UNIVERSITATEA DIN ORADEA
Facultatea de
Științe Economice

Emerging Markets Economics and Business. Contributions of Young Researchers

Proceedings of the 15th International Conference of Doctoral Students and Young Researchers

No. 12 - December 2024

EDITURA UNIVERSITĂȚII DIN ORADEA

Editura Universităţii din Oradea este acreditată de CNCSIS, cod 149 /
Oradea University Press is accredited by Romanian National Council for Research in Higher Education, code 149
ISBN 978-606-10-2389-9
ISSN 2344 – 6617 (print)
ISSN 2601 – 1840 (online)
ISSN-L 2344 – 6617

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FACULTY OF ECONOMIC SCIENCES
DOCTORAL SCHOOL OF ECONOMIC SCIENCES

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Editor-in-Chief: Prof. univ. dr. habil. Claudia-Diana Sabău-Popa

Oradea University Press

2024

The papers published in this volume are exclusively engaging the authors.

Table of Contents

BALANCING GROWTH AND SUSTAINABILITY: THE EVOLUTION OF BIOECONOMY CONCEPT

Dadiana Dabija
Doctoral *School of Economic Sciences, Faculty of Economics and Business Administration, "Ștefan cel Mare" University of Suceava, Suceava, Romania*
dabija.dadiana@gmail.com

Abstract: *The concept of bioeconomy has gained significant attention due to the urgent need to address global resource depletion and environmental degradation. The bioeconomy, a sustainable economic model, integrates biological resources and biotechnologies to promote economic growth while restoring ecological balance. However, the concept has many diverse interpretations focused on sustainability, economic growth, and biotechnology. Historically, "bioeconomics" emphasized degrowth and sustainability, but modern bioeconomy policies prioritize innovation, resource efficiency, economic growth and increased competitiveness. Despite the evolving definitions, the debate persists on whether bioeconomy should prioritize economic growth or focus on long-term environmental survival. This article traces the dynamic evolution of bioeconomy concept, highlighting the need for a balanced approach that fosters innovation.*

Keywords: Bioeconomy; Bioeconomics; Sustainability, Resource Depletion, Economic Growth

JEL classification: Q57

1. Introduction

Based on the current ecological footprint of the EU27 nations, the Earth cannot sustain the world's resource consumption (Global Footprint Network, 2024). Given the urgent environmental issues and depletion of finite natural resources, bioeconomy has emerged as a forward-thinking concept based on the sustainable use of natural resources and systems and offers the potential to solve global problems, promoting economic growth and jobs that are both ecologically and socially sustainable (Gould et al., 2023).

At its core, the bioeconomy represents not just an economic model, but a vision for the future that redefines the relationship between human activities and the planet's ecosystems. This vision imagines a future where economic progress is intrinsically linked to the responsible stewardship of natural resources and the restoration of ecological balance. By embracing the principles of the bioeconomy, we can strive to create a more sustainable, resilient, and equitable economic system that operates in harmony with the natural world (Aguilar & Twardowski, 2022).

Over the past 15 years, over sixty countries have adopted specific bioeconomy policies and strategies (Gould et al., 2023). According to recent studies, the term "bioeconomy" covers a wide range of industries, including bioenergy, forestry, agriculture, and the chemical and health sectors (Eversberg et al., 2023).

The concept of bioeconomy is complex and multifaceted, drawing upon a variety of disciplines that contribute to the knowledge underlying its development (Bugge et al., 2019; Dietz et al., 2023).

2. The evolution towards modern bioeconomy

The concept of bioeconomy appears to lack a clear, agreed-upon definition (Gould et al., 2023). According to recent studies, the term is polysemantic, encompassing three primary trajectories with unique dynamics presented in Table 1 below.

Table 1: The main trajectories of bioeconomy vision

Evolution	**1."Bioeconomics"**	**2. Bio-based economy**	**3. Bioeconomy**
Bioeconomy trajectory	The Bio-Ecology Vision	The Bio-Technology Vision	The Bio-Resource Vision
Aims & objectives	Sustainability & biodiversity, conserve ecosystems	Economic growth & job creation	Economic growth & sustainability
Value creation	Integrated, local production systems	Research & Technology	Processing biomass

Source: Adapted from Bugge et al. (2019)

The development of the bioeconomy reflects a growing understanding of the need to use biological systems' capacities to accomplish both environmental sustainability and economic growth (Eversberg et al., 2023).
The term "bio-economics" was first used by Russian biologist Baranoff in 1918, and later by Romanian economist Nicolae Georgescu-Roegen in the 1970s (Gould et al., 2023). Georgescu-Roegen's use of the second law of thermodynamics (entropy) explained how biological and ecological principles interact with economic systems, particularly regarding sustainability and resource use (Allain et al., 2022). Christian Patermann, the «father» of the modern European bioeconomy, significantly contributed to the EU's strategy in early 2000s, advocating for sustainability and biological resource integration (Aguilar & Twardowski, 2022).

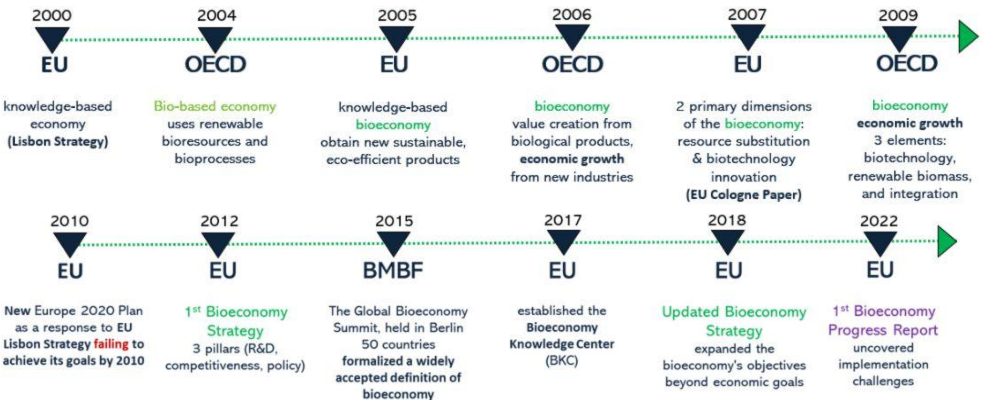

Figure 1: Evolution of bioeconomy concept in EU policy context (2000-2022)
Source: Own visualization expanding on Gould et al. (2023)

The evolution of bioeconomy concept is summarized in Figure 1.
In 2004, OECD’s definition of a bio-based economy was a crucial first step in comprehending how biological resources and biotechnology could spur economic growth (Többen et al., 2024). The EU first introduced its Bioeconomy Strategy in 2012, focused on industries relying on biological resources and addressed global challenges like climate change, food security, and sustainable development (Häyry & Laihonen, 2024).A recognized definition of the bioeconomy was formalized at the 2015 Global Bioeconomy Summit in Berlin (Dietz et al., 2023). In 2018, the EU updated its bioeconomy strategy to consider global environmental policy developments. The 2018 strategy aimed to strengthen and expand the bio-based industries, open up markets and investments, and establish local bioeconomies across Europe, while also considering the ecological limits of the bioeconomy (Patermann & Aguilar, 2021). The 2018 Bioeconomy strategy continues to define the EU's bioeconomy policy. No new formal definitions have been issued by the EU or OECD since then (Häyry & Laihonen, 2024).

3. Bioeconomics versus Bioeconomy

As demonstrated so far, the bioeconomy concept has had a dynamic evolution in the past two decades. Still, the concept lacks a clear and agreed-upon definition. Delvenne and Hendrickx (2013, p. 75, in Pungas, 2023) describes the bioeconomy concept as a "master narrative" that facilitates diverse understandings and interpretations. The potential of the bioeconomy to spur economic growth by creating new markets, job opportunities, and industries based on biological resources and processes is a major theme of this story (Eversberg et al., 2023). The bioeconomy is positioned in this master narrative as a comprehensive and sustainable economic model that addresses resource depletion, environmental degradation, and climate change while fostering innovation and economic growth (Aguilar & Twardowski, 2022).The bioeconomy definition is likely to continue evolving as new perspectives and priorities emerge, reflecting the dynamic and complex nature of the field.
Bioeconomics as the former concept, advocated for degrowth and sustainable, low-tech innovations (e.g. agroecological practices), called for a fundamental rethinking of society's relationship with natural resources, and often advocated for a slowdown in consumption (Allain et al., 2022). Bioeconomy, the current concept, is considered a key driver of economic growth through the use of renewable biological resources and biotechnologies that prioritize sustainability (Gould et al., 2023). Despite its importance, the original "bioeconomics" paradigm is often overlooked in bioeconomy literature, while the need for policymaking, extending research priorities, and enhancing competitiveness or economic growth takes precedence (Allain et al., 2022; Gould et al., 2023). The debate over whether the bioeconomic transition should prioritize economic expansion or human survival remains ongoing.

4. Conclusion

The bioeconomy has emerged as a critical framework addressing global challenges of sustainability, resource depletion, and environmental degradation.

Rooted in the responsible use of biological resources, the bioeconomy offers an integrated approach to achieving both economic growth and ecological balance.
The modern bioeconomy has evolved significantly over the past decade, emphasizing innovation as a key focus. While earlier bioeconomics emphasized degrowth and conservation, the bioeconomy's current core aim is to address critical environmental challenges, resource depletion, and climate change. Moreover, the bioeconomy's potential to create new markets, jobs, and industries makes it a crucial strategy for achieving ecological balance and fostering long-term sustainability.
Despite this shift, ongoing debates persist regarding whether the bioeconomic transition should prioritize economic expansion or more fundamental changes in consumption patterns to ensure long-term environmental sustainability. As more countries adopt bioeconomy strategies, the need for a clearer definition and a balanced approach remains crucial to shaping a sustainable future.

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IDENTIFYING SCIENTIFIC CONCERNS ABOUT AI'S IMPACT ON THE LABOUR MARKET

Ludovic Dioszegi
Doctoral School of Economic Sciences, University of Oradea, Oradea, Romania
dioszegi.ludovic@student.uoradea.ro

Abstract: *The relentless pace of inexorable technological advancement compels scientific research to continuously evaluate its impact on the economy. An expanding body of literature reflects both present and future effects, with technological evolution highlighting significant elements of change. This evolution increasingly emphasizes the importance of studying the socioeconomic implications of advancements in technology, particularly artificial intelligence, on the labour market. This article aims to capture the intensity and primary concerns of current research on this subject at both global and national levels. It seeks to provide an overview and to offer recommendations for selecting relevant literature for researchers exploring the connection between technological development and the labour market. The study seeks to identify various approaches, key topics, and possible clusters of convergence while also measuring specific quantitative indicators such as the number of publications per year, categorized by authors, institutions, and countries.*

Keywords: Artificial-Intelligence; Work; Labour; Employment; Literature; Technological-Change.
JEL classification: J01

1. Introduction

Significant technological advancements have profoundly altered the economic and social frameworks of preceding eras. Innovations such as the steam engine, electricity, and information technology not only transformed production models but also reshaped everyday life. Erik Brynjolfsson (Brynjolfsson, 2014) refer to the industrial revolution marked by the steam engine as the *"first machine age*" and the era of artificial intelligence (AI) as the *"second machine age"*. From 1950, when Alan Turing (Turing, 1950) linked the notion of intelligence to computational machines, until now, AI technology has seen rapid development, driven by exponential growth in computing power and algorithmic advancements. In 2017, OpenAI introduced the GPT-2 model with 1.5 billion parameters to highlight system complexity. This was followed by GPT-3 in 2020, boasting 175 billion parameters. The model's computational capacity skyrocketed from two petaflops to ten billion petaflops. GPT-4 has successfully passed the Turing test, pushing the boundaries of AI’s potential. These technological milestones set the stage for economic research, while history warns of the social costs borne by those impacted. Despite the undeniable role of technological advances in enhancing living standards and shaping modern societies with democratic values enjoyed by many, the arrival of a new technological wave necessitates pre-emptive economic, social, and political adjustments. As Daron Acemoglu and Simon Johnson (Acemoglu and Johnson, 2023) emphasised, the most important thing about technology is choice. Scholarly literature supports the urgency of addressing this challenge, with a yearly increase in related publications underscoring the need to identify key works and topics about AI's impact on the labour market.

2. Theoretical overview

John Maynard Keynes (Keynes, 2010), in his 1930 *essay "Economic Possibilities for our Grandchildren* predicted the 15-hour workweek, due to technological advances and increased productivity, leaving people more time for recreational activities and personal development. It is the most frequently used citation in literature that address this topic. Trying to classify literature according to authors, we define two distinct categories. The first is that of authors coming from the practical sphere, applicability or development of AI, such as Mustafa Suleyman (*DeepMind*), Paul R. Daugherty (*Accenture Research*), H, James Wilson (*Accenture Research*), Mo Gawdat (*Google X*). The second category is that of scientific researchers, whose name and importance in the field we will present in the results of the present research. The major difference in the way the two categories are approached is the framing of the technology itself. Economists place less emphasis on the peculiarities of AI, analysing it as a generic technology, while engineers detail the differentiating and determining features of AI, such as hyper-evolution, asymmetric impact, increasing autonomy, general usability. There are topics on which the positions are unanimous, or at least mostly consensual, such as the imminence of the phenomenon, the magnitude of the impact, the transformative effect, the time-lag inherent in implementation, the possible reactions of rejection from the directly affected factors, the increase in productivity, the creative destruction, the need for regulation. The positions diverge in the positioning of AI in future production processes, the types of jobs affected, of newly created jobs, technological unemployment or structural unemployment, the polarization of the labour market, inequality. Except for the option in which AI will not affect the labour market, the positions are between a complementary, augmentative AI and a dislocating, substitutive AI. The complementation of human capabilities on the labour market envisions a harmonious collaboration between humans and AI, the latter eliminating repetitive tasks that do not provide job satisfaction, leaving room for creative and important processes, re-humanizing both time and work. The displacement of humans by AI, or by technology driven by AI, also remains a possible scenario. The most commonly used models for explaining the effects of technology on the labour market are *the skill biased technical change* theory SBTC and the *Author-Levy-Murnane hypothesis, ALM* (Author, Levy and Murnane, 2003). According to SBTC, advanced technology needs skilled labour, generating additional demand for this category and decreasing demand for those with basic qualifications. The ALM hypothesis focuses on tasks, grouping them into routine, easily automated, and non-routine tasks, divided into manual and cognitive tasks (Author, Levy and Murnane, 2003).

3. Methodology

The methodology employed for this research is bibliometrics, offering the benefit of analysing a large volume of publications through quantitative techniques. This complements traditional methods such as systematic literature reviews or meta-analyses, which involve interpretive subjectivism. After defining the research objectives outlined earlier, we proceeded to data collection. We utilized WoS as the data source for our query, strictly focusing on publication topics, and employing logical operators like AND and OR to capture works related to AI and the labour market. The query parameters are crucial, as they significantly affect the resulting database; distinct parameters can produce different findings and conclusions. This forms the primary critique of bibliometrics: the research outcomes are specific to the analysed database, making their generalization across a broader research field unfounded or speculative. The resultant database was then processed using Biblioshiny, a bibliometric analysis tool developed in the R programming language.

4. Results

4.1. General analysis of the selected publications

As a result of the query, we obtained a database comprising 701 documents, published in 339 distinct sources in the period 1989-2024, by 1587 authors, with an average co-author rate of 2.54 per document. The average growth rate of publications was 15.54%. The first publications about AI present on Web of Science (WoS) are from 1977. The interdisciplinary approach, in this case AI and the labour market, although existing since 1989, follows a stagnant trajectory between 1989-2015, after which the average increase in scientific production is 34% per year. The trend is similar in terms of the number of citations, with an average annual increase of 54%, justified by the topicality of the subject and the growing number of publications. More than half of the publications analysed, based on the authors' affiliation to a country, are given by 5 countries: the USA with 17%, the Republic of China 12%, Germany 8%, Italy 7% and the United Kingdom 7%. Romania ranks 11th with 14 publications, equivalent to 2% of the total. It is worth noting the growth rate of publications in the Republic of China, uncorrelated with the impact of publications, measured by the average number of citations per article. China with 9.2 citations per article lags far behind the UK with 71.1, the US with 62.5 and Germany with 20.7. The average number of citations in the case of Romania is 3.28. The analysis of data on existing collaborations between countries, measured by frequency, shows the closest collaborations between the US and the UK (17), Germany – Italy (15), Germany – UK (13), US – Germany (12), Germany – Netherlands (11), Italy – Netherlands (10), Italy – Spain (9), USA – R. China (9). We identify close collaborations between America and Europe, and even weaker, but existing, with the Republic of China.

4.2. Analysis of sources and authors

The analysis of the sources aims not only to list the most frequent journals, but also to evaluate the quality of the analysed publications. To quantify this aspect, we have also added the H-index to the list of the most frequent journals, as a measure of scientific impact. Using the weighted arithmetic mean of the indices, we calculated an H-index of the analysed database, the result being H-index=112. The journals with the most publications are (*H-Index)*: *Technological Forecasting and Social Change (179), Technology in Society (88), Industrial and Corporate Change (127), Labour Economics (91), Applied Economics (113), Economics of Innovation and New Technology (66), International Labour Review (53), Structural Change and Economic Dynamics (69), Economics Letters (125).* The authors with the most publications are Daron Acemoglu (*MIT*), Pascual Restrepo (*Yale University*), Jacopo Staccioli (*Università Cattolica del Sacro Cuore*), Marco Vivarelli (*Università Cattolica del Sacro Cuore*), Virgillito Maria Enrica (*Scuola Superiore Sant 'Anna*), Klaus Prettner (*Vienna University of Economics and Business*), Carl Benedikt Frey (*University of Oxford*), also present in the list of the most frequently used references, along with David Autor (*MIT*), Erik Brynjolfsson (*Stanford University*). The 14 local publications come from 13 authors from 12 sources, including *Amfiteatru Economic (H-Index 30)* and *Journal of Theoretical and Applied Electronic Commerce Research (H-Index 47)* with 2 publications each, the most cited being *Pirosca Grigore Ioan, Serban-Oprescu George Laurențiu, Badea Liliana, Otoiu Adrian, Titan Emilia, Paraschiv Dorel Mihai*. The common topics, in descending order of frequency, are *automation, technology, inequality, technological change, salary level, artificial intelligence, employment, productivity*, subjects that we will examine in the following sections.

4.4. Content analysis

Although the analysis methods remain quantitative, content analysis manages to describe the major research directions in the analysed articles, based on the keywords used. The most frequently used keywords are, in descending order of occurrence: *employment, growth, future, jobs, technology, polarization, automation, robots, labour, impact*. The major concern is the future impact of automation and robotization on the employment rate on the labour market, the possible polarization effect generated by the imminent growth. It is worth mentioning the term *productivity* on the 14th place, *AI* on the 15th and *inequality* on the 16th. The identification of trend changes in topics shows that topics related to wages, or the labour market remain constantly present. The issue of the substitution effect remains behind as of 2022, the pessimistic approach of a future without jobs being considered unfounded. Referring to the past becomes irrelevant from the perspective of AI, and new topics appear, such as structural changes, economic growth correlated with technological evolution, automation. The relationships between topics, represented by keywords, are analysed using co-occurrence diagrams, which allow the identification of clusters. The application identified two clusters, one grouped around the words *employment, future, technology, jobs*, and the second, around the words *polarization, tasks, technological-change*. The first cluster focuses on the strictly economic effects of technological evolution, while the second deals with the social impact of these changes.

5. Conclusions

This study aimed to identify scientific concerns regarding the impact of AI on the labour market, by employing bibliographic methodology. The research was able to identify influential authors with significant impact, the dominant key journals in the field, the relevant topics and their evolution over time, respectively the existence of clusters. The similar size of the two identified clusters highlights the necessity of studying the social impact, urging future research to focus on concrete recommendations for guiding the development of AI, in the sense of directing it towards applications that do not exacerbate phenomena of labour market polarization or inequality. In his paper entitled *"Can We Survive Technology?"*, physicist John von Neumann (von Neumann, 1955) cautioned that the world is undersized and inadequately structured to cope with technological progress. It is our responsibility and opportunity to expand it economically and socially, and to reorganize it in order to leverage the benefits of technological progress.

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LABOUR MARKET CHALLENGES AND CSR

Cristian-Mihai Cismaș, Melinda Petronela Costin
West University of Timisoara, Doctoral School of Economics and of Business Administration, Timisoara, Romania
cristian.cismas95@e-uvt.ro
melinda.costin87@e-uvt.ro

Abstract: *The current EU-27 labour market is faced with unprecedented challenges, due to the shift to the digital economy, the set goals of transitioning to a decarbonized industry and services' sector. Currently, in EU-27 and at national level debates focus more and more around the issue of ensuring the necessary labour force, while balancing the negative effects and impacts of an economic, social, and political context fraught with uncertainty and volatility. The public and private sector need to develop concerted policies, with businesses at their core ensuring the necessary conditions for supporting approaches in consonance with CSR as stepping stone for improved models of economic growth, social development and consolidated governance at both EU-27and national level. The paper presents a brief review of the current state-of-affairs on the economic, and social dimension, by considering the possible CSR-impact on labour market in national context.*

Keywords: economic growth, social development, business environment, CSR
JEL classification: O43, P16, O17, M14, J24

1. State-of-affairs

2019 was the last year of the two decades in which at global and European level the debates about economic growth, social development and combating climate change occurred according to some relatively predictable circumstances. The pandemic was the 'hiatus year', as 2020 has shown that transparency, communication, collaboration and openness in both public and private sector are essential. The exit from the pandemic crisis as of 2021 is also the time at which a new economic, social, cultural and even political period began, and it brought with it unprecedented challenges from economic, social, cultural and political perspective. The political landscape changed considerably, with open conflicts in the immediate proximity of the EU-27, and renewed issues triggered by increasing inequality, renewed migration waves, increased, costs of living for households while aiming for decarbonizing the EU-27 economies. The business environment was just as affected as the demand for skills was unmet, due to the new realities of the digital economy. The skills' gap increased on one hand, while on the other hand most of the EU-27 society perceived a worsening of circumstances. The epicentre is the labour market, as it sends messages to both those preparing to entering it, to those close to exiting the labour market and to retired individuals.

All these facts, to which several more can be added indicate that a new paradigm is necessary for ensuring the achievement of EU-27 goals and targets, while answering also the concerns of the society. It was yet again underpinned that the public and private sector need to develop concerted policies with businesses and the workforce and potential workforce at their core, for preventing negative effects already identified in the populist waves, or more clearly or less stated initiatives of following own paths, away from the EU-27, a trend opened by Brexit. The background of the EU-27 economy is represented by the businesses active in all three sectors, and the challenges are not merely economic, but also social, environmental and institutional. The changes bring again into light the relevance of the soundness of the institutional framework, respectively its quality for supporting approaches in consonance with ESG and with CSR as stepping stone for improved models of ensuring economic growth, social development and consolidated governance at both EU-27and national level. In this context, one of the less investigated components in the literature is the relationship between labour market and CSR, and more specifically, the role of CSR in creating a favourable environment for supporting measures aimed to reduce the skills gap, to attract and retain 'talent' and high-skilled workforce in the EU-27 and national labour markets of the member-states.

2. Theoretical Framework

CSR is relatively young at EU-27 level, as first concerns were shown only in the years 2000s, more specifically as the Green Paper Promoting a European Framework for Corporate Social Responsibility was brought to the attention of interested stakeholders and of the society in 2001. The EU Strategy for CSR was passed in 2002, and a series of other initiatives and calls followed (European Commission, 2011). This is a first step in understanding the differences and the certain identifiable gap between European and American and Asian CSR, the most obvious one being that the so-called "Anglo-American model" is centred on shareholders, whereas the "Continental-European model" is more focused on interested stakeholders (Palmer 2011). CSR was aimed, at EU-27 level, as tool for increasing competitiveness, in the context in which EUA had clear objectives related to lifelong learning, labour organization, equal opportunities, social inclusion and sustainable development. All these goals, have at their core the business environment, the workforces that are associated based on the third pillar represented by institutions. Given the large gaps in knowledge about the impact of CSR at EU-27 and national level as stepping stone for ESG, monitoring and objective assessments are still necessary, as CSR impacts quality and availability of jobs, the social and economic well-being of the workforce, and of the communities in which they operate at local, regional and national level.

3. Methodology

In this context, the main aim of this research is to assess the health of the Romanian labour market, as related in terms of full-time, and part-time employment, quality-of-life and perceived individual well-being, as potential future proxies for the CSR activities at national level.

The selected population is represented by individuals aged 20 to 64 years, and the model pursues to identify the key intervention points, by using the Global Reporting Initiative Ic1 known as the most popular framework for voluntary reporting about environmental and social performance (Presence = 100; otherwise =0), the International Standardization Organization certifications for labour contracts and collective agreements, respectively Ic3 (presence = 100; otherwise = 0) on the corporate ide, and on the social side the existence of a code of ethics Is2. For these items we created key-performance indicators (KPI) based on calculating indexes over the period 2021-2023 starting from the specific formula ‘X/Y’, where x is the total input and Y the total output for each of the years included in the calculation (Nacu, T et al. 2022).

4. Results

The Romanian CSR activities remain still volatile, and several challenges are related to the evolution of the Romanian labour market. First and foremost, it is noticeable that in total employment, men tend to be better represented than women, and that the gender gap against EU-27 continues to be relatively high (Figure 1) by the end of the analysed period, respectively in 2023.

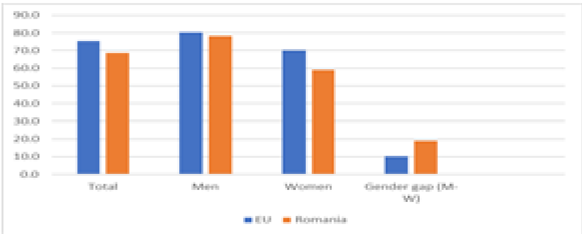

Figure 1: Total employment and gender gap in Romania 2023, %
Source: Eurostat [lfsi_empl_a]

However, more relevant is the employment by educational level, where the differences show that there is still much to be done, from a CSR perspective to improve employment opportunities for all individuals of working age, as the comparison with the EU-27, shows that in Romania the highest rates of employment continue to be for those with medium educational attainment level (Figure 2). We correlated these two indicators as average for the time interval 2021-2023 with the KPI’s of the Romanian companies identified in the GRI Reporting, and obtained the following results that show that on one hand, CSR is still dominated by grey areas and needs further consolidation from the economic and social institutional perspective, as the ‘imported’ CSR of multinational corporations on the economic, social and environmental dimensions continues to improve. However, there are still minus points, especially as regards the creation of environmentally sustainable workplaces, and encouraging hybrid modes of work that could contribute to decreasing damaging GHG emissions and improving the efficient use of energy.

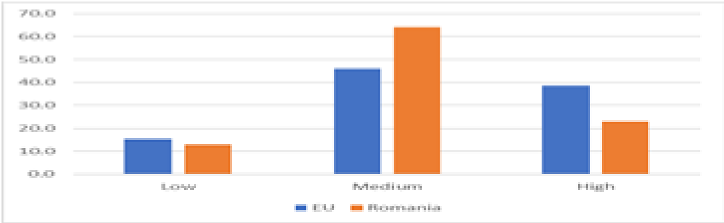

Figure 2: Total employment by educational attainment level 2023, %
Source: Eurostat [lfsi_empl_a]

The outcomes of our analysis show that CSR in Romania continues to need further improvement on dimensions such as workplace safety, especially in transports, constructions, retail trade, health and to lay more emphasis also on the well-being of the individuals included in the workforce (Table 1).

Table 1: Average KPI performance of CSR in correlation with the total yearly average of total employment and total employment by educational level

Company	KPI2021	KPI2022	KPI2023
Lidl	51.00	49.02	50.75
Banca Transilvania	51.75	65.30	52.25
Telekom Romania	52.00	50.75	45.25

Source: authors' own processing after GRI, CST Azores, Eurostat.

5. Conclusions

The current state-of-affairs in Romanian CSR indicates a slow catching up in this respect of national companies, as increasingly more businesses become more aware of its importance for the future development of the country. However, the institutional framework will need improvements at the level of mechanisms that encourage better allocation of resources, transparency and collaboration between the public and private businesses, and with the decision-factors at governmental level, for ensuring full and competitive integration of the country in the CSR reporting standards at EU-27 and global level.

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THE PUBLIC PRIVATE PARTNERSHIP IN THE ROMANIAN REGULATORY

Elena Bizim (Surdu)
elena.bizim@student.uaic.ro
Alexandru Ioan Cuza University of Iași, Faculty of Economics and Business Administration, Iași, Romania

Abstract: *With a tradition of over 20 years in the world, the partnership between the public sector and the private sector began to be applied in Romania only after 1989, being allowed both by the changes in the governance process and by the reform in the public administration. Against the backdrop of the globalization process, we are witnessing permanent changes in the national and international economic sphere. Authentic partnership implies, at least in theory, close collaboration and the combination of specific advantages between the private sector, more competitive and efficient, and the public sector, with responsibilities towards society regarding the spending of public money. The present study presents a literature review of the recent scientific literature regarding the most recent regulatory regarding the PPP in Romania.*

Keywords: *Public-Private Partnership; public collaboration; romanian regulation; economic policy; public administration; private investors;*

Classification JEL: *A10; L26; L32*

The development of this type of relationship between the public and private sectors is due to the consequences of three factors:
• the fiscal pressure to which governments are subjected;
• the interest shown by private organizations in the field of public services;
• developing the idea of complementarity between the two sectors, in the organization and provision of such services (Constantinescu, 2012).
These administrative contracts are attractive to governments and public organizations because they allow the sharing of risks and responsibilities between the public and private sectors, and can bring benefits in terms of efficiency and innovation in project implementation. At the same time, private entities can benefit from business opportunities and profit from the PPP projects. Construction partnerships involve collaboration between the public and private sectors to build and finance infrastructure, or public services (Constantinescu, 2012). PPP represents a collaboration tool that takes shape in a project to improve public services (Institutul pentru Politici Publice, 2004).
Private companies are often responsible for the design, construction and initial financing of the project, while the government may provide ongoing financing or service provision.
Each of the two parties agrees on its contribution, essentially the private partner bringing to the negotiation table know-how, human resources, financial resources, perspective and innovation. The public partner will most often provide the location

where the project will be implemented or other resources that come to complete the framework conducive to the development of the project.

However, PPPs can also be subject to criticism and controversy, such as the risk that some costs may be unfairly transferred to the taxpayer or the quality of services may be compromised in an attempt to maximize profit for the private partner. It is important that strong foundations are established for governance, transparency and accountability within these partnerships to ensure benefits for all parties involved and the community as a whole.

The public-private partnership has experienced multiple legislative changes over the last few years in Romania. In 2018, the Government of Romania regulated the conclusion, development and termination of the public-private partnership through Emergency Ordinance no. 39/2018 regarding the public-private partnership. The object of the public-private partnership contract is the realization or rehabilitation and expansion of some goods or services that will belong to the public partner's heritage (gov.ro).

The seat of the matter is O.U.G no. 39/2018 on public-private partnership, amended in January 2024 by Law no. 7/2024. The ordinance creates the legal framework for the conclusion, development and termination of the public-private partnership in Romania. Its purpose is to create the legal framework for the amplification, popularization and implementation of this type of partnerships, which emphasizes the increase of investments, both those financed from the budget or by accelerating the absorption of European funds, as well as by stimulating investments with private capital. Macroeconomic consolidation will be possible through a combination of fiscal - budgetary - monetary policies so that, against the background of maintaining macroeconomic balances, the quality of life in Romania can be increased.

The modus operandi of this type of partnership is distinguished by a number of elements, as follows:

a) cooperation between the public partner and the private partner, in order to implement a public project;

b) the long duration of the contractual relations, over 5 years, which allows the private partner to recover the investment and make a profit.

c) financing the project, mainly from private funds and, as the case may be, by pooling private funds with public funds;

d) achieving the goal pursued by the public partner and the private partner;

e) the distribution of risks between the public partner and the private partner, depending on the capacity of each contracting party to evaluate, manage and control a certain risk (O.U.G. no. 39/2018).

At the level of our country, public-private partnership contracts are assigned according to the provisions of Law no. 98/2016, of Law no. 99/2016, or of Law no. 100/2016, with subsequent amendments and additions, as appropriate, according to the conclusions of the substantiation study developed depending on the object of the contract and the manner in which the transfer of a significant part of the operating risk of an economic nature is carried out, in connection with the exploitation of the works and/ or of the services in question (O.U.G no. 39/2018).

As a contractual structure, the PPP contract is an administrative type, which mandatorily regulates:

• the parties;
• object of the contract;

• obligations of the parties within the project;
• the negotiated value of the investment;
• the duration of the contract and the term of completion;
• defining the calendar for the performance of the contract;
• the participation quotas in the public private partnership project and the assets that each partner offers;
• distribution of risks;
• performance criteria regarding the fulfillment of objectives;
• clauses for withdrawal from the project or termination;
• penalties.

Two forms of public-private partnership have been outlined in the doctrine:

a) the public-private contractual partnership, this being carried out on the basis of a contract concluded between the public partner, on the one hand, and the private partner, on the other hand, the contract to be implemented through a project company that is fully owned by to the private partner;

b) the institutional public-private partnership, this being carried out on the basis of a contract concluded between the public partner and the private partner, whereby a new company is established by the public partner and the private partner, which will act as a project company and which, after registration at the Trade Register according to law no. 31/1990, becomes a party to the respective public-private partnership contract (Constantinescu, 2012).

Public-private partnership contracts can also be concluded for the purpose of carrying out a relevant activity in the public utility sectors provided for in Law no. 99/2016 regarding sectoral acquisitions, as well as with a view to the realization by a private operator of community services of public utilities provided for in the Community Services of Public Utilities Law no. 51/2006. It should be emphasized that PPPs can only come to life at the initiative of the institutional partner, in the sense that he is the one who starts the procedure.

The financing of investments that are made within the framework of public-private partnership contracts can be ensured, as the case may be:

a) in full, from financial resources provided by the private partner from its own sources or attracted by the private partner;

b) from financial resources provided by the private partner, together with the public partner;

c) from financial resources provided by sovereign development and investment funds, privately managed pension funds, as well as investment funds and investment companies;

d) by issuing corporate bonds by the project company for the purpose of implementing the public-private partnership project.

In order to achieve the final goal, the conclusion of the contract and the start of the execution of the obligations in the contract, the national legislation outlines the need to go through several subsequent stages such as the realization of a substantiation study and its approval by the Government for central public administration projects or, as the case may be, by deliberative authorities for local public administration projects. Also, the contracting parties will go through the stage of awarding, approving and signing the public-private partnership contract. In the situation where the contracting authority, at the time of approving the substantiation study, has also developed the feasibility study related to the proposed investment, the substantiation

study can be approved together with the main technical-economic indicators foreseen.
A project that, through its technical and legal structure, in the current economic conditions, manages to attract sources of financing, with the ultimate goal of ensuring cash-flow throughout the duration of the targeted project, can be considered financeable.

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A LITERATURE REVIEW ON THE IMPACT OF EUROPEAN INTEGRATION IN PERIPHERAL REGIONS

Cătălina Mihaela Ficuț
Doctoral School of Economic Sciences, University of Oradea, Romania
cataficut@gmail.com

Abstract: *The purpose of this paper is twofold. Firstly, to identify the specific themes under investigation regarding the impact of European integration on peripheral regions research. Secondly, to outline an overview of research areas and gaps. Research on the impact of European integration in peripheral regions shows both positive and negative outcomes. On one hand, integration has provided significant benefits through access to structural and cohesion funds, facilitating infrastructure development, improving market access, and stimulating regional economies. These programs have helped narrow some of the economic disparities within the European Union (EU). On the other hand, the benefits have been uneven, with many peripheral regions, particularly rural and remote areas, experiencing limited economic diversification, population decline, and difficulties in attracting sustained investment. Urban areas and more developed regions tend to reap greater rewards from integration, deepening inequalities within certain countries. The literature also highlights the role of EU policies, such as the Common Agricultural Policy (CAP) and Cohesion Policy, in shaping regional outcomes, as well as the growing concerns over Brexit and Euroscepticism, which threaten to disrupt future integration efforts. Overall, the research emphasizes the need for more regionally tailored policies to ensure that peripheral areas fully benefit from European integration.*

Keywords: European Integration; Peripheral Regions; Economic disparities; Cohesion Policy; regional convergence; Integration paradox.

JEL classification: F15, O18, R11.

1. Introduction

European integration has significantly influenced economic, social, and infrastructural development across the European Union. Although the intent behind policies and funding mechanisms, such as the Cohesion Policy and structural funds, is to reduce disparities and foster a balanced economic landscape, peripheral regions often find themselves left behind. Scholars (McCann and Ortega-Argilés, 2013) refer to an "Integration Paradox" – the phenomenon whereby, despite substantial EU support, certain regions benefit more than others, sometimes widening existing inequalities. This phenomenon has been the subject of extensive analysis in the fields of economics, economic geography, and political science, highlighting critical issues such as economic dependency, the uneven distribution of structural funds, labour migration, challenges to regional identity etc. (Rodríguez-Pose et al., 2024, Dijkstra et al., 2020).

2. Methodology

2.1 Systematic Review Approach

To ensure a comprehensive and structured literature review, this study employs a systematic literature review methodology. This approach entails selecting, categorizing, and synthesizing relevant literature, focusing on peer-reviewed journal articles, policy reports, and seminal texts within the field. Following guidelines in systematic reviews (Ryan and Bernard, 2003), thematic and citation analyses were conducted to identify the most influential contributions and recurring themes, and to outline research areas and gaps.

2.2 Data Collection

A targeted search in databases such as Scopus, Web of Science, and Google Scholar was conducted. Keywords included 'European integration', 'peripheral regions', 'regional convergence', and 'social inclusion', 'Cohesion Policy' and 'economic disparities. Only studies explicitly focused on EU policies' impact on peripheral regions were included, excluding broader studies on integration effects without regional specificity. This yielded a dataset of 132 relevant studies spanning economic, social, and political domains, which were subsequently classified and analyzed. The search period focused on publications from 1990 to 2023. The most influential papers from this period were identified by citation analysis. This list includes articles directly related to the impact of European integration on peripheral regions, capturing themes such as cohesion policy, regional resilience, and border region migration. The thematic analysis was based on the categories that arose from the most-cited publications. Based on content similarities, these most-cited studies were examined and categorized into topic groups.

3. Literature Review

The literature reveals both positive and negative outcomes regarding the impact of European integration on peripheral regions:

- Positive Outcomes: Access to EU structural funds has led to improved infrastructure and connectivity, particularly in Eastern European countries (e.g., Poland, Hungary).
- Negative Outcomes: Peripheral regions often experience limited economic diversification, reliance on agriculture, and demographic decline (e.g., Romania, Bulgaria).

Scholarly research on the effects of European integration on peripheral regions reveals a mixed picture. On one hand, integration is recognized for providing significant financial support aimed at levelling economic opportunities across EU member states.

3.1 Economic Impact on Peripheral Regions

European integration has led to varying economic outcomes across regions, particularly affecting peripheral areas.

3.1.1 Growth and Convergence

A central tenet of EU policy is fostering economic convergence. Studies by Armstrong and Taylor (2000) examine the EU's Cohesion Policy, highlighting its role in channelling structural funds to lagging regions. Rodríguez-Pose and Petrakos (2004) associate different stages of integration with convergence.

3.1.2 Persistent Economic Disparities

Despite convergence goals, Baldwin and Wyplosz (2006) argue that structural and cohesion policies often fail to close economic gaps. Studies by Gouveia et al. (2020) reveal that peripheral regions frequently struggle with absorption capacity issues, which limits the effectiveness of EU investments. This calls for differentiated policy approach sensitive to the unique needs of these regions.

3.2 Social and Demographic Impacts

Integration policies have influenced population mobility and social structures in peripheral regions, producing both opportunities and challenges.

3.2.1 Migration Patterns

Gouveia et al. (2020) explore the migration trends in peripheral areas, noting significant out-migration of younger populations due to limited local employment opportunities. This demographic shift contributes to aging populations in these regions, posing additional challenges for social cohesion and economic sustainability (Binder and Matern, 2019).

3.2.2 Social Inclusion and Exclusion

Studies by Davies and Michie (2011) and Binder and Matern (2019) address the impact of EU integration on social inclusion in peripheral areas, highlighting that while EU policies create new opportunities for marginalized communities, access remains uneven. Peripheral regions often lack the institutional support required to implement inclusive social policies effectively.

3.3 Governance and Political Implications

Governance in peripheral regions is deeply influenced by the EU's multi-level governance structure, impacting local autonomy and policy influence.

3.3.1 Multi-Level Governance and Local Autonomy

Hooghe and Marks (2001) propose that multi-level governance, a key EU integration principle, introduces complex layers that benefit regional governance while simultaneously centralizing decision-making at the EU level. This arrangement presents both opportunities and constraints for peripheral regions, where local autonomy can be diminished (European Committee of the Regions, 2017).

3.3.2 Political Engagement and Policy Influence

Peripheral regions often face limited influence within EU institutions, leading to perceptions of political marginalization (Rodríguez-Pose et al., 2024, Dijkstra et al., 2020). The European Committee of the Regions (2017) emphasizes that regional representation remains inadequate, which can impact the effectiveness of policies aimed at supporting these areas.

3.4 Cross-Border Cooperation and Case Studies

Case studies from Eastern Europe and Southern Europe illustrate how EU policies affect cross-border dynamics in peripheral areas.

3.4.1 Eastern European Integration Experiences

Research by Błaszczyk (2022) on the Visegrad countries provides insights into how EU membership impacts Eastern European peripheral regions. Findings reveal that while economic growth has been stimulated, adaptation to EU regulatory standards remains challenging, underscoring the need for tailored integration strategies (Dodescu et al., 2018).

3.4.2 Cross-Border Initiatives

Dodescu and Botezat (2018) examine cross-border projects in Romania and Hungary, highlighting that these initiatives promote tourism and commerce but often struggle with sustainability due to dependency on EU funding. Studies by Husák (2010) underscores the need for robust local governance structures to support long-term regional cooperation.

3.5 Future Directions and Policy Implications

Studies advocate for more regionally nuanced approaches, proposing that the EU adapt its funding strategies to foster economic diversification, innovation, and education in peripheral regions. Key recommendations include:

- Supporting Economic Diversification: Adapting structural funds to support sustainable industries beyond agriculture, thus reducing dependency on CAP.
- Promoting Innovation and Education: Investing in high-tech industries and vocational training specific to the workforce needs of peripheral regions, fostering long-term economic resilience.
- Enhancing Regional Governance: Policies should empower regional and local governance structures to identify and address unique challenges, enhancing their capacity to manage EU resources effectively.

4. Results

The thematic synthesis illustrates a mixed impact of European integration on peripheral regions, with notable progress in funding accessibility and competitiveness but persistent disparities in economic and social outcomes.

4.1. Uneven Distribution of Benefits

- Studies indicate that integration benefits are not uniformly distributed across regions, with urbanized areas often capitalizing more effectively on EU funds than rural regions:
- Integration Paradox: McCann and Ortega-Argilés (2013) highlight that while EU funds support growth, many peripheral regions remain dependent on agriculture, failing to diversify economically.

4.2. Challenges Amplified by Brexit and Euroscepticism

Emerging literature emphasizes the uncertainties introduced by Brexit and rising Euroscepticism:

- Economic Impacts: Brexit threatens to destabilize funding allocations and cooperation in border regions, especially in Ireland and Eastern Europe, as noted by recent studies on regional trade and integration (Rodríguez-Pose et al., 2024, Dijkstra et al., 2020).
- Policy Shifts: These challenges underscore the need for adaptive EU policies that respond to the unique vulnerabilities of peripheral areas affected by fluctuating political sentiments.

6. Conclusion

This review underscores the complexity of European integration’s impact on peripheral regions. While integration has introduced opportunities, it has also revealed significant barriers, especially in governance and regional adaptation to EU policies. Future research should focus on localized, differentiated policy frameworks that account for each region's unique economic and social context. By addressing these gaps, the EU can foster more equitable and sustainable growth across all member states. This paper finds that, while European integration has promoted economic growth and infrastructure development, it has not fully addressed the needs of peripheral regions. The benefits of integration are skewed toward urban and already developed regions, often leaving rural areas to contend with stagnation and decline. The “Integration Paradox” suggests that unless EU policies are more carefully tailored to address these unique challenges, disparities will persist, potentially undermining the core objectives of European unity. Future research should further explore policy adaptations that can foster a more inclusive integration process across the EU.

5. Acknowledgements

The analysis points to a central issue in European integration: the need for regionally specific strategies that can more effectively address the unique needs of peripheral areas. The “Integration Paradox” is particularly evident in cases where urban centres and developed regions have the infrastructure and investment climates necessary to maximize EU funding, whereas rural areas face barriers to accessing similar growth opportunities.

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THE EUROPEAN ARMY - A GUARANTEE OF STABILITY AND DEVELOPMENT. MULTIFACETED APPROACH.

Cristian Romeo SPĂTARU
Department of Economics, The Doctoral School of Economics and Business Administration, „Alexandru Ioan Cuza” University of Iași, Iasi, Romania
cspataru1970@gmail.com

Abstract: Military force and capabilities are a key "hard power" concept element. Stability is a prerequisite for development, and a strong army is a guarantor of stability.
This analysis explores the feasibility of creating a common European army, evaluating the pros and cons while considering the context and available resources, including economic power. The focus is on the necessity and opportunity to establish a common European army, while also addressing essential aspects such as infrastructure, technological innovation, and trends in the defense industry, including the analysis of economic resources.

Keywords: EU army, stability, hard power, security threats, strategies & defense policies

JEL classification: F50

1. Introduction
This paper examines the necessity, opportunity, feasibility, and prospects of establishing a common European army, discussing pros and cons, advantages and disadvantages, and possible obstacles. Global leadership ambition requires a strong military.

2. Literature review
We propose a literature review to address several deficiencies in EU defense policy: institutional overload (Howorth, 2001), limited involvement by the Commission, persistence of unanimity rules (Wessels & Bopp, 2008), lack of a cohesive strategic culture, overlapping competencies, absence of influential figures (Margarita, 2010), weak military collaboration among member states, and hesitance to integrate the defense industry (O'Donnell, 2013). Economic and systemic divides also impede cooperation (Blockmans & Crosson, 2021), and gaps in capacity hinder military innovation (Crosson & Blockmans, 2022).
According to the 2017/2018 Eurobarometer, 75% of Europeans favor common defense policies, with 55% supporting a European army. Leaders like Macron and Merkel acknowledge this need, yet as of February 2022, actions remain limited, with J. Borrell pointing to defense capability shortfalls. Jurčák (2023) argues that a European army requires transferring national powers to the EU. Public concerns about Russia and critiques of NATO lend support to a European army (Graf, 2020), while Sahin & Sahin (2023) highlight potential benefits despite sovereignty concerns. Although CSDP and NATO have broad support, views differ on a common army (Mader et al., 2020).

The Russian aggression has intensified support for EU security as complementary to NATO (Fernández et al., 2023), and Fiott (2023) examines institutional responses to the Ukraine conflict. A seven-country survey indicates support for a "stronger, united, and autonomous EU in military matters" (Wang & Moise, 2023). The invasion of Ukraine in 2022 had a limited impact on strengthening the capabilities of the EU, but it resulted in a strengthening of national powers, supported by European institutions (Genschel, 2022).

Russia's breach of European security has underscored the need for a unified EU response, as a lack of cohesion is no longer viable. Given Russia's economic and social ties with EU nations, a robust response is essential across policies like trade, energy, immigration, and neighborhood affairs, building on over 50 years of European foreign policy principles (Maurer, Whitman, & Wright, 2023).

3. Methodology

The methodology used: 1) literature review, 2) a quantitative approach (grouping and statistical processing, making comparisons), 3) argumentation and logical demonstration.

Research questions:

● Is it possible to create a common European army? But is it likely?

● To provide context, what new perspective has the war in Ukraine brought to the EU?

4. Results and discussions

We will contextualize the EU's defense stance by examining its cultural, military, and economic resources.

● *Cultural-Historical Resources*: The EU has long positioned itself as a normative, civil power, aligning with J. Nye Jr.'s concept of soft power, which has distanced it from direct security and defense responsibilities, typically delegated to NATO and the U.S. Even the EU's Common Security and Defense Policy (CSDP) focuses on humanitarian over military missions, often in cooperation with the UN or NATO for peacekeeping (Wallace, Pollack, & Young, 2011). Cultural and structural constraints make the shift toward a militarized EU challenging. Common Foreign and Security Policy (CFSP) advances have generally been reactive, driven by external crises rather than proactive strategies. Rooted in Franco-British negotiations, the CSDP suffers from intergovernmental decision-making and sovereignty concerns, leading to slow responses, limited consensus, and undefined military strategy. Challenges include low defense spending, weak member cooperation, inconsistent training, and varied military capabilities.

On November 11, 2022, the European Defence Agency (EDA) noted that most defense planning occurs independently, with member states hesitant toward EU-level collaboration.

Table 1: Military expenditures/countries, in (Bil. USD) & (% of GDP), 2003-2022

Region/Country year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Americas																				
North America																				
USA, Bil USD ($)	440.53	493.00	533.20	558.34	589.59	656.76	705.92	738.01	752.29	725.21	679.23	647.79	633.83	639.86	646.75	682.49	734.34	778.40	806.23	876.9
USA, annual growth rate, %		11.91	8.15	4.71	5.60	11.39	7.49	4.55	1.94	-3.60	-6.34	-4.63	-2.15	0.95	1.08	5.53	7.60	6.00	3.58	8.77
USA, increase compared to 2003,%		11.91	21.04	26.74	33.83	49.08	60.24	67.53	70.77	64.62	54.18	47.05	43.88	45.25	46.81	54.92	66.69	76.69	**83.01**	**99.06**
USA, % GDP	3.83%	4.02%	4.09%	4.04%	4.07%	4.45%	4.88%	4.90%	4.82%	4.46%	4.03%	3.69%	3.48%	3.42%	3.32%	3.32%	3.43%	3.70%	3.46%	3.45%
Asia & Oceania																				
East Asia																				
China, Bil USD ($)	33.14	37.90	42.79	51.45	62.14	78.84	96.60	105.52	125.29	145.13	164.07	182.11	196.54	198.54	210.44	232.53	240.33	257.97	285.93	292
CH, annual growth rate, %		14.36	12.89	20.25	20.76	26.88	22.53	9.23	18.73	15.84	13.05	10.99	7.92	1.02	6.00	10.50	3.36	7.34	10.84	2.11
CH, increase compared to 2003,%		14.36	29.10	55.24	87.47	137.87	191.46	218.38	278.01	337.87	395.02	449.45	492.98	499.02	534.94	601.58	625.12	678.34	**762.69**	**780.88**
China, % GDP	2.00%	1.94%	1.87%	1.87%	1.75%	1.72%	1.89%	1.73%	1.66%	1.70%	1.71%	1.74%	1.78%	1.77%	1.71%	1.67%	1.68%	1.76%	1.61%	1.60%
Europe																				
Eastern Europe (EuroAsia)																				
Russia, Bil USD ($)	16.97	20.96	27.34	34.52	43.53	56.18	51.53	58.72	70.24	81.47	88.35	84.70	66.42	69.25	66.91	61.61	65.20	61.71	65.91	86.37
RU, annual growth rate, %		23.46	30.45	26.27	26.12	29.05	-8.28	13.95	19.61	15.99	8.45	-4.14	-21.58	4.25	-3.37	-7.93	5.83	-5.35	6.80	31.05
RU, increase compared to 2003,%		23.46	61.05	103.36	156.48	231.00	203.60	245.95	313.80	379.97	420.53	398.99	291.32	307.96	294.22	262.97	284.13	263.58	**288.29**	**408.84**
Russia, % GDP	3.67%	3.30%	3.33%	3.25%	3.12%	3.15%	3.92%	3.59%	3.43%	3.69%	3.85%	4.11%	4.87%	5.43%	4.25%	3.72%	3.86%	4.17%	3.72%	4.06%
Western Europe																				
France, Bil USD ($)	38.57	44.52	44.44	45.79	50.68	55.37	56.44	52.04	54.12	50.22	52.00	53.13	45.65	47.37	49.20	51.41	50.12	52.75	56.65	53.64
FR, annual growth rate, %		15.44	-0.19	3.04	10.68	9.24	1.94	-7.79	3.99	-7.21	3.55	2.18	-14.09	3.77	3.85	4.50	-2.51	5.24	7.39	-5.31
FR, increase compared to 2003,%3		15.44	15.23	18.73	31.41	43.55	46.34	34.94	40.32	30.20	34.83	37.77	18.35	22.82	27.55	33.29	29.95	36.76	46.87	39.08
France, % GDP	2.10%	2.10%	2.02%	1.98%	1.91%	1.90%	2.10%	1.97%	1.89%	1.87%	1.85%	1.86%	1.87%	1.92%	1.91%	1.84%	1.84%	2.00%	1.92%	1.94%
Germany, Bil USD ($)	33.00	35.78	30.33	35.88	40.11	45.10	44.53	43.03	45.16	43.80	44.24	44.66	38.17	39.91	42.28	46.50	49.08	53.32	56.51	55.76
DE, annual growth rate, %		8.42	-15.24	18.33	11.78	12.44	-1.26	-3.38	4.97	-3.02	1.01	0.95	-14.54	4.56	5.94	9.97	5.55	8.64	5.99	-1.33
DE, increase compared to 2003,%		8.42	-8.10	8.75	21.56	36.67	34.95	30.39	36.87	32.73	34.08	35.35	15.68	20.95	28.13	40.91	48.74	61.58	71.27	68.98
Germany, % GDP	1.32%	1.27%	1.07%	1.20%	1.17%	1.21%	1.31%	1.27%	1.21%	1.24%	1.19%	1.15%	1.14%	1.15%	1.15%	1.17%	1.26%	1.39%	1.34%	1.39%
Italy, Bil USD ($)	26.82	30.26	29.74	29.63	31.98	36.84	34.05	32.02	33.83	29.78	29.96	27.70	22.18	25.03	26.45	28.42	26.38	32.93	36.25	33.49
IT, annual growth rate, %		12.81	-1.73	-0.35	7.93	15.19	-7.56	-5.97	5.65	-11.97	0.59	-7.53	-19.93	12.86	5.65	7.46	-7.18	24.82	10.08	-7.61
IT, increase compared to 2003,%		12.81	10.86	10.47	19.23	37.34	26.95	19.37	26.11	11.02	11.68	3.27	-17.31	-6.68	-1.40	5.95	-1.65	22.76	35.14	24.85
Italy, % GDP	1.71%	1.68%	1.60%	1.52%	1.45%	1.54%	1.55%	1.50%	1.48%	1.43%	1.40%	1.28%	1.21%	1.33%	1.36%	1.36%	1.31%	1.74%	1.72%	1.68%
Spain, Bil USD ($)	12.88	15.26	16.00	17.25	20.07	22.23	20.18	19.71	19.70	18.86	17.24	17.18	15.19	14.01	16.04	17.82	17.19	17.43	19.54	20.31
ES, annual growth rate, %		18.49	4.82	7.84	16.31	10.77	-9.22	-2.32	-0.08	-4.24	-8.58	-0.37	-11.59	-7.72	14.48	11.09	-3.56	1.41	12.12	3.90
ES, increase compared to 2003,%		18.49	24.20	33.94	55.78	72.57	56.66	53.03	52.91	46.43	33.87	33.37	17.91	8.80	24.56	38.37	33.45	35.33	51.74	57.65
Spain, % GDP	1.42%	1.43%	1.39%	1.37%	1.36%	1.37%	1.36%	1.39%	1.33%	1.42%	1.27%	1.25%	1.27%	1.14%	1.23%	1.25%	1.23%	1.37%	1.37%	1.47%
UK, Bil USD ($)	52.34	60.25	61.65	64.22	73.45	72.92	64.01	63.98	66.57	65.45	63.84	67.00	59.99	53.33	52.08	55.83	56.57	58.33	67.50	68.46
UK,annual growth rate, %		15.11	2.33	4.16	14.37	-0.73	-12.21	-0.05	4.05	-1.68	-2.47	4.95	-10.46	-11.11	-2.35	7.22	1.32	3.12	15.72	1.43
UK, increase compared to 2003,%		15.11	17.79	22.69	40.32	39.30	22.29	22.23	27.18	25.05	21.96	27.99	14.61	1.88	-0.51	6.67	8.07	11.44	**28.96**	**30.80**
UK, % GDP	2.55%	2.50%	2.42%	2.37%	2.37%	2.49%	2.65%	2.57%	2.50%	2.42%	2.29%	2.18%	2.04%	1.98%	1.95%	1.94%	1.98%	2.16%	2.16%	2.23%

Source: Author's processing, based on SIPRI data, June 2024

● *Military Capabilities*: A quantitative analysis of major powers' military resources will provide context for the EU's position, following an examination of European military strengths using World Bank data. The U.S., widely seen as the leading army superpower (Anglițoiu, 2015), spent over $13 trillion from 2013 to 2022—four times China's and twelve times Russia's expenditure. As of 2022, global military budgets surpass $2 trillion, a concerning benchmark for the EU. Although EU member states collectively outspent China in this period, inefficiencies waste approximately €26.4 billion annually. A 2014 European Parliament study underscores the EU's military inferiority to the U.S., largely due to inefficient collaboration, while the U.S. remains dominant in military exports and personnel among NATO members (Kissinger, 2018). In March 2022, the European Council adopted the Strategic Compass, a plan for a rapid deployment force of up to 5,000 soldiers—an incremental but symbolic step in defense ambitions. The war in Ukraine has further spurred unity among EU members, accelerating efforts to modernize and restore military capabilities and foster collaborative projects.

● *Economic Resources*: Assessing the EU's financial capacity is critical, as aspirations for a common defense force depend on sufficient funding. Despite recent crises, the EU's GDP remains robust, just below China and the U.S. According to World Bank data, in the last 22 years (2000-2022), the EU ranked second globally in aggregate values, accounting for approximately 19% of global GDP.

To enhance collective defense capabilities, European Union leaders are advocating for both an increase in defense budget allocations and a more efficient distribution of defense expenditures (the situation of defense expenditures is presented in Table 1); However, only 18% of defense investments currently involve cooperation at the European Union level, a disappointing figure. The methodology for applying argumentation and logical demonstration to answer research questions is presented in Table 2.

Table 2: The methodology for applying Argumentation and Logical Demonstration

Argumentation	*The necessity of common security*	*In the context of global threats (external aggressions, terrorism) member states need a unified approach to ensure the security of their citizens.*
	Efficiency of resources	*A common European army would allow for a more efficient use of financial and human resources. Instead of each country investing separately in defense, a joint force could centralize these efforts, reducing costs and avoiding duplication.*
	Cooperation and solidarity	*The establishment of a common army would strengthen cooperation among the member states of the European Union, promoting solidarity and mutual trust. This could lead to greater stability in the region, as well as increased international influence.*
	Opportunity	*The war in Ukraine can be a mobilizing factor.*
Logical demonstration	*Premise 1*	*Security threats are becoming increasingly complex and interconnected*

	Premise 2	*A fragmented approach to defense could prove ineffective against these threats.*
Conclusion	*Therefore, a common European army is necessary to ensure a coordinated and effective response to any security challenges. The establishment of a European army is possible, but not likely shortly, considering the sovereignty of states and their cultural-historical resources.*	

Source: Author's editing, October 2024

5. Conclusion and recommendations

In conclusion, while the EU appears strong economically and militarily on paper, several challenges undermine this perception:

● Defense budgets are low, with many states not contributing at least 2% of GDP;

● There are deficiencies in military capabilities, inadequate weaponry, and poor cooperation among member states;

● The intergovernmental nature of decision-making hampers a robust CFSP and CSDP;

● Cultural and identity differences along with divergent geopolitical views, create barriers to establishing a unified European army.

The Russia-Ukraine war presents a pivotal moment for change, potentially pushing the PESCO-CSDP towards greater European integration or simplified decision-making through Qualified Majority Voting (QMV). However, the necessity of a common European army remains debated. Some countries, particularly Eastern European states, still prefer strengthening defense within NATO. But a European army does not imply abandoning NATO.

The crucial question is whether the EU aspires to be a "global power". To achieve this it needs a common military force. A strong, modern army is essential for the EU to influence global decisions, but the responsibility lies with member states. While establishing a common army seems feasible given existing opportunities, recent crises have posed significant obstacles. Ultimately, the decision rests with political leaders.

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THE CONCEPT OF DIGITAL ENTREPRENEURSHIP – digital entrepreneurship models

Daniel Pop
Business Administration, Doctoral School of Economic Sciences, University of Oradea, Romania
popdaniel95@gmail.com

Abstract: *Digital technologies and the internet have enabled new forms of value creation, delivery, and capture, giving rise to innovative business models. Examining the business models employed by digital entrepreneurs provides insight into key resources, activities, cost structures, value propositions, customer segments, channels, revenue streams, and strategic partnerships that new ventures leverage for competitive advantage.*
Digital venture business models can be categorized across several dimensions, including degree of innovation, focus on products vs services, and incumbent orientation. Core digital business models prominent among startups include advertising-based, e-commerce/retailing, multimedia/content, software/SaaS, transaction/brokerage platforms, and subscription models. Three additional models relevant in the Romanian context include outsourcing-focused, service-oriented, and product-oriented models.

Keywords: Digital entrepreneurship, Digital business model, Entrepreneurship, Digital transformation.

JEL classification: L26, M13, M15

1. Introduction

The emergence of digital technologies has fundamentally reshaped the entrepreneurial landscape, giving rise to innovative business models that leverage the internet for value creation, delivery, and capture. Digital entrepreneurship encompasses a broad range of activities where entrepreneurs utilize digital tools and platforms to establish new ventures or enhance existing businesses.

As noted by Giones and Brem (2017), understanding the diverse business models employed by digital entrepreneurs is essential for gaining insights into the key resources, activities, cost structures, value propositions, customer segments, channels, revenue streams, and strategic partnerships that underpin competitive advantage in this rapidly evolving environment. In recent years, various models of digital entrepreneurship have emerged, characterized by differing degrees of innovation and varying focuses on products versus services.

For instance, the European Commission (2021) categorizes these models across multiple dimensions, including their orientation towards incumbents and their adaptability to changing market conditions. Core models prevalent among startups include advertising-based models, e-commerce platforms, multimedia/content creation, software as a service (SaaS), transaction/brokerage platforms, and subscription services. Additionally, specific models have gained traction in particular

regional contexts, such as Romania, where outsourcing-focused, service-oriented, and product-oriented models reflect both local market demands and global trends. Following its integration into the European Union in 2007, the country has experienced significant digital transformation that has influenced its entrepreneurial landscape. Despite the potential for growth driven by a young and tech-savvy population, Romania faces notable challenges in digital entrepreneurship maturity. Recent reports indicate that small and medium-sized enterprises (SMEs) constitute 99.7% of active companies in Romania but exhibit low levels of digitalization—only 33% have achieved a basic level of digital intensity compared to the EU average of 60% (European Investment Bank, 2022).
This article aims to explore the various models of digital entrepreneurship that have emerged in Romania while situating them within the broader discourse on digital business models. By analyzing these models' characteristics and implications for future economic development, this research contributes to a deeper understanding of how local entrepreneurs can navigate the complexities of the digital economy.

2. Romanian digital entrepreneurship models

The evolution of digital entrepreneurship in Romania presents a unique case study within the Eastern European context, characterized by rapid digital transformation following the country's integration into the European Union. The Romanian digital entrepreneurship ecosystem has developed distinct models that reflect both global trends and local market specificities. Romania's digital entrepreneurship ecosystem is characterized by a mix of traditional industries adapting to digital platforms and new startups leveraging technology from inception. According to the European Investment Bank (2023), small and medium-sized enterprises (SMEs) constitute 99.7% of active companies in Romania, playing a crucial role in the economy. However, their level of digitalization remains low, with only 33% having a basic level of digital intensity compared to the EU average of 60% (European Investment Bank, 2023). The European Index of Digital Entrepreneurship Systems (EIDES) reveals that Romania ranks 26th out of 27 EU countries in terms of digital entrepreneurship maturity. This positioning underscores the need for enhanced governmental support and a more robust innovation ecosystem to foster digital growth (Lucian, et.al. 2023).
Key Models of Digital Entrepreneurship:
E-commerce Platforms: The rise of e-commerce has transformed traditional retail in Romania. Businesses are increasingly migrating online, with platforms like eMAG and Altex leading the charge. These platforms not only facilitate transactions but also provide valuable data analytics for businesses to understand consumer behavior better.
Digital Services: A growing number of Romanian entrepreneurs are offering digital services, including web development, digital marketing, and IT consulting. This model capitalizes on the high demand for digital transformation across various sectors, particularly among SMEs seeking to enhance their online presence.
Tech Startups: The tech startup scene in Romania is vibrant, with numerous incubators and accelerators supporting innovation. Startups like UiPath, Bitdefender, have gained international recognition, showcasing Romania's potential as a hub for technology-driven entrepreneurship. These companies often focus on automation and artificial intelligence, reflecting global trends toward efficiency and innovation.

Sustainable Digital Ventures: There is a growing trend towards sustainability within digital entrepreneurship in Romania. Entrepreneurs are developing business models that prioritize environmental responsibility while leveraging digital tools for efficiency. This approach aligns with global sustainability goals and caters to an increasingly eco-conscious consumer base (Nicolau, et.al. 2022).

Romania's digital entrepreneurship models are diverse and evolving, reflecting both local needs and global trends. While there are significant challenges to overcome, the potential for growth is substantial, driven by a young population eager to embrace technology and innovation. Enhanced government support, investment in education, and improved access to funding will be crucial in fostering a more dynamic digital entrepreneurship ecosystem in Romania. As these models continue to develop, they will play an essential role in shaping the future economic landscape of the country, contributing not only to job creation but also to the overall modernization of the Romanian economy.

2.1 Model based on outsourcing

The model of digital entrepreneurship based on externalization, or outsourcing, has become increasingly prevalent as businesses seek to enhance operational efficiency and concentrate on core competencies. This model entails delegating specific tasks or functions to third-party providers, enabling firms to leverage external expertise while minimizing costs. The primary advantage of this model is its ability to provide flexibility and scalability, allowing businesses to adapt swiftly to changing market demands without the burden of maintaining a large in-house workforce.

However, the externalization model presents several challenges that must be navigated effectively. While outsourcing can yield cost savings and access to specialized skills, it may also result in a lack of control over quality and project outcomes. Aubert et al. (2015) delves into the complex relationship between outsourcing practices and innovation outcomes in organizations. The authors present a nuanced examination of how outsourcing, while often pursued for cost efficiency and operational flexibility, can paradoxically hinder innovation if not managed effectively. Describing this model based we should take into consideration a dual nature of outsourcing as both a facilitator and a barrier to innovation. We can argue that while outsourcing can provide access to specialized skills and technologies, it may also lead to a dilution of internal capabilities and knowledge retention.

Also, using this framework implies limitations that can stifle innovation and reduce the potential for developing unique value propositions that differentiate the company in a competitive landscape (Reuschke & Mason, 2022). Therefore, while the externalization model offers immediate benefits in terms of efficiency and cost management, it is crucial for entrepreneurs to strike a balance between these advantages and the need for strategic alignment and innovation.

2.2 Model based on services

The service-oriented model of digital entrepreneurship has emerged as a dominant paradigm in the contemporary business landscape, characterized by its emphasis on delivering integrated, client-centric solutions. This model transcends traditional service delivery frameworks by prioritizing comprehensive value creation through specialized expertise and technological integration. According to Tăut (2020),

organizations operating within this paradigm typically employ multidisciplinary teams comprising business analysts, project managers, designers, and developers. This collaborative ecosystem facilitates the development of holistic solutions that address both technical requirements and strategic business imperatives, while fostering innovation through cross-functional expertise.
The inherent flexibility of the service-oriented model represents a significant competitive advantage, particularly when juxtaposed against conventional outsourcing frameworks. A recent research from Kulembayeva et.al. (2022) suggests that while traditional outsourcing models often operate within rigid pricing structures that potentially constrain innovation, service-oriented enterprises typically implement project-based compensation models that promote creative problem-solving and value creation. This structural difference enables organizations to invest in developing bespoke solutions that precisely align with client requirements while maintaining operational efficiency. The extension of digital platforms and ecosystem-based business models has further enhanced the efficacy of service-oriented digital entrepreneurship. In the context of rapidly evolving technological landscapes, the service-oriented model has demonstrated remarkable adaptability through its emphasis on continuous innovation and knowledge integration.
The evolution of service-oriented digital entrepreneurship has also catalyzed significant changes in organizational learning and knowledge management practices.

2.3 Model based on products

Digital product-based entrepreneurship represents a transformative business model that leverages technology to create, distribute, and monetize digital assets and solutions. Unlike traditional physical products, digital offerings possess unique characteristics including zero marginal cost of reproduction, instant global distribution capabilities, and scalable deployment options (Nambisan, 2017). These properties have fundamentally altered how entrepreneurs approach product development, market entry, and value creation in the digital economy. According to Sahut et al. (2021), successful digital product entrepreneurs focus on continuous innovation, user experience optimization, and implementing flexible pricing strategies that can include subscriptions, one-time purchases, or freemium models. The sustainability and growth of digital product ventures depend heavily on several critical factors identified in recent research. Kraus et al. (2019) emphasize the importance of robust technical infrastructure, effective digital marketing strategies, and data-driven decision-making processes. Additionally, studies by Li et al. (2020) highlight how modern digital product entrepreneurs must navigate challenges such as intellectual property protection, platform dependency risks, and increasing customer acquisition costs while maintaining product differentiation in increasingly crowded marketplaces. The future of digital product entrepreneurship continues to evolve with emerging technologies such as artificial intelligence, blockchain, and extended reality applications opening new opportunities for innovation and market expansion.

Product-oriented software companies (having their own intellectual property) increase team engagement. In this entrepreneurial case it's not just about the process of creating a great product, it's about taking and managing risks and equally making equity investments in the product. Marketing and sales strategies and the development of a customer support department must also be realized (Tăut, 2020).

3.Conclusion

The exploration of digital entrepreneurship models in Romania reveals a dynamic landscape shaped by both local and global influences. As the country continues to integrate into the digital economy, various models—ranging from e-commerce platforms to service-oriented and product-focused ventures—have emerged, reflecting the unique characteristics of Romanian entrepreneurs. The rise of tech startups, particularly in automation and artificial intelligence, underscores Romania's potential as a burgeoning hub for innovation.

Moreover, the adaptability of these models is essential for their sustainability and success in an ever-evolving market. The diversity of approaches—from outsourcing to service-oriented and product-oriented strategies—highlights the importance of flexibility in responding to market demands and technological advancements. As Romanian entrepreneurs continue to navigate the complexities of the digital landscape, their ability to innovate and pivot will determine their long-term viability. Ultimately, the development of these digital entrepreneurship models not only contributes to job creation but also plays a pivotal role in modernizing Romania's economy, positioning it favorably within the broader European context.

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CHARACTERIZATION OF NATIVE DIGITAL COMPANIES

MIHAELA GLENCORA PETRIȚA
Doctoral Schol of Economic Sciences, Faculty Economic Sciences, University of Oradea, Oradea, Romania
glencora82@yahoo.com

Abstract: *Digitization is not just a goal, but a dynamic and evolutionary process that brings significant benefits to those prepared to address the challenges and opportunities that this new business paradigm brings.*
Companies have already understood how important it is for their employees to feel good in the corporate environment and enjoy their work. This is essential to increase well-being and quality of life in the workplace being an effective strategy for improving business results. Motivated and satisfied employees work with more dedication, have more resilience and feel better prepared to face challenges at work.
This is a theoretical study, analyzing the specialized literature in which I presented the particularities of native digital companies in different fields

Keywords: digital companies, digital transformation, digitization, business

JEL classification : M5, M21

1.Introduction

Implementing technology into the organization's processes is one way to do this, because it allows the entrepreneur to get as much information as possible about the people he wants to reach, know their behaviors and identify their needs and objections.
Information is what we digitize, not processes digitization (Bloomberg, 2018). At the same time, it is necessary to differentiate between digitization and digital transformation, which refers to the associated changes with the application of digital technology in all aspects of human society. Digitization is accepted as the ability to transform existing products or services into digital variants, thus offering advantages over the tangible product (Parviainen, P et al., 2017).
Digital transformation brings many benefits, but to enjoy them, you need to understand the concept well enough and know how you should use it systematically within the company

2.The particularities of digitally native companies

Digital natives have grown up with internet access, depend heavily on mobile devices, heavilly consume social networking services, consider speed to be among the most important characteristics of digital products and services, and multitask across devices and between work and entertainment.

2.1. The digital companies in commerce

Sales managers play an important role by supporting their teams in the transition to digital methods. These include motivating employees creating a supportive environment for unlearning and enabling their team to adopt new technologies without a job replacement team.
Managers often face resistance from sales staff due fears of technology replacing human roles and the complexity of adopting new digital tools.(Malla, M et al., 2021)
Digital transformation is broadly defined as chamge in business models determined by technological progress and evolution of consumers behaivor. But digital transformation , in addition to opportunities, also presents risks, such as a potential volatility of the market, similar to the „dot – com bubble” since beginning of the 2000s.(Marcin Kotarba, 2017)
Digital services such as e-commerce are heavily influenced by consumer confidence, income levels, and macroeconomic conditions. Demand for digital services tends to rise with disposable income and favorable economic policies.
The hights share of companies that, in 2023, reached an extremely high level of the digital intensity index (DII) was recorded in Finland (13%), Malta (11,4%) and the Nederlands(11%), while Romania and Bulgaria ranked last in the EU, given that the most comapnie had a low lwvwl of this index (72,1% and 70,6%, respectively), Over 70% of Romanian companies at an extremely low level of digization and the use of based technologies. (the data published by EUROSTAT).
Enterprise tech is in the midst of a monumental upheaval, reflected in a surge in global IT spending. In fig. 1 shows the evolution of spending on digital transformation technologies and services worldwide from 2017 to 2026.

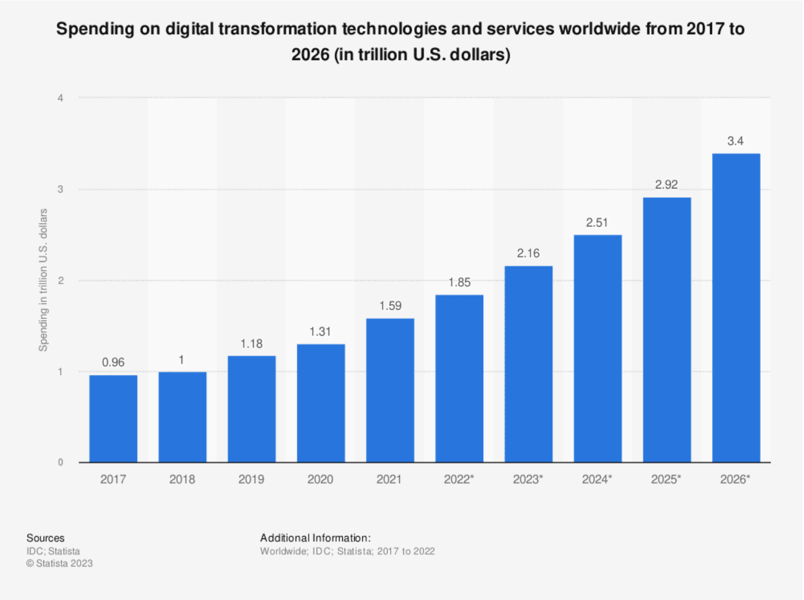

Fig.1. Digital transformation spending worldwide 2024,

Sources :IDC Statista (2023)

At the heart of this surge, IT services and communication services take the lead, transcending their roles as mere cost centers.
Yet, the story extends beyond financial figures. The increased investment mirrors a broader dedication to digital transformation initiatives. These investments are geared towards streamlining processes, harnessing data-driven insights, and fortifying organizational agility in the face of dynamic market conditions.

3.Conclusion

From the study we observed that in 2024, enterprises are not simply adapting to the digital age—they are using technology to redefine industry standards and reshape operational models. The goal is no longer just to remain competitive but to lead in an era where technology underpins
Digital transformation is not limited to companies that sell digital products or that focus on the Internet and technology, because digital transformation affects all areas that exist today.
From traditional institutions in the fields of health and education, to companies working on creating software and mobile applications, any organization must know how to use technological resources to its advantage in order to progress in today's market.
However, digital transformation is not only about the use of technology and social media presence. I think it is necessary to rethink the entire organizational structure of companies in the operation of this process, as well as to incorporate digital dynamism and to pursue truly comprehensive, innovative and relevant results.

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THIRD MISSION OF HIGHER EDUCATION IN THE SUSTAINABLE UNIVERSITY MODELS

Mónika Kis-Orloczki
Institute of Economic Theory and Methodology, Faculty of Economics, University of Miskolc; Miskolc, Hungary
monika.orloczki@uni-miskolc.hu

Abstract: *Universities have an increasing responsibility in transition towards sustainable development. There is consensus in the literature that higher education institutions contribute to the promotion of sustainable development and the achievement of sustainable development goals, taking into account environmental, economic, and social aspects. They can foster the achievement of the UN Sustainable Development Goals directly and indirectly not only as educational and research institutions, but also as organisations disseminating good practices through their campus operations to all their stakeholders within and outside the institution. Through the third mission activities, higher education institutions (HEIs) can achieve social innovation and can contribute to a more sustainable society. This article, as a literature review focuses on how social innovation and third mission of HEIs can be incorporated into sustainable university models.*

Keywords: sustainable university; fourth generation university; third mission of higher education

JEL classification: I23; Q01

1. Introduction

There is an increasing competition in the higher education market in recent decades. Universities meet requirements of many stakeholders, such as student and employee needs, labour market expectations, academic expectations, changing government funding conditions and as well as local social expectations. Király and Géring (2020) mention these goals as economic value creation, individual/human value creation and social value creation. Beyond their traditional roles (education and research), universities also function as driving forces in shaping a sustainable future by playing a key role in the development of sustainable thinking and acting of present and future generations. In addition to faculty members, academic actors, and students, through their communication as regional actors, universities can reach and engage a wide range of external partners (business sector, government agencies, non-governmental organizations, and the public) in research projects and development initiatives (Rosak-Szyrocka et al., 2022). The social responsibility of higher education institutions goes beyond the training of future professionals; to shape public awareness, they must demonstrate good practices for sustainable operation. (Amaral et al., 2015) It is necessary to train future leaders who possess high-level professional knowledge and are committed to social engagement.

In this study, I am looking for the answer to how the third mission activity carried out by the higher education institutions can be integrated into the sustainable university models.

2. The fourth-generation universities and the third mission of HEIs

Since the emergence of the first universities in the 12th century, higher education has undergone three major transformations. A global and domestic trend can be seen, where universities not only perform educational and research functions but also actively contribute to local economic development and to the solution of social challenges. Besides the primary education goal of the first-generation universities, in the 19th century it was extended to research objectives known as the Humboldtian university model. In the third-generation university model, which is referred to as the entrepreneurial university, the economic aspect of knowledge utilization appeared, along with the transfer of entrepreneurial knowledge. The fourth-generation university model, emerging today, developed to respond to environmental challenges. Its goal, in addition to education, research, and knowledge transfer, is cooperation and conscious, planned, and future-oriented development of the local economy and stakeholders. The university becomes both a catalyst and a driving force for the local economy by playing a role in shaping strategic directions. Cooperation with stakeholders is broadened, and experts who are familiar with local economic conditions and experienced in economic development also take part in the university's organizational management. (Lukovics and Zuti, 2014; Oztel, 2019; Rosak-Szyrocka et al., 2022)

HEIs play a crucial role in addressing today's environmental, economic, and social sustainability challenges. In addition to education (first mission) and research (second mission), third mission activities can also contribute to achieving the transition. According to Inzelt (2018), the third mission is "the utilization of knowledge created in higher education, as well as any activity related to the economic and social exploitation of higher education institutions' resources beyond the academic environment." Szabó-Tóth (2022) interprets third mission activities as the university's social responsibility, which in the fourth-generation university model appears in traditional educational and research activities, in campus operations and in collaborations with external stakeholders.

3. The sustainable university

Oztel (2019) emphasises that fourth-generation universities contribute to sustainability from four aspects, as knowledge transmission domains, through education in a multidisciplinary approach, as knowledge production domains, primarily through action-oriented research, as model citizens by the mission and operations and through social innovation. These four dimensions appear in the work of Cortese (2003), Velazquez et al. (2006), Grecu and Ipiña (2014). Authors as Lozano-Ros (2003), Lukman and Glavic (2007) Lozano et al. (2015) in addition highlight the importance of assessment, reporting, and feedback. Based on the above approaches, in my interpretation, a sustainable university is a higher education institution capable of operating and renewing itself in the long term. Beyond its educational, outreach, and research responsibilities, it minimizes its negative environmental, economic, and social impacts through cooperation with stakeholders, while contributing to the achievement of national and global sustainable development goals. (Kis-Orloczki, 2023)

4. Social innovation and third missin activities in the sustainable university models

Concerning the educational dimension, integrating sustainability topics into existing and new courses helps students become socially committed actors in the labour market. The collaboration in developing the curricula and course materials with the university's dual training partners and local companies, as well as the involvement of stakeholders in education, contributes to improving the university's labor market reputation, and thus economic sustainability. Trainings of teachers play a key role in third mission activities, as it helps raise social awareness, facilitates inclusive education, and promotes sustainability efforts. Short-term learning experiences (EU-supported microcredentials) could be promoted for life-long learning.

The university's openness to local communities is essential. Through workshops and open science lectures, more intensive knowledge-sharing can be achieved, and external stakeholders can become familiar with the outcomes of research activities.

Concerning the research dimension, it is crucial to create innovations and have research projects that can be directly applied for the problems of local communities. Research on social innovation and sustainability is an important interdisciplinary field. The advantages of digitalization and social media can be used to communicate scientific results. A good practice is the *Researchers' Night*, which provides an opportunity to share research results with the public in an engaging and understandable manner.

Both the in-campus experiences, and the active involvement of the students and employees are crucial in attitude shaping. It can include activities such as waste management, improving energy efficiency, and supporting sustainable transportation options. Organizing competitions, issuing calls for proposals, and awarding prizes on sustainability topics can help engage students and encourage their participation in sustainability projects. Developing indicator systems for measuring university sustainability activities can help improve operational efficiency, while also providing a basis for external stakeholders to assess their own sustainability efforts.

In collaboration with local communities, NGOs, and government agencies, I would particularly highlight the operation of an *ALUMNI* system, which can help universities better understand labor market needs. This system also enables the involvement of local economic actors, and potentially public sector representatives, in educational and research activities.

5. Conclusion

Universities, through their social innovation efforts, can contribute to the development of communities and to a sustainable future. Beyond their role in shaping attitudes, they are also responsible for enhancing the well-being of local communities and fostering economic development. The third mission activities of universities are the results of traditional education and research (R&D&I) activities. However today, it is strategically important for universities in repositioning and building their brand to provides services that meet the needs of local, national, and international communities.

There are numerous opportunities through which social innovation efforts can be realized in the four dimensions of a sustainable university. Further research topics include the review of the measurement of third mission activities.

6. Acknowledgements

The study was carried out within the Thematic Programme of Excellence 2021 - National Research sub-programme, as part of the Creative Region III project TKP2021-NKTA-22, with the support of the NKFIH.

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TECHNOLOGY ACCEPTANCE MODEL THEORIES

FABIAN Valentina Ileana

Doctoral School of Economic Sciences, University of Oradea, Oradea, Romania
vlad.valentinaileana@student.uoradea.ro

Abstract: *In the era of Artificial Intelligence (AI) and advanced technologies, understanding the level of technology acceptance within the business community and among researchers is crucial. Over the years, various models and theories have been developed to identify the factors influencing the successful adoption of technology. This paper reviews the existing literature to evaluate which acceptance models and theories are most relevant in today's context. By analysing the details and particularities of each model, we aim to determine the most suitable framework for adopting emerging technologies, such as AI.*

Keywords: Technology Acceptance Model; Technology Acceptance Theory; Adoption Model; Adoption Theory; User Acceptance; User Adoption.

JEL classification: **J01**

1. Introduction

In today's rapidly evolving technological landscape, the adoption of innovations, particularly Artificial Intelligence (AI), has become a critical focus for businesses. Understanding the factors that influence technology acceptance is crucial for researchers and practitioners alike (Davis, 1989). The successful integration of these technologies is essential not only for enhancing operational efficiency but also for gaining a competitive advantage in an increasingly digital marketplace. However, the degree to which individuals and organizations accept and utilize new technologies can vary significantly, influenced by a series of factors including personal attitudes, social norms, and perceived usefulness.
Over the decades, various models and theories have emerged to explain behaviour regarding technology adoption, providing valuable insights into the motivations and barriers associated with technology use (Venkatesh et al., 2012). These frameworks serve as valuable tools for understanding the underlying psychological, social, and organizational factors that contribute to or hinder the adoption process.
This paper seeks to provide a review of the literature surrounding these technology acceptance models, assessing their relevance and applicability to contemporary technological advancements.
By analysing each model and theory, we aim to identify the most effective frameworks for guiding the adoption of new technologies in our time, particularly AI. The findings will contribute to a better understanding of technology acceptance, equipping businesses and researchers with insights that can form their strategies for fostering user adoption and maximizing the benefits of innovation.

2. Methodology

The research methodology used for this paper is bibliometrics, hence we managed to analyse a large volume of books, articles and other publications through quantitative techniques. However traditional methods such as literature review was also used. The research objectives were defined as previously mentioned, so we started gathering and collecting data based on the keywords.
We used WoS as a data source, the keywords used were "Technology acceptance model theories" got us 10871 results from Web of Science Core Collection. However, after carefully refining the search criteria, we selected only the relevant articles/books that are directly related to the research topic. Also due to the restrains of time and limit for this paper, we decided to review the most important models and theories (14) as more detailed research can be done at a later time.

3. Literature Review

Table 1 below presents the technology acceptance models developed over the years, each with its own details, exceptions or particularities. Note that the model theories have been presented in a chronological order.

Table 1 – List of Technology Acceptance Models Theories

Theory / Model	Developed by	Description
Uses and Gratification Theory (U&G)	Katz et al. (1973)	Examines the reasons behind individuals' preference for specific communication mediums over others. The primary emphasis lies on the social and psychological factors influencing users in their pursuit of motivation and satisfaction. It highlights three key constructs: motivations, behavioural patterns of usage, and gratifications or satisfaction
Theory of Reasoned Action (TRA)	Ajzen and Fishbein (1975)	Foundation for investigating IT user behaviour; the model evaluates attitude, social norms, and intentions. Does not address habit, cognitive deliberation, misunderstandings in surveys, and moral factors.
Theory of Interpersonal Behaviour (TIB)	Triandis (1977)	This theory explains the intricacies of human behaviour influenced by social and emotional factors, integrating habits, facilitating conditions, and affect to enhance its predictive capability. However, its main drawback lies in its complexity and lack of simplicity compared to TRA and TPB, which fail to offer straightforward operational definitions of variables.
Social Cognitive Theory (SCT)	Bandura (1986)	The centres on three primary factors—behaviour, personal characteristics, and environment—that interact bidirectionally to predict both individual and group behaviour. These factors continuously influence one another, reciprocally shaping each other.

Theory / Model	Developed by	Description
Technology Acceptance Model (TAM)	Davis (1989)	Building on TRA, TAM describes user motivation through three key factors: perceived usefulness, perceived ease of use, and attitude toward usage. This model is extensively referenced in technology acceptance studies. However, it overlooks the impact of social influence on technology adoption and fails to consider intrinsic motivations, restricting its relevance outside workplace settings.
Perceived Characteristics of Innovating Theory (PCIT)	Moore and Benbasat (1991)	Highlights additional factors influencing adoption, including image, voluntariness, and behaviour. Voluntariness specifically shapes users' decisions to accept or reject an innovation.
Theory of Planned Behaviour (TPB)	Ajzen (1991)	This theory expands on the TRA model by incorporating a new variable: perceived behavioural control (PBC). The primary factors shaping behavioural intentions are perceived behavioural control, subjective norms, and behavioural attitudes. A user's attitude toward information technology may hold little significance if the system is inaccessible. The updated TPB is considered a more appropriate framework, reflecting the influence of an individual's voluntariness in adopting information technology within the workplace.
The Model of PC Utilization (MPCU)	Thompson et al. (1991)	Analyses actual PC usage behaviour by examining the direct impact of factors such as affect, facilitating conditions, long-term outcomes, perceived consequences, social influences, complexity, and job fit. It does not account for behavioural intention or habit.
Igbaria's Model (IM)	Igbaria et al. (1996)	This model incorporates both extrinsic and intrinsic motivators that influence the acceptance or rejection of technology. Actual user behaviour is shaped directly and indirectly by factors such as perceived usefulness, computer anxiety, computer satisfaction, and perceived enjoyment.
Motivational Model (MM)	Deci and Ryan (2000)	Takes into account both intrinsic and extrinsic motivations that influence user acceptance. The quality of the output and perceived ease of use affect perceived enjoyment and perceived usefulness.
Technology Readiness Index (TRI)	Parasuraman (2000)	Evaluates an individual's inclination to adopt and utilize new technologies. TRI examines four core dimensions: optimism (confidence in technology's benefits), innovativeness (willingness to pioneer technology use), discomfort (perceived lack of control over technology), and insecurity (distrust in technology's reliability).

Theory / Model	Developed by	Description
Diffusion of Innovations Theory (DOI)	Rogers (2003)	Explores the characteristics of innovations and their adoption, while classifying adopters. It integrates three key components: adopter characteristics, innovation traits, and the innovation decision process. However, it is less explanatory and practical for predicting outcomes compared to other models.
Unified Theory of Acceptance and Use of Technology (UTAUT)	Venkatesh et al. (2003)	Developed by adapting the fourteen original constructs from eight acceptance theories, this model identifies key constructs and moderating variables, including gender, experience, age, and voluntariness of use.
Compatibility UTAUT (C-UTAUT)	Venkatesh et al. (2012)	Provides thorough understanding of cognitive phenomena in UTAUT; identifies new boundary conditions. Research limitations due to cross-sectional design.
Extension of TAM (ETAM)	Venkatesh et al. (2012)	This model introduces additional factors to TAM, aiming to improve its adaptability, explanatory power, and specificity. ETAM has been proposed in two distinct studies.

4. Discussion and Conclusions

The exploration of various technology acceptance model (TAM) theories highlights their significant role in understanding and predicting user behavior toward new technologies. The original Technology Acceptance Model (TAM), developed by Davis (1989), laid a solid foundation by identifying perceived usefulness and perceived ease of use as critical determinants of technology adoption. This model's simplicity and clarity have made it widely applicable across various contexts, from business to education.

Building on this foundation, the Unified Theory of Acceptance and Use of Technology (UTAUT) models introduced by Venkatesh (Venkatesh et al., 2003). have expanded the original framework by incorporating additional factors such as social influence, facilitating conditions, and user experience. The extensions offer a more comprehensive understanding of the variables that influence user acceptance, thus providing a robust tool for organizations seeking to implement new technologies successfully.

The Extended TAM (ETAM) and Technology Readiness Index (TRI) brings additional layers of insight, emphasizing the role of psychological readiness and trust. These factors are essential for AI acceptance, as users may feel apprehensive about AI autonomy, data privacy, or job displacement. By considering user readiness and proactively addressing concerns, organizations can foster a more positive reception of AI technologies.

In conclusion, applying these technology acceptance models to AI provides a robust framework for understanding the factors that drive or hinder AI adoption. By leveraging these theories, organizations can design AI systems that align with user expectations, reduce perceived barriers, and foster a positive attitude toward AI. This

holistic approach is crucial for maximizing the potential of AI technologies and ensuring their successful integration across different sectors.
Future research should explore hybrid models that integrate elements from TAM, UTAUT, and TRI, tailored specifically to address the unique challenges of AI, thereby enhancing user trust and acceptance in this rapidly evolving field.

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ACCEPTANCE OR PREJUDICE - JAPANESE WORKERS IN HUNGARY

Zsuga Zsolt
University of Miskolc, Hantos Elemér Doctoral School - Faculty of Economics, Hungary
zsolt.zsuga@uni-miskolc.hu

Abstract: The Asian, and within that the Japanese business and work culture is radically different from what was common in Hungary until the 90s. However, this should not lead to prejudices against the Japanese as colleagues or bosses. Drawing on my six years of experience working within a Japanese-owned company I had many negative experiences myself. I examined how receptive we are to the Japanese and how we judge them as leaders. In this thesis, due to space limitations, I have only included the most important findings, but the study itself yielded much more detailed results.

Keywords: Japanese, work culture, acceptance, Hungarian, employees, leaders

JEL classification: A13; A14

1. Introduction

The number of Japanese-owned businesses established in Hungary are already in excess of 200, employing almost 40,000 people, mostly Hungarians (dailynewshungary.com). We can find Japanese primarily among senior and middle managerial roles. Quite rarely but they can also perform certain special tasks that do not involve a high position. If Japanese are a large part of the population within a company, they form a closed community and remain reluctant to open up to Hungarians due to the Language barrier (since many Japanese do not speak any other language than their native language). These are the stereotypes that everyone is probably already familiar with, even if they have never worked with or met the inhabitants of the Asian island country. In 2023, as part of a larger research project, I examined the extent to which these assumptions can be supported by experience.

2. Methodology

2.1 Secondary research

During my secondary research, I primarily looked for external sources that sought answers to similar questions like mine. Surprisingly, I found only one study of this type which was conducted in October 2008 at Sony Hungária Kft. by Dr. Ildikó Rudnák an assistant professor at the Institute of Social Sciences, Faculty of Economics and Social Sciences, Szent István University. (Rudnák, 2009) At the

request of the company's management, she sought answers to the following questions, among others:
Is the selection of Japanese managers professional, do they take into account the competencies of integration, the existence of which is a kind of guarantee for success, for understanding frictions?
What is their opinion of each other at all? Do they want to and are they able to fit in with each other? Do they discuss and solve the problems that arise?
At the time of the survey the company employed 881 people of which 314 were men (36 percent) and 567 were women (64 percent). Out of all, 3 candidates were Japanese. One had been working in Gödöllő for more than 3 years, second had spent more than 1 year in Gödöllő, and 1 had recently arrived in Hungary. The Hungarian respondents, without exception, had been employees of Sony Hungária Kft. for more than 3 years at the time.

The survey revealed that employees are not adequately prepared to deal with cultural differences. They were only able to/used to deal with cultural differences based on their own experience, no one gave them any information or help and no one trained the employees to do so.

Table 1: About the Japanese (reference: own editing based on Rudnák I. (2009))

Positive (Hungarians' opinion)	**Negative** (Hungarians' opinion)
cohesive, systematic, accurate, following the rules, honest, persistent, respectful, disciplined	narrow-minded, superiority. the rejection of European business culture, they are not family-oriented, rank hierarchy, they discuss important things in Japanese, they are aloof, they are not independent, they don't respect individuality power mania

Based on the responses, it became clear that the fundamental difference between Hungarian and Japanese corporate cultures is that Japanese employees prioritize the interests of the community and the company, subordinating their own interests to these.They are characterized by a high sense of duty, which is essential for the company's success. These characteristics are excessive from the Hungarian perspective and are not considered an example to follow. Hungarian employees try to solve emerging problems independently, which is unacceptable in Japanese organizational culture. (Marosi, 1995)

I considered the suggestions of this survey to be good and worth following, so I incorporated them into my own research. In this way, it can be examined how much the expectations of Hungarian employees have changed in the years since 2008 towards Japanese companies and Japanese colleagues.

2.2 Primary research

In order to obtain more accurate results, I used a survey method which included electronic and internet-based version.

I conducted a questionnaire survey with former and current employees of Japanese-owned companies. The target population was set at 150 people, and I planned to interview 50-50% male and female working-age adults. I knew from the start that I would not receive 150 fully completed, usable questionnaires, but I aimed to receive at least 90 responses for the survey to be effective. This was achieved, as 98 questionnaires were received that could be processed and evaluated and they also met the gender quota I had set (50% male, 50% female respondents). From this perspective, I consider the survey to be representative. However, due to lack of space, I will only examine three of the 27 questions here.

I conducted the data collection between January 6th to 22nd, 2023. 10 Employees of Japanese-owned companies in Hungary participated in the survey.

3. Research results

Many people believe that culture is best represented and carried by people who live in it and come from that cultural background. Consequently, Japanese business culture should be best represented by people from Japanese business life and have a Japanese cultural background. Could this statement be true?

85.7% of the respondents (84 people) worked with Japanese people, so it can be said that the vast majority have personal experience. But what are these?

Figure 1: What were your experiences (positive) with your Japanese colleague? (reference: own editing**)**

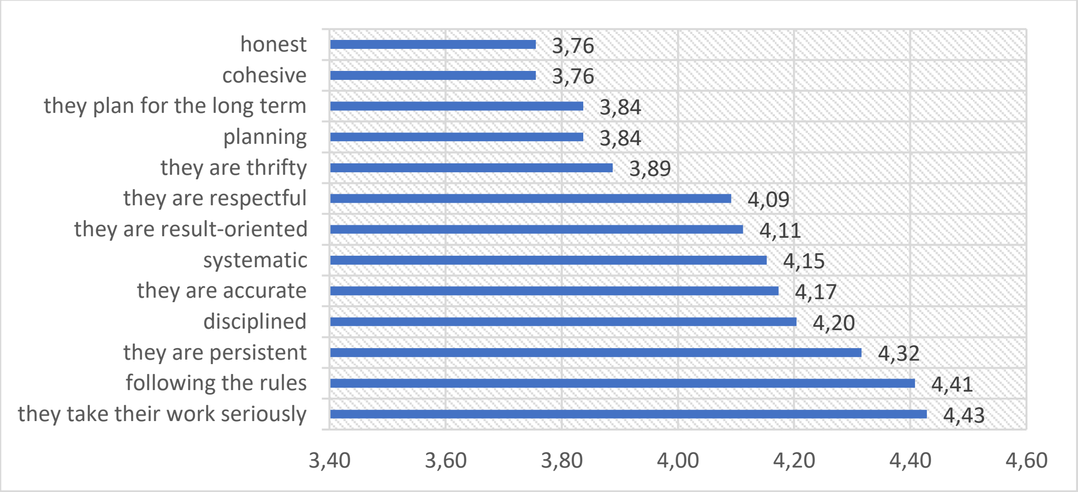
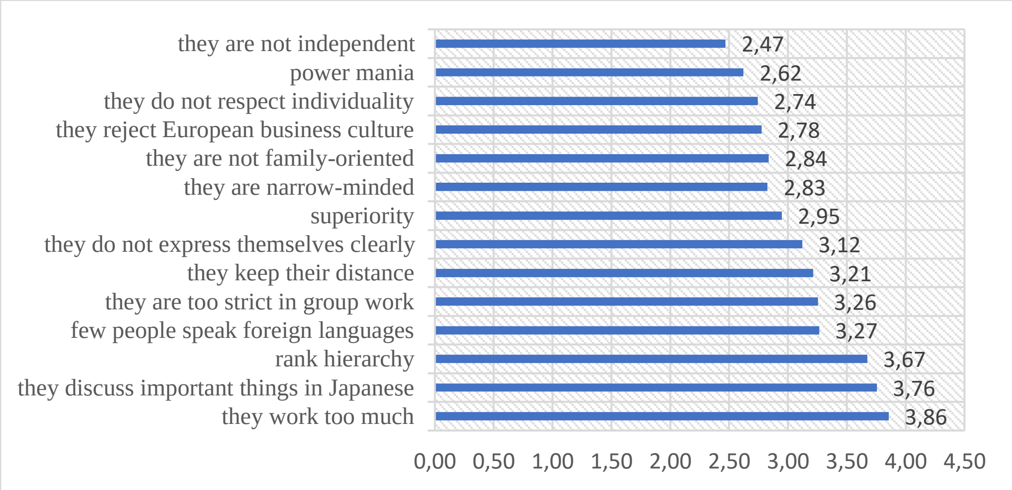


Figure 2: What were your experiences (negative) with your Japanese colleague? (reference: own editing**)**



Scoring from 1 to 5, where 1 is not at all typical of them and 5 is completely typical of them. 8 out of the 13 characteristics received an average score above 4 points. Therefore, it can be stated that in the eyes of Hungarian colleagues, the Japanese: take their work seriously, follow the rules, are persistent, disciplined, accurate, systematic, result-oriented and respectful. This perfectly resonates with the research of Dr. Ildikó Rudnák, who also came to similar conclusions.

The survey of negative experiences was conducted in a similar way, here the answers can be divided into 3 fairly clearly distinguishable groups. The most typical negative characteristics are: they work too much, discuss important things in Japanese and adhere to the hierarchy. In the second group: only few people spoke a foreign language (this is also my personal experience), they are too strict in group work, they keep their distance and do not express themselves clearly. What Hungarians consider the least characteristic is lack of independence, but even this is close to the average score of 2.5. These results also resonate with the research mentioned above.

Table 2: Summarizing the most characteristic features (reference: own editing)

The Japanese	
Positive (most typical)	**Negative** (most typical)
they take their work seriously	they work too much
following the rules	they discuss important things in Japanese
they are persistent	rank hierarchy
disciplined	few people speak foreign languages
they are accurate	they are too strict in group work
systematic	they keep their distance
they are result-oriented	they do not express themselves clearly

4. Conclusions

This data supported the experiences I had gained during my time at the Japanese company. Japanese colleagues are therefore recognized in Hungary and can work with them, but cultural differences and the lack of language skills hinder this. In any case, we can say that Hungarians recognize the discipline of the Japanese and that they take their work seriously.

However, harmonious cooperation will require more from both sides (Japanese and Hungarian) in the future.

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BALANCED SCORECARD THEORY: EVOLUTION AND CRITIQUES

Endre Nagy
Institute of Management, Faculty of Economics, University of Miskolc, Hungary
endre.nagy.appl@gmail.com

Abstract: *The Balanced Scorecard has become one of the key management success theories of the past decades. This paper is the essence of the development of the Kaplan-Norton (hereafter referred to as KN) theory and the essence of the major critiques of the theory in the literature. With the significant increase in the ability of organisations to assimilate, adapt, innovate and become more resilient, the soft and non-finance aspects of controlling tools close to 'human capital' are increasingly receiving attention, but these phenomena also require a different management information system as earlier. Does the Balanced Scorecard approach meet these requirements of our times?*

Keywords: Balanced Scorecard; HR controlling;

JEL classification: M50

1. The Balanced Scorecard theorem

The BSC is a balanced strategic assessment system based on performance indicators. It looks at company performance from four equally weighted perspectives:

(1) financial performance; (2) customers; (3) operational processes; (4) learning and development competencies

They are presented simultaneously to create a balanced assessment with the following aspects: (a)short and long term indicators; (b) financial and non-financial indicators; (c) retrospective and predictive indicators; (d) external and internal performance elements.

2. The evolution of the Balanced Scorecard approach

STEP1_KN(1992):	"Balanced assessment system"_ provides a true picture and effectively improves performance
STEP2_KN (1996):	"Soft metrics"_organisational competitive advantage can be achieved through non-financial performance (intangible asset management and human capital management). Set up metrics for these and evaluate these soft areas!

STEP3_KN (2001):	"Strategy-focused organisation"_ Improve your processes that directly support your core objectives!
STEP4_KN (2004):	"Startegy map"_a visualised map of the main management processes and interrelationships supporting the objective
STEP5_KN (2005):	"Strategic Management Office"_coordinates the implementation of the strategy (Kaplan-Norton: Execution Premium, 2008, Harvard Business School Press, 321p).
STEP6_KN (2006):	"Exploring synergies"_fine-tuning the organisational core objectives and the operational tasks of supporting departments will lead to breakthroughs
STEP7_KN (2008, 2012):	Analysis of "A decade and a half": companies with BSC strategic discipline are more successful than their competitors

3. The criticism of Balanced Scorecard theory

Bukh & Malmi, (2005)	management processes are overly metric and measurement-centric, tying up processes in a shackle
Voelpel, Leibold és Eckhoff (2006)	the concept can become a 'straitjacket', the BSC is built on a conceptual foundation of the strong organisational control
Lueg és Vu (2015)	model requires significant resources and intellectual capacity to implement
Madsen (2014)	controversial conservative turnaround: monitoring and enforcement asset instead of evaluation
Abrahamson (1996)	strong socio-economic environmental psychological pressure, the number of applyers continues to grow without criticism; "management fashion"
Busco & Quattrone, (2014)	theory is consciously and effectively disseminated and used in practice with a "rhetorical machine"
Hansen & Mouritsen (2005)	BSC is becoming canon, wich it goes against the core goal; it is slavishly adapted by applyers
Bessire & Baker, (2005)	"old wine in a new bottle" - the repackaging and rebranding of existing knowledge sold by "management merchants" to package the old and sell as a new
Nørreklit & Mitchell, (2007)	style and metaphors of "primitive and "effect hunter"
Nørreklit et al., (2012)	KN's books and their language are similar to those written by management gurus
Narayanamma & Lalitha (2016)	learning and development is still not measured correctly, but it is the engine of growth for companies

4. Critique of the BSC from the HRM side

All four assessment areas of the BSC model are important drivers of business and enterprises, but the four aspects yet it does not mention the concepts nor of "employee", "human capital" or "HRM"!
Compared to its importance and role in the general management literature, the BSC currently receives little attention in the field of human resource management (HRM). The book "The HR Scorecard" (including the “high-performance work system” (HPWS) model) by Becker, Huselid and Ulrich (2001) takes the general BSC concept and adapts it to the HR function of the company, but does not develop a full operational version of the BSC and does not populate it with company data! Furthermore, these studies, in my view, only look at the BSC as a tool of executive of the management and not as an analytical measurement and evaluation tool for HR.
Kaufman et al., (2020) provided for the first time a data based, diagrammatic representation and comparison of the HPWS model (comparing the strategic HRM model) by examining the performance evaluation systems of 2000 companies with over 50 employees in the U.S.. They provided actual data for the BSC based HR/HPWS scorecard. They found that the HPWS scorecard, when filled in with data, produced data that was a class above and more accurate than an average HRM scorecard.

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CORPORATE ENTREPRENEURSIP

Orsolya Pető
Faculty of Economics, University of Miskolc, Miskolc, Hungary
orsolya.peto@student.uni-miskolc.hu

Abstract: One of the key factors for long-term business success is the ability to innovate and renew. Research shows that entrepreneurial spirit, based on creativity, risk-taking, and innovation, plays a crucial role in these processes. Corporate entrepreneurship is becoming increasingly important, especially for large companies, as it allows employees to contribute to the company's development through their initiatives without having to start separate businesses. This concept is continuously evolving and lacks a unified definition, as its application varies from company to company. However, it plays an essential role not only as a theoretical concept but also as a practical tool in fostering innovation and maintaining competitiveness. Internal entrepreneurial spirit helps drive continuous growth and development, not only as part of corporate culture but also as an integral part of corporate strategies. Both in theory and practice, various entrepreneurial types are linked to corporate entrepreneurship, such as intrapreneurship, organizational entrepreneurship, corporate venture, and strategic entrepreneurship, each contributing to a company's success in a dynamic market environment.

Keywords: Corporate Entrepreneurship; Entrepreneurship, Intrapreneurship

JEL classification:
M12; M14

1. Introduction

For companies, the key to success lies in their ability to innovate and renew themselves. Numerous studies confirm that these factors are essential for long-term success, but the question of where entrepreneurial spirit should manifest often sparks debate. Should it be present in the leadership, employees, or rather in the corporate culture? This may be influenced by the size, industry, and location of the company. Some researchers argue that larger companies should build on an internal entrepreneurial culture, known as corporate entrepreneurship, so that employees' initiative can contribute to the company's development.

The goal of corporate entrepreneurship is to create a work environment that fosters the birth of new ideas, initiative, and quick adaptation. This innovation, taking place within the corporate culture, helps ensure growth, development, and motivation for both employees and the company.

2. Historical background

The meaning of the term entrepreneurship has significantly evolved over time. While many forms of entrepreneurship exist today, the classical, original concept remains the most important as it is closest to the internal entrepreneurial spirit that forms the basis for innovation within large companies. Corporate entrepreneurship represents a mindset that implements entrepreneurial thinking within the organizational framework, allowing employees to develop their own ideas using company resources.

This approach not only supports individual initiatives but also contributes to a company's long-term competitiveness and the establishment of an innovation culture.

2.1. Adventurers and entrepreneurs

Entrepreneurial spirit can be observed as early as in ancient times, with people always stepping forward with new ideas or bravely initiating changes. In earlier times, the term "adventurer" was often used to describe such individuals who dared to modify existing products and processes (Carlen, 2016).

Richard Cantillon, an economist of the 18th century, considered those who were willing to take risks as entrepreneurs. The term "entrepreneur" first appeared in 1723 in Jacques des Bruslons' commercial dictionary and was adopted by the Oxford English Dictionary in 1762 (Navale, 2013).

With the further development of entrepreneurial concepts, terms like "entrepreneurism" and "entrepreneurship" emerged, signifying entrepreneurial mindset and its practical aspects, such as launching business activities.

2.2. Corporate entrepreneurship and related concepts

In today's business world, internal entrepreneurship, or Corporate Entrepreneurship (CE), has taken on increasing importance. This entrepreneurial approach has become particularly significant as organizations recognize that entrepreneurial thinking, creativity, and innovation can be applied through internal resources. Bouchard and Fayolle (2018) highlight that the application of the Corporate Entrepreneurship concept is often controversial, as its interpretation and practical implementation can vary from company to company. They found that while many companies try to integrate internal innovation and entrepreneurial spirit into their daily operations, the degree of success and the way this is achieved can differ significantly.

Therefore, Corporate Entrepreneurship is not a static or final concept, but a constantly evolving and adapting theory, which not every company can apply uniformly or systematically. Since it lacks a universally accepted definition, each organization adapts its content and implementation to fit its specific goals, strategies, and resources. Some companies have successfully integrated internal entrepreneurial spirit and actively support innovation and initiative, while others are still searching for the most appropriate approach that fits their corporate structure.

Thus, Corporate Entrepreneurship is not merely a theoretical concept but also a practical tool that helps companies maintain and increase their competitiveness. Although the first mention of the concept dates back to the 20th century, its widespread adoption is more accurately attributed to the 21st century. Research on Corporate Entrepreneurship often mentions pioneers like Howard H. Stevenson (1983), who broadly defined entrepreneurial activity in the business context. Stevenson argued that entrepreneurial spirit is not limited to launching new businesses but can also be applied to innovative developments and growth within existing companies. Furthermore, Guth and Ginsberg (1990) emphasized that corporate innovation is crucial for maintaining long-term competitiveness, as it facilitates the efficient integration of internal developments and innovations into the company's structure.

In the 1980s, as maintaining competitiveness became a critical issue for companies, the concept of Corporate Entrepreneurship gained popularity. Researchers and professionals focused on creating more flexible and innovative systems within large companies, which traditionally responded more slowly to changes.

As Corporate Entrepreneurship spread, several related entrepreneurial concepts also gained prominence, including:

- Intrapreneurship
- Organizational Entrepreneurship
- Corporate Venture
- Strategic Entrepreneurship

The review of the literature clearly shows that the boundaries between Corporate Entrepreneurship and related concepts are not always clear-cut. Often, the theoretical and practical approaches are not distinctly separated, and some elements may be referred to in terms of intrapreneurship or corporate venture. This phenomenon indicates that the Corporate Entrepreneurship concept covers a broad spectrum, with various corporate strategies, initiatives, and activities overlapping, further complicating the application of clear definitions and categories.

Kuratko et al. (2015) discuss not only Corporate Entrepreneurship but also the following related concepts:

Intrapreneurship: Entrepreneurial activities within the company, where employees think and act entrepreneurially while utilizing the company's resources.

Organizational Entrepreneurship: Entrepreneurial behavior extending across the organization, which includes searching for new business opportunities, renewing existing processes, and increasing the company's competitiveness.

Corporate Venture: Corporate venture capital, in which companies seek and develop new business opportunities using internal resources.

Strategic Entrepreneurship: Entrepreneurial activities aimed at achieving long-term corporate strategies and goals, including developing new business models and expanding into new markets.

These concepts all contribute to a company's success and sustainability by fostering innovation, growth, and the maintenance of competitiveness in a dynamic market environment.

3. Conclusion

In today’s new wave of economic development, where innovation and entrepreneurial spirit serve as catalysts, companies must be able to innovate and operate with less risk. The key to success lies in encouraging entrepreneurial activities, as every future organizational advance will be built on the creativity, passion, and perseverance of individuals. Corporate Entrepreneurship is the strategy that unleashes individual innovators and ensures sustainable growth and development for companies. From the original entrepreneurial concept formulated in 1723, the idea has evolved through several stages to the modern concept of Corporate Entrepreneurship, which is now essential for fostering innovation and maintaining competitiveness in today’s business world.

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ENTREPRENEURIAL ECOSYSTEMS AND DIGITAL TRANSFORMATION CHALLENGES

Adrian Burta
PhD Student, Business Administration, Faculty of Economic Sciences, University of Oradea, Romania
burta.adrian@student.uoradea.ro

Abstract: *This article explores the key terms related to the digital transformation of the entrepreneurial ecosystems, with a focus on the challenges induced by the digital revolution. Digital transformation has profoundly impacted how entrepreneurial ecosystems operate, providing access to global markets, fostering collaboration, and enhancing innovation. However, this shift also brings complex economic, ecological, and ethical challenges. Economically, digitalization can intensify inequalities, favoring large corporations capable of investing in advanced technology. Ecologically, it leads to higher energy consumption and increased electronic waste, necessitating sustainable approaches. Ethically, digital ecosystems are increasingly vulnerable to cybersecurity risks and data privacy concerns, underscoring the need for transparent data management and robust protection policies. Ultimately, this study pleads for a balanced integration of technology, sustainability, and social responsibility in modern entrepreneurial ecosystems.*

Keywords: digital transformation; entrepreneurial ecosystems; economic challenges; ecological challenges; ethical and cybersecurity challenges

JEL classification: M15; L26; O33.

1. Introduction

The digital revolution has reshaped most economic sectors, redefining business models and relationships with clients and partners (Kraus et al., 2019; Schmidt & Müller, 2023). Digital transformation, a complex process with profound implications for the business environment, involves adapting and integrating digital technologies into all organizational and social aspects. This shift has been driven by the development of technologies such as artificial intelligence, blockchain, and the Internet of Things (IoT), which have redefined how businesses are created and managed (Bejjani et al., 2023).

Digital transformation has become necessary to remain competitive and meet the demands of clients and partners who seek efficient interactions, rapid access to information, and personalized services.

Digitalization and integration of advanced technologies have generated significant transformations in the entrepreneurial environment. Digital transformation refers to the process through which digital technologies are integrated across all aspects of an organization or entrepreneurial ecosystem, impacting efficiency, connectivity, and the ability to meet market demands. This process extends beyond adopting isolated technological tools, requiring a profound restructuring of organizations' operations and collaboration.

Lescevica et al. (2013) emphasize the foundational role of the Unified Theory of Acceptance and Usage of Technology in assessing market readiness, while Rizkalla et al. (2021) and Ryu and Fortenberry (2021) further elucidate these factors within specific settings, such as digital products and omnichannel retailing. Together, these studies highlight the need to prioritize user expectations and perceived ease of use to ensure successful technology adoption. The cumulative insights from these studies indicate that understanding user perceptions and aligning technological offerings with these expectations is essential for promoting user engagement and satisfaction in digital environments.

2. Key Terms

- Digital Revolution: is based on converting technology from an analog format to a digital one and has led to major technological advances that have profoundly transformed all economic sectors. This revolution supports innovation and expands the capacity of organizations to respond to market demands at an accelerated pace (Schmidt & Müller, 2023).
- Digital Transformation: The process by which organizations adopt digital technologies to improve performance, efficiency, and adaptability to market needs. According to Kraus et al. (2019), digitalization fundamentally changes traditional business models by enabling better connectivity and automation.
- Entrepreneurial Ecosystems are complex networks of interactions between entrepreneurs, investors, public institutions, and organizations that support entrepreneurial success and business development (Leal et al., 2023).
- The Unified Theory of Acceptance and Usage of Technology (UTAUT) provides an integrative understanding of the main theoretical models that explain user acceptance of new technologies. The UTAUT model proposed four key determinants of technology acceptance: Performance Expectancy, Effort Expectancy, Social Influence and Facilitating Conditions (Markovits, 2024).

3. Challenges of Entrepreneurial Ecosystems in the Context of Digitalization

While digitalization provides opportunities for growth and efficiency, it also imposes significant challenges on entrepreneurial ecosystems, including economic, ecological, and ethical issues.

- Economic Challenges: Digital transformation in entrepreneurial ecosystems creates inequalities between large and small companies, as larger organizations can invest in advanced technologies and benefit from extensive resources, thereby increasing competition and reducing the survival chances of start-ups. According to Kraus et al. (2019), access to funding and resources remains a persistent challenge for small businesses in the digital era. However, digitalization also generates new markets and business models based on online platforms and digital services, allowing broader market access and scalability (Schmidt & Müller, 2023).

- Ecological Challenges: As ecosystems become more digitalized, a significant environmental impact emerges, primarily through increased energy consumption and electronic waste generation. The rising number of connected devices, data centres, and IT infrastructures contributes to a higher carbon footprint (Dobrin et al., 2022, p. 349). The issue of electronic waste is further exacerbated by the short life cycle of digital equipment, highlighting the importance of recycling and sustainable solutions in entrepreneurial ecosystems, as emphasized by Leal et al. (2023).
- Ethical and Cybersecurity Challenges: In the context of digitalization, data privacy and cybersecurity are essential considerations. Entrepreneurial ecosystems must adapt to cyber security risks and data protection challenges, which are increasingly vulnerable to cyberattacks. Bejjani et al. (2023) underscore the importance of stringent security measures and data protection policies within digital ecosystems, as user trust is essential for the functioning of these environments. Additionally, data usage raises ethical dilemmas, as entrepreneurs are responsible for managing customers' personal data transparently and securely to prevent misuse (Pelău, 2024, p. 699).

4. Conclusions

Digital transformation plays a crucial role in the evolution of entrepreneurial ecosystems, offering unprecedented opportunities while also imposing significant challenges. Digitalization enables businesses to access global markets swiftly, fosters collaboration, and drives innovation. However, it also introduces economic, ecological, and ethical risks. Economically, digitalization can deepen inequalities and demands substantial investments in emerging technologies, posing a considerable challenge for smaller enterprises (Kraus et al., 2019; Bejjani et al., 2023).

Furthermore, digitalization has notable ecological implications, such as increased energy consumption and electronic waste generation, both of which call for sustainable solutions and effective recycling initiatives (Dobrin et al., 2022). The ethical and cybersecurity impact remains a critical concern, and entrepreneurial ecosystems must enhance data protection policies and implement transparent practices to maintain user trust (Pelău, 2024).

For entrepreneurial ecosystems to thrive in a global digital economy, a balanced approach that integrates technological innovation with social responsibility and sustainability is essential. Thus, collaboration between the public and private sectors, supported by appropriate policies, can foster responsible and secure digital ecosystem development, contributing to local economic growth and community well-being (Leal et al., 2023).

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Technology and digital transformation in social entrepreneurship

Alexandru Bagosi
Business Administration, Doctoral School of Economic Sciences, University of Oradea, Romania
bagosi.alexandru@student.uoradea.ro

Abstract: Digital technologies are crucial for social enterprises, enhancing their impact and growth in a connected world. By focusing on areas like finance and user engagement through online platforms, these organizations can streamline operations and reach wider audiences. While automation improves efficiency, it doesn't replace the trust built through personal interactions. Social computing tools foster collaboration and community engagement, allowing users to create content and support various causes. Additionally, technologies like AI and IoT help manage environmental impacts and adapt to changing needs. While digital transformation offers many benefits, it also poses challenges, especially for entrepreneurs in underserved areas. Ultimately, social enterprises thrive when they balance digital innovation with the human connections that define their mission.

Keywords: Social enterprise; entrepreneurs; digital; technological tools.

JEL classification: L26, L31, O35, P31

1. Introduction

Digital technologies, including online platforms provide a diverse set of tools that can drive social impact and support the growth of the social economy.They often begin their transformation journey by focusing on areas like finance management,user engagement and promotional activities, through websites and online commerce platforms. These methods enable organizations to experiment and embrace advancements at their speed with automation typically starting off in departments such as sales, scheduling or community engagement. In general nowadays digital tools offer a foundation for growth and operational effectiveness they are unable to substitute the trust and genuine connections like the person interactions. Social economy businesses combine tools with interactions by using technology, for certain tasks while prioritizing personal connections where they are most important. Marketing efforts are also streamlined through digital marketing strategies and sales are supported by e-commerce solutions that allow wider reach and greater accessibility. Digitalization in the social economy leads to more agile and scalable organizations, capable of reaching and serving a larger audience while staying true to their mission. This balanced approach allows social economy enterprises to harness the power of technology without losing sight of the human-centered values that define them (Gagliardi Dimitri, Cox Deborah 2020).

Collaboration tools and platforms based on the Internet are reaching users on an entirely new scale, connecting people through social networks. These tools are all built to encourage interactions, collaborations and sharing in the online world. The term "social computing" describes any technology that supports social relationships through software. In social computing, users play an active role, often creating or editing content themselves. This shift has transformed computing from a solitary task to one that prosper on social connections and contributions. Social software includes several key tools: content creation and sharing platforms for videos, images, music, and text; social networking sites that connect people with similar interests; tools for coordinating activities, like petitions, fundraising, and community programs; collaborative tools for building complex products, like open-source software such as Linux (Redondo Teófilo 2015).

2. Technological Tools in Action: AI, Blockchain, and IoT in Social Enterprises

Blockchain has many benefits, like decentralization, persistence, anonymity, and auditability. Its applications cover a wide range, from cryptocurrency and financial services to risk management, the Internet of Things and public or social services. There is not a comprehensive review that looks at blockchain from both a technological and application perspective. Despite the growing interest in blockchain, there is still a need for thorough research that explores both its technical foundations and real-world applications. Also blockchain technology holds great potential for building future internet systems, it still faces several technical challenges. One major issue is scalability. For example, Bitcoin's block size is currently limited to 1 MB, and a new block is mined roughly every 10 minutes. This means the Bitcoin network can only handle about 7 transactions per second (2018). In recent years, the pharmaceutical sector has seen a significant increase in data digitalization. Also with the help of the digital transformation there comes the challenge of acquiring, analyzing and using that data to address complex clinical issues. This is where AI becomes valuable, as it can manage vast amounts of data efficiently through advanced automation. AI systems use a range of sophisticated tools and networks that can replicate aspects of human intelligence, though they are not meant to entirely replace human presence. By interpreting and learning from input data, AI can make independent decisions to achieve specific goals (Paul Debleena, Sanap Gaurav, Shenoy Snehal, Kalyane Dnyaneshwar, Kalia Kiran and Tekade K. Rakesh 2024). The integration of AI, blockchain (BC), and the Internet of Things (IoT) significantly influences research and activities related to sustainable development. Combining artificial intelligence with IoT and big data technologies creates new opportunities to tackle environmental sustainability issues. By leveraging these interconnected technologies, businesses can enhance their sustainability efforts and adopt a more environmentally responsible approach to their operations. (Abdulqader Zhehat Rebar, Abdulqader Masood Dildar, Ahmed M. Omar, Ismael Rasheed Halbast, Ahmed Hasan Sarkar, Haji Lailan 2024)

In today's rapidly evolving corporate landscape, embracing sustainable practices has become essential. Companies face increasing pressure to boost profits while reducing their environmental footprint. AI-driven solutions play an important role in achieving these goals by integrating ,,Internet of things'' data into businesses systems' for effective sustainability management. AI technologies offer powerful tools for assessing environmental performance and enable the collection, analysis, and application of real-time data. Through predictive analytics and data visualization techniques, organizations can gain valuable insights into various environmental impacts, such as energy consumption, waste generation, carbon emissions, and water usage. The term "Internet of Things" refers to a network of interconnected devices and systems that communicate with each other and share data. This expansive network allows devices to collect and exchange information seamlessly, creating a dynamic flow of data. To facilitate effective data exchange and ensure real-time updates, it's essential to integrate actuators and sensors within the IoT framework. These components are crucial for monitoring various conditions, automating processes, and responding to user interactions. The IoT has the potential to revolutionize many industries by enabling smarter, more responsive systems that adapt to changing needs (2024).

3. Challenges and Risks of Digital Reliance in Social Entrepreneurship

Entrepreneurship is widely seen as a powerful way to tackle the ongoing challenge of poverty in rural areas of developing countries. In general, adopting digital technologies is becoming increasingly essential for organizations of all types. Digital tools can level the playing field, allowing them to compete with larger firms by reaching broader audiences and optimizing resources. Digital adoption has become a key factor in helping businesses remain competitive and resilient in a rapidly changing market. (Soluk Jonas, Kammerlander Nadine, Darwin Solomon 2021) Digital innovation can help social enterprises increase their impact and improve how they address social challenges. According to (Ebrahim A. Battilana J. Mair J)there are two special ways to evaluate an organizations' social performance. The first is by looking at the scale of the social issue the organization tackles. The second is by considering the range of actions required to effectively address the social problems. (He Tong, Liu JMartin, Phang Wei Chee, Luo Jun 2022)

4. Conclusion

In conclusion, digital technologies give both social enterprises and traditional businesses incredible tools to grow and to run more efficiently. By using digital platforms, organizations can reach more people and tap into markets that were once out of reach. Social enterprises can make a bigger impact and spread their message further through digital campaigns. Social media also makes it easier to connect with communities, get valuable feedback, and build stronger relationships. E-commerce platforms make buying and selling more convenient, while collaboration tools bring teams together, even from different locations. Plus, data analytics guide smarter decision-making. Embracing digital transformation makes organizations more adaptable, driving growth and positive change.

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A LOOK OVER THE RED SEA TRADE CRISIS AND THE INDIAN SHIPMENT INDUSTRY

Beatrice Radu
West University of Timișoara, Doctoral School of Economics and Business Administration, Timișoara, Romania
maria.radu97@e-uvt.ro

Abstract: *The following paper examines the economic changes that occurred in the Red Sea shipment activity since the beginning of the Gaza War, especially since there have been direct attacks on commercial ships. The paper focusses on the indian export activity, considering the economic evolution of India in the past few years. Also, India's new project India-Middle East-Europe Economic Corridor (IMEC), a project that is meant to strengthen its place as one of the top economic leaders, is at risk due to geopolitical tensions in the area. Exchanging well-known trade routes because of geopolitical tensions and armed conflicts can have a significant impact over shipment deadlines that can be mirrored in shipping costs. The paper examines India's shipment activity before and after the Gaza War, comparing statistics regarding this activity and examines the current situation of the IMEC project given the circumstances.*

Keywords: trade; Red Sea; IMEC; exports; India.

JEL classification: F1, F13

1. RED SEA SHIPPING CRISIS

The Red Sea plays a key role in global trading, connecting shipments from Asia to Europe, by linking the Indian Ocean with the Mediterranean Sea, consisting of a total of 30% of global shipments. Through the Suez Canal, the fourth biggest shipping canal in the world, the western world receives important amounts of oil, fuel and food products. In 2022, more than 22,000 ships transited the Suez Canal, carrying 12% of the world's global trade.

1.1. HOW THE GAZA WAR AFFECTS GLOBAL TRADE

It is well-known that maritime security in the Red Sea was at risk, being used to violent conduct over the commercial shipment, but since the Israeli-Hammas war erupted on October 2023 and rapidly escaladed with incidents consisting in violent incidents on sea, mainly in Houthi attacks over commercial vessels in the area responding in the slowdown of the maritime activity, the Red Sea activity faced major shipment changes. The implications on the Suez Canal shipment activity has been clearly outlined by the reduced shipment traffic, thus making the economy slowdown.

Because of the maritime tensions in the Red Sea area, the routes from the Suez Canal have been redirected to other routes, such as the Cape of Good Hope, and so making the delivery process longer than it used to be. Shipment has been deeply affected by the reroute through the Cape of Good Hope. The crisis in Red Sea, outlined by the downturn in traffic in the Suez Canal made this event be a historic low in the history of shipment through the Suez Canal.

2. INDIA AS AN EMERGING MARKET

One of the characteristics of an emerging market consists of higher per capita income. India is becoming a performing market, facts backed up by rapid digitization, increased productivity and favourable youthful demographics, competing directly with China, whose population has been unranked to second place after India, with a total of 1,44 billion people. India has been facing structural reforms which make the business environment flourish and the economy thriving, while trying to assure enough jobs for India's workforce.

2.1. INDIA'S SHIPMENT ACTIVITY

Due to its geographical position on the map, right between the western and the eastern world, India possesses the advantage of becoming a world-renowned cargo hub. Taking into consideration it's growing population, growing GDP and the infrastructure revolution, it's facing, such as new railways and roads India has the potential of becoming one of China's competitors when it comes to global shipping. Not the least taking into consideration India's air cargo sector that faced significant developments in the last few years.

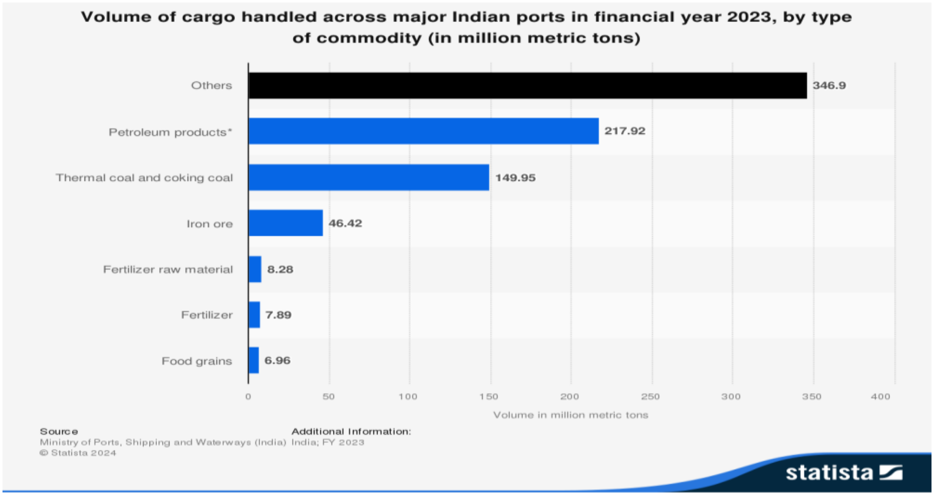

Figure no.1 Volume of cargo handled across major Indian ports in financial year 2023, by type of commodity (in million metric tones)
Source: Ministry of Ports, Shipping and Waterways (India), India,FY 2023, Statista

As seen above, India's petroleum product reached at the end of 2023 a total value of 218 million metric tons, making it one of the most exported product from India. Looking back, in 2022 India's most exported product was again refined petroleum, making it the second largest exporter of refined petroleum in the world. The refine petroleum exported from India has reached countries like The Netherlands and Unites States, underlining once again the importance a strategical geographical location.

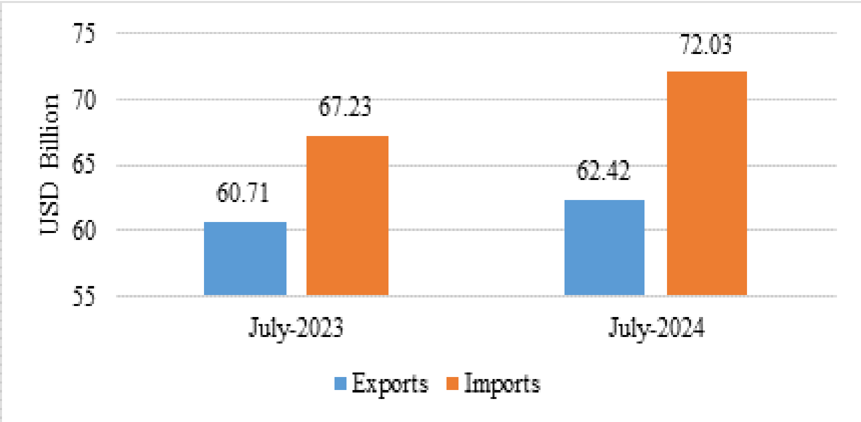

Figure no. 2

Source: Indian Ministry of Commerce & Industry

Although the figure above does not present exclusively maritime exports, comparing 1 year data from April 2023 to April 2024, we can conclude that Indian exports grew by almost 7% considering the geopolitical tensions in the region.

2.2 INDIA'S FUTURE FOR TRADE

Taking advantage of its developing economy and its geographical position, India has come up with a response to China's Belt and Road Initiative. The plan was welcomed with open arms by countries considered Advanced Economies, such as the United States and Saudi Arabia, and by the President of the European Commission, Ursula von der Leyen.

The IMEC suggests a connection between maritime transport and new and existing railways, connecting India to the western world, shortening the delivery time. The IMEC comes as a response to China's Belt and Road Initiative, also known as the new Silk Road. Comparing the IMEC with the BRI Noor Ul Ain et al. (2024) suggest that it would be beneficial for China and India to work together on l cooperation and shared security risk.

Before getting too excited about the IMEC initiative, we have to consider the situation happening at the moment at the Suez Canal. Although IMEC sounds like a great economic corridor that can assure India's position as one of the leading economies in the world, the initiative was presented just one month ahead of the October 2023 Hammas attacks and, although India tries to tie the knot to secure the initiative, the geopolitical tensions in the area make it hard for the plan to be put into action. Not the least, once again the initiative was shadowed by another geopolitical tension, the Israeli-Iran conflict. Nonetheless, taking into considerations the implications of IMEC in the the Middle East, especially for Pakistan, Raza Ali Khan (2024), underlines IMEC's challenges consisting of geopolitical tensions that affect the corridors and also financial and coordination complexities.

3. CONCLUSIONS

Considering the geopolitical tensions in the Red Sea and the Suez Canal, data shows us that Indian trades are not affected by the Gaza War. Bearing in mind the situation in Gaza and the premises that the war won't stop anytime soon we can't totally exclude the possibility that the Indian trade won't be affected by it. Longer delivery time can be a contribution to commercial costs that can be mirrored in the shipment costs of goods. Although, India's IMEC project has been overshadowed by two major conflicts, Indian leaders still want to push through with the project. IMEC can consolidate India's statute as one of the economic global leaders and can significantly contribute to the welfare of Indian economy. From a geopolitical point of view, India is losing the possibility to secure its regional influence. The project is supposed to create more jobs for the Indian people and to create a faster trade route, 40% faster the one already existing, which means that with each day the project is delayed India losses its possibility to trade more and to trade cheaper and to improve its supply chains. Because IMEC provides cross-border ship-to-rail transit network, India can't attract foreign investments to create new railways. Not the least, the delay of the project is interfering with Indian businesses access to European markets.

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Adapting Entrepreneurial Models in the North-East Region of Romania: An Analysis of Technology-Based Innovative Entrepreneurship

Balan Iulia Mariana (Mîndruță)
Stefan cel Mare University of Suceava, Faculty of Economics, Administration, and Business, University Street 13, 720229 Suceava, Romania
iuliabalansv85@gmail.com, ORCID ID:0009-0002-1568-7223

Abstract
This article examines the applicability of entrepreneurial models in the socio-economic context of Romania, focusing on the country's north-east region, which is affected by limited economic opportunities and underdeveloped infrastructure. The study analyzes how these entrepreneurial models (Schumpeterian, Lean Startup, Social, and Scalable) can promote sustainable progress in this area. The analysis highlights the challenges and advantages of each model, emphasizing the importance of an approach tailored to local needs. Using a bibliometric analysis conducted through the Web of Science platform and VOSviewer software, this article presents trends and the relevance of the concepts "entrepreneurial business models," "innovative entrepreneurship," and "technological entrepreneurship" in specialized literature. Conclusions offer insights into how entrepreneurial strategies can be adapted to regional circumstances, providing public policy recommendations that could help local entrepreneurs thrive through government programs and European funding.

JEL Classification: L26, O31, O43, R11

Keywords: *entrepreneurship, Schumpeterian model, Lean Startup, regional development, innovation, Romania, social entrepreneurship*

Introduction

Entrepreneurial development in Romania is essential for reducing economic disparities between the country's various regions, with a particular focus on the North-East region, one of the most disadvantaged regions in the EU (Defourny & Nyssens, 2010). In this region, significant issues impact business growth, such as weak infrastructure, youth labor migration, and a lack of economic opportunities. The purpose of this investigation is to examine the relevance of existing entrepreneurial models in this specific context to identify both challenges and opportunities for entrepreneurial initiatives in the area.

Bibliometric Analysis

The analysis was conducted in September 2024, based on articles published on Web of Science. We used VOSviewer and the Web of Science platform to highlight the relationship between entrepreneurship, entrepreneurial models, and technology-based innovative entrepreneurship (van Eck & Waltman, 2010). Through this analysis, we found correlations and recent changes between terms in specialized literature. An analysis was performed on the expressions “entrepreneurial business models,” “entrepreneurial models,” “innovative entrepreneurship,” and “technological entrepreneurship,” focusing on how these spread across different domains (Web of Science, 2024).

“Entrepreneurial business models” appeared in 15 articles from 2014 to 2024, with the most frequent domains being Business (4 articles) and Green Sustainable Science Technology (3 articles), reflecting high interest in innovation and sustainability in business (van Eck & Waltman, 2010). In the analysis by nation, Australia and England ranked highest, with three articles each, followed by Germany and Norway. This highlights global interest in research regarding entrepreneurial models.

During the same period, the phrase “innovative entrepreneurship” was cited 426 times, predominantly in Management (122 citations), Business (120 citations), and Economics (103 citations), demonstrating the relevance of this notion across disciplines (Ries, 2011). By country, Russia and the People's Republic of China lead in innovative entrepreneurship research, followed by the United States.

The term “entrepreneurial models” was cited in 50 domains, with Romania ranking second globally with seven articles, highlighting Romanian researchers' involvement in international discussions. Terms like “education,” “entrepreneurial intentions,” and “development” are frequently associated with the phrase, demonstrating the concept’s importance in entrepreneurship studies (Defourny & Nyssens, 2010).

The phrase “technological entrepreneurship” received 154 citations, mainly from Management (50 citations), Business (47 citations), and Economics (25 citations). The geographical distribution of citations shows that the United States, People's Republic of China, and Romania are the most frequent countries, suggesting a global concern for technological entrepreneurship and economic development based on technological innovation (Porter, 1990).

VOSviewer Application is a software tool that enables the creation of bibliometric maps based on network data, as well as the visualization and exploration of these maps. Networks can include articles, journals, authors, researchers, or individual publications. They can be generated based on the topics addressed by publications, citations, bibliographic couplings, co-citations, or relationships between authors. Networks of co-occurring terms or themes specific to the scientific literature within one or more fields can also be created and visualized using this application. Search results from the Web of Science database were selected, processed, and subsequently extracted in text files for input into VOSviewer to perform an analysis of the relationships between these terms and other concepts related to the connected research domains.

The results show that innovation- and technology-based entrepreneurial models are strongly linked to economic growth, sustainable development, and collaboration between government, universities, and the business sector. This finding indicates a solid scientific foundation for empirical research in this area. Analyzing the specialized literature helps in selecting studies that are most relevant to the field of interest and assists in formulating research hypotheses.

Methodology

The study is based on a comparative analysis of key entrepreneurial models using secondary data from literature and regional market analysis. Below is a description of the selected models, along with defining elements and how they apply to a specific regional context.

Entrepreneurial Models in the Romanian Context

1. **Schumpeterian Model**

Developed by economist Joseph Schumpeter, this model argues that entrepreneurs drive innovation and "creative destruction" (Schumpeter, 1934). This model posits that entrepreneurs create value by developing new products, services, or processes that transform existing market structures. The Schumpeterian model does not function well in Romania's north-east region, where people lack access to capital and infrastructure, hindering innovation.

However, there are significant opportunities, particularly through European funds allocated for innovation, which can support innovative businesses (Porter, 1990). Especially if policies are created that encourage innovation and help entrepreneurs implement new technologies, the Schumpeterian model has the potential to accelerate the region's economic growth.

2. **Lean Startup Model**

Popularized by Eric Ries, this model is based on the rapid testing of new business ideas and their continuous adjustment according to market feedback (Ries, 2011). This model works well in situations where there are limited resources, making it suitable for areas with limited economic resources, such as Romania's north-east. Essentially, the Lean Startup model allows entrepreneurs to reduce financial risks and quickly learn from their mistakes.

In the north-east region, the Lean model can help grow startups and small businesses by encouraging young entrepreneurs to experiment with innovative ideas without risking significant investments. The Lean model can foster a sustainable entrepreneurial environment in this region if it has access to business incubators and government support (Defourny & Nyssens, 2010).

3. **Social Entrepreneurship**

Instead of focusing on maximizing profit, social entrepreneurship focuses on making a positive impact on the community (Defourny & Nyssens, 2010). Such a model could be transformative in Romania's north-east, helping create jobs and addressing significant social issues, such as integrating disadvantaged groups into the workforce and creating innovative social services.

Since social entrepreneurs are often supported through grants and government funds, the social entrepreneurship model is ideal for areas with pronounced social needs. Social entrepreneurs in this region have the ability to create projects that improve the community's quality of life, while also promoting social inclusion and reducing economic disparities (Ries, 2011).

4. Scalable Model

This entrepreneurial model is based on rapidly scaling the business to become competitive nationally or internationally and to access larger markets (Aldrich & Fiol, 1994). This model is ideal for tech startups, as they have the capacity to expand quickly through digital platforms or innovative technologies.

While resource-intensive, the Scalable model offers extraordinary opportunities for regions with access to emerging markets and innovative technologies. Technology companies in north-east Romania can use digital platforms and apply blockchain or artificial intelligence technology to reach international markets. By creating well-paid jobs and attracting foreign capital to the area, these enterprises have the potential to fundamentally transform the local economy (Porter, 1990).

Conclusions

The analysis showed that no entrepreneurial model can be applied universally in Romania; disadvantaged areas require specific adjustments to succeed. Local entrepreneurs seem to prefer the Lean Startup and Social Entrepreneurship models because they are more adaptable and focus on community needs. In addition, government support and access to European funds are essential to stimulate the region's economic growth.

Overall, creating an environment that supports entrepreneurship and encourages cooperation between the business environment, universities, and authorities can create favorable conditions for adopting these models. This will provide a sustainable solution for the economic growth of the north-east region.

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A COMPARATIVE ANALYSIS OF WELL-BEING INDICATORS IN UNDERDEVELOPED NATIONS: EXAMINING DIVERGENCES AND CONVERGENCES ACROSS SUB-PANELS

Alina IONAȘCU

Doctoral School of Economics and Business Administration, West University of Timisoara, Timisoara, Romania
alina.ionascu@e-uvt.ro

Abstract: *This study evaluates the influence of globalization on population well-being by examining key economic and social indicators such as GDP per capita, inflation rates, national debt relative to GDP, urbanization, and population size. The analysis compares highly globalized countries—deeply integrated into the global economy through extensive trade and financial flows—with less globalized nations, which exhibit lower levels of international economic integration. The paper explores the impact of globalization on economic and social well-being across these two categories of nations, identifying significant differences in well-being indicators. This comparative approach sheds light on how global economic integration affects various dimensions of well-being and highlights the key trends emerging in each economic context. After conducting a thorough comparative analysis, the results are interpreted to identify major trends that define each group of countries. The study examines how globalization either enhances or undermines well-being and addresses issues concerning the distribution of globalization's benefits and challenges. Finally, it considers how nations in both categories adapt to the economic and social transformations driven by global integration.*

Keywords: Globalization; Well-being indicators; Economic integration; Emerging markets; Socioeconomic development.

JEL classification: F63; F60; O57; P45.

1. Introduction

Globalization, as a powerful and multifaceted process, has had significant implications on the economic and social well-being of populations across the world. The degree of integration into the global economy varies considerably among nations, with some countries being deeply enmeshed in global trade, financial flows, and cultural exchanges, while others remain more insulated with lower levels of international economic integration. To assess the impact of globalization on population well-being, this study examines key economic and social indicators, including GDP per capita, inflation rates, national debt as a percentage of GDP, urbanization, and population size.

2. METHODOLOGICAL FRAMEWORK FOR THE COMPARATIVE ANALYSIS OF GLOBALISATION'S EFFECTS

This study employs a rigorous comparative analysis to investigate the impact of globalization on macroeconomic well-being and stability. The selection of countries for analysis was deliberately informed by the Globalization Index (KOF), which offers a multidimensional assessment encompassing economic, social, and political dimensions of globalization. The sample comprises 20 countries, chosen to represent a broad spectrum of economies with varying levels of globalization. This variation in globalization intensity among the sampled countries offers a robust foundation for a comparative analysis of how differing levels of global integration impact economic outcomes and stability.

Table 1 Ranking of countries according to the Globalization Index 2023

Nr.	COUNTRY	GLOBALIZATION INDEX (KOF)
1	SWITZERLAND	91
2	BELGIUM	90
3	NETHERLANDS	90
4	SWEDEN	89
5	GERMANY	89
6	AUSTRIA	89
7	UNITED KINGDOM	88
8	DENMARK	88
9	FINLAND	87
10	FRANCE	87
11	SLOVAKIA	83
12	SINGAPORE	82
13	ESTONIA	82
14	LITHUANIA	81
15	UNITED STATES OF AMERICA	81
16	CROATIA	81
17	SLOVENIA	81
18	POLAND	81
19	MALTA	81
20	MALAYSIA	80

Source: Own data processing ETH Zurich, kof.ethz.ch

Through the careful selection of countries, this analysis highlights both mature European economies, characterized by advanced industrial development and extensive integration into international trade, and emerging economies, each at different stages of development and global integration. This approach enables the exploration of converging and diverging factors that shape the effects of globalization on these economies. For the comparative analysis of the relationship between globalization, well-being, and macroeconomic stability, several key indicators were utilized to offer a comprehensive view of the economic and social performance of each nation. These indicators include total population size (in millions), urbanization rates, gross domestic product (GDP) at current prices (in billions of USD), GDP per capita, real GDP growth rate, and share of global GDP adjusted for purchasing power parity (PPP). Additionally, labor force size, labor force participation rate, unemployment rate, inflation rate, trade balance, and government debt relative to GDP provide critical insights into the health of national economies. To quantify the relationships between globalization and various economic and social factors, multiple linear regression models were employed, specifically tailored for panel data to capture both temporal and cross-sectional variations. This econometric approach allows for a more detailed understanding of how globalization influences well-being and macroeconomic stability across different national contexts.

3. A COMPARATIVE EXAMINATION OF WELFARE INDICATORS

To evaluate the impact of globalization on the well-being of populations, this investigation meticulously analyses a range of pivotal economic and social indicators. These indicators encompass gross domestic product (GDP) per capita, inflationary trends, the ratio of national debt to GDP, the degree of urbanization, and overall population size. The analysis encompasses both highly globalized nations, which reap substantial advantages from extensive trade and financial exchanges owing to their profound integration within the global economic framework, as well as nations characterized by lower levels of international economic integration. By juxtaposing these two cohorts of countries, this study elucidates significant disparities in well-being indicators, thereby facilitating a more nuanced understanding of the ramifications of global economic integration on diverse dimensions of well-being. The results illuminate critical trends, emphasizing the convergent and divergent influences of globalization on economic and social stability. Furthermore, the research addresses the duality of globalization's effects on well-being, examining whether it serves to enhance or undermine overall quality of life by scrutinizing the distribution of its benefits and the challenges it engenders. The study also probes the adaptive strategies employed by nations as they navigate the economic and social transformations instigated by escalating global interconnectedness.

4. Conclusion

In conclusion, this study provides a comprehensive examination of the intricate relationship between globalization and the well-being of populations, revealing nuanced insights into how varying levels of global economic integration manifest across different national contexts. The findings indicate that while highly globalized nations tend to enjoy more favourable economic outcomes and social stability, the benefits of globalization are not uniformly distributed, often leading to disparities in well-being indicators among less integrated countries. This analysis not only underscores the divergent effects of globalization on macroeconomic stability but also highlights the adaptive strategies nations employ in response to the challenges and opportunities presented by increased interconnectedness.

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RESILIENT REBOUND: THE SEMICONDUCTOR INDUSTRY'S POST-PANDEMIC RECOVERY

Dragos Dragomir
Bucharest University of Economic Studies, Doctoral School of Accounting, Bucharest, Romania

Email: Dragomirdragos15@stud.ase.ro

Abstract: *The outbreak of the COVID-19 virus caused issues in the semiconductor industries as production experienced a breakdown and there were interruptions in the demand and supply chain. The sector has shown steady recovery with the active construction of new factories, greater automation and adjustment to new market realities. This paper sets out the details of the measures that were executed by the market leaders for the industry's recovery, as well as the potential for development in the future. The combination of the sectors' recovery capabilities, state support and scientific progress allowed industry to be on the way to meet the growing global demand for 5G, artificial intelligence and Internet of Things (IoT) technologies.*

Keywords: Semiconductors; Recovery; Resilience; Supply; Growth; Technology

JEL classification: L63; O33; M41

1. Introduction

Semiconductors are essential to modern life, as they are integral to all electronic components found in computers, telecommunications, healthcare, transportation, and energy systems, which are all equipped with chips.

Since inception, the semiconductor industry has played a pivotal role in enhancing the globe regarding new technology in consumer goods, automotive and today's computing and artificial intelligence. However, the Covid-19 pandemic was a game changer, creating unprecedented breakages that were felt in production and globally in supply chains. Nevertheless, overcoming all these hurdles, the industry did exhibit a remarkable strength, overcoming supply shortages, demand shifts and compliance challenges to grow stronger. In this article, we will then analyze how this sector has adapted not only to challenges but has fully integrated recovery in the ever-changing conditions around it. The trend across the globe, however, seems to suggest that the semiconductor industry will undoubtedly change its growth patterns. Semiconductors are regarded as a pivotal driver of technological advancement due to their extensive use in microchips found in electronic devices, including automated electric vehicles. Recent technological progress is characterized by the increasing integration of artificial intelligence (Ali, 2024), industrial automation (Moktadir, 2023) and autonomous driving (Wang, 2024). All of these are expected to increase the demand of the microchips. This marks the beginning of growth opportunities for the industry like never before.

2. Covid-19 Early Impact on Semiconductor's Industry

The semiconductor shortages resulted in the suspension of production and backlogs among virtually all global auto manufacturers. By May 2021, the annual worldwide production losses were estimated at $110 billion. The interaction of the final consumers, the chip producers, and the car producers made up the internal shocks that triggered further reactions, propagating and intensifying the unavailability's' impact across the international supply chain networks. More electronic devices were in demand as people were working at home and so the semiconductor makers changed their focus to the consumer electronics industry. The automobile industry paused operations and tried to resume the production processes. Furthermore, the regional concentration of the chip production capacity was of no assistance because there were a lot of delays, fragmentation of the multi-tier auto industry, and the urge to stockpile during shortages (Ramani, 2022).

2.1 Covid-19 Late Impact on Semiconductor's Industry

The global semiconductor market in 2021 achieved the highest revenues of $555.9 billion according to the data released by the Semiconductor industry association in October 2022, it registered a 26% growth in revenues compared to the previous year. Nevertheless, in the past years, the semiconductor industry failed to produce enough semiconductors to satisfy the industry's needs. The anomaly is attributed to an extended shutdown geared by Covid-19 infection, which affected the global trend of businesses and caused consumers from various sectors to have a high demand for advanced chips. The need and demand for consumer electronics and computer parts rose exponentially because as the employer-enforced era of work-at-home due to Covid–19, during the time there was so such need for employers to sell goods, many businesses had millions of dollars in inventory that went unsold. At first sales to inventories ratios peaked as businesses made their sales due to having too much stock, however as demand was renewed these businesses have been declining due to an inability to restock to the pre pandemic levels of supply. Due to some chip manufacturers' inability to project demand accurately, lead times increased after demand for these chips skyrocketed.

The lead time average for the period between 2018 to late 2020 averaged 13 weeks, but there was a sudden shift towards increasing lead time perceived as 40 to 45 weeks (Ochonogor, 2023).

3. The Semiconductor Industry's Path to Post-Pandemic Recovery

During the second half of 2020, with countries progressively lifting lockdown restrictions, the demand for automobiles surged, reflecting consumers' preference for personal modes of transport. With the rise in car production by auto manufacturers, there was a corresponding increase in the demand for semiconductor chips that impacted the upstream supply chain. However, suppliers notified the manufacturers that they were unable to fulfill this heightened demand due to limitations in chip production capacity (Ramani, 2022).

Thus, although there was an increase in the demand for semiconductors, the factories found themselves unable to manage production effectively in the first phase, having earlier diminished their output and fallen out of sync.

Although the lockdowns have been over for a long time, Forsythe emphasizes that simply removing lockdown restrictions will not be adequate for recovery, as economic decline has been noted across various sectors and professions, including semiconductors (Forsythe, 2020).

3.1 Ideal Path for Fully recovered industry

Although the industry has not entirely returned to pre-pandemic levels following the COVID-19 crisis, it has strategically realigned itself and has been able to surmount the challenges presented.

Evidence suggests that automotive companies that are enhancing their resilience tend to achieve better outcomes in multiple areas. The concept of resilience has been analyzed through multiple lenses, including ecology, sociology, psychology, engineering, organizational analytics, and economics. Researchers from diverse disciplines have sought to understand how entities, whether they be companies, individuals, or communities, can endure environmental shocks and emerge not just intact but thriving. While many scholars in the field of supply chain management have focused on risk and resilience strategies, few have explored the methodologies for assessing and measuring supply chain performance in terms of resilience. (Rayamann, 2024)

4. Conclusions

After encountering the unexpected difficulties of the COVID-19 pandemic, the semiconductor industry has made a remarkable recovery and reestablished its critical position within the global economy, successfully overcoming considerable challenges related to supply chain integrity, production capacity, and market demand. The existing global conditions have permitted the sector to not only resume its operations but also to create a solid foundation for future progress through investments in infrastructure, digital transformation, and supportive governmental policies. The obstacles faced by industry have revealed its core competencies in innovation, diversification, and risk management, which are vital for effectively addressing any forthcoming global crises.

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THE IMPACT OF AI REGULATION ON INNOVATION AND COMPETITIVENESS: CHALLENGES AND OPPORTUNITIES FOR SMEs

Maria Magdalena Doroiman, Nicoleta Sîrghi
Doctoral School of Economics and Business Administration, Faculty of Economics and Business Administration, West University of Timisoara, Timișoara, Romania
maria.doroiman10@e-uvt.ro
nicoleta.sirghi@e-uvt.ro

Abstract: *This paper examines the impact of the European Union's Artificial Intelligence (AI) Law on the innovation capabilities and competitive positioning of SMEs, from the dual perspective of regulation as both facilitator and constraint. The EU AI Act, with the purpose of supporting the safe and ethical implementation of AI, sets a risk-based regulatory framework. This study performs a systematic literature review of 130 articles published from 2018 to 2024, based on which several key themes were identified: the attitude towards AI regulation and governance, the impact of AI on driving innovation in businesses, especially in startups and SMEs, the impact of AI adoption on their competitiveness and performance, the ethical concerns surrounding AI development and deployment and the macroeconomic impacts of AI, its contribution at the firm-level productivity. The findings highlight that although the Act promotes trust and long-term sustainability trough ethical AI implementation, it also imposes considerable compliance costs that may affect the SMEs' capacity to innovate and expand. This study emphasizes the need for balanced policy measures that support both compliance to regulations and opportunities for innovation and economic growth. The paper offers strategic insights for policymakers and SME leaders aiming to navigate the evolving AI regulatory landscape.*

Keywords: AI regulation; SMEs; innovation; competitiveness; ethics; compliance costs.

JEL classification: O33; L26; M15.

1. Introduction

The EU Artificial Intelligence (AI) Act, introduced in 2024, represents a significant regulatory milestone for governing the development and deployment of AI technologies in Europe. The primary goal of this regulation is to maintain the functionality of the internal market while protecting the safety and the fundamental rights of individuals and enterprises, based on transparency, accountability, and fairness (EU, 2024). Under this risk-based approach, the Act classifies the AI systems based on their potential impact, ranging from minimum to unacceptable risk, in order to encourage responsible use and ethical AI practices.

The impact of this regulation on AI startups and SMEs, key drivers of economic growth and innovation (OECD, 2020), is significant. Although these smaller enterprises could benefit from AI's transformative potential, the Act's stringent compliance requirements for high-risk AI systems create major challenges that may impede their ability to innovate and compete on a global scale (Stix & Maas, 2021). The regulatory environment, though intended to promote trust and facilitate cross-border AI trade (Hleg AI, 2020), may disadvantage the EU SMEs relative to their competitors in the U.S. and China, where governance structures are more flexible (Calo, 2017; Zeng et al., 2021). This systematic literature review explore the Act's potential impact on innovation and competitiveness for AI startups and SMEs, evaluating the balance between the need for regulatory compliance and for an innovative, competitive ecosystem. This review synthesizes current academic findings and policy views, in order to propose a conceptual framework to explore the opportunities and the constraints of this evolving regulatory landscape, offering strategic recommendations for the benefit of the European SMEs.

2. Literature Review

The rapid evolution of AI has increased competitiveness across various sectors including finance, healthcare, manufacturing, and services through automation, rapid decision-making, and novel business models (Acemoglu & Restrepo, 2019; Liu et al., 2020; Wamba-Taguimdje et al., 2020). However, increasing AI adoption has raised significant concerns around ethical use and data privacy, determining governments to balance innovation with supervision. The European Union has taken a proactive role, starting 2018 with the AI Strategy and culminated in 2024 with the comprehensive EU AI Act (EU, 2018; EU, 2024), with the purpose to create a unified regulatory framework, to reduce the fragmented approaches at national level and to facilitate an integrated digital single market. The EU AI Act has a risk-based approach that categorizes AI systems by their potential impact on fundamental rights, consumer safety, and public security. The systems that present an unacceptable risk, such as manipulative AI or social scoring, are forbidden due to potential societal harm. High-risk systems, such as those used in critical infrastructure or employment, must respect strict requirements, including risk assessments, transparency, and human oversight. In contrast, limited-risk systems face only transparency obligations, while minimal-risk systems remain largely unregulated (Veale & Borgesius, 2021). This tiered framework is designed to ensure safety while encouraging a competitive AI ecosystem.

Considering the critical role of startups and SMEs in the European economy - accounting for a significant share of employment and economic output - the implications of the EU AI Act are of particular importance for these businesses (OECD/EBRD, 2023). AI startups, often operating with limited resources, face specific challenges in the regulatory frameworks while simultaneously developing AI-driven innovation. The impact of the EU AI Act, therefore, might extend beyond the regulatory compliance to include considerations of how governance can both enable and constrain the innovation potential of AI-driven startups and SMEs. This regulation seeks to create an environment where transparent, accountable, and fair AI supports responsible innovation, protecting citizen rights while promoting trust in the technology (EU, 2018).

This paper aims to determine whether the EU AI Act will foster sustainable innovation or present hurdles to European business competitiveness, especially compared to less regulated regions. The paper's novelty lies in its focus on the Act's implications for innovation, competitiveness, and economic performance among AI startups and SMEs, analyzing both opportunities and challenges.

3. Methodology and Results

The systematic literature review (SLR) was considered the most appropriate methodology for this study, as it is used in general for identifying, evaluating and interpreting all available research papers relevant to a particular topic (Kitchenham & Charters, 2007). More specifically, a domain-based, a structured and conceptual review is most appropriate, as it can help to synthesize the existing knowledge on the implications of the EU AI Act and offer insights for future research on AI governance, innovation, and SME competitiveness.
The systematic literature review undertaken for this article followed the standard steps, with the particularities of the content analysis, to ensure objectivity, transparency and replicability. The analysis is based on the quantitative approach, by selecting a database of representative publications, but also on a qualitative approach, of the content analysis type, by grouping the articles on a common theme, following the methodology in the field. Following the PRISMA protocol (Moher et al., 2009; Page et al., 2021), there were identified 4457 articles in Web of Science database, records with the terms ”AI”, ”regulation” or ”innovation” or ”competitiveness”. After screening, 130 articles were included in the review and based on their analysis, the results of this systematic literature review highlight five core themes reflecting the EU AI Act's implications on innovation and competitiveness for AI startups and SMEs. Given the varied, heterogeneous structure of the selected articles, it was necessary to analyze their content in order to identify recurring patterns and themes and to group them according to key areas. The final selected papers were reviewed using thematic analysis, without preconceptions or assumptions.A synthesis of these themes is presented in Table 1, with the sub-themes, the research insights and the fields addressing each theme.

Table 1 - Key themes identified

Major themes	Sub-themes	Research insights
1. AI regulation and governance	- Compliance with AI regulations - Risk-based approaches to AI regulation - Legal liability and AI decision-making - Collaboration in AI ecosystems - Governance of AI development	Balancing innovation and compliance is a central challenge, with particular issues for high-risk AI systems(Lee, 2020; Birkstedt et al., 2023; O'Shaughnessy et al., 2023);Legal accountability in AI decisions, especially in healthcare and judicial systems, is an emerging concern (Henkel et al., 2020; Cuéllar et al., 2024); AI ecosystems thrive when there's collaboration between corporates, startups, and academic institutions (Buhmann & Fieseler, 2023; Woolley, 2023);Governance

		structures influence AI deployment (Dignam, 2020; Chatterjee & N.S, 2021; Birkstedt et al., 2023)
2. Innovation dynamics	- AI as a driver of innovation - AI in global competitive markets - AI for SMEs and startups	AI is viewed as a major driver of innovation, particularly in product development (J. Liu et al., 2020; Sjödin et al., 2021; Verganti et al., 2020; Zhang et al., 2022);Competitive fears arise as the EU lags behind the U.S. and China due to stricter regulations (Filieri et al., 2021; Igna & Venturini, 2023; Marino et al., 2023; Y. Liu et al., 2024);AI could create competitive advantages in niche sectors (Sjödin et al., 2021; Kulkov, 2023; Franco et al., 2023);potential of AI to transform how SMEs and startups operate (Etemad, 2024; Grashof & Kopka, 2023; Saleem et al., 2023; von Garrel & Jahn, 2023)
3. Competitiveness and SME performance	-Challenges of regulatory compliance for SMEs - Competitive advantages of ethical AI -Collaboration ecosystems and resource sharing -International competitiveness in AI markets -Adoption of AI for operational efficiency -Sector-specific performance and competitiveness	SMEs face higher compliance costs and regulatory burdens, limiting their ability to innovate and scale quickly compared to larger firms (Wamba-Taguimdje et al., 2020; Kopka & Fornahl, 2024),SMEs that integrate ethical AI practices, such as transparency and fairness, gain competitive advantages by fostering trust with consumers and regulators (Omrani et al., 2022);SMEs that adopt AI to improve operational efficiency, optimize processes, and reduce costs can maintain competitiveness despite regulatory challenges (Gladysz et al., 2023) ;Collaboration with larger firms, academic institutions, and other partners is critical for SMEs to overcome resource limitations and remain competitive in the AI ecosystem (Munoko et al., 2020);Certain sectors, such as healthcare, legal tech, and finance, offer competitive opportunities for SMEs (Chen et al., 2023; Li et al., 2023)

4. Ethical implications and social responsibility	- Bias and fairness in AI - Accountability and transparency - Data privacy - Building trust in AI systems - Balancing ethical AI with disruptive innovation - Consumer acceptance of AI -Human oversight in AI decisions and collaboration in the workplace	Ethical concerns dominate AI research, with a strong focus on bias in decision-making algorithms (Munoko et al., 2020);Privacy issues arise in consumer-facing AI applications like marketing and social media (Stahl et al., 2023);Transparency in AI models is a growing area (John-Mathews, 2022; Rezaei et al., 2024);The trade-off between trust and innovation is a recurring theme, with AI companies needing to balance rapid innovation with ethical obligations (Goncalves et al., 2024);Research highlights the importance of human oversight to ensure AI systems remain ethical and transparent (Méndez-Suárez et al., 2024);Collaboration between humans and AI in decision-making processes is evolving, but fears remain over loss of control (Rezaei et al., 2024)
5. Economic growth and productivity	- AI and productivity growth - AI and job displacement - Cost of AI compliance for startups	AI's productivity boost depends on the sector (Czarnitzki et al., 2023);Concerns over job loss due to automation dominate, particularly in manufacturing and service industries (Acemoglu & Restrepo, 2019);High compliance costs for AI startups and SMEs could stifle innovation (Kulkov, 2023; Marino et al., 2023).

Source: Authors' contribution based on the systematic literature review

4. Conclusions

The EU AI Act represents a transformative regulatory framework that intends to balance AI-driven innovation with ethical oversight and risk management. For AI startups and SMEs, this regulation brings both opportunities and challenges that shape their competitive positioning and the growth potential.

Despite the regulatory challanges, the EU AI Act offers SMEs the opportunity to establish a strong ethical foundation that could differentiate them in global markets. Future policy adaptations, including support mechanisms similar to the new sandboxes, may be needed to drive innovation within the regulatory framework. This study emphasizes the need to allign the regulatory objectives with the innovation strategies, to ensure that EU's AI sector remains competitive and, as well, ethically sound.

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ROMANIA PERFORMANCE TOWARDS THE DIGITAL DECADE 2024 – TARGETS AND OBJECTIVES IN DIGITALISING PUBLIC SERVICES AND SMEs

Andreea Andrei (Adomnitei)
Human and Social Sciences Doctoral School, Faculty of Economics and Business Administration, "Ștefan cel Mare" University of Suceava, Suceava, Romania
andreea.andrei4@student.usv.ro

Abstract: *In 2023, as Report on the State of the Digital Decade 2024 shows, Romania made significant progresses in digitalising public services and in digitalising SMEs. Digital transformation has become increasingly significant in Romania's economic, social, and political spheres in recent years, supported by substantial EU funding. Romania allocates EUR 5.8 billion (21.8% of its total Recovery and Resilience Plan in total amount of EUR 28.5 billion) to digital transition. As part of the Cohesion Policy, an additional EUR 3 billion—equivalent to 10% of Romania's total Cohesion Policy funding—is dedicated to advancing the country's digital transformation. The purpose of the paper is to analyse the position of Romania regarding digitalising of public services (for businesses and for citizens) and in digitalising SMEs compared to other European Union countries, based on Eurostat statistical indicators of DESI 2024 and in relation to digital decade target by 2030. For now, the widespread benefits for citizens and businesses, such as improved and more transparent public services or enhanced competitiveness and innovation, remain limited. A substantial gap persists in reaching the digital decade targets set for 2030.*

Keywords: DESI, digital transformation, digital economy, digital society

JEL classification: O00, O50

1. Introduction

The Digital Decade Policy Programme 2030 establishes a framework for monitoring and collaboration to achieve shared goals for Europe's digital transformation. Digital society and technologies offer innovative ways to learn, entertain, work, explore, and pursue aspirations. They also introduce new freedoms and rights, enabling EU citizens to connect beyond physical boundaries, geographic locations, and social hierarchies. The programme outlines Europe's digital ambitions for 2030 through four key objectives: (a) a digitally skilled population and highly skilled digital professionals; (b) secure and sustainable digital infrastructures; (c) digital transformation of businesses; (d) digitalisation of public services. Progress toward these targets is tracked through the Digital Economy and Society Index (DESI), which compiles indicators of Europe's digital performance and monitors the advancement of EU countries in achieving the 2030 goals.

2. Digital public services for businesses

This indicator measures the online availability of key public services for entrepreneurs and it is defined as the percentage of administrative steps that can be fully completed online for two significant business milestones: business start-up and managing regular business operations.

As it's shown in table 1, based on Digital public services for businesses DESI 2024, Romania registered the 3rd growth rate at the level of the European Union, 12.1%.

Table 1: Top 5 annual progress in 2024 for Digital public services for businesses indicator

Country	Digital public services for businesses		
	DESI 2023	DESI 2024	Annual progress
Greece	73.7%	86.2%	16.9%
Bulgaria	80.7%	91.9%	13.7%
Romania	44.6%	50.0%	12.1%
Sweden	87.9%	96.0%	9.3%
Belgium	87.6%	91.6%	4.6%

Source: https://digital-decade-desi.digital-strategy.ec.europa.eu

Despite this progress, as we see in Figure 1, Romania occupies the last position in the ranking with a scor of 50.0%, while the average of the European Union is 85.4% and the first position is occupied by Finland, Ireland and Malta with a score of 100%. Romania occupies the last position in this ranking also based on DESI 2023. The digital decade target by 2030 is 100% for both EU and Romania.

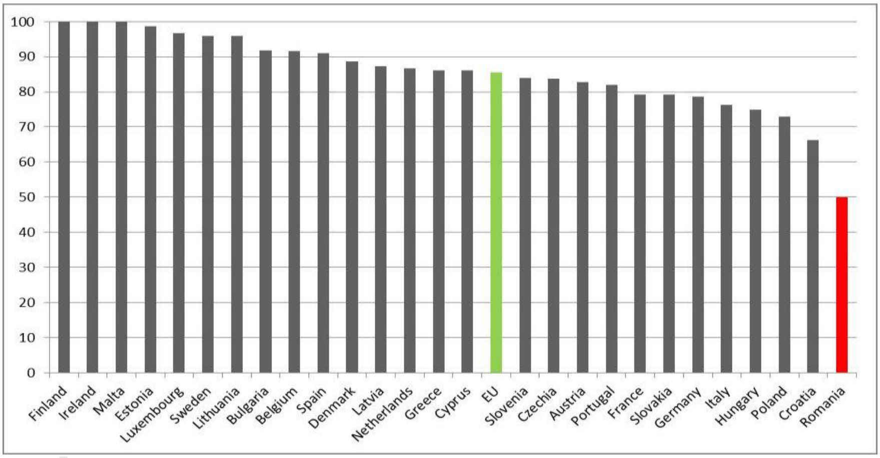

Figure 1: Digital public services for businesses

Source:https://digital-decade-desi.digitalstrategy.ec.europa.eu/datasets/desi/charts

3. Digital public services for citizens

The indicator is defined as online provision of key public services for citizens, measured as the share of administrative steps that can be completed fully online for

seven major life events, considered for citizens to be family, career, studying, health, transport, moving, starting a small claims procedure.
As we see in table 2, Romania registered the 4th growth rate at the level of the European Union for DESI 2024 Indicator Digital public services for citizens, 9.7%.

Table 2: Top 5 annual progress for Digital public services for citizens indicator

Country	Digital public services for citizens		
	DESI 2023	DESI 2024	Annual progress
Greece	64.6%	75.9%	17.5%
Cyprus	63.6%	74.0%	16.2%
Bulgaria	59.5%	67.5%	13.4%
Romania	47.6%	52.2%	9.7%
Hungary	67.9%	73.4%	8.1%

Source: https://digital-decade-desi.digital-strategy.ec.europa.eu

Despite this progress, as we see in Figure 2, Romania occupies the last position in the ranking of the 28 countries with a scor of 52.2%, while the average of the European Union is 79.4% and the first position is occupied by Malta with a score of 100%. Romania occupies the last position in this ranking also based on DESI 2023. The digital decade target by 2030 is 100% for both EU and Romania.

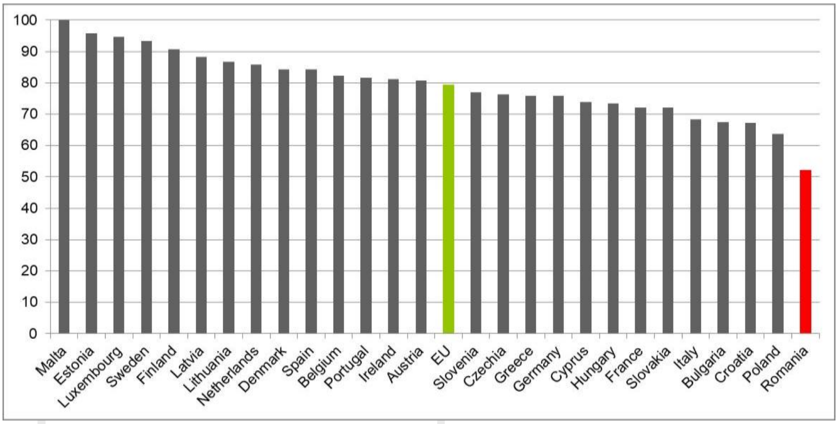

Figure 2: Digital public services for citizens
Source:https://digital-decade-desi.digitalstrategy.ec.europa.eu/datasets/desi/charts

4. SMEs with at least a basic level of digital intensity

The digital intensity score is based on counting how many out of 12 selected technologies are used by enterprises with 10-249 persons employed from all manufacturing and service sectors, excluding the financial sector. A basic level requires usage of at least 4 technologies. As we see in table 3, Romania registered the 4th growth rate at the level of the European Union for DESI Indicator SMEs with at least a basic level of digital intensity, 20.7% (data from 2023 and 2021).

Table 3: Top 5 annual progress for SMEs with at least a basic level of digital intensity indicator

Country	SMEs with at least a basic level of digital intensity		
	DESI 2022	DESI 2024	Annual progress
Hungary	34.5%	53.2%	54.2%
Latvia	38.1%	48.2%	26.5%
Poland	39.8%	50.0%	25.6%
Romania	22.2%	26.8%	20.7%
Greece	37.7%	43.3%	14.9%

Source: https://digital-decade-desi.digital-strategy.ec.europa.eu

Despite the progress recorded, as we see in Figure 3, based on DESI 2024 for SME'as with at least a basic level of digital intensity, Romania occupies the last position with a score of 26.8%, while the average of the European Union is 57.7% and the first position is occupied by Finland with a score of 85.6%. Romania occupies the last position in this ranking also based on DESI 2022 (data from 2021). The digital decade target by 2030 is 75% for Romania and 90% for EU.

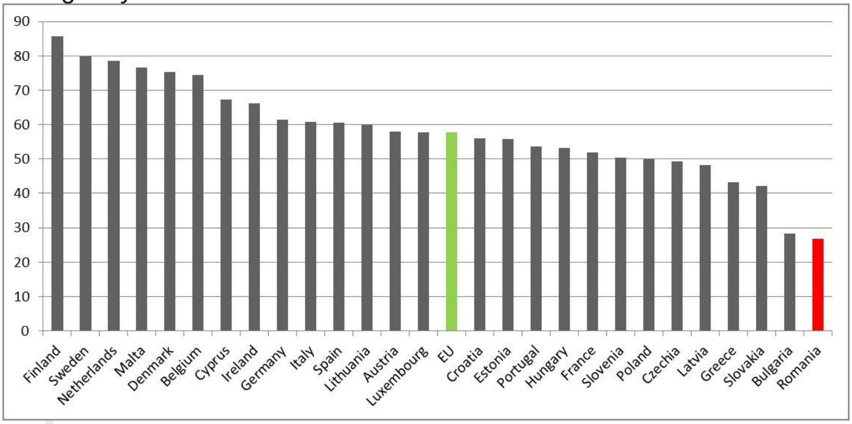

Figure 3: SMEs with at least a basic level of digital intensity
Source: https://digital-decade-desi.digital-strategy.ec.europa.eu

5. Conclusions

Performance on the digitalisation of public services in Romania remains low compared to other countries and the EU average, with a considerable gap still to be bridged to meet the Digital Decade target by 2030. However, notable progress was recorded in 2023. Sustained efforts and actions have the potential to drive significant improvements in the coming years, particularly in transparency, simplification, and quality, with investments and reforms for the digitalisation of public administration (in key areas such as justice, employment and social protection, environment, civil service management and skills development, public procurement, cybersecurity, tax and customs, while building a secure government cloud infrastructure), investments for digitalisation of health to support the development of an integrated e-Health system, investments for digitalisation of education (improving digital pedagogical skills, educational content and equipment and resources, including in universities).

Romania's performance in the digitalisation of businesses remains the lowest among EU countries and well below the EU average. However, a positive trend has been observed in basic digital intensity and other related indicators, particularly in e-Invoicing. Despite ongoing efforts, a significant gap persists in achieving the digitalisation targets for businesses and implementing the roadmap by 2030, which involves increasing research, development and innovation in the information and communication technology sector.

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DIGITALIZATION OF THE ENERGY SECTOR IN THE REPUBLIC OF MOLDOVA: AN ESSENTIAL STEP FOR RESILIENCE AND SUSTAINABILITY

Oleg Petelca[1], Ciprian-Constantin Pătrăuceanu[2], Iurie Beșliu[3], Veronica Garbuz[3]
[1]*Alexandru Ioan Cuza University of Iași, Romania*
[2]*University of Oradea, Romania*
[3]*Alecu Russo State University of Bălți, Republic of Moldova*
oleg.petelca@gmail.com
patrauceanuc@yahoo.com
iurie.besliu@gmail.com
garbuz_veronica@yahoo.com

Abstract: *The Republic of Moldova's energy sector faces significant challenges, including reliance on imported energy, outdated infrastructure, and increased demand for sustainable solutions. Digitalization offers a transformative pathway to enhance resilience, optimize resource use, and improve energy efficiency. This article explores the benefits and challenges of digitalizing Moldova's energy sector, focusing on smart grid implementation, data-driven decision-making, and the integration of renewable energy. By adopting digital solutions, Moldova can build a more robust, sustainable energy system that aligns with European energy standards and addresses the country's unique challenges.*

Keywords: Republic of Moldova; energy sector; digitalization; reducing dependency; energy supply

JEL Classification: *L94, L95, F15.*

1. Introduction

The Republic of Moldova faces numerous challenges in its energy sector, being heavily dependent on energy imports and with partly outdated infrastructure. In this context, sustainable development of the energy sector is essential for ensuring energy security and economic stability. The modernization of Moldova's energy sector is being carried out along two major lines: digitalization of the energy infrastructure and strengthening international partnerships. These efforts are supported by external partners and international financial institutions, contributing to the establishment of a more robust and efficient framework for the country's energy supply.

The Republic of Moldova is at a critical juncture in its energy development. As one of Europe's most energy-dependent countries, Moldova imports a significant portion of its energy, making it vulnerable to price fluctuations and geopolitical tensions. In recent years, the global push towards energy sustainability has highlighted the need for Moldova to modernize its energy infrastructure and adopt innovative solutions.

Digitalization represents a promising approach to address these challenges by enhancing efficiency, enabling smart energy management, and supporting the integration of renewable energy sources.

Objectives of Digitalization in Moldova's Energy Sector

- Enhancing Energy Resilience: Reducing dependency on energy imports by optimizing resource use.
- Promoting Sustainability: Integrating renewable sources through smart grid technology.
- Improving Operational Efficiency: Leveraging data and automation to reduce energy waste and increase grid reliability.

Moldova's energy sector has several structural vulnerabilities, exacerbated by the unstable geopolitical context in the region and recent energy crises. The reliance on natural gas and electricity imports, especially from single suppliers such as the Russian Federation, and the lack of domestic gas storage facilities increase the risk of supply disruptions. According to the report, Moldova imports over 70% of its energy needs, which significantly exposes it to price fluctuations and external supply shocks.

2. Benefits of Digitalization in the Energy Sector

Digitalization is a vital component for improving operational efficiency and enhancing energy management in the Republic of Moldova. Digital technologies enable more efficient monitoring of energy consumption, optimization of distribution, and reduction of losses within transport networks. For example, the introduction of smart metering and real-time network monitoring systems helps prevent outages and allows for quicker incident management.

The implementation of these technologies has been accelerated with the support of international partners, such as the European Bank for Reconstruction and Development (EBRD) and the European Investment Bank (EIB). These financial institutions have provided funds for the modernization and digitalization of infrastructure, aiming to align Moldova with European energy market standards

Digital transformation in the energy sector can deliver numerous advantages, particularly in countries like Moldova, where outdated infrastructure and energy dependence create challenges.

2.1 Enhanced Grid Reliability and Efficiency

Digital tools can optimize grid performance, reducing outages and improving response times. Smart grids, which incorporate digital sensors, automation, and advanced control systems, allow for real-time monitoring and remote management. By implementing smart grids, Moldova can reduce transmission losses, balance supply and demand more effectively, and enhance the grid's resilience to external disruptions.

2.2 Data-Driven Decision-Making

Digitalization facilitates the collection and analysis of vast amounts of data on energy consumption patterns, grid performance, and demand forecasts. In Moldova, this data could help energy providers and policymakers make informed decisions on resource allocation, pricing, and infrastructure investments. Data analytics can also identify inefficiencies and recommend targeted improvements, ultimately enhancing system performance and reducing costs.

2.3 Integration of Renewable Energy Sources

As Moldova seeks to increase its renewable energy share, digital solutions are essential for managing these variable sources. Smart grids can dynamically adjust to changes in supply from solar or wind sources, minimizing disruptions and ensuring a stable energy supply. Additionally, digital platforms can support distributed energy generation, allowing consumers to contribute to the grid through small-scale renewable installations.

3. Key Challenges of Digitalizing Moldova's Energy Sector

While digitalization offers significant benefits, implementing it in Moldova's energy sector involves overcoming a series of challenges:

3.1 High Initial Costs and Limited Funding

Digitalizing the energy sector requires substantial investment in technology and infrastructure, which can be a significant hurdle for Moldova's limited budget. The cost of deploying smart meters, digital control systems, and cybersecurity measures may strain public and private funding sources.

3.2 Cybersecurity and Data Privacy Concerns

The digitalization of critical infrastructure like the energy grid makes it vulnerable to cyberattacks. Moldova's energy sector needs robust cybersecurity measures to protect against these threats, particularly given the country's geopolitical position. Effective cybersecurity will require investment in digital literacy, personnel training, and security protocols to prevent breaches and safeguard data privacy.

3.3 Regulatory and Institutional Barriers

Successful digitalization depends on a supportive regulatory framework. In Moldova, outdated regulations, slow policy adaptation, and limited interagency coordination can impede digital transformation efforts. Reforming policies to support digital initiatives, incentivize renewable energy investments, and promote innovation will be essential for the sector's digitalization.

4. Strategic Steps for Implementing Digitalization

To overcome these challenges and realize the benefits of digitalization, Moldova can adopt a strategic approach that includes phased implementation, partnerships, and regulatory reforms.

4.1 Phased Implementation of Smart Grids

A phased approach to smart grid implementation, starting with pilot projects in major urban areas, can provide Moldova with valuable insights before broader adoption. This gradual transition reduces upfront costs, allows for infrastructure testing, and enables adjustments based on pilot project outcomes.

4.2 Public-Private Partnerships and International Support

Leveraging international aid and building partnerships with private technology firms can help Moldova access the resources needed for digitalization. The European Union and other international organizations are potential sources of funding and technical expertise that could facilitate Moldova's transition to a digitalized energy infrastructure.

4.3 Regulatory Reforms and Policy Support

Modernizing Moldova's regulatory framework is vital to supporting digitalization efforts. Policies that incentivize digital technology adoption, encourage renewable energy integration, and protect consumer data are critical. Moldova’s energy regulators must prioritize digital-friendly policies and work with stakeholders to ensure smooth implementation.

4.4 Workforce Development and Capacity Building

Digitalization demands a skilled workforce familiar with advanced technologies and data analysis. Investing in workforce training programs will enable Moldova to build a pool of skilled professionals who can manage and operate digitalized energy systems, ensuring sustainable sector growth.

5. Case Study: Digitalization Efforts in Similar Economies

Examining case studies of digitalization in countries with similar economic conditions and energy dependencies provides valuable insights for Moldova. For instance, neighboring Romania has made strides in adopting smart meters and renewable energy integration, supported by EU funding and regulatory reforms. By studying these examples, Moldova can adopt best practices and avoid potential pitfalls.

Integrating Moldova into the European energy market is a strategic priority. Joining the European Energy Community and achieving candidate status for European Union membership has allowed Moldova to access funding and cooperation projects aimed at supporting modernization and diversification of energy sources. Furthermore, partnerships with neighboring countries, especially Romania, have been crucial for ensuring a stable energy supply and diversifying import sources, including through interconnection projects.

6. Conclusions

Digitalization is an essential step for building a resilient and sustainable energy sector in the Republic of Moldova. While challenges such as funding, cybersecurity, and regulatory barriers exist, a strategic, phased approach to digitalization can drive significant improvements in energy efficiency, reliability, and sustainability. By investing in smart grids, data analytics, and regulatory reforms, Moldova can create a modern energy system that aligns with European standards and supports the country’s economic and environmental goals. The sustainable development of the energy sector in the Republic of Moldova requires a combination of intensive digitalization and the strengthening of international partnerships. Investments in modern technologies and renewable energy resources are essential for reducing import dependency and enhancing the country's energy security. By continuing reforms and implementing interconnection projects, Moldova can become a more integrated and stable player in the regional energy market, thus contributing to long-term economic and social stability.

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A BIBLIOMETRIC ANALYSIS ON HEALTH ECONOMICS PUBLICATIONS

Oana-Laura Nicula
Ph.D. student, Doctoral School of Economic Sciences, University of Oradea, Oradea, Romania
oananicula@gmail.com

Abstract: *Applying bibliometric analysis in health economics can serve as a tool for understanding the evolution, trends, and impact of research within this field. It employs quantitative methods to assess the volume of publications, citation patterns, and the influence of various studies on policy and practice. A systematic review of the literature reveals several key themes and methodologies that characterize the current landscape of health economics research. The present paper conducts a preliminary analysis on the key publications on health economics by interrogating data bases like Web of Science and Scopus and also VosViewer as a visual instrument to map the actual landscape on health economics.*

Keywords: Health economics, Bibliometric analysis, Health Scientific publications

JEL classification: H51, I15, I18

1. Introduction

Bibliometric analysis serves as an important tool for understanding the dynamics of scientific research across various fields. This method quantitatively assesses scientific production and provides insights into the intellectual structures and emerging trends within specific domains. For instance, Yanti et al. highlight that bibliometric analysis can effectively map research landscapes, revealing hot topics and the intellectual framework of a field through science mapping techniques (Yanti et al., 2022). This idea is echoed by Özdemir, who emphasizes the significance of visualizing bibliometric networks to study the conceptual structure of research areas (Özdemir, 2023). The ability to visualize these networks allows researchers to discern relationships and trends that may not be immediately apparent through traditional literature reviews.

Bibliometric analysis is a powerful methodology that not only quantifies scientific output but also visualizes and interprets the relationships within the literature. Its application across diverse fields, from environmental studies to medical research, demonstrates its utility in mapping research trends and guiding future inquiries. The integration of advanced analytical tools, such as VOSviewer, further enhances the capability of researchers to conduct detailed bibliometric studies, thereby contributing to the advancement of knowledge across disciplines (Saputro, 2023; Lucaci & Sarafescu, 2022).

Bibliometric analyses themselves have emerged as a significant area of research within health economics. Studies like that of Akbar et al. demonstrate how bibliometric methods can illuminate citation trends, influential authors, and the overall impact of research in specific domains, thereby guiding future research directions and policy decisions (Ananthakrishnan et al., 2020). This meta-analytical approach not only enhances our understanding of the field but also identifies gaps in the literature that warrant further investigation.

2. Literature review

Applying bibliometric analysis in health economics can serve as a tool for understanding the evolution, trends, and impact of research within this field. It employs quantitative methods to assess the volume of publications, citation patterns, and the influence of various studies on policy and practice. A systematic review of the literature reveals several key themes and methodologies that characterize the current landscape of health economics research.

One prominent area of focus in health economics is the evaluation of interventions through economic analyses. For instance, systematic reviews have highlighted the importance of comprehensive economic evaluations that include both cost and effectiveness assessments. Pega and Wilson emphasize the necessity of integrating economic analyses with effectiveness studies to provide a holistic view of intervention impacts, advocating for best practice guidelines that call for comprehensive systematic reviews of economic analyses (Pega & Wilson, 2016). Similarly, Lo et al. discuss the significance of conducting economic evaluations alongside clinical effectiveness reviews to inform health policy decisions effectively (Lo et al., 2022). This dual approach not only enhances the robustness of the findings but also aids policymakers in understanding the economic trade-offs associated with different healthcare interventions (Anderson, 2010).

Moreover, the application of standardized reporting guidelines, such as the Consolidated Health Economic Evaluation Reporting Standards (CHEERS), has been pivotal in improving the quality and transparency of economic evaluations in health research. Xu et al. note that adherence to these guidelines facilitates a more systematic and rigorous approach to reporting health economic evaluations, which is essential for ensuring the credibility and applicability of findings (Xu et al., 2014). The CHEERS guidelines have been widely endorsed and are increasingly being adopted in systematic reviews, as evidenced by studies that utilize these standards to assess the methodological quality of economic evaluations (Husereau et al., 2013).

The bibliometric analysis of health economics literature also reveals trends in research focus areas, such as the economic evaluation of specific interventions like point-of-care testing (POCT) and cancer screening. Lingervelder et al. provide a systematic review of health economic evidence related to POCT, indicating a growing body of literature that supports its economic viability despite some limitations in long-term benefit assessments (Hoque et al., 2011). Furthermore, Adair et al. highlight the diversity of modeling methods used internationally to evaluate the health economics of colorectal cancer screening, underscoring the need for methodological standardization across studies (Lingervelder et al., 2021).

In addition to intervention-specific evaluations, the economic burden of health conditions and the cost-effectiveness of various treatments are critical components of health economics research. For instance, Ding et al. conducted a systematic review on the cost-effectiveness of immune checkpoint inhibitors for lung cancer, illustrating the importance of evaluating innovative therapies within the context of economic sustainability (Adair et al., 2022). Similarly, the economic implications of public health issues, such as bullying and antimicrobial resistance, have been explored, emphasizing the necessity for economic evaluations to guide resource allocation in healthcare systems (Ding et al., 2020; Jadambaa et al., 2021).

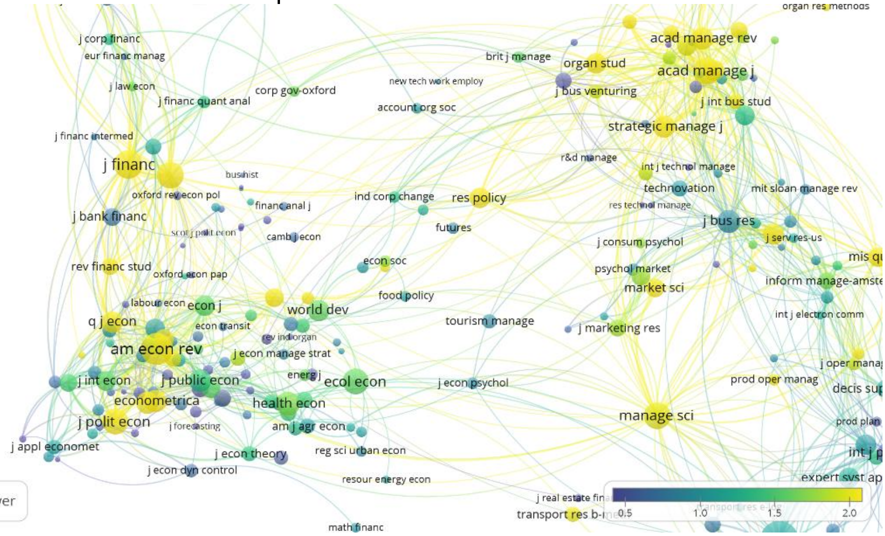
3. Methodology

Table 1: The main sources for scientific articles on Health Economics

Source Title	CiteScore	Highest percentile	Citations 2020-23	Documents 2020-23	% Cited
European Journal of Health Economics	6.1	88%	2,460	402	84
American Journal of Health Economics	4.3	80%	333	77	70
International Journal of Health Economics and Management	3.6	74%	317	88	63
Value in Health Regional Issues	2.6	70%	865	339	68
Forum for Health Economics and Policy	1.6	51%	25	16	56
Journal of Pharmaceutical Health Services Research	1.5	56%	363	246	49
World Scientific Series in Global Health Economics and Public Policy	0.1	5%	17	116	10

Source: https://www.scopus.com/sources.uri

Figure 2: Health economics map



Source: Health economics on VosViewer

4. Conclusions

As shown in Table 1, there are several main publications for health economics that are extremely valuable for scientific research and those are the main sources for information totalising over 4,500 citations between 2020 and 2023. The main publication widely consulted is the European Journal of Health Economics which had 2,460 citations in the above-mentioned period with a slight decrease in 2023, but still ranking 28 out of the 242 publications in the category Economics, Econometrics and Finance (miscellaneous) on Scopus. The American Journal of Health Economics is also a highly used source with an increasing number of citations and 48 ranking.

In conclusion, bibliometric analysis in health economics provides valuable insights into the development and impact of research in this field. By integrating economic evaluations with clinical effectiveness studies, adhering to standardized reporting guidelines, and employing bibliometric methods, researchers can contribute to a more informed and effective healthcare decision-making process.

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THE IMPORTANCE OF FINANCIAL DIAGNOSIS IN THE ACTIVITY OF THE TOURIST ENTERPRISE

Ciprian-Constantin PĂTRĂUCEANU[1], Oleg PETELCA[2]
[1]*University of Oradea, Romania*
patrauceanuc@yahoo.com
[2]*Alexandru Ioan Cuza University of Iași, Romania*
oleg.petelca@gmail.com

Abstract: *Financial diagnosis is a vital tool for understanding and enhancing the performance of tourism enterprises. Given the volatility and seasonality of the tourism sector, a comprehensive financial diagnosis provides insights into a company's financial health, allowing for informed decision-making. This article explores the importance of financial analysis in tourism, focusing on profitability, liquidity, and solvency assessments. By understanding these elements, managers can make strategic decisions that improve financial resilience and operational efficiency, ensuring sustainable growth in a competitive market.*

Keywords: entrepreneurship, tourism, financial diagnosis, decision-making, profitability

JEL Classification: L83, G32

1. Introduction

The tourism industry is highly competitive and affected by seasonal demand, fluctuating customer preferences, and external factors such as economic crises or pandemics. Financial diagnosis offers a systematic approach to assessing the health and stability of tourism businesses, providing the information needed to adapt to challenges and identify growth opportunities. This article aims to outline the main components of financial diagnosis and their impact on decision-making in tourism enterprises.
Objectives of the Financial Diagnosis
- Evaluating Financial Health: Identifying strengths and weaknesses in financial stability.
- Risk Assessment: Understanding and mitigating financial risks associated with tourism's seasonality and external shocks.
- Strategic Planning: Enabling data-driven strategies for growth, diversification, and resilience.

2. Key Components of Financial Diagnosis in Tourism Enterprises

2.1 Profitability Analysis

Profitability analysis is crucial for tourism enterprises, as it provides insights into the company's ability to generate profit and grow sustainably over time. Given the seasonal nature of tourism, profitability metrics allow managers to assess not only the overall financial performance but also to identify peak and off-peak financial health. By regularly analyzing profitability, tourism enterprises can pinpoint cost-saving opportunities, optimize pricing strategies, and ultimately improve shareholder value.

Several profitability indicators provide a comprehensive view of financial performance in the tourism industry:

2.1.1. Gross Profit Margin. The gross profit margin shows the percentage of revenue that exceeds the cost of goods sold (COGS). In the tourism industry, this might include direct expenses such as travel packages, accommodation costs, transportation, and food services. A high gross profit margin indicates efficient cost management, which is critical in an industry where small changes in direct costs (like fuel or lodging expenses) can significantly affect profitability.

2.1.2. Operating Profit Margin. This metric represents the proportion of revenue left after covering all operating expenses, excluding interest and taxes. For tourism enterprises, operating expenses may include administrative costs, marketing expenses, and wages for guides or staff. Operating profit margin reflects management efficiency, showing how well the enterprise converts its revenue into profit before non-operational expenses. For tourism companies, achieving a strong operating margin during peak seasons is crucial, as it must often cover lean periods.

2.1.3. Net Profit Margin. The net profit margin measures how much profit a tourism business retains after all expenses, including interest and taxes, are deducted. This metric indicates the overall profitability and is essential for understanding long-term sustainability. Since net profit margin accounts for all expenses, it is a comprehensive indicator of financial health. Tourism enterprises with higher net profit margins are better positioned to withstand economic downturns, invest in new projects, and increase shareholder value.

2.1.4. Return on Assets (ROA). ROA measures how efficiently a tourism enterprise uses its assets to generate profit. Assets in this industry might include physical assets like hotels, vehicles, or technology systems. A high ROA indicates that the company uses its resources effectively. This metric is especially relevant in tourism, where asset-heavy businesses (e.g., tour companies with fleets or hotels) need to maximize their return on investment.

2.1.5. Return on Equity (ROE). ROE measures the return generated on the shareholders' equity, providing insights into the profitability from an investor's perspective. In tourism, where investors may be concerned about seasonality and the industry's vulnerability to external shocks, a strong ROE reassures stakeholders of the company’s profitability and growth potential.

Factors Affecting Profitability in Tourism Enterprises:

a. Seasonal Demand and Pricing Strategies. Tourism enterprises often experience fluctuations in demand, which directly affects profitability. High season months may bring in substantial revenue, while off-season periods require effective pricing strategies to maintain profitability. Adjusting pricing based on peak and off-peak seasons is essential to stabilize revenue across the year.

b. Cost Structure. Tourism businesses need to manage both fixed and variable costs. Fixed costs (such as lease agreements for office space) remain constant, while variable costs (like supplies, fuel, or food expenses) fluctuate. Profitability

analysis helps identify areas to optimize these costs, for example, by reducing utility usage or renegotiating supplier contracts.
c. Customer Experience and Satisfaction. Profitability is significantly influenced by customer satisfaction in tourism. Satisfied customers are more likely to return, refer others, or leave positive reviews, all of which boost revenue and profitability. Consequently, investments in quality service, training for personnel, and customer engagement often lead to a more robust bottom line.
d. External Economic Conditions. Economic downturns, exchange rate fluctuations, or changes in fuel prices can impact profitability in the tourism industry. During periods of economic uncertainty, profitability analysis enables companies to adjust operational expenses, streamline services, or explore alternative revenue sources to protect margins.
e. Technological Integration. Tourism companies that invest in technology to streamline bookings, automate customer service, or analyze customer data tend to see higher profitability. Technological advancements allow for cost savings, improved customer experience, and better market targeting, all contributing positively to profit margins.

2.2 Liquidity Analysis
Liquidity refers to a company's ability to meet short-term obligations, crucial for tourism enterprises, especially during low-demand seasons. Common liquidity ratios include the current ratio, quick ratio, and cash ratio.
- Current Ratio: Indicates the ability to cover short-term liabilities with short-term assets.
- Quick Ratio: A stricter measure of liquidity, excluding inventory from assets.
- Cash Flow Analysis: Emphasizes cash reserves and flow management, crucial for handling seasonal revenue variations.

2.3 Solvency Analysis
Solvency is a longer-term measure of financial stability, focusing on a company’s ability to meet its long-term obligations. It is especially important for tourism companies that may rely on financing for expansion or to survive downturns.
- Debt-to-Equity Ratio: Shows the proportion of debt used in financing operations.
- Interest Coverage Ratio: Reflects the company’s ability to pay interest expenses, critical for maintaining creditworthiness.
- Long-Term Debt to Capitalization: Analyzes the proportion of long-term debt in the company’s total capital structure.

3. Importance of Financial Diagnosis for Strategic Decision-Making in Tourism

Financial diagnosis enables managers in the tourism industry to make informed decisions regarding operational adjustments, investment in assets, or reallocation of resources. Key areas impacted by financial diagnosis include:
- Budgeting and Forecasting: Allows for better financial planning by anticipating revenue and expense patterns.

- Investment Decisions: Provides insights into the feasibility of expanding or diversifying service offerings.
- Risk Management: Identifies areas of potential financial vulnerability, allowing managers to implement risk mitigation strategies.
- Sustainability: In the current market, sustainable practices can impact financial metrics and overall competitiveness, especially as more consumers prefer eco-friendly travel options.

4. Challenges in Financial Diagnosis for Tourism Enterprises

While financial diagnosis is essential, tourism enterprises face unique challenges:
- Seasonal Demand: Revenue and cash flow can fluctuate significantly, making financial planning complex.
- External Economic Factors: Factors like currency fluctuations, political instability, or economic downturns can unpredictably impact demand.
- Pandemics and Crises: As seen during the COVID-19 pandemic, tourism is particularly vulnerable to global crises.

Addressing these challenges requires adaptive financial strategies, including creating financial buffers and developing a crisis response plan.

5. Conclusion

In conclusion, financial diagnosis is a crucial aspect of effective management in tourism enterprises. It provides a comprehensive overview of financial health, enabling managers to make strategic decisions, ensure liquidity, and achieve profitability. By identifying financial strengths and weaknesses, tourism companies can better navigate market challenges, respond to demand fluctuations, and achieve sustainable growth.

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COMPARATIVE ANALYSIS OF FINANCING SPORTS ACTIVITIES FROM PUBLIC AND PRIVATE SOURCES

GOGA Traian Vasile
Doctoral School of Economics and Business Administration, West University of Timișoara, Romania
traian.goga89@e-uvt.ro

Abstract: Sport activities and sports represent a widespread phenomenon at the level of human society, having positive implications in several aspects. By being practiced or attended to, they bear benefits able to improve the general health level, improve social interaction and also satisfy social needs. Also they can develop the economic activity that is related to them, due to a high commercial potential that some of these activities present. This paper analyses firstly the way in which public authorities from European countries manage the subject of financing from public funds sports and sports activities. Another point of analysis is the way in which sports organisation attract funds from private sources. This includes also factors and reasons why sponsoring is attractive to different organisations and what kind of return of their investment is expected through this. Finally, the paper ends with conclusions and possible directions of further research.

Keywords: sports activities; public funding; private funding; sponsorship;

1. General overview of funding of sports activities

The concept of ”physical culture” has existed for a considerable period in human society, Ștefan (2005) describing it as being a component of universal culture which sinthetizes the categories, norms, institutions and material goods that have been established and created in order to capitalize the biologic and moral potential of humans. This definition suggests that physical culture, in the sense of sports activities and sports, is an essential part in pursuing fulfillment by individuals. Proof of sport activities being used in order to improve society has been noted by Christensen (2012) who explains how the ancient city-state of Sparta used athletics as a way to impose compliance with social norms. Examples can be found in modern-day society. Marivoet (2014) emphasises that sport is a cultural phenomenon with huge potential in bringing people, cultures, and nations together. Health benefits are recorded by a number of scientifical papers. Cao et al. (2024) show that physical activity has been well documented for physical and mental health. Physical activity is also considered crucial by the World Health Organisation as the primary consideration in the global health field, proposing a standard at least 150 min of moderate-intensity physical activity throughout the week (Bull et. al, 2020). Such evidence makes public authorities and private organisations support sports activities.

Funding of sports activities is widespread and is put into practice depending on the level of practice and its goals. Funding can be defined the way in which sports organisations, receive funds for their activities and programmes. The majority of states around the world finance sports activities and sports infrastructure. Governments allocate large sums of public resources to sports, appreciating the various positive externalities resulting from sports activities, such as better health or promoting a country's reputation through winners at the Olympic Games (Howard and Crompton, 2018). In cases where sports organisations show a commercial value that is meaningful to businesses, the use of sponsorship arises.

2. Public funding of sports activities

Financing offered for sports activities to sports organisations by public authorities is present in the vast majority of states. Nemec et al. (2014) split the wide concept of public funding into three main sources of financing depending on the public authorities' level in the state hierarchy:

- Public financing directly from state level
- Public financing from regional authorities (counties, districts etc.)
- Public financing from municipal level

Haring (2010) also described such a type of stratification of public funding, his work reffering strictly to Germany's case. Namely, the German Federal Government funds sports activities undertaken at the highest level of performance. Regional authorities mainly finance potential high-profile athletes or teams that can reach the level of international performance and also sports clubs or organisations that are relevant for that region. Lastly, local level authorities finance amateur and mass-sport activities in order to enhance the benefits of practicing sports by their inhabitans such as improving social integration and offering to especially young persons the path to avoid damaging behaviour.

In regard of allocating resources on behalf of public funding of sports activities, scientific literature records variations of this action. Brooks and Wigan (2009) support the opinion that financing sports activities fuel the common good of people, communities and nations, as resulted by their research. Groothuis and Rotthoff (2016) have found evidence that funding sports activities and especially high-level competitions require a thorough analysis from the point of view of their economical and social impact. From the perspective of the public decision theory, financing sports activities is a controversial action as Mueller (2012) recorded. Pil Lee et al. (2013) used a variety of models and instruments that measured social impact of public-financed sport activities and discovered an important positive efect on social capital and cohesion at community-level especially.

The European Union provided the idea of establishing *sattelite accounts* in the case of public funding of sports activities. These accounts provide a framework linked to the to central (national or regional) accounts. Thus, in the case of expenditures related to sports activities, information is centralized and reveals the full extent of resources allocated. In this way, a clear picture and comparison between expected results and acomplished results.

Regarding the efficiency level of the funds coming from public sources used for sports activities, conclusions vary among different authors. Andreff and Szymanski (2006) have mentioned in their work that the elementary image over the relation public money-sports activities suggests that careful analysis of the context is required when proceeding in this direction. Segui et al. (2021) have focused their research on the topic of efficient use of the public funding that is provided to Spanish national sports federations. Trying to correlate the amount of public resources with the sporting results achieved has indicated that the amount of financing on its own does not guarantee success. Instead, the organisational policy adopted by the federations is the crucial mix of factors, of which financing is an important one, but not the decisive one. Kasale et al. (2018) also came to a similar conclusion, mentioning that organisational management should be the key focus of a national sporting federation

3. Private funding of sports activities

Kwon et al. (2015) indicate an amount of 35,2 billion USD invested by companies in sports events at a global scale. Zaharia et al. (2016) indicate an amount 40 billion USD invested by companies in the US alone in the sports domain, through sponsorship contracts.

Sponsorship is the main means by which companies invest in sports activities because they can apply their marketing strategies. Ratkovic (2023) notes that the social and economical changes that have taken place in the last decades has made sport acitivities more attractive for companies. The same author suggests that more persons adopt a different lifestyle compared to past decades, a lifestyle in which physical appearance and social status play a more important role. Koronis et al. (2021) link the growth of sponsoring sports activities to the broad audience they reach by online broadcasting.

Different papers suggest that marketing products and companies through sports works, at least in some cases. Ying (2012) cites the case of Toyota which agreed with the basketball team Houston Rockets to name their home venue ”Toyota Sports Center”. China’s basketball superstar Yao Ming was playing for the squad which in turn lead to a big number of Chinese citizens following the team’s games. Therefore, everytime the Houston Rockets played on the home field, the name Toyota would be consolidated in the minds of the Chinese consumers. Walraven et. al (2014) discovered that brand awareness for the beer company Heineken grew significantly after being the main partner of the soccer competition UEFA Champions League. Brenner (2003) cites the case of car manufacturer Subaru who opted to sponsor UCI Mountain Bike World Cup. The reason is that people involved and viewers it presented a much larger compatibility with the typical consumer that Subaru targeted.

However, applying partnership and sponsorship with different sport teams or events does not always guarantee success. Biscaia et al. (2014) did reveal that loyal fans of different teams are becoming aware of a product or a company much faster when sponsorship is involved, but only when there is a positive feeling of perception towards it. Zaharia et al. (2016) have studied also the impact of sponsorship on brand awareness and sales. The results have indicated that even if brand awareness has improved, it does not necessarily imply a shift in consumer behaviour. Intention to buy may exist, but it is no guarantee it will actually happen. Martinez et al. (2019) have analyzed return of investment for insurance company Divina Pastora, which sponsored the basketball team Joventut de Badalona. The study showed results were modest. There was no correlation between the company name and the team. The company was perceived just like it was perceived at the beggining of the sponsorship agreement.

4. Preliminary conclusions and future research

Sports activities represent an important domain for public authorities and private companies alike. States have included sport activities among the fundamental rights of their citizens and provided the to ensure all necessary conditions for practicing them. However, governance of the sports organisations that receive public funding does not offer a high level of confidence regarding efficiency of expenditures. For private companies, changes in modern society that have modified consumer behaviour imply new marketing strategies. Sports activities represent now a more efficient way to reach both a larger number of consumers and the consumers that meet the profile that companies are looking for. This increases the attractiveness and relevance of sport activities from a commercial point of view. Possible directions of future research could approach what kind of improvement could be made in the sense of a more judicious use of public resources. As for private funding of sports activities, researching what other marketing or CSR activities, besides sponsorship, could help achieve the goals set.

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DIFFICULTIES IN DETECTING AND MEASURING CORRUPTION AND FRAUD IN THE USE OF PUBLIC FINANCIAL RESOURCES

BOLOȘ Corina, HERCZEG Lorant
University of Oradea, Doctoral School of Economic Sciences, Oradea, Romania
boloscorina@gmail.com, lorantherczeg1984@gmail.com

Abstract: *In this article we will analyze the facts of fraud and corruption in the use of public financial resources, taking into account the mechanisms to combat these phenomena that cannot be treated in the form of generally valid templates given the continuous development and the existing scale in Romania and the European Union. Countries with strong institutions and functioning democracies are often at the top of the corruption perception index.*

Keywords: fraud, corruption,public procurement, contracts, public institutions, anti-corruption measures

JEL classification: D73

1. Introduction

Corruption in public administration is a factor undermining fundamental values, human rights and the rule of law. The factors of corruption can be political, economic and social in nature, and are implicitly linked to the level of economic development of countries. The main factors leading to corruption are the immorality of public officials, the desire to get rich, bureaucracy, low salaries, legislative loopholes/permissive legislation, the level of education and the collective behavior established in the institution.

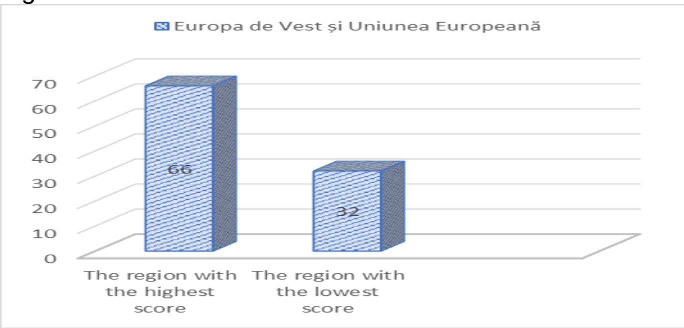
2. Fraud indicators in public procurement consist of the following characteristics:

The main difficulties in detecting and measuring corruption and fraud in the use of public financial resources are due to the subjective, often self-interested, application of legal provisions, given the enormous volume of legislation leading to even more ambiguities and contradictions; the permissiveness of the entire body of legislation leading to subjective interpretations by officials; underdeveloped procedures within institutions; the appointment of poorly trained, vulnerable, corruptible and criminally capable persons to leadership positions in order to keep their positions;

3.Dimensions of fraud and corruption

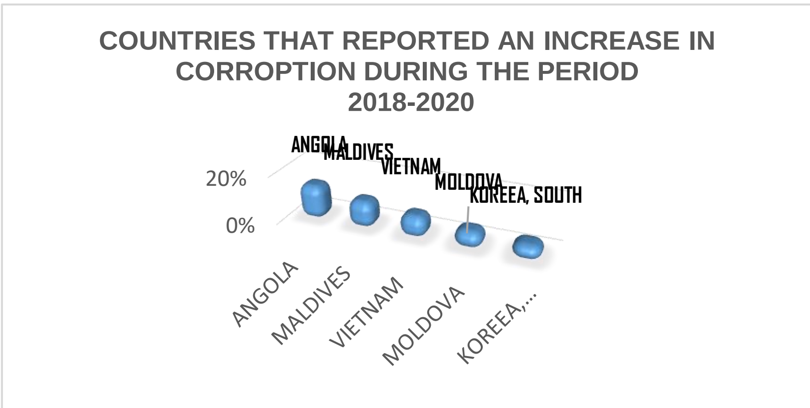
According to data from Transparency International Romania 2022, which shows that the scale of corruption is enormous globally. The index that ranks the level of corruption analyzes 13 independent data sources and uses a scale from zero to 100, where zero means highly corrupt and 100 means clean. Countries with strong institutions and functioning democracies often top the index, on the other hand,

countries experiencing conflict or where basic personal and political freedoms and personal liberties are extremely limited tend to score the lowest.
Figure 1



Source: created by the author based on information available on the website *https://www.transparency.org.ro*

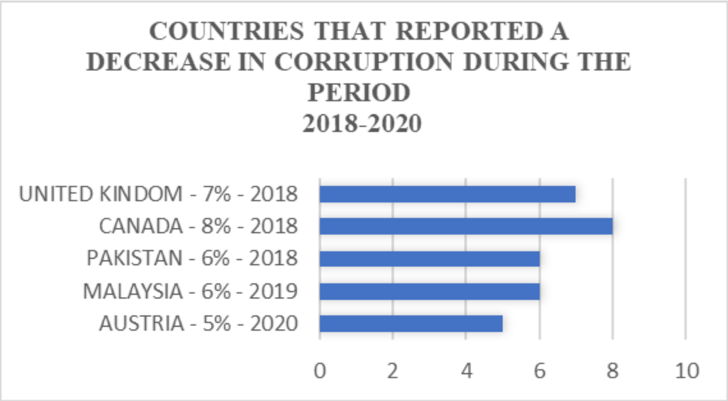
According to the CPI (Transparency International Romania) over the last five years, only eight countries have seen a significant increase, improving their scores, while 10 countries have significantly decreased, including high-ranking countries such as Austria, Luxembourg and the United States. United Kingdom. The remainder (90 percent of countries) saw corruption levels stagnate.
Changes in CPI score (Transparency International Romania):
The number of countries on which the underlying data sources broadly agree that they have improved or declined over the 2012-2021 period for all 180 countries with available data.
The countries that, according to Transparency International Romania databases, reported an increase or decrease in the corruption rate over the period 2018-2022 are those in Figure 2:



Source: created by the author based on information available on the website *https://www.transparency.org.ro*
Countries experiencing conflict or where basic personal and political fundamental and personal freedoms are extremely limited tend to score the lowest.

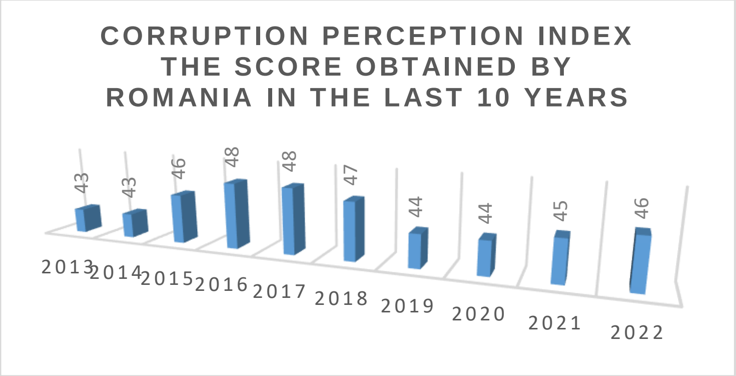
With the highest score in terms of increase in corruption at country level is Angola with 14%, followed by Maldives with a score of 11%, Vietnam 9% followed by Moldova 7% and South Korea 6%.

Figure 3:



Source: created by the author based on information available on the website https://www.transparency.org.ro

In Figure 3 we find the corruption perception index over the last 10 years and we can unfortunately observe the continuous upward trend from 2020 onwards.
Countries with strong institutions and functioning democracies are often at the top of the index. Canada tops the rankings with a better score, United Kingdom and Austria follow closely with a score of 7% and 5%, Pakistan and Malaysia complete the decrease in corruption during the period 2018-2020 with a score of 6%.



Source: created by the author based on information available on the website https://www.transparency.org.ro

The CPI (Transparency International Romania) 2022 shows that the scale of corruption is enormous: globally, the average score remains unchanged at 43 out of 100 for the eleventh consecutive year, and more than two-thirds of countries (68%)

have a score below 50. The index ranks 180 countries and territories according to their reported perceptions of corruption levels in the public sector, according to experts and business people. It is based on 13 independent data sources and uses a scale from zero to 100, where zero is very corrupt and 100 is very clean.

4. Conclusion

Corruption and fraud are ancient phenomena that have been repressed by the application of harsh measures and punishments to prevent and combat them, but this phenomenon has not only survived but has also developed steadily and progressively, manifesting itself in different forms, from petty corruption encountered in the daily experiences of the population in the fields of health, police, education, public administration, etc. to systemic corruption that is rooted as a way of functioning of public systems and up to political corruption.

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EUROPEAN STRUCTURAL AND INVESTMENT FUNDS INFLUENCES ON HEALTH INFRASTRUCTURE IN THE EUROPEAN UNION

Oana-Laura Nicula, Marius-Florin Moș
Ph.D. students, Doctoral School of Economic Sciences, University of Oradea, Oradea, Romania
oananicula@gmail.com
mosmarius@yaho.com

Abstract: *The European Structural and Investment Funds (ESIF) have played a significant role in improving health systems across the European Union (EU) during the 2014-2020 programming period. These funds, which include the European Regional Development Fund (ERDF) and the European Social Fund (ESF), are designed to promote economic cohesion and enhance public services, including healthcare. The impact of ERDF on health systems can be analysed through various dimensions, including funding allocation, health system performance, and the integration of health policies across member states. The present paper attempts to analyse health infrastructure allocation through the European Regional Development Fund in the programming period 2014-2020. Source: https://cohesiondata.ec.europa.eu/*

Keywords: Healthcare funding, ESIF, ERDF, Health infrastructure

JEL classification: H51, I15, I18

1. Introduction

The distribution of European Structural and Investment Funds (ESIF) during the 2014-2020 programming period has been a significant aspect of the European Union's regional development strategy. The ESIF encompasses various funds, including the European Regional Development Fund (ERDF) and the European Social Fund (ESF), aimed at reducing disparities between regions and promoting economic development across member states. This period witnessed a notable allocation of funds, with specific emphasis on cohesion policies that aimed to support less developed regions, particularly in Central and Eastern Europe.

During the 2014-2020 period, the planned allocation for ESIF was approximately €351 billion, with a substantial portion directed towards the EU-13 countries (newer member states) that have historically received less funding compared to the EU-15 (older member states) (Gallo et al., 2020). This uneven distribution reflects broader economic inequalities within the EU, which the Cohesion Policy aims to address (Jovančević et al., 2015).

Health spending accounts for almost 10% of the GDP in Europe with those people employed in health-related fields accounting for 15% of the European workforce.

The European Regional Development Fund (ERDF) is a component of ESIF funds and has been a significant source of funding for health infrastructure projects within the European Union during the 2014-2020 programming period. This funding is essential for addressing regional disparities in health services, enhancing healthcare access, and improving overall public health outcomes across member states. It also aimed to reduce inequalities in health access, particularly in rural and underserved areas.

3. Literature review

One of the primary ways in which ESIF has improved health systems is through targeted funding aimed at enhancing healthcare infrastructure and services. For instance, investments from the ESIF have been directed towards upgrading healthcare facilities, improving access to medical services, and supporting health-related research initiatives. This is particularly evident in less developed regions, where the funds have been crucial in bridging the gap in healthcare access and quality compared to more affluent areas (Bachtler & Méndez, 2020). However, studies indicate that there remains a significant disparity in the allocation of healthcare research funds, with EU-15 countries receiving a disproportionate share compared to EU-13 countries, which may hinder equitable healthcare improvements across the Union (Kaló et al., 2019).

Moreover, the ESIF has facilitated the Europeanization of health systems, promoting the adoption of best practices and standards across member states. This process has been characterized by a "discursive transformation" in health policy, where public health expenditures are increasingly framed as essential for economic growth and efficiency (Baeten & Vanhercke, 2017). The EU's emphasis on cost-effectiveness has led to a focus on health system performance assessment, which aims to enhance transparency and accountability in healthcare delivery (Perić et al., 2017). By fostering a culture of performance evaluation, the ESIF has encouraged member states to adopt innovative practices and improve health outcomes, although the effectiveness of these measures varies significantly across different regions (Azzopardi-Muscat et al., 2016).

Furthermore, the ESIF has supported initiatives aimed at addressing public health challenges, such as the COVID-19 pandemic. The EU's financial assistance has been instrumental in strengthening health systems' resilience, particularly in the Western Balkans, where the funds have helped mitigate the health impacts of the crisis (Shehaj, 2020). This highlights the role of ESIF not only in immediate health system improvements but also in enhancing long-term preparedness for public health emergencies.

Despite these advancements, challenges remain in the effective implementation and monitoring of ESIF-funded health initiatives. The complexity of EU governance and the varying capacities of member states to utilize these funds effectively can lead to inefficiencies and suboptimal outcomes (Breidenbach et al., 2018). Additionally, the political context and domestic resistance to EU influence in national health policies can complicate the integration of EU health objectives with local needs (Azzopardi-Muscat et al., 2016).

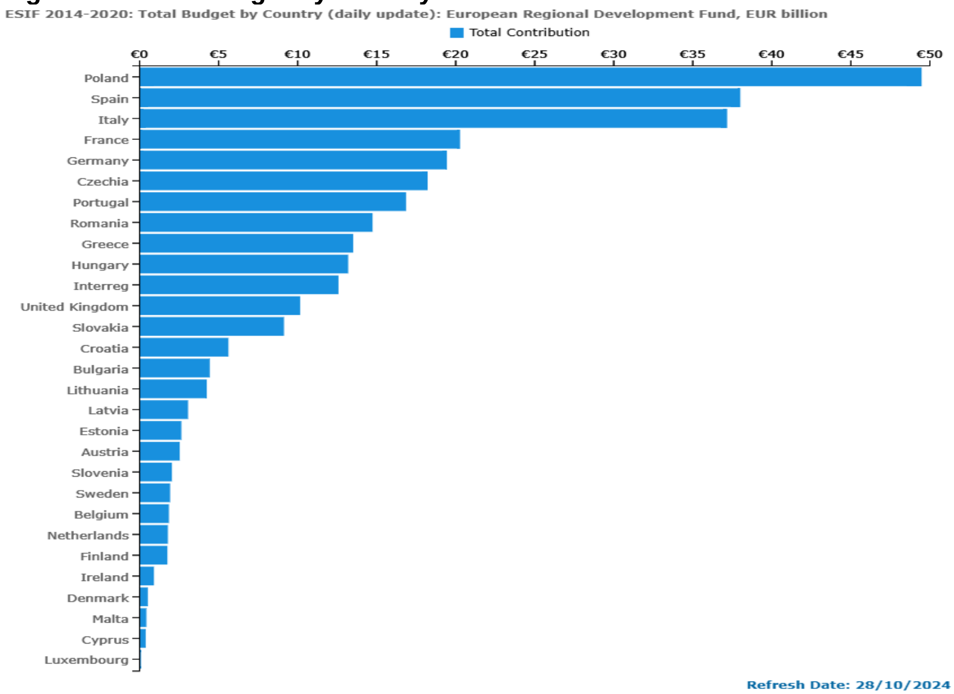
The strategic alignment of ERDF funding with the EU's cohesion policy underscores its importance in fostering sustainable health improvements and addressing regional disparities.

The effectiveness of ERDF funding in health infrastructure is closely linked to the administrative capacity of member states. Studies have shown that regions with stronger governance and administrative capabilities are better positioned to absorb EU funds effectively (Încalţărău et al., 2020). This highlights the importance of not only providing financial resources but also ensuring that member states have the necessary frameworks and capacities to implement health infrastructure projects successfully.
The main data analysed in this paper was extracted from the European Commission's Cohesion Open Data Platform (https://data.europa.eu/).

3. Methodology

The European Regional Development Fund (ERDF) is financially the largest fund, covering all countries and investing under all eleven European Structural and Investment Funds (ESIF) thematic objectives. It has a strong focus on 4 key priority areas: Research and Innovation, Digital Economy, SME Competitiveness and Low Carbon Economy. The ERDF also finances Interreg – cross-border, transnational and interregional co-operation under the Territorial Co-operation objective.
The Cohesion Fund is available to 15 EU countries - Bulgaria, Croatia, Cyprus, Czechia, Estonia, Greece, Hungary, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Slovakia and Slovenia. Its funding is allocated to trans-European transport networks and to projects falling under EU environmental priorities.

Figure 1: ERDF budget by country 2014-2020



Source: https://cohesiondata.ec.europa.eu/dataset/ESIF-Regional-Policy-budget-by-country-2014-2020/fift-a67j

The target of this analysis is to put an emphasis on the ERDF allocations for health infrastructure in the 2014-2020 programming period and especially compare the more developed EU-15 countries to the newest EU-13 members that have significantly struggled to catch-up.
The member states that had the biggest allocation through ERDF were Poland (over 42 Billion EUR), Spain (around 29 Billion EUR), Italy (27 Billion EUR). In the top 10 member states after the amount allocated only 4 states are from the EU-13 (Poland, Czechia, Romania and Hungary)

Table 2: 2014-2020 ERDF Health allocations

COUNTRY	2016-2019	2020-2023	TOTAL
LESS DEVELOPED			
Poland	7,4 B EUR	10,9 B EUR	18,3 B EUR
Romania	1,4 B EUR	4,5 B EUR	5,9 B EUR
Czechia	1,2 B EUR	3,4 B EUR	4,6 B EUR
Slovakia	1,2 B EUR	2,3 B EUR	3,5 B EUR
Hungary	1,1 B EUR	1,6 B EUR	2,7 B EUR
Latvia	608 M EUR	970 M EUR	1,57 B EUR
Lithuania	671 M EUR	840 M EUR	1,51 B EUR
Croatia	600 M EUR	796 M EUR	1,39 B EUR
Estonia	590 M EUR	720 M EUR	1,31 B EUR
Bulgaria	284 M EUR	543 M EUR	827 M EUR
Malta	103 M EUR	147 M EUR	250 M EUR
Cyprus	51 M EUR	182 M EUR	233 M EUR
Slovenia	-	22 M EUR	22 M EUR
MORE DEVELOPED			
Spain	2,08 B EUR	25,3 B EUR	27,38 B EUR
Italy	1,04 B EUR	3,84 B EUR	4,88 B EUR
Portugal	1,03 B EUR	2,24 B EUR	3,27 B EUR
France	500 M EUR	1,90 B EUR	2,40 B EUR
Greece	580 M EUR	722 M EUR	1,3 B EUR
Ireland	-	1,21 B EUR	1,21 B EUR
Germany	208 M EUR	417 M EUR	625 M EUR
Belgium	12,66 M EUR	119 M EUR	131,66 M EUR
United Kingdom	-	123 M EUR	123 M EUR
Sweden	27,36 M EUR	-	27,36 M EUR
Finland	9.52 M EUR	12,73 M EUR	22,25 M EUR
Netherlands	-	6 M EUR	6 M EUR
Luxembourg	-	103,2 M EUR	103,2 M EUR

Source: https://cohesiondata.ec.europa.eu/2014-2020/2014-2020-EU-cohesion-policy-ERDF-ESF-health-alloc/48zj-4wmc

The platform developed by the EU Commission allows various data interrogation, therefore the above table is meant to show how the health infrastructure was allocated between member states.
It is also important to take into account the fact that this programming period also encountered the particular situation of the COVID-19 Pandemic. In this respect, the EU Commission proposed additional allocations as showed in the columns above covering the 2020-2023 period.
The less developed or in transition member states had a total allocation of over 40 billion Euro for health infrastructure investments out of which 26,8 billion Euro were allocated for strengthening the response to the COVID-19 pandemic.
The more developed member states had a total allocation of approximatively 50,3 billion Euro for health infrastructure investments, out of which around 36 billion Euro were allocated to ensure a proper response to the pandemic.
Some member states have detached themselves from the others having the administrative capacity to manage and absorb large amounts from the allocated ERDF, relevant for the Eastern European countries being Poland.

3. Conclusion

In conclusion, the European Structural and Investment Funds have significantly contributed to the improvement of health systems in the EU by providing essential funding, promoting best practices, and enhancing resilience against public health threats. However, disparities in funding allocation and the challenges of governance and implementation continue to pose obstacles to achieving equitable health outcomes across the Union.
As an example of good practices in absorbing ERDF and ESIF funds, not only from the health sector, Poland is the member state to observe and further analyse.

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FINANCIAL INSTITUTIONS, FINANCIAL MARKETS AND ECONOMIC GROWTH: A PANEL ANALYSIS OF THE EUROPEAN UNION COUNTRIES

Teodora PALCAU
Department of Economics, Faculty of Economics and Business Administration, Babes-Bolyai University, Cluj-Napoca, Romania
teodora.palcau@econ.ubbcluj.ro

Abstract: *This study applies the Generalized Method of Moments (GMM) estimation and Granger causality tests within a dynamic panel data framework, to examine the relationship between financial sector and economic growth in 27 European Union (EU) countries, during 1990-2019. Using the recently developed Financial Development Index from the International Monetary Fund, we address the following question: How does the impact of financial development on economic growth vary across the pre-crisis, crisis, and post-crisis time periods in the European Union countries? The results confirm a positive relationship between finance and economic expansion, but there are some changes of magnitude over the analysed period. We also found evidence of Granger causality.*

Keywords: economic growth; financial development; panel; GMM.

JEL classification: F43; E44; G15; G21.

1. Introduction

As countries become members of the European Union, they experience liberalization of the financial sector and gain access to the single market of financial services. While being a complex and interconnected economic and financial system, European Union includes one of the largest monetary unions in the world, known as the Eurozone (European Commission, 2023). Therefore, it is easy to recognize this financial system's unique structure, which also contains a large number of monetary and non-monetary financial organizations. The need of a deeper integration of the banking system was acknowledged after the financial crisis from 2008, and the so-called 'Banking Union' was initiated (European Comission, 2024a). Another initiative, namely 'Capital Markets Union' (CMU), aims to support a single market for capital, so consumers, investors and companies could benefit from investments and savings flowing across the European Union (European Comission, 2024b). A substantial part of the literature has focused on the relationship between the financial sector and economic growth, and it is mainly agreed that there are two mechanisms that drive this relationship: capital accumulation and productivity growth. But a main challange remains to assess simultaneously the intermediary roles of both financial institutions and financial markets. Another aspect is to empirically observe the variations among different time spans, during crisis periods or in times of economic recovery. The aim of this paper is to empirically investigate the finance-growth nexus in 27 European Union countries by employing the extensive *Financial Development Index* as an indicator for the financial sector; it combines 20 variables to evaluate depth, access and efficiency of financial institutions, and financial markets as well (Svirydzenka, 2016). Additionally, we address the following question: *How does the impact of financial development on economic growth vary across the pre-crisis, crisis, and post-crisis time periods in the European Union countries?*

2. Literature review

The relationship between finance and growth started to present interest since decades ago, and Bagehot (1873) made one of the first contributions to this field, recognizing the importance of the financial system. Patrick (1966) underlined the importance of the financial system overall, the financial institutions and the particular role of financial innovation, when considering emerging and underdeveloped countries. Pagano (1993) sustained the importance of existing policies in terms of developing the financial markets, but also in terms of macroeconomic stability. During the 1980s and 1990s, a new methodology, namely the panel data technique, started to gain territory in the empirical research area. Until then, methods like conceptual analysis and cross-country regressions were mostly employed. Part of the popular early explanations and pieces of evidence on the relevance of using the Generalized Method of Moments (GMM) estimation is correlated with the work of some widely-recognized authors (Arellano & Bond, 1991; Arellano & Bover, 1995; Blundell & Bond, 1998). The banking sector's significance in 28 European Union countries' growth was acknowledged by Ferreira (2017), sustaining that banking institutions which can ensure high levels of efficiency in terms of functioning, contribute to economic growth. The empirical study focuses on the changes during pre-crisis years versus post-crisis years, over the period 1998-2012. The conclusions by applying GMM estimation include that, the decrease in the quality of the bank assets could negatively impact growth rate of the gross domestic product (GDP). We take further the author's work and contribute to the specialised literature by taking into account a comprehensive view of the financial sector, assessing both financial institutions' and financial markets' development. This study also contributes by examining the differential effects of financial development on economic growth during pre-crisis, crisis, and post-crisis periods. Moreover, the paper provides updated evidence on the finance-growth causal relationship, particularly within the unique financial architecture of the European Union.

3. Methodology

We are focusing on the countries that are part of the European Union as of 2024. GDP per capita growth is the dependent variable in our model as a measure for economic growth, collected from the World Development Indicators Database (World Bank, 2024). To capture the dynamic character of economic growth, the model also incorporates previous year's GDP per capita growth rate. The Financial Development Index is used as a proxy for financial development (International Monetary Fund, 2024). It takes into consideration 20 variables for depth, access and efficiency of the financial institutions, and financial markets (Svirydzenka, 2016). Trade openness is included in the model, in order to assess the robustness of the results (World Bank, 2024). All lagged variables are used as instruments to control endogeneity. As we take into consideration a large period of 30 years, including the years of the Global Financial Crisis, which debuted in 2007 as a subprime mortgage crisis, we believe that, for a panel analysis, it is crucial to pay greater attention to these years. The period of a crisis has much more power to determine the sign and the strength of the finance-growth relationship (Asteriou and Spanos, 2019). Therefore, three sub-panels are constructed to observe, separately, the relationship between financial development and economic growth. For unbalanced dynamic panels with short time periods and a large number of observations, the GMM approach stands out as being suitable (Arellano & Bond, 1991; Arellano & Bover, 1995; Blundell & Bond, 1998), as long as the GMM estimator is efficient and the used instruments are robust (Bond et. al., 2001). Therefore, we conduct an analysis to evaluate GMM estimators. As we assess the necessity to use the System GMM estimator, additionally to the equation that captures the level relationships among variables, we add the first-difference equation. The Orthogonal Deviations transformation addresses endogeneity by orthogonalizing the used instruments. J-Statistic Test is then applied to assess the overall validity of the model. Also, Pairwise Granger causality tests are used to assess the causal relationship between financial development and economic growth (Granger, 1988). The panel-level Granger causality test is a mainly used approach in the specific literature, as it captures the average effect of one variable's predictibility on another, across the entire panel.

4. Results

For the pre-crisis period (1990-2007), the empirical results indicate a positive influence of the lagged dependent variable (representing the past value of the GDP per capita growth), as well as significant impact of the financial proxy and trade openness on economic growth. The coefficient for financial development is lower compared to the other studied periods, but it remains statistically significant. We consider that the results reflect very well the economic landscape after the collapse of communism in Eastern Europe countries. These countries made the shift from centrally planned to market-oriented economies and attempted to synchronize their policies with the demands and standards of the European Union. The infrastructure for a high impact of finance on growth might not have been established until later. This, among with limited capital markets activity in most of the European countries by that time, and early stages of banking sector development, are factors that sustain further the results. We also found evidence of the presence of bi-directional Granger causality between financial development and economic growth. During the crisis years (2008-2014), the results support the presence of a positive impact of the financial sector development on economic growth, but there is evidence of a negative influence from the previous year's GDP per capita growth rate, as expected. Numerous factors, such as the type and intensity of a crisis, the country's economic structure, the policies implemented during the crisis, and the overall connections with the global economy, can affect how quickly a country adjusts to a steady state of economic growth during that crisis. We found only uni-directional Granger causality between finance and growth for the crisis-affected years. Furthermore, the empirical results for the post-crisis period (2015-2019) show that the negative influence of the prior GDP per capita growth rate persists, but financial development positively and statistically impacts growth. In fact, during these years the coefficient of the financial development indicator is the highest. Different policy measures were promoted by governments and central banks, including the European Central Bank, in order to mitigate the effects of the crisis and to promote economic recovery. These measures (including fiscal stimulus, banking reforms, and monetary easing) could have had an impact on the relationship between financial development and economic growth. The significant changes in financial regulation and supervision promoted by the European Union policy contributed to the stability of the finance sector, and in the long-term, to growth. There is also empirical evidence of the presence of Granger causality between finance and growth.

5. Conclusion

The empirical findings support the hypothesis of a positive relationship between financial development and economic growth in 27 European Union countries, there is also evidence of Granger causality between finance and growth, but we find some differences in terms of magnitude during the studied time spans. The highest level of the financial development coefficient is during the period 2015-2019, the post-crisis years. Therefore, the impact of financial development on growth varies according to the economic context. European Union policymakers might consider to continue supporting the financial sector development overall, in terms of banking, capital markets, and insurance institutions, and to facilitate access to different financial instruments. Fostering diversified sources of funding could sustain further economic growth in future downturns. Thus, we found the answer to our addressed question, *How does the impact of financial development on economic growth vary across the pre-crisis, crisis, and post-crisis time periods in the European Union countries?* A further question arises here, as the level of financial development that causes economic growth could be also investigated, through a threshold dynamic panel approach, which we intend to incorporate in our future research.

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TRANSFORMATION OF INTERNATIONAL BANKING WITHIN A MULTIPLE CRISES CONTEXT

Dan Costin Nitescu, Cristian Marius Anghel

Doctoral School of Finance, Faculty of Finance and Banking, Academy of Economic Studies, Bucharest, Romania

E-mails: dan.nitescu@fin.ase.ro, E-mail: cristian.anghel10@gmail.com

Abstract: *This research aims to identify the transformations that have taken place in the international banking system, over several periods of crisis. The first part of the research presents the post-crisis financial contexts as well as the interdependencies between the main macroeconomic indicators used. The second part presents the Autoregressive Panel Vector methodology used to highlight the interdependencies between macroeconomic indicators important for the banking system (lending interest rate, non-performing loans, exchange rate, unemployment). The sample analyzed comprises a selection of 20 countries representing a major percentage of global GDP-(53%). The third part contains the results of the research together with the author's conclusions and final remarks. The research concludes with the references section.*

Keywords: Financial crisis; credit interest rate; unemployment; exchange rate; nonperforming loans.

JEL classification: G21; E4; E5; J6

1. Introduction

As the banking sector is one of the most important channels for financing economies, the financial crises of the last 15 years, starting with the global financial crisis, the pandemic crisis and continuing with the Ukraine war, have impacted and transformed the global banking system.

According to Cerutti et al., (2017), since the global financial crisis in 2009, the stability of financial markets has become an essential concern for policymakers and financiers. Also,with the end of the covid 19 pandemic, the demand has outstripped supply, generating inflation, which has been greatly exacerbated by the impact of covid 19 globally.

Shortly after the end of the Covid 19 pandemic and the beginning of its impact on inflation, (Kammer et al., 2023) the outbreak of the Russian-generated war in Ukraine also causes geopolitical risks to increase globally and putting severe pressure on the global economy, generating slowing economic growth and accelerating inflation.

Also according to the authors Stiglitz (2018), Borio et al.,(2017), (Brunnermeier and Koby, 2016), loosening monetary policy for a long period of time with too low interest rates leads to a reduction in interest income which may prevent the transmission of monetary policy.

Estimating the impact of exogenous shocks of changes induced by non-performing loans (NPLs) and the other analyzed variables on loan interest rates and bank lending, respectively, shows that in the short term, the level of NPLs will increase as a result of the economic situation at that time, regardless of whether the interest rate is lower during the financial crisis, (Bahruddin and Masih, 2018).

The ability of European banks to finance real economies has been significantly affected by the volume of non-performing loans held in their portfolios. In the medium and long term, the level of NPLs does not become proportional to the level of lending and interest rates offered by banks, compared to the research in the field (Bahruddin and Masih, 2018), Badar et al., (2013), (Demertzis and Viegi, 2021), (Nitescu and Anghel, 2023).

The development and implementation of policies to combat non-performing loans, improved supervision and the development of new mechanisms and tools have been the monetary authorities' response to the problem of non-performing loans.

2. Methodologies used for the quantitative study

Table 1: (ARDL) Test

Dep. Va. D(LIR)				
Variab.	**Coeff.**	**Std. Err**	**t-Stat.**	**Pr.**
L –R Eq.				
D(NPL)	0.081307	0.004106	19.80143	0.000000
RERI	0.024229	0.001622	14.93562	0.000000
D(UNEMP)	-0.544614	0.077277	-7.04755	0.000000
S-R Eq.				
COIN.01	-0.327385	0.091599	-3.57412	0.0006
D(NPL,2)	-0.021674	0.00318	-6.8155	0.0000
D(RERI)	-0.006755	0.00985	-0.68577	0.4949
D(UNEMP,2)	0.083684	0.12047	0.694647	0.4894
FFI	0.032754	0.027892	1.174298	0.2439
COV_19	-0.602938	0.464335	-1.2985	0.198
Obs - 180				
RMSE	1.024315	MDV		0.046092
S.D. dep. var	2.085182	S.E. Reg		1.650833
Ak.I.C.	-0.125619	Ssr		209.8442
SchC	1.902846	L.l.		135.5619
H-Q C	0.69527			
A.R.D.L.(1; 1; 1; 1)				

Primary source: Own calculation for data from W.B. and T.G.E.

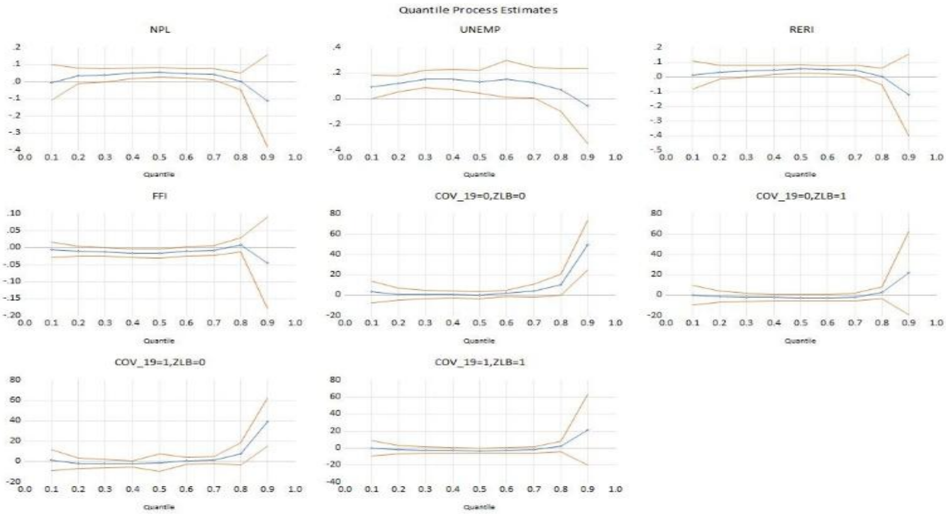

Figure 1: Quant. Proc Est.
Main Source: Computation. derived from data extracted W.B. and TGE databases.

3. Conclusions

The results of the study indicate that monetary policy together with policymakers plays a dominant role in controlling the loan interest rate, the volume of NPLs and the unemployment rate in the countries analyzed. Thus, reducing the level of NPLs can be done by reducing the interest rate on loans in each country, by trading NPLs on secondary markets, by carefully selecting clients and by improving credit quality management.

The reaction of global stock markets to the Ukrainian war suggests that it was interpreted by investors as very important news. This is different from the global financial crisis or the COVID-19 pandemic crisis, where there was a delayed reaction. Measures of the duration of the crisis suggest the severity of the Russian war in Ukraine was mitigated compared to that of the global financial crisis or COVID-19.

Prolonged periods with low interest rates do not contribute to increasing savings and stimulate investment. Furthermore, the monetary policies that have been used, together with government liquidity support programs during the pandemic crisis, have led to superior levels of inflation at the end of the period analyzed. The struggle to bring down inflation has led to a speedy rise in interest rates many times in the previous year, having very slow economic growth and which overlapped with the bankruptcy of three banking institutions.

The analyses highlight the significant part of the unemployment indicator, interlinked with all other variables, for countries selected in this study. Policies linked to renewable employment incentives need certain attention and must be considered alongside other policy tools. In this case, to make the transition to renewable energy, a series of measures are needed such as development for new positions, expansion of distinct capabilities, lifelong learning in agreement with the economic development, and briefing the majority of the employees.

Investing in ESG (environmental, social, and governance investing) together with high-tech innovations may contribute to the profitability of the banking industry, impacting economies, integrating innovation, providing support for encouraging workforce expansion, and playing the main starter in the adaptation to a green economy.

The main objectives for banking systems in the following years must include control mechanisms adjusted for the circumstances of a series of critical economic situations, in combination with the realization of renewable development aims and the conversion to a low-carbon economy besides the evolution of a regulatory framework (monetary, economic and fiscal) redesign for needs of each country. In this case, the primary focal point must be on the procyclical strategy in order that the banking system alongside each country's economy in the disturbed situations can come up with a suitable settlement to volatile occurrences and the absorbing impact generated by shocks.

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THE ECONOMIC FOOTPRINT OF ITALIAN CAPITAL IN ROMANIA: A FINANCIAL AND STRATEGIC PERSPECTIVE

Andreea-Roxana CROCNAN
Faculty of Economics and Business Administration, West University of Timișoara Timisoara, Romania
Andreea.crocnan99@e-uvt.ro

Abstract: This study evaluates the financial performance of Italian capital companies operating in Romania from 2012 to 2022, highlighting their significant contributions to economic growth and development in key sectors such as manufacturing, construction, and financial services. Through a detailed analysis using key financial indicators like Return on Equity (ROE) and Return on Capital Employed (ROCE), the research reveals steady revenue growth and profitability, particularly before the COVID-19 pandemic. However, challenges such as legislative instability and bureaucratic hurdles are noted as obstacles to sustained performance. The findings underscore the importance of strategic adaptability, investment in innovation, and workforce development for maintaining competitive advantages. Recommendations for Romanian authorities include enhancing regulatory frameworks and reducing bureaucratic barriers to maximize the benefits of foreign investments.

Keywords: Italian capital, financial analysis, Romania economy, foreign direct investment (FDI)

JEL classification: F21

1. Introduction

Foreign capital has played a crucial role in transforming Romania’s economy since the 1990s, contributing to infrastructure development and integration into the global market. Among the most significant foreign investors, Italian capital has had a profound impact on sectors such as manufacturing, construction, and financial services. This paper analyses the financial performance of companies with Italian capital from 2012 to 2022, highlighting their economic contributions and challenges faced. The study combines data from the case study in your report with additional scholarly sources to provide a comprehensive analysis.

2. Review of the scientific literature

Financial analysis is a complex process used to evaluate a company's financial health and performance. It involves key indicators such as Return on Equity (ROE), Return on Assets (ROA), and Return on Capital Employed (ROCE) to assess the efficiency of resource utilization (Palepu, Healy & Peek, 2016). For foreign-owned companies like those with Italian capital, financial management strategies must include external factors such as currency risks and regulatory changes (Wild, Subramanyam & Halsey, 2014).

Italian capital has made substantial contributions to Romania's economic development, bringing investments in technology and high-quality management practices. These companies have been instrumental in modernizing the manufacturing industry and boosting competitiveness on international markets (Federici, 2013). The integration of Italian investments has facilitated not only industrial growth but also knowledge transfer, enhancing the skills and expertise of the local workforce. This cross-cultural exchange has reinforced Romania's economic ties with Western Europe, creating opportunities for partnerships and export growth. Additionally, the capital influx has led to a more diversified economic structure, making Romania less dependent on traditional industries and more resilient to global economic shifts (Pellicelli, 2010). In the construction sector, Italian companies have participated in major infrastructure projects that have supported both urban and rural development (IMF, 2012).

3. Research methodology

The study examined 3,000 Italian-owned companies active in sectors such as manufacturing, construction, and financial services to evaluate financial performance from 2012 to 2022. These companies were chosen based on their size and economic relevance, offering a representative perspective on the impact of Italian investments.

3.1. Analysis results

Revenue and profitability: Throughout the analysed period, Italian-owned companies demonstrated steady revenue growth, supported by process modernization and quick adaptation to market demands. In 2019, before the impact of the COVID-19 pandemic, profitability peaked, with high net profit margins.

Table 1: The average revenue 2012-2022

Year	Revenue (USD)	The average revenue (USD)
2022	39.050.750.524	13.012.579
2021	31.203.126.919	10.737.483
2020	28.983.074	10.452.000
2019	26.333.528	10.227.000
2018	25.866.178	10.571.000
2017	22.878.834	9.666.000
2016	18.169.565	8.166.000
2015	18.331.614	8.614.000
2014	18.965.290	9.421.000
2013	4.314.984	24.517.000
2012	1.178.815	23.576.000

Source: Own processing from the Orbis database, 2024.

Performance Indicators: ROE varied across sectors, with an average of 12-15%, indicating efficient capital utilization by these companies. ROE, or Return on Equity, is an indicator that measures a company's profitability in relation to its shareholders' equity. (Brigham & Ehrhardt, 2021). ROCE is an indicator that measures the efficiency of a company's use of all capital invested in the business, including both equity and debt, it was particularly relevant for the construction sector, highlighting the ability to generate profits from invested capital (Penman, 2013).

Table 2: The average revenue 2012-2022

Year	ROE %
2012	-6,99
2013	33,40
2014	30,66
2015	31,48
2016	35,55
2017	32,68
2018	35,28
2019	34,70
2020	28,44
2021	40,11
2022	45,86

Source: Own processing from the Orbis database, 2024.

Efficient operations and optimal asset utilization can positively influence a company's profitability.

Table 3: **The average revenue 2012-2022**

Year	Total assets (USD)
2012	9.439.513.434
2013	24.172.796.014
2014	42.170.116.427
2015	41.464.166.924
2016	42.459.371.538
2017	52.856.311.906
2018	57.578.198.184
2019	61.293.341.717
2020	71.135.294.985
2021	74.531.619.908
2022	78.238.561.003

Source: Own processing from the Orbis database, 2024.

3.2. Determinants of performance and strategies for Improvement

Management adaptability: Companies with high innovation capacity were better positioned to face economic challenges and demonstrated greater resilience (Brynjolfsson & McAfee, 2014). Those investing in process digitization and supply chain optimization-maintained profit margins even during periods of instability.

Risks and challenges: Legislative instability and bureaucracy in Romania were significant obstacles reported by Italian companies, affecting expansion plans and increasing operational costs (Pellicelli, 2010). Additionally, currency fluctuations impacted import costs and profit margins (Gitman & Zutter, 2012).

Italian capital companies adopted various strategies to adapt to the Romanian economic environment. Effective approaches included strategic partnerships and investment in local workforce training, boosting productivity and enhancing management competencies (Nicolescu & Popa, 2017). Implementing advanced technologies and optimizing financial resource management were essential for maintaining competitiveness (Schilling, 2019).

5. Conclusion

The impact of Italian capital in Romania is evident through contributions to GDP growth, job creation, and infrastructure improvement. However, to maximize long-term benefits, Romanian authorities should enhance regulatory environments and reduce bureaucracy. Italian companies should continue investing in digitization and workforce development to maintain competitive advantages and adapt rapidly to market changes.

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ADOPTION OF DIGITAL SERVICES TAX: A COMPARATIVE ANALYSIS OF DST STRATEGIES ACROSS EUROPEAN COUNTRIES

Fuad Bahramov
Doctoral School of Economic Sciences, Faculty of Economic Sciences, University of Oradea, Oradea, Romania.
fuad.behremov.96@gmail.com

Abstract: *This paper presents a comparative analysis of the Digital Services Tax (DST) strategies adopted by various European countries because of challenges created by the digital economy. Global digital companies generate significant revenue without a substantial physical presence, several European governments have introduced DST to ensure fair tax contributions. This research investigates the objectives, variations, and outcomes of DST policies across Europe. Examination of these national strategies will allow us to assess the effectiveness of DST in generating revenue from digital activities and its implications for the digital services market, business strategies, and international tax policy. The results contribute to understanding of how DST can reduce the tax challenges of the digital economy. This study is particularly appropriate in context of fair digital taxation and the need for sophisticated strategies in an increasingly digitalized economic environment.*

Keywords: Digital Services Tax; European countries; multinational companies; international tax framework.

JEL classification: H20; H25.

Introduction

Digital platforms have become the important part of both human and business lives. Several countries started to introduce and propose taxes called the Digital Services Tax (DST) on revenues generated by global digital companies. It has already been adopted by several countries. The DST was applied on specific services, such as digital advertising, data hosting, and platform intermediation. The main purpose is to ensure that these companies contribute fair amount of tax revenues in the countries where they have operations. However, implementation of DST can bring not only benefits, but also different challenges, especially for businesses and consumers. DST may affect the operational costs of digital platforms, pricing strategies of international companies, and finally, the budget of consumers. This research investigates the effect of DST on the operational costs for digital platforms in European countries where DST has already implemented.

Digital services tax is the new type of tax, and it is anticipated that it will increase government budget. However, there are some challenges during the adoption of DST. That situation makes DST an important topic to investigate. The main objective of this study is to provide a detailed comparison of DST strategies implemented and proposed across Europe.

In conclusion, the DST represents a significant development in global taxation with the purpose that provide fair taxation of multinational digital companies in the countries in which they make revenues. Besides increasing government revenue and promoting tax fairness, its implementation can also make challenges for businesses and consumers. This study will provide a comparative analysis of DST strategies in European countries, and it will also examine both the benefits and difficulties associated with its adoption. Furthermore, the research emphasizes the importance of understanding DST's broader implications for EU integration and economic policy coordination in the digital era. The findings suggest that DST is a necessary shift in modernization of tax system, however the minimization of its effects on consumers and businesses should be considered for maximizing its potential to increase public revenues.

Theoretical framework

The digitalization of the global economy has launched significant debate regarding the taxation of digital services. Digital Services Tax (DST) policies have emerged as countries dealing with the need for a fair tax system which can collect revenue from global digital companies. Those companies realize operations without substantial physical presence in the markets where they generate profit. That situation was making challenges for tax administrations. The DST is a type of tax applied on gross revenue generated from different kinds of digital services such as streaming services, and digital advertising. This chapter examines the theoretical framework of DST, and it explores various study papers.

Aulia and Hambali (2022) analyses the evolution of DST regulations in various European countries. The study highlights that DSTs were designed to increase tax revenue. They argue that the DST must be carefully introduced to avoid double taxation and align with international tax standards. The paper analyses the development of DST regulations in several European countries and discusses the need for its implementation in Indonesia.

Other scholars compare DST with existing tax systems, particularly VAT, in context of its effectiveness and fairness. Zaytsev (2021) claims that DST aims to increase tax equity by targeting revenue earned by multinational digital companies. However, he questions the DST's effectiveness, because the expected increase in tax fairness may not fully materialize. The compatibility of DST with international trade agreements is also questioned in Pirlot's (2021) investigation. It evaluates the DST's alignment with World Trade Organization (WTO) law. Pirlot concludes that the legal arguments against DSTs based on WTO law are weak to prevent DST adoption. This finding shows DST's relative resilience within the current international legal framework.

The implementation of DST also brings a range of economic and political implications in international trade relations. Yue Dai (2020) explores that the Italian model DST faces issues such as trade tensions with U.S., privacy risks, and increase in costs of consumers. That study also advocates that the new tax is influencing not only the "tech giants", but also other companies.

Overall, all the study papers show that the DST will bring not only benefits, but also challenges at the same time.

Comparative approaches and different strategies for DST in European countries

During the expansion of digital economy, several European countries have already adopted DST and some of them are still waiting for global solution for its implementation. Some countries, such as France and Italy, have been early adopters of DST, while others have taken more suspicious approaches. This chapter explores the diverse strategies and policies adopted by European countries in implementing DST, comparing the key elements such as tax rates, revenue thresholds, and the specific digital activities which are base for taxation. Most DSTs have been suspended until 2025 due to ongoing negotiations related to the OECD's Pillar 1 proposal. This proposal was adopted by over 140 countries. The objective is to reform international tax rules by reallocating taxing rights to the country where consumption occurs, and it can eliminate the need for DSTs. The general situation for European countries is described in the following Table 1.

Table 1: The current situation for Digital services tax in Europe, 2024.

Country	Status	Year	Rate	Country Income Threshold	Global Income Threshold
EU Digital tax	Paused		3%	€50 million	€750 million
Austria	Implemented	2020	5%	€25 million	€750 million
Belgium	Paused		3%	€5 million	€750 million
Czech Republic	Proposed		5%	CZK 100 million	€750 million
Denmark	Implemented	2024	2%	-	-
France	Implemented	2019	3%	€25 million	€750 million
Greece	Implemented	2019	Nil	n/a	n/a
Hungary	Implemented	2019	7.5%	HUF 100 million	n/a
Italy	Implemented	2020	3%	€5.5 million	€750 million
Latvia	Paused		3%	-	€750 million
Norway	Paused		-	-	-
Poland	Implemented	2020	1.50%	-	-
Poland 2	Proposed		7%	-	-
Portugal	Implemented	2021	1.50%	-	-
Portugal 2	Proposed		7%	-	-
Slovenia	Proposed		-	-	-
Spain	Implemented	2021	3%	€3 million	€750 million
Turkey	Implemented	2020	7.50%	TRY 20 million	€750 million
UK	Implemented	2020	2%	£25 million	£500 million

Source: Author's representation based on: Caragher, J. (2024). Digital Services Taxes DST – global tracker. Retrieved from VATCalc. Available at https://www.vatcalc.com/global/digital-services-taxes-dst-global-tracker/ accessed on 02.11.2024.

Table 1 shows the status of DST across various European countries. It shows whether the tax has been implemented, proposed, or paused, and the year of implementation where applicable. The rates are very different among countries. The lowest indicators are observed in Poland and Portugal (1.5%), and the highest indicators are in Hungary and Turkey with 7.5%. Most countries have set thresholds that differ between domestic and global income. Many countries set a global revenue threshold of €750 million. There is no information about tax rates or thresholds in Greece, yet. The Czech Republic and Poland have higher rates proposed but not yet enacted.

DST differ significantly in their scope in each country. Obviously, some countries choose to focus on specific types of digital services while others adopt broader measures. For example, Austria and Hungary restrict their DST to online advertising revenues, a relatively narrow focus compared to other countries. In contrast, France has implemented DST which covers not only online advertising but also the provision of digital interfaces and the transmission of user data for advertising purposes. France's DST, at a rate of 3%, applies to companies with global revenues exceeding EUR 750 million and domestic revenues above EUR 25 million. Italy's DST also adopts a broad scope, taxing revenues from online advertising, digital interfaces, and user data transmissions. Italy is indicating that if the international negotiations led by the OECD do not lead to a consensus or a workable solution (Pillar one) for taxing digital companies, it may decide to maintain its current DST rather than eliminate it as previously planned.

Other countries, such as Denmark and Poland, focus their DSTs on more specific digital services. Denmark, which implemented its DST in 2024, imposes a 2% tax on revenues from on-demand audiovisual media services, with an additional 3% surcharge for companies that invest less than 5% of their Danish revenues in Danish content. This strategy aims to promote local content creation. Poland, on the other hand, applies a 1.5% DST to audiovisual media services and a 5% levy on advertising revenues.

Overall, European countries are at different stages in the implementation of DSTs. Austria, France, Italy, and Spain have fully implemented their DSTs. Other countries, such as Belgium and the Czech Republic, have proposed DSTs but have not yet passed or implemented them. Belgium initially introduced a DST proposal in 2019, but it was rejected. A revised proposal was reintroduced in 2020, though it has not yet been enacted. Several countries such as Latvia, Norway, and Slovakia, have announced intentions to introduce DSTs but they need to take significant legislative steps.

Conclusion

The comparative analysis reveals that while countries like France, Italy, and Spain have implemented various forms of DST, the strategies differ widely in terms of scope, rates, and revenue thresholds. These variations highlight the challenges governments face in balancing the need for fair tax contributions from digital companies. Moreover, many countries paused DST adoption because of the ongoing negotiations at the OECD level which has target to achieve a more coherent international tax framework.

In conclusion, the adoption of DST across European countries shows a significant evolution in context of taxing multinational digital firms, which often generate substantial revenue. However, the introduction of DSTs is not without challenges. The geopolitical tensions with the U.S., concerns about double taxation for multinational firms, and uncertainties related to the OECD's Pillar One negotiations complicate the adoption process. The findings suggest that while DSTs can enhance public revenue and promote equity in taxation, governments should also consider its adverse effects on market dynamics and international relations.

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THE FISCAL TAX CHALLENGES OF THE DIGITAL ECONOMY

Roxana Ciortin Gangoș
Doctoral School of Economic Studies, University of Oradea, Oradea, Romania
ciortingangos.roxana@student.uoradea.ro

Abstract: *Development of the digital economy has resulted in non-resident companies operating in market jurisdictions in fundamentally different manners today than at the time international tax rules were designed. This article is meant to provide an overview of the current state of play in the area of the possible reform of the international tax regime with the view of addressing the challenges raised by the digitalization of the economy. The paper also deals with another new notion that appeared and was debated in the context of the digitalization of the economy, namely the concept of "value creation". Value creation is increasingly based on knowledge and intangible assets. This trend has gained momentum with the development of the service sector, the rise in competition as a result of globalization and deregulation, and the impact of the digital revolution. Public authorities, states, the EU institutions and transnational and international bodies have a major role to play in regulating the multi-dimensional potential of global growth and defending against the problems inherent in these new, unavoidable processes. This article aims to highlight the main political, technological, institutional and regulatory characteristics and contradictions of the Digital Single Market from a global perspective, tracing its development over time and particularly analyzing the taxation of the digital economy.*

Keywords: digital economy; digitalization; tax challenges; permanent establishment; value creation

JEL classification: A13

1. Introduction

As highlighted in the BEPS Action 1 Report, the digital economy is not a sector of the economy per se but concerns the entire economy. This can be explained by the fact that the digital economy is the result of a transformative process brought by information and technology (ICT). Therefore, this phenomenon should be apprehended as a spectrum, rather than a specific business field, where traditional "brick-and-mortar" businesses are at one end, and highly digitalized models are at the other. Over the past decade, value creation has been increasingly based on knowledge and intangible assets. Despite the fact that there is no generally accepted definition or classification for the latter notion, there is overall consensus on three basic characteristics of such assets: they generate economic profit, they are not tangible and they may be appropriated, negotiated, traded, etc.

2.The international tax challenges of the digital economy

It is necessary to understand the new features of the digital economy and whether it has modified the way enterprises generate profits in order to adapt the current tax

system to this new era. To this end, the BEPS Action 1 Report highlighted six features that are key to the digital economy. They are: the mobility of intangibles, users and business functions; reliance on data; network effects; the use of multi-sided business models; tendency towards monopoly or oligopoly and volatility. While some of these characteristics mainly characterize the digitalization of business models from a macroeconomic perspective (for instance, this phenomenon leads towards monopolistic situations), other directly challenge international tax standards. In particular, mobility and the use of intangibles allow enterprises to generate profits in a market jurisdiction without physical or tangible nexus therein, which questions the concept of PE, whether constituted by a fixed place of business or through an agent. This results from the fact that the manner in which digitalized businesses operate differ from the ways of making business at the time of the design of international tax rules. In other words, it can be argued that the digital economy disrupts the traditional residence versus source balance when it comes to the taxation of non-resident enterprises (NRE) in the market jurisdiction. However, it seems that the digital economy raises more fundamental concerns, such as raising questions regarding the paradigm used to determine where economic activities are carried out and value is created for tax purposes, which is based on an analysis of the functions performed, assets used and risks assumed.
With the Base Erosion and Profit Shifting (BEPS) Project, the OECD and the G20 intends to fix the international tax system on the basis of coherence, substance and transparency with the policy objective of operating a shift from unilateralism to multilateralism.

3.Introducing a Digital PE concept

In particular, the options advanced by the OECD to tackle these issues rare: the amendment of the existing "permanent establishment" definition, the introduction of a Significant Economic Presence test (SEP), the application of a withholding tax on goods or services, the adoption of an equalization levy and a VAT solution. It is however worth mentioning that in both the 2014 Interim Report and the Final Report of Action 1, none of these options were recommended.
The profits of an enterprise are taxable in the State of residence of the enterprise, unless the latter carries on its activities in a Contracting State through a Permanent Establishment (PE) as defined by Article 5 of the OECD Model Tax Convention (MTC). Thus, when defining whether a non-resident enterprise has to pay taxes in a market jurisdiction, the PE concept of utmost importance.
It should be mentioned that, addition to the above jurisdictions, in fact, the most notable digital tax development in 2019 has been the introduction or planning of digital services taxes in several Countries, including many that are OECD members: Malaysia, Singapore, South Korea and, in Europe, notably: France and Austria, where the measures have already been enacted as well as other countries, such as Spain, Belgium, Czech Republic and the United Kingdom. The British experience would appear particularly notable, not only because it would overlay the already introduce diverted profits tax but also because it would constitute the first concrete application of the "user participation" conceptual framework outlined in the following section. Namely, the tax would be meant to be levied, at 2% rates on revenues derived from British users' creation of value for digital services businesses. All the

measures mentioned so far have been expressly labelled as “interim measures” by the concerned jurisdictions, in the sense that all jurisdictions have expressly mentioned their intention to withdraw the measures by means of a sunset clause once an international agreement on the taxation of the digitalized economy has been reached under the aegis of the BEPS Inclusive Framework.

4.Transfer pricing-based approaches

The latest policy brief released by the OECD in January 2019 introduced a marked emphasis on solutions based on a reform of transfer pricing rules either based on a reconsideration of a role of “user participation” or on the relevance of the deployment of “marketing intangibles”.

The overall objective and policy rationale of the “user participation” proposal is to identify whether there are significant sources or location-specific rent and, in the affirmative, attribute residual taxing rights to the jurisdiction in which they are established.

This goal gives the “user participation” proposal structurally narrow scope and application, which deviate from the current international tax rules on nexus and allocation only operates in respect of those activities in which the user actively contributes to value creation.

According to the “user participation” proposal, changes would affect social media platforms, search engines and online marketplaces, thus making this proposal the one with the strongest ring-fencing effect.

The “user participation” proposal can give rise to specific problems insofar as digital platforms can give rise to new sources of location-specific rents in a country that may differ from that in which the consumer is based. For this reason, giving greater taxing right to the jurisdiction of “user value creation” need not always mean expanding the taxing rights of the consumer jurisdiction, but to the rents arising from users residing in a given jurisdiction.

In this and other respects, the case for reallocating taxing rights based on location-specific rent must be distinguished from a case relying on “destination-based” apportionment, which would by contrast appear to be implicitly factored in by the marketing intangibles proposal. This perspective would effectively lead to a hybridization of the current system (which would be left in place for routine returns) and of a destination-based inspired approach which would come into play with regard to extra-returns arising from the deployment of marketing intangibles.

This trend has gained momentum with the development of the service sector, the rise in competition as a result of globalization and deregulation, and the impact of the digital transformation, which marks a paradigm shift in the long line of industrial revolutions. Although there is some divergence of opinion in the literature – some see the advent of digital technologies as the second machine age and the peak of the third industrial revolution (Brynjolfsson & McAfee, 2015) and others as a fourth revolution in its own right, leading to a merging of the physical, digital and biological worlds (Schwab, 2016) , experts agree that these new technologies have resulted in a radical metamorphosis of the economy and society (Calvino et al. 2018).

Digital wealth creation is strongly concentrated in the United States and China, which together hold 75% of all patents related to blockchain technologies, 50% of global spending on IoT, 75% of the cloud computing market and 90% of the market

capitalisation value of the world's 70 largest digital platforms. In order for Europe to stay in the game, 50 billion EUR investments per year is missing. (DigiWorld Yearbook, 2019).
In Figure 1 is illustrated the legislative status of digital services taxes in European OECD countries as of June 27, 2022

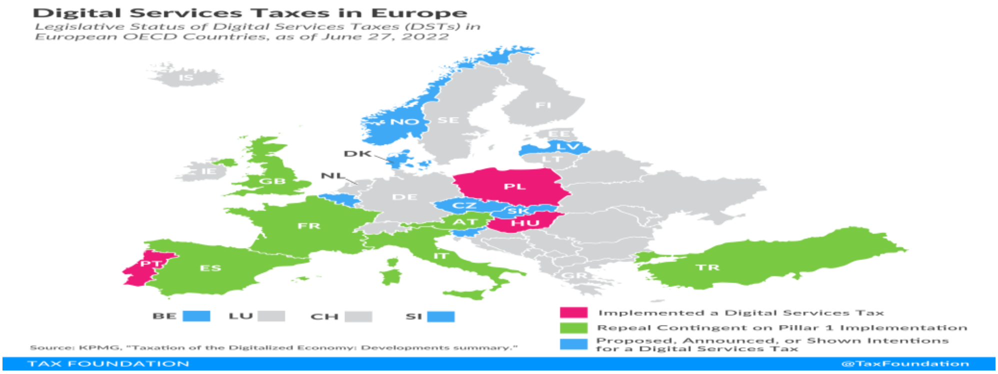

Figure 1: The digital services taxes in European OECD countries, June 27, 2022
Source: KPMG, Taxation of the digitalized economy
The European Commission is adopting a proactive approach by proposing a (new) interim tax for data services to ensure that those activities which are not currently taxed in an effective way will begin to generate immediate revenues for Member States (approximately EUR 5 billion annually). The aim is precisely to tax the digital giants - with total annual worldwide revenues of EUR 750 million and EU revenues of EUR 50 million - which benefit enormously from the ESM. The EU is envisaging a new 3 percent digital service tax applying to revenue from specific online services (such as creating marketplaces: digital intermediary activities which allow users to interact with other users and which can facilitate the sale of goods and services between them; selling advertising space), and transmitting collected user data.

4.Conclusions

The globalization of the digital economy is indicative of a changing multidimensional paradigm driven by a number of factors: the primacy of intangible assets in value creation; a growing transnational and international dimension in the production and consumption of goods and services; the transition from human labor to artificial intelligence; the increasing dominance of networks of stakeholders over individual players; the emergence of new forms of sharing, creation, collaboration and innovation; and the need to harmonize rules, standards and policies (including in the area of taxation) within a multilateral framework. Industry structures and business and investment models are being disrupted by new needs, innovations in products and services, changing cost.
The Digital Single Market is one of the main policy priorities of the European Commission, which aims to open up digital opportunities for people and businesses in a market of over 500 million EU consumers. To realize its potential, the Digital Single Market needs a modern and stable fiscal framework that fosters innovation, tackles market fragmentation and allows all actors to capitalize on new market dynamics in a fair and balanced manner.

Paradoxically, the digital economy continues to be governed by traditional taxation, which has proven to be incomplete, insufficient and a source of injustice. Within the applicable regulatory framework, digital companies are able to take advantage of some tax systems to minimize their taxation (tax planning), thereby gaining an undeniable comparative advantage and outperforming national companies. There is often a discrepancy between where value is created and where tax is payable on the corresponding income – as can be seen with the example of GAFAM. The criterion of physical presence clearly no longer applies to the digital economy.

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THE IMPORTANCE OF FINANCIAL REPORTING STATEMENTS IN HIGHER EDUCATION – BIBLIOMETRIC ANALYSIS

Paula-Paraschiva DRAGAN (married SPIRIDON)
Doctoral School of Economics and Business Administration, West University of Timisoara, Timisoara, Romania
e-mail: paula.dragan84@e-uvt.ro

Abstract: *This study explores the critical role of financial reporting statements in the public administration and higher education institutions, highlighting how these documents support institutional transparency, accountability, and informed decision-making. A bibliometric analysis of literature from the Web of Science database was conducted in the period 2014-2024, encompassing 998 relevant articles filtered by keywords such as "Management," "Public Administration," and "Educational Research." This analysis, supported by tools like World Art and Microsoft Office, underscores trends in financial reporting and accounting standards in the public education sector. Findings emphasize the importance of adopting International Public Sector Accounting Standards (IPSAS) to enhance consistency, comparability, and transparency in financial disclosures. Additionally, the study discusses how such standards can help mitigate management inefficiencies and support institutional sustainability. The bibliometric data further reveal significant interest in themes related to reforms, policy management, and performance evaluation in public sector institutions, underscoring the evolving landscape of financial accountability within higher education.*

Keywords: financial reporting statements, management, public administration, education educational research, universities institutions, higher education

JEL Classification: D 73, E 6, H 11, H 52, H 83.

1. Introduction

Financial reporting for the higher education institutions involves the preparation and dissemination of detailed financial statements that reflect the financial activities over a specific period. These reports typically include income statements, balance sheets, cash flow statements, and notes that provide deeper insights into financial decision-making and strategic allocations. For higher education institutions, these financial statements are not merely tools for compliance-they are vital documents that communicate the institution's priorities, financial strength, and accountability to various stakeholders, such as students, alumni, faculty, donors, and government entities.

The study aims to investigate the role of financial reporting statements within public administration and higher education institutions, focusing on their contributions to institutional transparency, accountability, and decision-making processes.

By examining 998 articles from the Web of Science database (2014-2024), the paper intends to identify trends and insights into financial reporting and accounting standards relevant to higher education and public administration.

The objectives include understanding how financial reporting disclosures and the implementation of established accounting standards can mitigate management inefficiencies and support sustainable operations within higher education institutions.

2. Literature review

Accounting can be defined as a complex set of concepts, methods and procedures that enable and support the preparation of financial and accounting information required by users to make informed decisions about an economic entity, which usually refers to an entity separately, at an enterprise (Hoggett et al., 2012).

As a set of techniques used in the specified fields, accounting is exercised in the theoretical framework built through a series of principles and practices that embrace logic. These principles of general acceptance lay the foundations of accounting as a profession and support the flexibility and dynamics of accounting practice (Riahi-Belkaoui, 2004). Accounting principles change in response to economic and social developments, user demands for more sophisticated financial information, advances in technology and knowledge, or political conditions. Regular re-examination of accounting principles in the light of the changing environment, information needs and values are essential to ensure and increase the usefulness of the financial information provided by accounting. Changes in the accounting principles card serve as a response and resolution to emerging accounting issues (Boateng, 2012).

In the literature, the matching principle works closely with the income principle to explain accrual accounting. Initially, accrual accounting referred to the process of aligning the financial results of business transactions or economic events over the period of their occurrence (Weygandt, Kimmel and Kieso, 2009).

To increase the relevance of financial reporting, the implementation of IPSAS for public institutions takes place which is built through accounting practices that are more standardized, accounting, other policies and the importance of complying with established standards to realizes the best result.

One of the major advantages of IPSAS implementation is transparency (Gomes et al., 2023). The information provided is particularly relevant and studies have shown the ability to eliminate mismanagement in accounting and financial reporting structures (Adamu & Ahmed, 2014). The principal purpose of IPSAS standards is to improve the information quality that is presented in the public sector financial reports taking in considerations the best accounting policies.

3. Research methodology

Bibliometrics is based on principles from bibliography and statistical bibliography. Bibliometric analyzes can encounter some difficulties due to the large volume of information that can increase rapidly in a short period, so that it is difficult to be able to cover all the structure of specific knowledge within the scope of a research area, the large amount of data requires a high volume of resources and time to perform a quality bibliometric analysis (Maria et al., 2023).

In this article, the bibliometric analysis was carried out based on the information extracted from the Web of Science, and the tools we used were the World Art and Microsoft Office programs. We started from the notion of financial reporting statements and the impact that financial statements have on the management of public administrations on the one hand and the impact on the management of universities institutions on the other. It was desired to carry out an analysis of the existing information in the specialized literature regarding the notion of financial reporting statements in universities institutions, by finding an area of intercorrelation with the existing scientific literature at the level of the Web of Science database. The bibliometric research is based on a systematic review of the scientific literature and several types of comparative bibliometric analyzes carried out on 998 scientific research articles that present some perspectives on the evolution of the financial reporting system and the progress made by public system accounting (Radu et al., 2021).

Using the existing scientific database in the Web of Science, a query was made using "financial reporting statements in universities institutions" as the main tag, thus resulting in a number of 10,154 articles containing this tag. Since we wanted to identify aspects at the level of the financial reporting statement's impact on management, public administration and at the level of education educational research, we used the following filters consecutively (table 1)

Table 1 **The filters used in the Web of Science when querying the database**

Filters applied	**Number of items after applying filters**
Articles	8304
Year publication 2014-2024	5884
WOS category, Management, Public administration, Education educational research	998

Source: Web of Science database (accessed on 31.10.2024)

4. Results

From the 998 articles selected, 780 refers to the management, 203 public administration and 26 to the education educational research.

Looking at figure number 1, I identified the words exported thought Web of Science from 998 articles, in the figure that I made with the word art software, the words with the highest frequency by character size are graphically highlighted.

Figure 1 ***Word cloud school processed Word Art***
Source: WOS database (accessed 31.10.2024) via https://wordart.com/

Qualitative analysis of the sample of articles was carried out using the word cloud of the elements contained in the article title and the author's keywords. The plus keywords analyzed in bibliometric research are as effective as the authors' keywords for analyzing the structure of knowledge in a particular scientific field.

Using the WordArt software, the first 20 words that have the biggest frequency in the analysis are: Report-3644, Financial-3213, Account-2216, Study-1680, Manage-1509, Audit-1425, Quality-1360, Earn-1248, Inform-1237, Find-1186, Govern-1122, Corporate-1091, Standard-992, Company-984, Disclosure-969, Internal-931, Value-897, Research-872, Effect-819, Results-819.

This analysis shows us that the scientific articles in the selection are oriented towards the analysis of reforms, policy management aspects and performances within the framework of public sector reforms.

5. Conclusions

The analysis highlights that the financial reporting statements are fundamental in promoting transparency, accountability, and strategic financial management within higher education institutions.

The bibliometric analysis reveals the high interest of the scientific community regarding the financial reporting statements for the management decision from public and educational institutions. We notice that out of the 998 articles resulting after the application of the filters, the most, 780 have as defining element the management of institutions.

The findings demonstrate that adherence to IPSAS fosters improved financial information quality, which is instrumental in mitigating mismanagement and fostering long-term financial sustainability in educational institutions. Furthermore, the data reveal a broad scholarly interest in the intersection of financial reporting with management, public administration, and educational research, signaling a growing recognition of financial transparency’s impact on policy and institutional performance.

We must bear in mind that a bibliometric analysis to be correct must also present the limits of the research. For this article I used data only from the Web of Science platform. If other databases had been analyzed, I could have had other results, but I chose the information from this database because it is the most representative for the articles that refer to financial reporting statements in higher education.

Another limitation was generated by the application of filters in Web of Science that excluded some scientific articles that might have had an impact on the analysis. In other scientific articles that will be written, I can expand the bibliometric data, to show other important aspects of financial reporting statements in higher education.

As future research topics, the implementation of IPSAS at the level of public institutions can be analyzed with an emphasis on the higher education segment in Romania, but also through comparisons and analyzes with the financial reporting systems of higher education institutions at the EU level.

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RISK-ADJUSTED EFFICIECNY OF FINANCIAL INSTITUTIONS

Danijel Petrović
University of Rijeka, Faculty of Tourism and Hospitality Management Naselje Ika, Primorska 46, Croatia HR – 51410 Opatija

dpetrovic@unipu.hr

Abstract: *In the field of economics, efficiency is characterized by the minimization of inputs (costs) and the maximization of outputs (profits). The efficiency of financial institutions, particularly banks and insurance companies, has been the subject of numerous empirical studies. This research contributes to the existing literature by providing a conceptual framework for estimating risk-adjusted efficiency. It outlines the non-parametric Data Envelopment Analysis (DEA) Benefit-of-Doubt (BoD) model, which is utilized for constructing composite indices and estimating efficiency. In contrast to prior studies that primarily assess efficiency through profitability measures, this research focuses on the application of efficiency ratios. The aim is to incorporate the effects of risk management activities on the efficiency of financial institutions. To accomplish this aim, the study proposes a conceptual framework for developing composite Risk Management Indices (RMI) for banks and insurance companies, thereby facilitating the estimation of risk-adjusted efficiency. Insights from this research may stimulate future empirical investigations into the risk-adjusted efficiency of financial institutions utilizing the proposed framework. Furthermore, the findings of this study could be beneficial to regulators and the management of financial institutions who are interested in understanding the impact of risk management on institutional efficiency.*

Keywords: risk-adjusted efficiency, banks, insurance companies, composite indices

JEL classification: C14, D24, G21, G22

1. Introduction

Financial institutions, primarily banks and insurance companies, play a crucial role in providing financial services that enhance capital allocation, facilitate effective risk management, and improve hedging and asset pricing. Furthermore, more efficient financial institutions contribute to the competitiveness of the financial system and lessen the costs and risks associated with goods and services. However, efficiency is frequently assessed using profitability indicators (ROA or ROE) often overlooking the impact of risk management on the efficiency of financial institutions. This concern was initially raised by Mester (1996), who contended that failing to incorporate risk into efficiency estimations results in inaccurate and misleading results. Berger and DeYoung (1997) were the first to differentiate between external ("bad luck") and internal factors ("bad management"). Recent studies (Bhatia et al. 2018; Ahmad et al. 2020) emphasize the importance of risk as a critical component in the efficiency estimation of financial institutions.
To assess the impact of risk management activities on financial institutions, I propose the development of a composite Risk Management Index (RMI) based on the work from (Malafronte et al. 2018; Gulati et al. 2020; Gulati 2023) and others.

2. Hypothesis overview

My research examines the relationship between risk management and efficiency of financial institutions as defined by the following hypothesis:

- H1: There is a significant relationship between bank-specific risks and the composite RMI.
- H2: There is a significant relationship between the RMI and the bank's efficiency.
- H3: There is a significant relationship between insurer-specific risks and the composite RMI.
- H4: There is a significant relationship between the RMI and the insurer's efficiency.

3. Methodology

Financial data and indicators are predominantly utilized in the estimation of efficiency. Radojcic et al. (2018) define operating costs, capital, investments, and deposits and loans as the most used inputs, while premiums, investment, interest and non-interest income as most used outputs. This research aims to construct a composite risk management index for banks and insurance companies by employing the non-parametric Data Envelopment Analysis (DEA) Benefit of Doubt (BoD) model, as proposed by Melyn and Moesen (1991) and subsequently expanded by Cherchye et al. (2007). This model facilitates a data-driven allocation of weights to the components of composite indices, thereby mitigating the subjectivity associated with the equal distribution of weights among sub-indicators, as tested empirically by (Vidoli and Fusco 2018; Gulati et al. 2020; Gulati 2023).

4. Composite Risk Management Index (RMI)

The initial phase of this research involves the development of a composite Risk Management Index (RMI). To validate the hypothesis presented in Section 2, it is essential to conduct a panel data analysis in which RMI serves as the dependent variable (H1; H3), while its sub-indicators function as independent variables. Additionally, it is imperative to examine the relationship between the efficiency ratio—defined as operating costs divided by operating income—considered as the dependent variable, and RMI along with its components as independent variables (H2; H4). This study will utilize an international longitudinal sample comprising banks and insurance companies. The advantages of employing the DEA BoD methodology include its capacity to provide insights into the most efficient financial institutions operating on the frontier, as well as its weighting scheme. Consequently, this methodology facilitates the ranking and comparison of risk management activities among banks and insurers, while also offering valuable insights into the determinants of effective risk management and its relationship with efficiency.
To construct the composite RMI for banks the CAMEL framework (Capital Adequacy, Asset Quality, Management Efficiency, Earnings, and Liquidity) is implemented as presented in Figure 1.

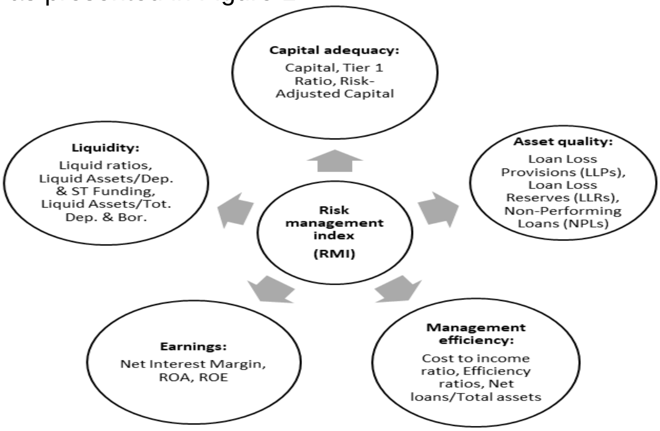

Figure 1: Bank composite risk management index
Source: Author's construction

The composite RMI for insurance companies is formulated based on key indicators related to capital adequacy, asset quality, management efficiency, earnings, and solvency. The structure of this index is illustrated in Figure 2.

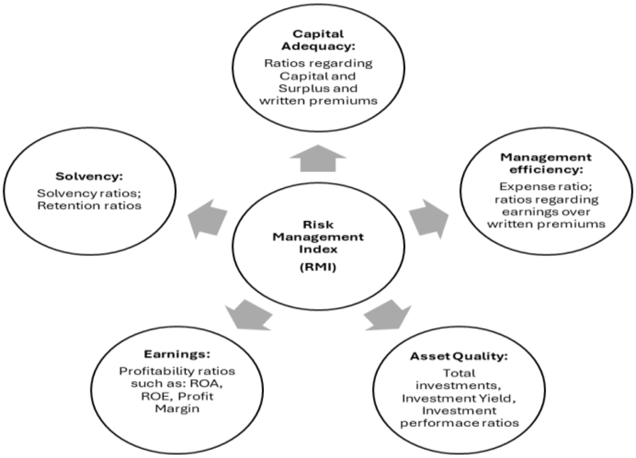

Figure 2: Insurance companies composite risk management index
Source: Author's construction

5. Conclusion

The efficiency of financial institutions is a critical factor in the economy, as it contributes to the reduction of transaction costs and risks while ensuring the appropriate allocation of capital. This paper proposes a conceptual framework for the development of composite Risk Management Indices for banks and insurance companies, aimed at assessing their risk-adjusted efficiency. To accomplish this goal, the proposed structure of the risk management index for banks is based on the CAMEL framework.

A comparable framework is applied to insurance companies, with a greater emphasis on solvency rather than liquidity. To support the implementation of this framework, a DEA BoD model is proposed to facilitate data-driven weight allocation. The advantages of the proposed methodology are twofold. First, in a longitudinal study, weight analysis yields insights into the most significant determinants of risk management efficiency for each bank and insurance company, as well as their changes over time. Second, based on the efficiency results, the model enables the ranking and comparison of risk management quality among banks and insurance companies. The insights derived from this conceptual framework, along with subsequent empirical studies, indicate that financial institutions can enhance their risk management efficiency by allocating more resources to specific areas. Furthermore, these findings may assist regulators in identifying financial institutions that exhibit weak and ineffective risk management practices, thereby enabling timely interventions to ensure the efficiency and stability of the financial system.

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HOW CAN BANKS DRIVE THE EFFORT TO MITIGATE CLIMATE CHANGE- BLIBLIOMETRIC ANALYSIS

Claudia Gherțescu
University of Craiova, Faculty of Economics and Business Administration, Craiova, Romania
claudiaghertescu@gmail.com

Abstract: *The aim of this study is to explore the role of the banking sector in climate change mitigation by examining the integration of sustainability principles into banking practices and strategies. By analyzing the linkages between environmental, social and governance (ESG) factors and banking operations, the study highlights how sustainability efforts influence long-term financial performance and the sector's broader impact on society. Through a bibliometric approach, the research highlights emerging trends in sustainable finance and identifies gaps in the literature, such as practical case studies and regional benchmarking. Results show that banks can make a significant contribution to climate change mitigation by aligning lending practices and investment strategies with sustainability objectives. Policy recommendations include the development of more comprehensive frameworks that integrate ESG considerations into banking regulation and increased transparency in reporting on sustainability efforts.*

Keywords: ESG, banking, bibliometric analysis

JEL classification: G24; G28.

1. Introduction

The environmental, social and governance (ESG) paradigm has recently gained significant attention in the banking and finance industry, given the profound transformations it is bringing about in the way investments are managed. This trend can be attributed to several interlinked factors.

First, investors are becoming increasingly willing to integrate ESG criteria into their investment strategies. This is due to a growing awareness of the impact that financial decisions can have on the environment and society. International forecasts predict that assets under management in this area will reach USD 33.9 trillion by 2026 (PwC, 2022), underlining a significant shift in investor priorities.

Second, ESG-related risks pose a major challenge for the financial sector. These risks, such as climate change, social inequality and poor governance practices, can affect the stability of financial institutions (Weber et al., 2008; Kalfaoglou, 2021). Regulators and supervisors globally have begun to address these risks, recognizing them as essential for maintaining the integrity of financial markets (FSB, 2017; ECB, 2020; Fed, 2022).

Studies also show that high ESG scores correlate with more prudent risk-taking by banks (Galletta et al., 2023). This suggests that financial institutions that adopt ESG principles tend to be better prepared to face economic challenges due to a long-term orientation and more effective risk management. Moreover, they have a greater ability to attract investors who are becoming increasingly aware of the impact of ESG risks on financial performance.

In addition, ESG practices play a important role in strengthening the stability of banks during financial crises. Good management of environmental, social and governance issues helps maintain trust in the banking system and helps institutions withstand internal and external shocks (Chiaramonte et al., 2021; Aevoae et al., 2022). This stability is essential not only for banks but also for the global economy, as a robust banking system can support economic growth and sustainable development.

Last but not least, ESG proves to be a significant determinant of solvency risk for banks. ESG indicators can be used to forecast potential financial distress of institutions, providing investors and regulators with a valuable tool for assessing the financial health of banks (Citterio and King, 2023). Integrating ESG criteria not only helps to reduce risks, but can also contribute to a more stable and responsible financial environment.

The aim of this paper is to analyze the role of the banking sector in climate change mitigation exclusively from a bibliometric perspective, focusing on the integration of sustainability principles into banking practices and strategies. The study aims to highlight emerging trends in sustainable finance and identify gaps in the literature in terms of practical examples and regional comparative analysis.

The relevance of this research stems from the key role that the banking sector can play in supporting a sustainable economy. Through the use of bibliometric analysis, the paper provides an overview of how environmental, social and governance (ESG) factors are integrated into the banking sector and contribute to climate change mitigation efforts. This approach enables a better understanding of the impact of the banking sector on environmental challenges and emphasizes the need for regulatory frameworks that incorporate ESG considerations and transparent reporting of sustainability initiatives.

2. Methodology

Bibliometric analysis targets all forms of enlightenment and applies mathematical and statistical methods to investigate trends and technological progress in science and technology (Moed, 2006; Zhang et al., 2021). These measurements are essential for revealing the current state of research and development trends in a field, helping researchers to deeply understand the topic under study (Vatananan-Thesenvitz et al., 2019). A bibliometric analysis provides a rigorous methodological assessment of existing work, facilitating the development of evidence-based guidelines for practitioners (Kitchenham, 2004; Prinsen et al., 2018). This method also helps to identify the state of the art in the research field (Levy and Ellis, 2006).

For bibliometric analysis, we use the specialized software VOSviewer, which allows the creation and visualization of maps based on network data. The software can generate maps based on the adjacency matrix of networks, as well as scientific publications, journals, researchers and organizations (Ball and Dirk, 2005). The VOSviewer facilitates the analysis of keywords, authors and institutions, providing a clear picture of the most frequently used terms and cited sources. This analysis can also assess the popularity of publications among scholars and the reputation of authors (Zupic and Tomaž, 2015).

As part of the research, we conducted a comprehensive cooccurrence analysis of author keywords, setting a minimum threshold of 50 papers. We also examined co-citation, with a minimum threshold of 25 articles cited from the same paper, as well as co-authorship from the perspective of institutions and countries (Baker et al., 2020; Tunger and Eulerich, 2018). Using VOSviewer, we constructed maps illustrating the connections between articles, researchers and institutions, assessing the links according to their intensity. The node size in the analysis map reflects the importance of the article within the whole sample, and the items are grouped into clusters, highlighting the relationships between them. In interpreting the results, particular attention is paid to the links and their strength, emphasizing the number and intensity of links in the bibliometric analysis.

3. Results

By consulting the Web of Science database and applying the keywords ESG and banking, we identified a total of 607 papers relevant to this topic. These results reflect growing academic and sectoral interest in the integration of environmental, social and governance factors into banking activities, a crucial area for sustainability strategies. The papers cover a wide range of topics, from environmental and social risk assessment models to the impact of ESG factors on the financial performance of banking institutions. This bibliometric selection allows an in-depth analysis of research trends and provides a solid basis for assessing how the banking sector contributes to sustainable development goals and climate change mitigation.

The Web of Science data indicates a significant increase in interest in publishing ESG-related papers in banking, with 184 publications in 2024, representing 30.31% of the total papers analyzed. This upward trend is also evident in previous years, such as 2023 with 147 publications (24.22%) and 2022 with 107 publications (17.63%), suggesting that the banking sector is becoming increasingly aware of the importance of integrating environmental, social and governance factors into business strategies. In contrast, the low number of publications in previous years, e.g., only 16 papers in 2019 (2.63%) and only one publication in 2010 (0.165%), indicates that this area of research has only started to gain momentum relatively recently, providing significant opportunities for exploring the further interplay between banking and sustainability.

3.1. Co-compete network analysis of keywords

This analysis provides insight into the topics and issues that have garnered the most attention from researchers regarding the integration of environmental, social, and governance (ESG) factors in banking.

By mapping the relationships between these keywords, the study aims to reveal emerging trends, highlight gaps in the existing literature, and inform future research directions in this critical area of sustainable finance.

The keyword co-occurrence map illustrates a network of frequently used terms in the literature on ESG (Environmental, Social, and Governance), risk and performance. Out of a total of 2,339 keywords identified, 194 were selected for analysis, the criterion being their occurrence in at least 5 documents. This selection allows to focus on the most relevant concepts and the terms, according to the requirement, have been organized into 8 thematic clusters, each representing a specific research area.

A central aspect of the map is the ***ESG*** node , which stands out for its large size, suggesting that it is one of the most discussed terms in the analyzed literature (200 occurrences and 1140 strong links with other keywords). In close proximity to the ESG node is the term **Risk**, indicating a strong link between risk assessment and governance and sustainability practices (66 occurrences). Also, the ***Financial performance*** node is particularly important (124 occurrences and 794 strong links), highlighting the significant influence of ESG on the performance of organizations, being correlated with concepts related to performance evaluation.

The map is organized into 8 thematic clusters, each with a distinct specificity. For example, **Cluster 1** (red) focuses on the relationship between 'risk' and 'returns', including terms such as 'liquidity' and 'covid-19', suggesting a financial analysis in the context of sustainability which has become a necessary theme for banking institutions with the covid-19 pandemic. **Cluster 2** (blue) contains terms such as "responsibility" and "corporate social-responsibility", emphasizing a focus on global governance. **Cluster 3** (green) addresses "social responsibility" and "banking", highlighting the link between ESG and environmental responsibility with the increasing digitalization of the banking sector.

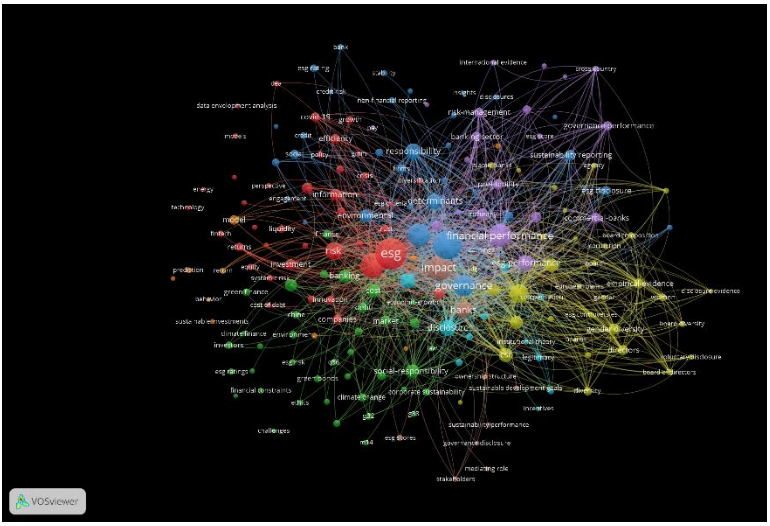

Figure 1. Keyword co-occurrence network. Source: own processing in VOSviewer

Other clusters, such as **Cluster 4** (yellow), which includes terms such as "board composition" and "gender diversity", focus on corporate governance. **Cluster 5** (orange) explores the connection between ESG and innovation through terms such as "sustainable investments" and "model". **Cluster 6** (purple) focuses on "profitability" and "financial performance", highlighting the interplay between organizational efficiency and the challenges of banking institutions. Clusters 7 and 8, although less central, contain terms such as "stakeholders" and "sustainability performance", which are relevant to more niche aspects of ESG.

The nodes are interconnected by lines indicating the co-occurrence of the terms in the documents, suggesting that these terms are frequently mentioned together. Strong links between terms such as 'ESG' and 'performance' or 'risk' suggest that these themes are often explored simultaneously in the literature.

3.2. Authors' co-citation network

The author map illustrates the collaborative structure among ESG researchers, segmented into four distinct clusters. Out of a total of 1,562 authors, only 199 met the criterion of having at least two published papers and one citation, which highlights a high level of selection of relevant authors for this analysis. Each cluster reflects a network of intensively collaborating authors, thus **cluster 1 (green)** includes authors such as Paltrinieri Andrea, Pisera Stefano, Dreassi Alberto and Migliavacca Alberto Milena, Girardone Claudia who form the core of this collaborative group. These authors collaborate closely, creating an active research network, especially on banks' environmental policies and banks' financial stability. The presence of several links between them suggests a multidisciplinary approach, focusing on the financial aspects of ESG and their implications for governance.

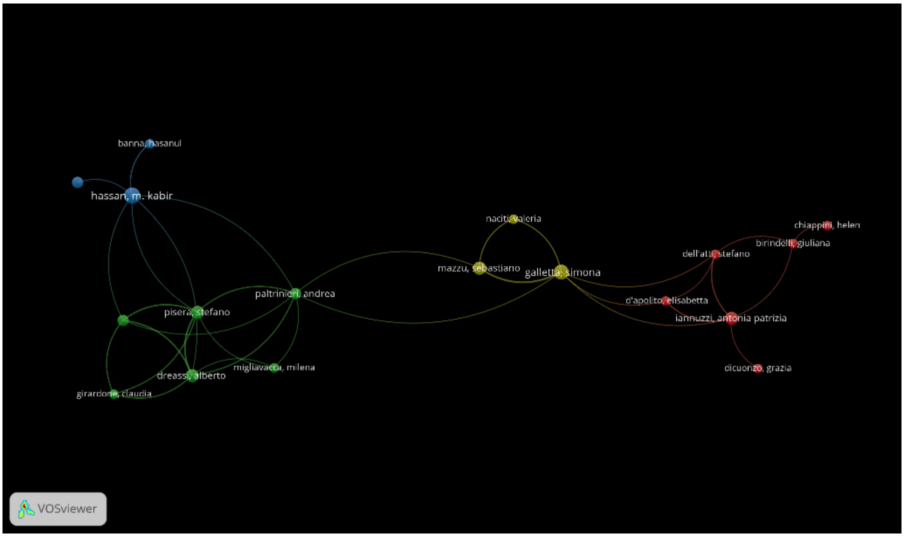

Figure 2. Co-citation of authors. Source: own processing in VOSviewer

Cluster 2 (yellow) brings together authors such as Naciti Valeria and Galletta Simona, who are also connected with authors from other clusters. Although the collaborative network is narrower than the green cluster, authors in this cluster explore central themes and collaborate with researchers in other fields.

The 3rd (blue) cluster is highlighted by authors such as Hassan M. Kabir and Banna Hasanul, who are connected with other ESG researchers. Collaborations in this cluster focus on applied research and case studies related to Islamic financial markets. The blue cluster suggests a specialization on applied aspects in the ESG field, being oriented towards market research and empirical analysis.

And the last cluster 4 (red) includes authors such as Dell'Atti Stefano, Birindelli Giuliana Giuliana, Iannuzi Antonia Patrizia. This cluster has a wider network which represents the diversified themes and the strong link between these authors.

5. Conclusion

In conclusion, the bibliometric analysis of the literature on ESG mainstreaming in the banking sector shows a growing interest in the field, with a significant number of recent publications. This trend suggests that banks are becoming increasingly aware of the importance of adopting sustainable practices, which are essential for achieving sustainable development goals and mitigating climate change. The co-occurrence network analysis of keywords and authors' co-citations revealed not only central themes such as risks and financial performance, but also interconnections between the ESG concept and various dimensions of corporate governance. This collaborative structure among researchers emphasizes the diversity of approaches and topics of interest, thus providing a solid foundation for future studies. Finally, these findings suggest significant opportunities for deepening the relationship between the banking sector and sustainability practices, pointing to a promising avenue for future research in this dynamic field.

Bibliometric analysis based on Web of Science data reveals significant gaps in the literature on ESG mainstreaming in the banking sector. Although the number of papers published has increased considerably in recent years, with a clear trend of growing interest in these topics, ESG research remains fragmented and certain areas are insufficiently explored.

A notable gap is the lack of comparative studies examining how different financial institutions approach the implementation of ESG strategies in different regional contexts and market specificities. In addition, there is a need for more in-depth research analyzing the impact of ESG measures on long-term financial performance, given that most studies focus on short-term assessment.

There is also an opportunity to explore in more detail the relationships between ESG, digitalization and innovation in the banking sector, given the rapid transformations in technology and their impact on sustainability strategies. This could provide valuable insights into how emerging technologies can facilitate the implementation of ESG principles.

In conclusion, future research should focus on inter-disciplinary approaches, given the complexity and diversity of the ESG topic. Studies should aim to collaborate between the fields of finance, management and social sciences to provide a holistic understanding of the impact of ESG factors on the banking sector and, by extension, on sustainable development.

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APPROACHES TO THE CONCEPT OF PERFORMANCE

Anca-Giorgiana (BURTIC) BURESCU
Doctoral School of Economic Sciences, Faculty of Economic Sciences, University of Oradea, Romania
burtic.ancagiorgiana@student.uoradea.ro, anca.giorgiana91@yahoo.com

Abstract: *The paper presented in the first part some acceptances of the term performance. A company's performance can be assessed by combining the analysis of financial performance with non-financial or sustainability performance. In addition to addressing the concept of performance, the general objective of this article is to highlight the importance of reporting sustainability information in creating value for companies and to analyze the influence on the performance of organizations. At the end of the paper, the legislative context regarding the reporting of non-financial information, respectively the reporting of aspects related to sustainability by companies listed on the capital market, is addressed.*

Keywords: The concept of performance, financial performance, non-financial performance, ESG reporting

JEL classification: M40, M41, Q56

1. Introduction
The paper aims to approach the concept of performance and identify the link between financial performance and non-financial performance. The analysis of the overall performance of an entity is carried out by combining the analysis of financial performance indicators with a series of non-financial performance or sustainability criteria. In fact, the notion of performance acquires significance only through the prism of comparison with a standard or with other subjects who carry out the activity in question. Understanding the notion of global performance is of particular importance in the current context of the world economy. In a free competition in the capital markets, a company that is able to consistently achieve financial performance will have a positive stock market performance, easier access to capital and will be more attractive to investors.

2. The concept of performance
Financial performance is often difficult to achieve by economic entities, especially in a certain economic context. Performance always occurs as a result of a comparison based on either an internal or an external variable.
At the level of the economic entity, the notion of performance concerns a multitude of forms of manifestation of the progress registered by it following the development of its economic and financial activity.
M. Porter (1985) considered the company's performance as a direct function of the evolution of its competitors, arguing that "the fundamental basis of an above-average long-term performance is the sustainable competitive advantage", an advantage manifested, mainly, in two forms: low cost or differentiation.

Other authors consider that "the principles of performance analysis consist in measuring accounting and financial results, evaluating their level and volatility" (Cohen E., 1991).
In the opinion of E. Helfert "when we want to evaluate the performance of a business we look for ways to measure the financial and economic consequences of historical managerial decisions, regarding investments, operations and financing".(Helfert E., 2006)
A. Bourguignon defines performance as "achieving organizational objectives, regardless of their nature and variety".(Bourguignon A., 2000).
According to the authors Tișcenco, V. & Bădicu, G. (2021), in the specialized literature, the concept of performance is characterized in such a way that it can capture the following areas of it:
1. The overall performance includes the set of financial and non-financial successes achieved for the partners, along with the guarantee of obtaining long-term benefits.
2. Social performance implicitly focuses on actions to promote social interests by the entity, precursors to elements of a strict economic or legislative order (Ștahovschi A. and Mircea-Dafinescu V., 2013).
3. Organizational performance involves the use of economic indicators such as: organizational growth, turnover or market share and intangible factors such as image or employee satisfaction, all of which serve as support in setting and achieving social objectives (Ciubotariu, M., Socoliuc, M., Mihaila, S. and Savchuk, D., 2019).
4. Financial performance refers to the instrument for measuring and presenting accounting information through financial statements. (Cosmulese C. G. and Hlaciuc E., 2019).

3. Financial performance

Performance represented and still represents a continuous concern of the management of any enterprise.
Financial performance is analyzed through the prism of: the company's objectives; values created by the enterprise; the productivity and efficiency of the company's activity.

3.1. Performance analysis through the lens of enterprise objectives.

A first category of researchers define performance through the lens of the company's objectives. Thus, starting from the vision of the company as "a group of people who carry out common activities aimed at achieving one or some objectives" (Nicolescu, O., Verboncu, I., 2007).
R. Tannenbaum and H. Shimdt believe that performance represents "the degree to which an organization, as a social system, with certain resources and means, achieves its objectives"(Tannenbaum, R., Shimdt, H, 2009).
The same R. Tannenbaum and H. Shimdt studied organizational performance using quantitative measurements. They described the performance of an economic organization through the lens of the degree of achievement of objectives and focusing on "labor productivity, net profit, the degree to which the organization fulfills its mission and its success is maintained or growing".(Tannenbaum, R., Shimdt, H, 2009)
A similar definition is proposed by G. Lavalette and M. Niculescu, showing that the company's performance aims at "achieving organizational objectives regardless of

their nature and variety"(Lavalette G., Niculescu M., 1999). The same authors describe performance as "a state of competitiveness of the company, achieved through a level of effectiveness and efficiency that ensures a sustainable presence on the market"(Lavalette G., Niculescu M., 1999). However, it is necessary to specify in this context what is meant by the notions of efficiency and effectiveness. Thus, in economic terms, efficiency involves either maximizing the results obtained given a certain amount of resources (maximizing value), or minimizing the amount of resources used in order to obtain a certain result (minimizing costs).

The definition proposed by A. Bourguignon on performance is applicable both at the level of an enterprise and at the individual level: "he who achieves his goals is a performer"(Bourguignon, A., 2000). A. Bourguinon emphasizes the fact that it is necessary to establish how to measure the performance of an enterprise, an activity, a product or an individual. Therefore, we consider it appropriate to take into account not only monetarily quantifiable factors in assessing the company's performance, but also some non-financial factors, impossible to quantify monetarily, whose aggregate effect reflects the performance to a better extent.

3.2. Analyzing performance through the lens of enterprise value.

Seen from a second perspective, performance is defined through the prism of the value created by the enterprise. Thus, P. Lorino (2003) shows that performance represents "all that, and only that, contributes to the achievement of the strategic objectives" of the enterprise, as well as "all that, and only that, contributes to the improvement of the value couple - cost, and not only what contributes to the decrease of the cost or the increase of the value". The definition of performance is no longer limited to achieving the results desired by the enterprise, but is now viewed through the lens of the value-cost combination, which can be improved by reducing costs, on the one hand, and increasing the value of the enterprise, on the other hand, both actions being necessary to be carried out simultaneously.

The new approach to performance through the lens of value creation is based on a valid general truth, namely that companies create value only to the extent that capital is remunerated at a rate of return higher than its cost.

Also, J.M. Stern, J.S. Shiely and I. Ross show that performance is "an unstable level of an enterprise's potential, obtained as a result of the optimization of the value-cost relationship and which makes the enterprise competitive in certain strategic sectors."(Stern, J.M., Shiely, J.S., Ross, I., 2001).

3.3. Performance analysis through the prism of productivity and efficiency of the company's activity.

A last category of specialists defines performance through the prism of productivity and efficiency of the company's activity. M. Lebas shows that performance does not exist unless it can be measured, and in no case can it be limited to knowing a single result. Thus, the results obtained will be evaluated by comparison with the expected results or with certain standard results (H. Bouquin, 2004).

4. Non-financial or sustainability performance

4.1. The evolution of the concept of non-financial performance

Non-financial performance has for many years been a term used to describe the activities and impact of organizations beyond financial results. This mainly includes corporate social responsibility (CSR), transparency in reporting activities and commitments to communities. In a study by KPMG (2020), 70% of the world's 250 largest companies reported CSR activities, highlighting an increased interest in these aspects However, non-financial performance was often viewed as a complement to financial performance, rather than as a central element in organizational strategy. In this context, companies were focusing their efforts on improving their brand image without integrating these activities into their business model.

4.2. The transition to sustainability performance

Recently, there has been a significant change in the perception of non-financial performance. More and more organizations are beginning to recognize the importance of sustainability not just as a branding element, but as an essential component of their business strategy. This transition is reflected in the increase in reporting requirements and the adoption of international standards, such as those established by the Global Reporting Initiative (GRI) or the Sustainability Accounting Standards Board (SASB).

A report published by McKinsey in 2021 points out that organizations that integrate sustainability into their business model can benefit from superior financial performance as consumers become increasingly aware of the social and environmental impact of their choices. For example, 65% of consumers said they would pay more for products that are sustainably manufactured (McKinsey, 2021).

4.3. Dimensions of sustainability performance

Sustainability performance is based on three fundamental dimensions: economic, environmental and social. This integrated approach enables organizations to assess their impact from diverse perspectives and make more informed decisions.

The economic dimension. This dimension refers to the organization's ability to generate profits in a way that does not compromise future resources. Companies that adopt sustainable practices may find opportunities to reduce costs through energy efficiency or waste reduction. For example, a study conducted by Harvard Business School in 2022 shows that firms that invest in green technology and eco-innovation saw an increase in profitability of up to 20% within five years.

Environmental size. This dimension focuses on the organization's impact on the environment. Many companies implement policies to reduce carbon emissions, save water and use renewable resources. A notable example is the “Net Zero” initiative adopted by many organizations starting in 2020, which aims to achieve net zero greenhouse gas emissions by 2050 (UN, 2021).

The social dimension. The social dimension of sustainability performance refers to the organization's impact on its communities and employees. Here, issues such as diversity and inclusion, human rights and working conditions are crucial. A 2023 report from Deloitte points out that organizations that invest in diversity and inclusion initiatives not only improve employee morale, but also increase innovation and overall performance.

4.4. The legislative context regarding the reporting of non-financial information

A company's non-financial performance results from the respective company's ESG reporting.
ESG - the acronym for Environment, Social & Corporate Governance - represents a set of principles and standards that guide and evaluate the environmental, social and governance activity and impact of companies.
Globally, ESG analysis of listed companies has become an increasingly relevant criterion in the analysis of investment opportunities, especially among institutional investors.
The requirements regarding the reporting of non-financial aspects are spreading internationally, being included in the legislative provisions of an increasing number of states (de Klerk and de Villiers, 2012).
According to the press release – Bucharest Stock Exchange Launches the First Esg-Focused Initiative on the Romanian Capital Market, at the level of the European Union, the options regarding the reporting of non-financial information are specified in Directive 2014/95/EU (EU, 2014). Thus, the directive provides that "in order to increase the consistency and comparability of non-financial information presented throughout the Union" (art. 6, p. 2), large enterprises that are entities of public interest and that, at the balance sheet date, exceed the criterion of had an average number of 500 employees during the financial year must "draw up a non-financial statement containing information on at least environmental, social and personnel aspects, respect for human rights, combating corruption and bribery" (art. 6, p. 2).
The Directive is transposed into national legislation by the Orders of the M.P.F. no. 1.938/2016 and no. 2,844/2016, with applicability starting from January 1, 2017 (O.M.F.P. 1,938/2016, art. III, p. 9).
Directive 2014/95/EU (NFRD) adopted in 2014, is the first act to introduce sustainability reporting obligations for certain large companies in the EU. The NFRD requires companies under its purview to publish an annual non-financial statement that includes information on environmental, social and employee issues, respect for human rights and anti-corruption.
Another regulation is the Taxonomy Regulation, which provides for a common classification system for identifying environmentally sustainable economic activities.
ESG information can be presented in an annual report, a stand-alone sustainability report or an integrated report that combines the two approaches by interlinking the company's sustainability with its financial performance. Companies can select the most appropriate reporting format for their needs as long as all regulatory requirements are met.
The last regulation in this field is given by Directive (EU) 2022/2464 of the European Parliament and of the Council of December 14, 2022 amending Regulation (EU) no. 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU regarding sustainability reporting by companies, known as "CSRD" ("Corporate Sustainability Reporting Directive"),
The CSRD Directive has as its main objective the revision of the European requirements regarding non-financial reporting, as a result of the deficiencies noted by the EC services in terms of this type of reporting, especially in terms of comparability/standardization, quantity, quality and relevance of the reported information of companies.

The reporting deadlines according to the new regulation are as follows:
From January 1, 2025 - large companies (which exceed 2 of the size criteria: more than 250 employees and/or 40 million euros in turnover and/or 20 million euros in total assets), reports being issued in 2026 ;
From January 1, 2024 - public interest companies with over 500 employees, the reports being issued in 2025;
From January 1, 2026 - listed SMEs, reports being issued in 2027.

Conclusions
In conclusion, performance could be defined as a whole as satisfying existing customers, keeping them through better quality of goods and services provided, as well as winning new customers. The ultimate goal of a company is to increase profit, which can be achieved through performance.
With regard to ESG reporting, sustainability, the measurement of ESG factors relevant for a certain business, the way of reporting and auditing, as well as the possibilities to increase the level of ESG, will be topics of increasing interest both on the public stage but especially within each society.
The requirements of the new Directive CSRD will bring costs and difficulties for the companies concerned, especially for those that will be subject to such reporting obligations for the first time.
The Corporate Sustainability Reporting Directive (CSRD) was transposed, on January 26, into national legislation through OMF 85/2024.

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THE COMPLEXITY OF DECISION-MAKING AT THE LEVEL OF COMPANIES - OVERVIEW CONCEPT

Doroteea Andreea Surlea
University of Oradea, Doctoral School in Economic Sciences, Oradea, Romania
dorobacter03@gmail.com

Abstract: *The aim of this paper is to provide a condensed overview of the decision-making process at the company level using smart and innovative techniques. It is important to note that technology is advancing, and companies must adapt accordingly, using all available resources to keep pace and optimize their results. In the financial sector, it is not enough to make decisions based solely on rational or emotional factors; as it is a financial sector, statistical certainty is also expected, resulting from the data analysis that underlies financial situations. Smart technologies support data analysis by facilitating and improving the decision-making process through accurate and objective data processing. The concept of enterprise-level decision making is complex, and synthesizing all the information can be challenging, but with careful consideration, a logical and clear understanding of how this process works and the methods that support it can emerge.*

Keywords: decision-making; Artificial Intelligence (AI); financial analysis; data analysis; finance; Machine Learning.

JEL classification: G40, G17, G11

1. Introduction

Financial decision making is a complex process that requires a strong ethical framework to help individuals and organizations make choices that are both profitable and morally responsible (Owolabi, et al., 2024). In order to make a correct financial decision, the company data must be analyzed. This analysis is performed using various methods, and the latest methods use intelligent techniques, usually referred to as artificial intelligence. According to (Duan, et al., 2019), the use of AI in decision-making has been one of the most influential applications of AI throughout its history. In today's rapidly evolving and interconnected global economy, decision-making in organizations has become a complex and multi-layered process that affects not only short-term business results but also long-term strategic direction. The days of relying solely on intuition or limited data to make decisions are over. Modern businesses must consider a variety of factors, including market dynamics, regulatory requirements, technological changes and stakeholder expectations. Every decision, whether related to resource allocation, market entry or product development, can create a ripple effect throughout the organization and beyond, affecting employees, customers, investors and communities alike. Numerous reports highlight the benefits of AI in decision-making, emphasizing that AI can help an organization's employees make better choices, improve analytical and decision-making skills, and foster creativity (Wilson & Daugherty, 2018). In this paper, I have included concepts related to the complex decision-making process that is firmly based on enterprise-level data analytics. When we refer to data analysis, we are undoubtedly talking about the important preliminary stage that contributes to correct and objective decision making.

2. Research

Using the following search terms: „financial decision making”, „data analysis”, „AI” I conducted a comprehensive search across several databases, including Web of Science (WoS), Clarivate, ScienceDirect, Research Gate and Google Scholar. I focused primarily on articles published between 2000 to 2024 to capture both basic knowledge and recent developments in the field. Searching for these keywords yielded 42,752 results in Web of Science and 531,000 in Google Scholar. From this vast array of resources, 31 articles were downloaded as they had the most relevant titles. After collecting the initial articles, I conducted a two-stage screening process: First, titles and abstracts were reviewed to remove articles that were clearly irrelevant to my research question. I then reviewed the full texts of the shortlisted articles in detail to assess their relevance and quality, and excluded any articles that did not offer significant insights into technologies or their impact over financial decisions. The sources selected and cited were, in my personal opinion, the most relevant ones for the documentation related to this paper.

3. Methods of performing data analysis for financial decision-making – Techniques

Decisions are inextricably linked to human psychology. Individuals perceive the world through personal interpretations, leading to diverse understandings even on the most concrete or seemingly certain things (Droj, et al., 2016), but it is not enough to make a rational decision based on personal opinion alone; therefore, new techniques have been implemented to ensure that decisions are objective. The continuous development of data storage and processing technologies has been instrumental in reshaping the financial sector (Ionescu & Diaconita, 2023). Currently, several advanced techniques currently recognized for support in data analysis, including: Artificial Intelligence (AI), which includes Machine Learning (ML) and Natural Language Processing (NLP), Data Mining and Big Data. In the 2010s, the term AI regained popularity, with "machine learning" and "data mining" emerging as widely used concepts within the field (Ionescu & Diaconita, 2023).

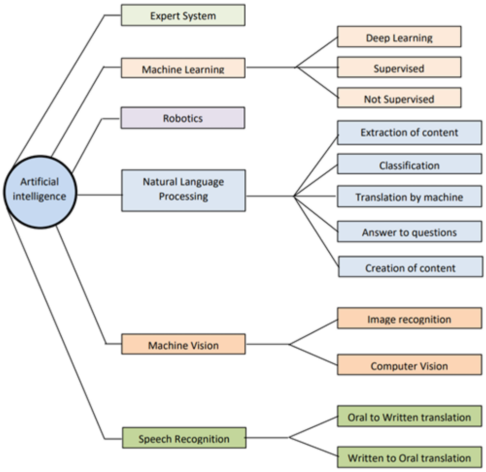

Figure 1: Intelligent techniques used and included within Artificial Intelligence
Source: Melanie Ochs, *The Impact of Artificial Intelligence on the Decision-Making Process of a Real Estate Company*

I found it appropriate to include the figure above because it summarizes and illustrates the components of artificial intelligence in an accessible way. This method is complex and includes several techniques that can be used in the data analysis and decision-making process in companies. According to (Duan, et al., 2019) Deep Learning, a subset of Machine Learning, has been a key driver behind AI's recent successes. AI and machine learning algorithms rely on large datasets to learn and evolve, and the rise of Big Data has significantly accelerated their progress. Access to vast, varied datasets has made it possible to develop sophisticated ML models capable of making accurate predictions and informed decisions (Ionescu & Diaconita, 2023). The complexity of the decision-making process, according to (Calabretta, et al., 2017), can be structured into the following organizational steps:

- Collecting relevant information as fully as possible.
- Conducting a formal, structured analysis of data.
- Following a step-by-step process grounded in rules and relationships.

In my opinion, the need to make a decision indicates that a problem exists. Identifying the problem for which solutions are sought is the first phase of the decision-making process, followed by gathering information relevant to the problem, analyzing the information found, formulating several solutions based on the data analysis, highlighting the most appropriate solution, and finally making the actual decision and implementing it in the company.

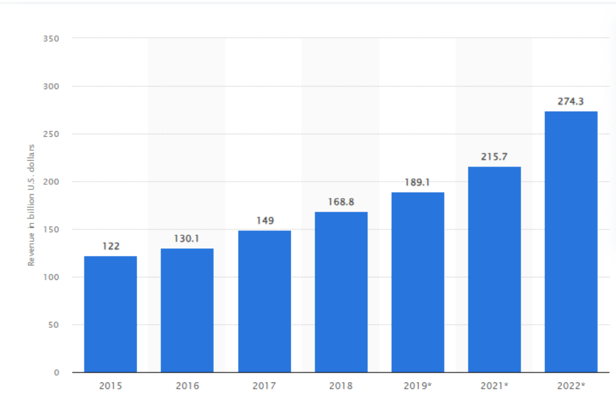

Figure 1: Revenue from Big Data and business analytics worldwide from 2015 to 2022 -in billion U.S. dollars.
Source: Statista.com

The statistical data studied shows that big data and the analysis of company data have experienced significant growth year after year. The above statistics confirm that from 2015 to 2022 there was an increase of approximately 152.3 billion US dollars. This statistic demonstrates that organizations are paying attention to data analytics and understand that good financial decisions require the use of these analyses. It is important to pay attention to the decisions taken and their foundations because a well-made decision can strategically position the company to achieve a strong market advantage (Droj & Droj, 2015).

4. Challenges

While smart data analytics technologies offer numerous benefits, they also come with significant challenges. The main issues include complexity, as the implementation of these technologies requires significant expertise and financial investment; data security, as managing large amounts of data poses significant risks in terms of security and confidentiality; and reliance on data quality, as the effectiveness of analytics depends on the quality of the data collected - incomplete, inaccurate or unstructured data can lead to erroneous conclusions. Omoshola Owolabi et al (2024) pointed out that when AI collects and processes large amounts of data, there is a risk that sensitive information could be misused or compromised. Financial institutions must implement strong security measures to protect consumer data and maintain trust in the system.

5. Conclusion

In conclusion, modern business decision making requires a complex, integrated approach that leverages both advanced technologies and traditional strategic frameworks to navigate the rapidly evolving business landscape. Artificial intelligence (AI) and machine learning are no longer optional tools, but central to enabling more accurate financial forecasting, data analysis, and operational optimization. With the ability to process vast amounts of data in real time, these technologies enable companies to identify trends, predict market changes and manage risk more effectively than ever before. However, the adoption of AI and machine learning is not without its challenges, as companies need to invest in skilled personnel, a robust data infrastructure and continuous learning to maximize the potential of these tools' potential. Decision-making now combines quantitative rigor and human judgment, creating a comprehensive approach that considers both short-term opportunities and long-term goals. For companies, this means cultivating a culture of adaptability, prioritizing data ethics, and encouraging innovation. All of this is essential to building resilience and ensuring sustainable success in an increasingly complex global marketplace.

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DIGITALIZATION OF FINANCIAL SERVICES FOR THE BENEFIT OF THE CONSUMER IN THE EMERGING MARKET IN ROMANIA

FILIP Robert Dorin, NIOATA (CHIREAC) Roxana-Mihaela, LUPU (FILIP) Gabriela Ana-Maria, DASCĂLU (CIRJAN) Nadia-Tudora
University of Craiova, Doctoral School of Economic Sciences ”Eugeniu Carada”, Craiova, Romania
filiprobertdorin@gmail.com, roxananioata06@gmail.com, Lupuanamariagabriela@yahoo.com, dascalunadia@yahoo.com

Abstarct: *The objectives of this paper are to analyze how digitization is influencing consumer behavior and the benefits of these changes in Romania. The importance of the paper lies not only in the need to understand current trends, but also in identifying challenges that may arise during this transition. In an emerging market such as Romania, digitalization is not only an opportunity but also a risk, especially in terms of cybersecurity and accessibility. Therefore, a detailed analysis of this phenomenon is essential to provide a complete picture of how digitization can serve consumers' interests and promote a more sustainable economy.*

Keywords*: emergent market, stock market, consumer behavior, Fintech,*

J.E.L. classification: A19, G21, M30, O33

1.Introduction:
In the current context of the global economy, digitization of financial services has become an imperative, and Romania is no exception. As technology advances, Romanian consumers expect more accessible and efficient financial services. This paper aims to analyze the impact of digitization on Romanian consumers, highlighting the benefits, challenges and future of these services in an emerging market.
Digitization of financial services can be defined as the process by which these services, traditionally based on physical interactions and manual processes, are transformed through the use of digital technologies. In Romania, this process started with a slight delay compared to other markets in Europe, but the evolution has been rapid. Since 2010 to date, the Romanian financial sector has undergone a significant transformation, thanks to the adoption of fintech solutions, online banking platforms and mobile applications that facilitate the management of personal finances. This has not only increased market competitiveness, but also opened new opportunities for consumers.
The benefits of digitization are obvious. The accessibility of financial services has increased significantly, with consumers now able to access their bank accounts through easy-to-use apps or make payments from anywhere, anytime. This convenience is accompanied by a reduction in costs, as many of these digital services are cheaper than traditional ones. In addition, the transparency offered by digital platforms makes it easier for users to compare financial products and choose options that best suit their needs. The user experience is also enhanced by user-

friendly interfaces and personalized services that better respond to individual requirements.

2. Benefits of digitization for consumers

Digitization of financial services brings a number of significant benefits for consumers, fundamentally transforming the way they interact with financial institutions. One of the most notable benefits is increased accessibility. Thanks to digital platforms, consumers can access financial services from any location and at any time, eliminating the need to physically visit a bank. This convenience not only saves time, but also facilitates access for people in areas underserved by bank branches, thus contributing to financial inclusion.

In parallel, digitization leads to significant cost savings for consumers. Digital services are often less costly than traditional ones because they eliminate the expenses associated with physical transactions. This translates, for example, into lower fees for money transfers or reduced costs for opening and maintaining accounts. In addition, the increased transparency generated by digital platforms makes it easy for users to compare financial products, allowing them to choose options that best suit their needs and budget.

Improved user experience is another key benefit of digitization. Mobile banking apps and online platforms are designed to provide an intuitive interface that makes it easy to navigate and use services. This user-centricity not only simplifies financial management processes but also promotes a more personalized interaction. By using data analytics, financial institutions can provide recommendations tailored to each consumer's profile, thus improving the relevance and usefulness of the services offered.

As a result, the digitization of financial services represents a considerable advantage for consumers through increased accessibility, reduced costs and improved user experience. These benefits not only make it easier to manage personal finances, but also contribute to building a closer relationship between consumers and financial service providers, promising a positive development for the sector as a whole.

3.Emerging technologies in the Romanian financial market

In the Romanian financial market, emerging technologies are playing a key role in transforming the sector and redefining the way consumers interact with financial services.

The new segments of emerging technologies that will change the financial services industry in the coming years are: banking process automation, biometrics, blockchain, cloud computing, conversational economics, instant payments, cybersecurity, machine learning and artificial intelligence.

Local fintechs have become catalysts of innovation, bringing solutions tailored to the specific needs of Romanian consumers. These startups are not only developing apps and digital platforms to facilitate payments or loans, but are also helping to create a more competitive ecosystem where users benefit from diversified options and personalized services. This dynamic is spurring a culture of innovation among traditional financial institutions, which are forced to adapt and adopt new technologies to stay relevant.

The use of blockchain and cryptocurrencies has brought a new dimension to the Romanian financial market, offering solutions that promote transparency and security of transactions. Blockchain technology enables the creation of distributed ledgers that reduce fraud risks and improve the efficiency of financial processes. In addition, the adoption of cryptocurrencies by a segment of the population reflects an openness to new forms of payment and investment, offering consumers alternatives to the traditional banking system. Although regulation in this area is still developing, interest in these technologies continues to grow, suggesting a promising direction for the future of financial services in Romania.

Artificial intelligence and data analytics are other fundamental components of the digital transformation in the financial sector. These technologies enable institutions to collect and analyze large volumes of data about consumer behavior, thereby facilitating the personalization of services and improving the user experience. By using advanced algorithms, financial institutions can anticipate customer needs, optimizing the products offered and reducing the risks associated with lending. In this context, artificial intelligence not only supports operational efficiency, but also contributes to more informed decision-making.

Four of Romania's most innovative banks analyze the impact of technology on financial services from their own experience. For example, Banca Transilvania talks about the impact of artificial intelligence and customer perception following the introduction of virtual assistants. BCR looks at the role of personalization of services in the relationship between customer and bank, providing new details on the George digital banking platform. ING Bank Romania is already seeing the first tangible results following the introduction of the ING Pay mobile wallet app, and will present new data on adoption. TBI Bank is bringing the online lending experience directly in the online retailer's store, with a revolutionary system that allows authentication through the customer's video channel. The system is already deployed in over 150 online stores.

Consequently, emerging technologies including local fintechs, blockchain and artificial intelligence are redefining the financial landscape in Romania. These innovations are not only improving the services available to consumers, but also fostering a more competitive business environment tailored to today's market demands. As these technologies continue to evolve, a profound transformation of the Romanian financial sector is expected, with significant benefits for all stakeholders.

The implementation of digital solutions in Romanian banks has led to a profound transformation in the way these institutions interact with customers and conduct their business. Banks have invested heavily in technology to improve the efficiency of internal operations and provide faster and more accessible services. For example, many banks have developed mobile applications that allow customers to make payments, manage accounts and apply for loans in a simple and intuitive way. Not only have these solutions reduced waiting times and associated costs, but they have also increased customer satisfaction as customers can access banking services from the comfort of their own home. Moreover, the integration of advanced security systems into these platforms has helped to boost consumer confidence, as consumers are more likely to use digital services when they feel safe.

Another successful example is a peer-to-peer lending platform that connects investors directly with people seeking loans, cutting out traditional intermediaries. This innovation not only offers more favorable terms for both borrowers and investors, but also diversifies the options available in the financial market, encouraging competition and reducing costs.

4.Conclusions:

The digitalization of financial services in Romania is a complex and dynamic process with significant implications for consumers and the entire economic sector. Throughout the analysis, we have highlighted how the implementation of digital solutions has improved the accessibility and efficiency of financial services, providing consumers with more varied and convenient options. Innovations brought by fintechs and the use of emerging technologies, such as artificial intelligence and blockchain, have facilitated not only the development of personalized products, but also increased transparency in the sector. However, challenges related to cybersecurity, privacy and digital exclusion require further attention.

In this context, the recommendations for the future of digitization of financial services in Romania focus on a few key directions. It is crucial for regulators to work closely with financial institutions and fintechs to develop an adaptable legal framework that encourages innovation without compromising security and consumer protection. Investing in financial and digital literacy must become a priority, ensuring that all citizens, including the most vulnerable segments, are prepared to use emerging technologies in a responsible and informed way.

In addition, promoting technological accessibility solutions will contribute to reducing digital exclusion and increasing financial inclusion.

Thus, by addressing these issues, Romania can fully reap the benefits of digitization, becoming an example of best practice in the region and contributing to a fairer and more efficient economy, representing a major opportunity for consumers, offering significant benefits, but also challenges that need to be carefully managed. It is essential that all stakeholders - financial institutions, regulators and consumers - work together to maximize the benefits of this transition and ensure a more secure and affordable financial future for all.

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CURRENT TRENDS AND FUTURE CHALLENGES REGARDING THE DEVELOPMENT OF E-BANKING IN ROMANIA

NIOATA (CHIREAC) Roxana-Mihaela, DASCĂLU (CIRJAN) Nadia-Tudora
University of Craiova, Doctoral School of Economic Sciences ”Eugeniu Carada”, Craiova, Romania
roxananioata06@gmail.com, dascalunadia@yahoo.com

Abstract: *The aim of the paper is to explore the trends and challenges regarding the development of e-banking in Romania as well as the prospects for the development of the digital banking sector in Romania. The development of e-banking in Romania is not without challenges. One of the main obstacles is cybersecurity. In an interconnected world, the risks associated with cyber-attacks have increased exponentially, which requires financial institutions to constantly invest in protection technologies and employee training to prevent security incidents and, last but not least, to invest in financial education among consumers, which is a major challenge. Even if the technological infrastructure is available, user confidence in these new financial solutions may be low, especially among older generations or those who have not previously had access to digital banking. Banks therefore need to invest not only in technology but also in consumer education campaigns to help consumers understand the benefits and risks associated with e-banking.*

Keywords: e-banking, banking system, digital banking, customers, Fintech,

J.E.L. classification: F65, F69, G21, M30, O31

1. Introduction

The current trend of e-banking development in Romania is characterized by a significant acceleration in the adoption of digital technologies in the financial sector. This transformation has been and is being fuelled by consumers' growing preferences for fast, accessible and convenient solutions in the context of a rapidly digitalizing society. Romanian banks have responded to this demand by expanding mobile banking services, online platforms and payment applications, which not only facilitate access to financial services, but also enhance the user experience. In this respect, technological developments and innovations in fintech have helped to create a competitive environment where customers benefit from personalized and efficient solutions. In an increasingly digitized world, e-banking has become central to the financial sector, transforming the way consumers interact with financial institutions. The importance of e-banking is underlined not only by the efficiency it brings to transaction processing, but also by its ability to democratize access to financial services, allowing users to make payments, apply for loans or invest from the comfort of their own home. This development has been accelerated by technological advances, but also by changes in consumer behaviour, as consumers look for fast and affordable solutions. Thus, analysing the current trends and future challenges of e-banking becomes essential in order to understand not only the development directions of this sector, but also its impact on the Romanian economy.
In the current context in Romania, e-banking is constantly expanding. This dynamic is in line with global trends, but it is also influenced by the specific local market.

Smartphone usage and internet accessibility have increased considerably and the COVID-19 pandemic has accelerated the adoption of these digital solutions. However, the sector faces significant challenges, such as the need to ensure cybersecurity and navigate an ever-changing legislative framework. Consumer financial education also remains a crucial issue, in particular to reduce the reluctance of certain segments of the population to embrace new technologies. In this complex landscape, a deep understanding of e-banking becomes essential not only for financial sector actors, but also for consumers, who need to be prepared to reap the benefits of this digital revolution.

2. History of e-banking in Romania.

The history of e-banking in Romania reflects a dynamic evolution, marked by significant changes in the financial landscape. In the early 2000s, the first financial institutions started to introduce online banking services, but initial take-up was limited by poorly developed technological infrastructure and widespread consumer reluctance. With the advancement of internet technology and increased use of personal computers, e-banking began to gain ground, and banks realized the importance of digitization to improve their services and respond to changing customer demands.

In recent years, e-banking in Romania has experienced an unprecedented acceleration, driven by technological advances and changes in consumer behaviour. The rise of smartphones and the accessibility of high-speed internet have facilitated faster adoption of digital solutions.

In addition, the COVID-19 pandemic has acted as a catalyst, prompting many consumers to change their financial habits to online payments and account management via mobile apps. As a result, e-banking has evolved from an optional service to a necessity and banks have had to invest in innovative solutions to remain competitive.

Key milestones in this evolution include not only the introduction of internet banking platforms, but also the development of mobile apps offering advanced functionalities such as contactless payments and integration with fintech services (Dumitrescu, 2023).

The impact of emerging technologies, such as artificial intelligence and blockchain, has been particularly significant, improving not only operational efficiency but also transaction security.

These innovations have enabled banks to personalize offers, optimize lending processes and increase consumer trust in digital services. Thus, e-banking in Romania has not only become an integral part of the financial ecosystem, but has also contributed to the formation of a culture of innovation that will continue to shape the future of the banking sector. This transformation is not only a technological process, but also a cultural change, which requires continuous adaptation of all actors involved, from banks to consumers.

2.Current trends in e-banking.

Current trends in e-banking reflect a profound transformation of the financial sector, marked by changes in consumer behaviour and technological advances. The growth of mobile banking is one of the most obvious trends, with users now having access to banking services anytime and from anywhere. This flexibility not only enhances the customer experience but also contributes to the operational efficiency of banks, which can offer personalized services and interact with customers in real time. Mobile apps are thus becoming an essential channel for financial institutions, which are adapting their marketing and communication strategies to meet the needs of an increasingly demanding clientele (Bălan, 2022).

Digitization of financial services and customer relations also plays a central role in this evolution. Romanian banks are adopting digital solutions to manage customer interactions more efficiently, with chatbots and virtual assistants who can quickly answer questions and provide 24/7 support. This change not only optimizes resources but also improves customer satisfaction, with faster and more accessible services. Digitization also allows banks to analyse consumer data more efficiently, providing tailored solutions that better meet individual needs.

The use of fintech technologies and cryptocurrencies adds another layer of complexity and opportunity in e-banking. FinTech bring innovations that transform the way financial products are designed and delivered, challenging traditional banks to rethink their business strategies. Cryptocurrencies, on the other hand, have started to gain popularity as alternatives to traditional currencies, and financial institutions are now exploring ways to integrate these digital assets into their offerings. This trend not only reflects an openness to innovation, but also a recognition of fundamental changes in the global financial landscape.

In the context of these developments, we have observed that the adoption of cybersecurity and regulation is becoming crucial. With the growth of digital services, the risks of fraud and cyber-attacks are greater than ever. Financial institutions need to invest in advanced security solutions to protect customer data and maintain trust in their services. Regulations designed to protect consumers and ensure market integrity are also evolving and banks must comply with these rules to operate effectively.

Current trends in electronic banking are therefore not only transforming the financial sector, but also require constant adaptation to new economic and technological realities.

3. Future challenges in e-banking

The future challenges in e-banking are multiple and complex, shaping an ever-changing landscape for financial institutions in Romania. A key issue is regulation and compliance with existing legislation such as GDPR and European directives. These regulations require banks to protect customers' personal data, but also to ensure transparency in the processing of information.

The implementation of these rules not only requires significant investments in IT infrastructure, but also a cultural change in organizations, which need to integrate these principles into their business strategies. Moreover, regulations are constantly evolving and banks need to adapt quickly to new requirements to avoid sanctions and maintain consumer confidence. Cybersecurity is another major challenge amid the exponential growth in cyber-attacks.

With every technological advance comes new risks, and financial institutions must constantly invest in security solutions to protect customer data and transaction integrity. A security breach can not only have devastating financial consequences, but can also damage a bank's reputation and undermine consumer confidence. In this context, a proactive cyber risk management strategy becomes essential and educating employees and customers on digital security is a priority.
In addition to internal challenges, e-banking also faces increasingly fierce competition from fintech and traditional banks. FinTech are bringing rapid innovation and personalized solutions that appeal to young consumers, forcing banks to rethink their products and services to stay relevant. This competitive climate is spurring innovation, but also a reassessment of traditional business strategies, and banks must decide how to position themselves in this new financial ecosystem.
It can be said that user education and integration in the digital age are becoming vital. Many segments of the population, especially the elderly or those who have not previously had access to digital services, face barriers to adopting electronic banking services. Banks need to implement financial education campaigns to inform consumers about the benefits and risks associated with using digital services. In this way, a better understanding of these tools will not only help to increase the take-up rate, but also to build trust between financial institutions and customers.

4. Conclusion

Future trends and challenges in e-banking require an integrated approach combining regulatory compliance, cybersecurity, competitiveness and user education, thus ensuring sustainable development and effective adaptation to new economic and technological realities.
Looking to the future, it is clear that e-banking will continue to evolve and today's challenges will require new and appropriate innovative solutions. Collaborations between banks and fintech companies, the development of integrated platforms and the use of artificial intelligence to personalize offers are just some of the promising directions that can transform the financial landscape. Therefore, in order to take full advantage of the potential of e-banking, Romania needs to combine technological innovation with a careful approach to regulation and education, ensuring that all citizens benefit from the advantages of the digital economy.

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GOVERNANCE QUALITY: THE KEY TO ABSORBING EU FUNDS IN SUCCESSIVE MFFS

Balan Diana, Nicolescu Ana-Cristina
West University of Timisoara, Doctoral School of Economics and Business Administration, Timisoara, Romania
West University of Timisoara, Romania, Faculty of Economics and Business Administration, Department of Finance, Business Information Systems and Modelling
diana.balan01@e-uvt.ro
cristina.nicolescu@e-uvt.ro

Abstract: *This paper delves into the crucial relationship between governance quality and the absorption of European Structural and Investment Funds across the 2007-2013 and 2014-2020 Multiannual Financial Frameworks. The varying levels of fund utilisation among Member States, often reflective of divergent governance standards, have drawn significant attention. This study stands out by employing cluster analysis, a unique approach, to classify Member States based on governance indicators and ESI fund absorption rates, utilising annual data spanning 27 countries from 2007 to 2022. The findings reveal a clear association between robust governance structures and higher fund absorption rates, while weaker governance consistently leads to lower utilisation. This analysis offers valuable insights for EU policy by pinpointing governance characteristics most conducive to effective fund absorption, thereby contributing to strategic efforts to enhance institutional capacities and promote equitable development across EU regions.*

Keywords: EU Funds; absorption rate; governance indicators; cluster analysis

JEL classification: O52; G28; C38

1. Introduction

The absorption of European Structural and Investment Funds (ESI Funds) is a key factor in advancing socio-economic cohesion and balanced development across Member States. The 'Absorption rates' refer to the speed and efficiency with which the Member States utilise these funds. However, the effectiveness of fund utilisation varies considerably, primarily determined by the quality of governance frameworks, including their transparency, accountability, and operational efficiency. This variability has drawn increasing attention within the context of the EU's Multiannual Financial Frameworks (MFF) for 2007-2013 and 2014-2020, as policymakers seek to understand how differences in governance affect the deployment of EU resources. This study offers a comparative analysis of fund absorption across these periods, employing cluster analysis to group Member States by governance indicators and corresponding fund absorption rates, thereby identifying distinct governance profiles. The findings not only inform policy discourse on EU cohesion but also provide practical guidance on how to improve governance characteristics that support effective fund utilisation. By highlighting the specific governance characteristics that lead to higher fund absorption rates, this research empowers policymakers and stakeholders to make informed decisions, thereby advancing the EU's objective of fostering equitable development across its Member States.

2. Data and methodology

The study uses a comprehensive dataset of 27 EU Member States from 2007 to 2022, structured with an annual data frequency. Each variable in the dataset was standardised to ensure comparability across Member States. Key indicators include ESI funds absorption rates and six governance metrics: Government Effectiveness, Voice and Accountability, Political Stability, Regulatory Quality, Rule of Law, and Control of Corruption. These metrics were chosen for their relevance to governance quality and potential impact on fund absorption rates. Employing cluster analysis, implemented via JASP software, the study systematically categorises countries based on these governance and absorption indicators.

3. Results

The findings presented in this study underscore the intricate interplay between governance efficacy and the absorption of ESI funds across the 2007-2013 and 2014-2020 Multiannual Financial Framework periods. By employing cluster analysis, the study distinguishes groups of Member States based on standardised governance indicators and funds absorption rates, offering profound insights into the institutional and operational dynamics influencing the utilisation of EU financial support. These findings are significant as they provide a deeper understanding of the factors influencing EU fund absorption rates, informing future policy decisions.
The 2007-2013 MFF cluster analysis (Table 1) underscores stark governance and fund absorption disparities. Cluster 1 achieves high scores in governance indicators alongside positive fund absorption. In contrast, Cluster 4, with low scores across governance dimensions, reveals significant institutional weaknesses hindering effective EU fund utilisation.

Table 1. Cluster Means for 2007-2013 MFF

	ABR	GE	VA	PS.	RQ	RL	CC
Cluster 1	0.122	1.275	1.297	0.994	1.391	1.253	1.417
Cluster 2	0.23	-0.168	-0.065	0.145	-0.378	-0.107	-0.016
Cluster 3	0.103	0.692	0.651	0.153	0.455	0.78	0.659
Cluster 4	-0.569	-1.568	-1.874	-0.96	-1.472	-1.71	-1.389
Cluster 5	-0.06	-0.582	-0.45	0.02	-0.383	-0.565	-0.777
Cluster 6	0.079	-0.295	-0.416	-1.703	-0.48	-0.375	-0.478

Source: Authors' processing using JASP

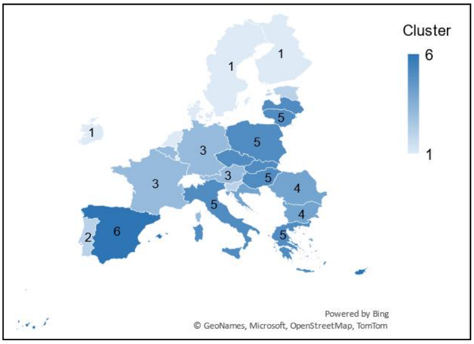
In contrast to the 2007-2013 MFF period, which identified six distinct clusters, the 2014-2020 MFF analysis consolidates these into four clusters (Table 2), indicating a convergence in governance profiles among some Member States. Cluster 1 shows strong governance indicators alongside a high absorption rate, signalling proficient fund management. Conversely, Cluster 4, with consistently low scores across governance indicators, highlights persistent institutional constraints that hinder effective EU fund absorption.

Table 2. Cluster Means for 2014-2020 MFF

	ABR	GE	VA	PS.	RQ	RL	CC
Cluster 1	0.215	1.07	1.081	0.709	1.233	1.093	1.251
Cluster 2	0.027	-0.078	-0.162	0.19	-0.256	-0.146	-0.406
Cluster 3	0.112	0.612	0.588	-0.488	0.348	0.768	0.58
Cluster 4	-0.286	-1.229	-1.147	-0.735	-1.121	-1.24	-1.073

Source: Authors' processing using JASP

The clustering analysis of EU Member States for the 2007-2013 and 2014-2020 MFF periods (Figure 1) reveals distinct governance and fund absorption profiles, demonstrating the critical role of institutional capacity in shaping absorption outcomes. In both periods, high-governance countries such as Denmark, Finland, and Germany consistently appear in clusters marked by robust institutional frameworks and elevated EU fund absorption rates, underscoring the stabilising influence of strong governance structures. Conversely, lower-governance countries like Bulgaria and Romania remain in clusters characterised by diminished governance indicators and lower absorption rates across both periods, revealing persistent structural limitations within domestic governance systems that impede effective fund deployment. Intermediate clusters demonstrate varying governance standards and fund absorption levels, with countries such as the Czech Republic and Spain showing gradual improvement in their absorption capacities from 2007-2013 to 2014-2020. This comparative analysis underscores continuity in governance-related challenges for certain Member States and incremental progress for others, highlighting the nuanced relationship between national governance contexts and EU fund absorption outcomes across successive MFF periods.



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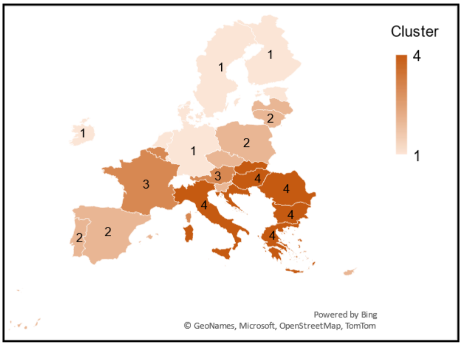

(2)

Figure 1. EU Member States by Governance and Fund Absorption Clusters for 2007-2013 MFF (1) and 2014-2020 MFF (2)
Source: Authors' processing using Microsoft Excel

4. Conclusion

In conclusion, this analysis underscores a pronounced relationship between robust governance structures and the effective absorption of EU funds, aligning with prior research (Achim and Borlea, 2015; Rodríguez-Pose and Garcilazo, 2015; Incaltarau, Pascariu and Surubaru, 2020). Member States exhibiting high regulatory quality standards, rule of law, and government effectiveness have demonstrated a tangible advantage in fund absorption, highlighting the essential role of well-governed administrative frameworks in aligning operational practices with EU requirements. Conversely, lower scores in governance indicators—such as accountability and corruption control—are associated with reduced fund absorption capacity, indicating that deficiencies in these areas may hinder the effective deployment of EU resources. The comparative analysis between 2007-2013 and 2014-2020 Multiannual Financial Frameworks reveals both progress and areas of stagnation in fund absorption. For the EU, strengthening governance structures across Member States remains crucial to achieving a balanced and equitable deployment of funds. These insights suggest that future EU initiatives should focus on capacity-building programs, tailored governance reform strategies, and continuous monitoring to help lagging regions enhance their institutional frameworks. Such efforts would improve fund absorption rates and contribute to sustainable socio-economic development and cohesion across the EU.

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EXCHANGE RATE MANAGEMENT IN AN INFLATION TARGETING REGIME

Bozagiu Andreea-Mădălina, Enache Iuliana Violeta
The Bucharest University of Economic Studies, Department of Money and Banking, Bucharest, Romania
andreea.bozagiu@fin.ase.ro
enacheiuliana23@stud.ase.ro

Abstract: *Our scientific working paper underlines the importance of establishing the direct relationship between inflation and its main economic determinants like the exchange rate and the interest rate, as well as their influencing variability. We did use in our paper the multiple regression methodology to detect the influence of the above dimensions over inflation. The main results highlight both the positive and statistically significant impact of the interest rate over inflation, as well as the negative impact of the exchange rate. This is the reason that shows how our findings can provide valuable insights for policy and decision makers in need to stabilize the economy and properly manage inflation.*

Keywords: inflation, exchange rate, interest rate, multiple regression

JEL classification: B26, E31, E43

1. Introduction

The main goal of our scientific work is to present the link between inflation and its main determining factors. The scientific literature about this topic relief a wide overview of studies examining inflation and its influencing factors. There are more definitions about inflation, but it is recommendable to agree on one unanimously accepted by everybody interested in and operating with it. There are more and more voices, authors observing how the main economic indicators of national economies are increasingly influenced by the interconnection with the global economy, as external factors. But the more synergies erase among the national economies in today modern era, the more independent to each other those economies become and so their macroeconomic indicators. In the last period, more economists and analysts explained about the trend of nominal inflation became influential at global level, after a long time was considered primarily a mainly internal issue. The synergies and interdependence of inflation across countries proved to be a new challenge for analysts, economists and policymakers too. This is the reason that might increase the risk of wrong policies when dealing to excessively high or low inflation, as the solutions can be different, depending on the source of the inflationary shock. Hartmann and McAdam (2018).

British economist Alban William Phillips, after consistent and long period research over historical data from 1861 to 1957, identified an inverse relationship between inflation and unemployment in the British economy, well known the Phillips Curve. Phillips postulated that when inflation rates go up, unemployment rate goes down, as price increases stimulate the economy, thereby expanding employment opportunities and reducing unemployment. On the contrary, a decrease in inflation is usually associated with higher unemployment, as economic factors become less stimulative for business expansion. This relationship reveals the idea that for reducing unemployment it might be acceptable a degree of inflation, while addressing inflationary pressures might inherently conduct to higher unemployment, thus restricting purchasing power and calming prices rises.

However, M. Friedman and E. Phelps (1968), criticized the original Phillips Curve model, by pointing out the lack of inflation expectations, as hypothesis. They claimed that any inverse correlation between inflation and unemployment would be rather temporary and thus confirmed what Ben Bernanke said in 2006 about the fact that any systematic reduction of unemployment below its natural rate cannot be achieved through sustained inflationary policies.

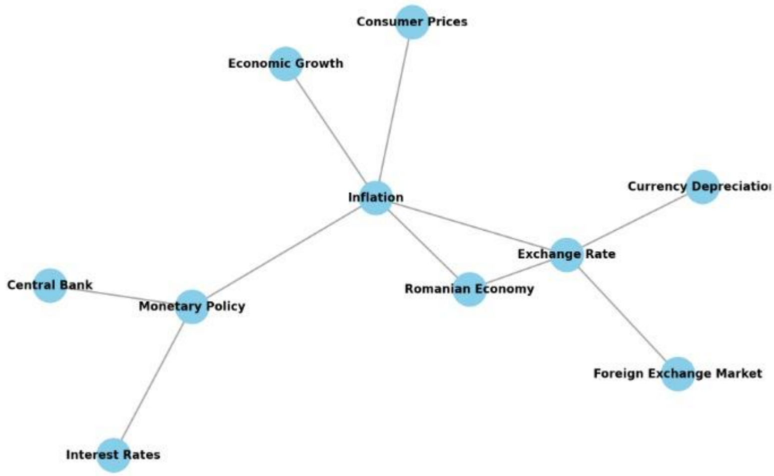

Figure 1: Inflation and its determining factors connectess
Source: Own Research

2. Methodology and Results

One of the most widely addopted methods for estimating the economic impact of variables on inflation rate is simple econometric regression. The main advantage of this standard approach is its conceptual simplicity and ease of interpretation, offering a direct way to understand the relationship between two variables by estimating the effect of an independent variable on a dependent variable. Similar to simple regression, multiple regression is also utilized, which additionally enables the quantification of the influence of multiple variables on inflation.

$$Y=\alpha+\beta_1X_1+\beta_2X_2+\ldots+\beta nXn+\varepsilon$$

where: **Y** represents the inflation rate (the dependent variable), $\mathbf{X_1}$**...** $\mathbf{X_n}$ are the explanatory variables (e.g., exchange rate, interest rate, output gap), **α** is the intercept term, **β** is the coefficient indicating the impact of the explanatory variable on inflation, **ε** represents the model error.

The model results for Romania, applied to a quarterly data sample from 2005Q1 to 2024Q1, are as follows:

Table 1: Regresion Output

Variable	Coefficient	Std. Error	t-Statistic	Prob.
c	0.762166	0.106135	7.181105	0.0000
Exch_Rate	-0.055633	0.043122	-1.290143	0.0011
Int_Rate	0.283887	0.076492	3.711303	0.0004
Y_gap	0.013567	0.035876	0.378166	0.0064
R-squared	0.185201			
Adjusted R-squared	0.151716			
S.E. of regression	0.883267			
Sum squared resid	56.95169			
Log likelihood	-97.64659			
F-statistic	5.530892			
Prob(F-statistic)	0.001773			
Mean dependent var	0.889630			
S.D. dependent var	0.959006			
Akaike info criterion	2.640171			
Schwarz criterion	2.761927			
Hannan-Quinn criter.	2.688873			
Durbin-Watson stat	0.573378			

Source: Own research

*Inflation=0.762166− 0.055633 Exch_Rate + 0.283887 Int_Rate +0. 013567 Y_gap*where, Inflation=CORE3,Exch_Rate=REAL_EFFECTIVE_EXCH_RATEInt_Rate=SPREAD_ROBOR3M and Y_gap=output gap

From the presented table, it is evident that the chosen model explains approximately 18.5% of the variation in core inflation, suggesting that other factors not included in the model may influence inflation. The F-statistic test and the associated probability (p = 0.001773) indicate that the overall model is statistically significant. However, the Durbin-Watson value suggests the possibility of autocorrelation in the residuals, which could impact the validity of the conclusions.Regarding the regression coefficients, the positive value of the constant highlights an inherent tendency toward core inflation in the economy. In the case where all other independent variables are zero, the inflation level would be 0.762166. The positive and statistically significant coefficient of the interest rate suggests that an increase in the ROBOR spread contributes to higher core inflation. This could reflect that higher borrowing costs translate into greater financing expenses for companies, which are then passed on to consumers in the form of higher prices. Additionally, the positive value of the output gap coefficient suggests that as the economy operates above potential (a positive GDP gap), there is increased inflationary pressure as demand exceeds the production capacity of the economy. On the other hand, the negative coefficient for the exchange rate implies that an appreciation of the real effective exchange rate (a higher value) tends to reduce core inflation.

3.Conclusion

In our article we explored the historical relationship between inflation and its relevant economic determinants, emphasizing their influence on national economies and monetary policies. As a result of our research, we concluded that inflation is not an isolated process, rather than an interconnected one with global economic variables, such as the exchange rate and interest rate. The results of our analysis suggest that the developed regression model explains approximately 18.5% of the variation of core inflation, indicating that there are other significant factors not included in the model, factors influencing the dynamics of inflation as well.The predominant influence of interest rates on inflation is fully confirmed by our findings, showing that higher borrowing costs will lead to price increases, as companies pass growing expenses on to consumers. Moreover, we did observe that a positive output gap generates inflationary pressures and during periods of economic expansion, demand exceeds production and delivery capacities, driving up prices.Another significant aspect analyzed is the debate and critique of the Phillips model by Friedman and Phelps, who underline the role of inflation expectations in the relationship between inflation and unemployment. This approach provides a broader perspective on how monetary policy should be tailored to avoid inflationary pitfalls without compromising economic stability.The conclusion is that inflation is a multifaceted phenomenon influenced by complex interactions between internal and external economic variables. Economic and monetary policies must be carefully calibrated to respond to emerging challenges, considering global trends and economic interdependencies. Future approaches should integrate both traditional and global factors to provide effective and sustainable solutions for managing inflation.

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THE IMPACT OF BANK BRANCH DENSITY ON MORTGAGE LENDING IN THE EURO AREA

Radu Popa, Alin Ioan Vid
Bucharest University of Economic Studies, Bucharest, Romania

Radu.Popa@fin.ase.ro
Vid.alinioan@gmail.com

Abstract: *Since the Great Financial Crisis, the number of bank branches has decreased significantly as credit institutions have sought to cut costs and increase efficiency. However, such developments may have adverse effects on households' access to finance. Using a panel dataset for the Euro area from 2010 to 2023, this paper aims to uncover how the changes in bank branch density have affected mortgage lending growth. Our results indicate that, after controlling for a series of macroeconomic and financial indicators, a reduction in bank branch density of 10 per 100,000 people leads to a decrease of 0.13% in the yearly growth rate of mortgage loans.*

Keywords: mortgage lending, banking, finance, panel data.

JEL classification: G51; E58; C35; D14.

1. Introduction and literature review

Access to finance for households is an important component for building wealth, especially regarding mortgage financing. However, the trend in the Euro Area since the Great Financial Crisis has been the reduction of the number of branches, as banks sough to cut costs and move their activity online. For example, the average number of bank branches per 100,000 people in 2010 was 42, while by 2023 it had decreased to 19 per 100,000 people. Furthermore, as shown in Figure 1, there exists a significant heterogeneity between countries, with some countries such as Spain, Luxembourg and Cyprus experiencing a decrease twice as large as the average, while in other countries such as Slovakia, Croatia and Austria the density of branches was mostly stable. By leveraging on these cross-sectional differences, this paper strives to prove that this structural shift has had a negative impact on access to finance for households.

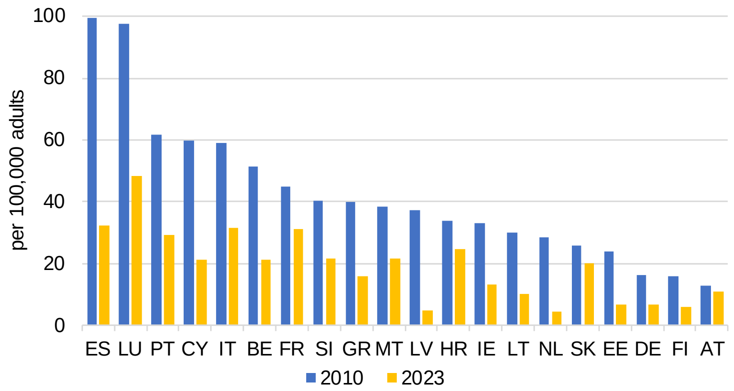

Figure 1: The evolution of commercial bank branches density in the Euro area over time
Source: World Bank, World Development Indicators

Access to credit is an important avenue, especially for low-income debtors, to build wealth by investing in real-estate. Given that most households have invested their wealth in their homes, access to mortgage finance can have significant consequences on households' long-term well-being. However informational asymmetries and lack of financial literacy may prevent borrowers from accessing credit in case of branch closures. Jiang et al. (2023) show that branch closures have asymmetric effects, impacting to a greater extent older and poorer borrowers, as they have less access to technology to supplement services of bank branches through online banking. Barca and Hou (2024) show that this trend was exacerbated by the COVID-19 pandemic which supported banks to shifting operations online.

On the other hand, Ergundor (2010) finds that the existence of branches of bank branches in low-income neighbourhoods has positive effects on mortgage issuance, both in terms of issuance volumes, as well as interest rates charged. Gilje et al. (2017) demonstrate that bank branches pay an important role in integrating local credit markets by attracting deposits in counties which benefited from the shale oil boom and allowing increased supply of mortgage loans in other regions where these banks have a physical presence.

This paper contributes to the literature in two ways. First of all, most studies presented focus on single geographic entities. By performing a panel analysis of Euro area countries, our analysis sheds light on the effect of branch closures in an international context. Second of all, our analysis spans a long period of time and thus is able to offer longer term predictions regarding the effect of bank branch presence on access to finance. Finally, by controlling for both banking sector characteristics, as well as macroeconomic developments on the national level, we are able to isolate the effect of bank branch density on issuance of mortgage loans.

2. Methodology and results

In order to estimate the impact of bank branch density on mortgage loan origination, this paper will use a yearly panel model. The dependent variable is the 1-year growth rate of mortgage loans at the national level, as calculated from the Monetary Financial Institutions Balance Sheet Items in the Statistical Data Warehouse. In the first specification only country fixed effects are added, besides our variable of interest which is the number of commercial bank branches per 100,000 adults. The second specification also includes banking sector controls such as CET 1 capital ratio, NPL ratio, return on equity and cost of mortgage borrowing. These are important as banks with higher capitalization and profitability are more likely to lend. On the other hand, if the NPL rate is high or if the costs of borrowing increases, banks are less likely to lend. These indicators are taken from the Consolidated Banking Data in the Statistical Data Warehouse. Finally, we also include macroeconomic controls such as real GDP growth, unemployment rate and price growth of residential real-estate. All controls are included with a 1-year lag. By using these controls, we ensure that we control for both supply-side factors related to the health of the banking sector, as well as demand-side factors related to the health of the residential real-estate market and general economic conditions.

Analysing the results in Table 1, we observe that the coefficient relating to bank branch density is positive and significant in all specifications. Taking into account all controls, a reduction in bank branches of 10 per 100,000 persons results in a -1,3% lower mortgage credit growth. Given that the overall change in bank branches was -23 per 100,000 persons between 2010 and 2023, we can conclude that this the reduction of bank branches had an important impact on credit growth and consequently on household welfare and ability to build wealth.

Table 1: Main results

	(1)	(2)	(3)
Commercial bank branches /number per	0.053* (0.028)	0.111** (0.045)	0.132*** (0.047)
CET1 capital ratio		0.005 (0.117)	0.014 (0.118)
NPL ratio		-0.050 (0.057)	-0.037 (0.082)
Return on Equity		-0.147*** (0.049)	-0.145*** (0.050)
Real GDP growth			-0.143* (0.073)
Unemployment rate			0.001 (0.222)
RRE price growth (nominal., y-o-y)			0.078 (0.065)
Observations	208	174	174
R-squared	0.501	0.542	0.555
Country FE	Yes	Yes	Yes
R2	0.501	0.542	0.555
Likelihood	-534.2	-439.3	-436.8

Source: Own calculations

5. Conclusion

Using a country-level dataset for the Euro between 2010 and 2023, we have shown that the reduction of bank branch density has had an important effect on mortgage lending. These developments highlight the negative consequences that branch closures have had on access to finance for households. Given the existence of asymmetric information, bank branches play an important role in filling that gap and supporting credit issuance, especially to low-income households. Further developments of this study may aim analyse the distributional consequences of branch closures, by evaluating mortgage issuance by income class.

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DOES THE QUALITY LEVEL OF PUBLIC INSTITUTIONS MATTER? NON-EURO CEE COUNTRIES CASE

Alin-Ioan Vid, Radu Popa
Doctoral School of Finance, Bucharest University of Economic Studies, Bucharest, Romania
vid.alinioan@gmail.com
radu.popa@fin.ase.ro

Abstract: *This paper explores the role of two initial conditions in explaining differences in economic growth for Central and Eastern European countries over the past 20 years: the quality of public and economic institutions at the national level and the level of public debt. The approach employed starts from the one presented by Masuch et al. (2016) who argues, similar to other approaches in the literature that, in general, the quality of public institutions is a very important element of economic growth and could be particularly important for countries that have initial public debts above a certain threshold. In this paper, a brief literature overview is provided, as well as the latest developments regarding the relevant indicators in CEE.*

Keywords: economic growth; CEE; public institutions quality; macroeconomics; GDP/capita.
JEL classification: F43; H11

1. Introduction
The critical role of robust and efficient public institutions, commonly known as good governance, has been extensively highlighted for the first time in studies from the early 2000s as an essential factor in driving long-term economic growth. These studies demonstrated that countries with weaker public institutions often struggle to maintain sustained economic growth and are more prone to crises and stagnation (Acemoglu, Johnson, and Robinson, 2001; 2002). Acemoglu et al. (2004) illustrate, through various historical episodes, how institutions shape incentives, impose constraints on economic actors, and ultimately play a fundamental role for the long-term economic outcomes. They define economic institutions as the frameworks governing property rights and access to economic resources. Therefore, effective public economic institutions are those that safeguard property rights and ensure fairly broad access to economic resources within society. Additionally, historical analysis underscores that strong institutions, coupled with democracy, transparency, and political stability, contribute to minimizing economic volatility.

2. Literature review
The importance of public (political and economic) institutions for the economic growth and population wealth has recently gained attention once again through Acemoglu, Johnson and Robinson winning the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel in October 2024. As the The Committee for the Prize in Economic Sciences in Memory of Alfred Nobel (2024) noted, the topic has been in the researchers’ attenttion way before this year winners’ first publications in early 2000s.

Some aspects of the economic institutions influencing prosperity and wealth can be found in the work of classical economic thinkers like Adam Smith and John Stuart Mill. Smith highlighted the importance of property rights, markets, and competition as drivers of productivity and wealth, while Mill explored how governance structures and social policies could promote both individual freedom and collective prosperity. In a series of scientific papers and their influential book, "*Why Nations Fail?"* (2012), Economics Nobel Prize 2024 winners argue that countries with "inclusive institutions" - those that allow broad participation, uphold property rights, and ensure political stability, therefore foster innovation, investment, and economic growth. Conversely, the opposite, so-called "extractive institutions," which concentrate power and wealth in the hands of a few, often lead to stagnation, poverty, and inequality. By examining historical and cross-country evidence, they demonstrate that the quality of institutions, rather than geography or culture alone, is the fundamental determinant of prosperity or poverty in nations. Their research is crucial for understanding that a good economic development is highly dependent of inclusive governance structures.

Hall and Jones (1999) investigate why productivity varies greatly across countries. They argue that differences in output per worker are largely explained by "social infrastructure," which includes institutions and government policies that shape the economic environment. Countries with strong social infrastructure – like secure property rights, rule of law, and open markets – encourage investment in physical and human capital, leading to higher productivity. In contrast, countries with weak infrastructure often face lower productivity. Their study highlights how institutional quality fundamentally impacts economic performance by influencing the incentives and resources available for productive activities.

Masuch et al (2016), building on Acemoglu et al. work, examine how institutional quality and public debt jointly impact economic growth in Europe. They find that strong institutions support growth, but high public debt can undermine this effect, especially in countries with weaker institutions. Their analysis suggests that while robust institutions can offset some negative impacts of debt, excessive debt remains a major barrier to sustainable growth, highlighting the need for both fiscal responsibility and institutional strength for long-term stability.

3. Current trends in public institututions quality and economic performance indicators in CEE

For the purpose of this study, public and economic institutions are defined in alignment with the approaches proposed by Acemoglu et al. (2004) and Masuch et al. (2016). Institutional quality is measured using four governance indicators derived from the Worldwide Governance Indicators database (managed by the World Bank): regulatory quality, the rule of law, government efficiency, and corruption control. These indicators reflect the ability of economic systems to establish a level playing field for market participants, reduce the overuse and waste of resources, and create incentives that promote innovation, investment, saving, and the supply of public goods.

Work conducted by Blanchard and Wolfers (2000), as well as Masuch et al. (2016), highlighted the challenge of endogeneity when examining institutional variables alongside macroeconomic indicators, as these variables are often assessed retrospectively. Hall and Jones (1999) also stressed the interdependence between institutional variables and productivity levels, suggesting that institutional quality may be influenced by economic output per worker. Consequently, studies investigating institutional variables must implement thorough robustness checks, with instrumental variable techniques such as Two-Stage Least Squares (2-SLS) being commonly recommended, as noted by previous research.
The approach described above does not have the objective of explaining the differences in GDP level, but of GDP/capita growth. Many studies, even for Central and Eastern European economies, focus on macroeconomic indicators and classical variables, without including or highlighting institutional quality as an explanatory factor of economic growth.

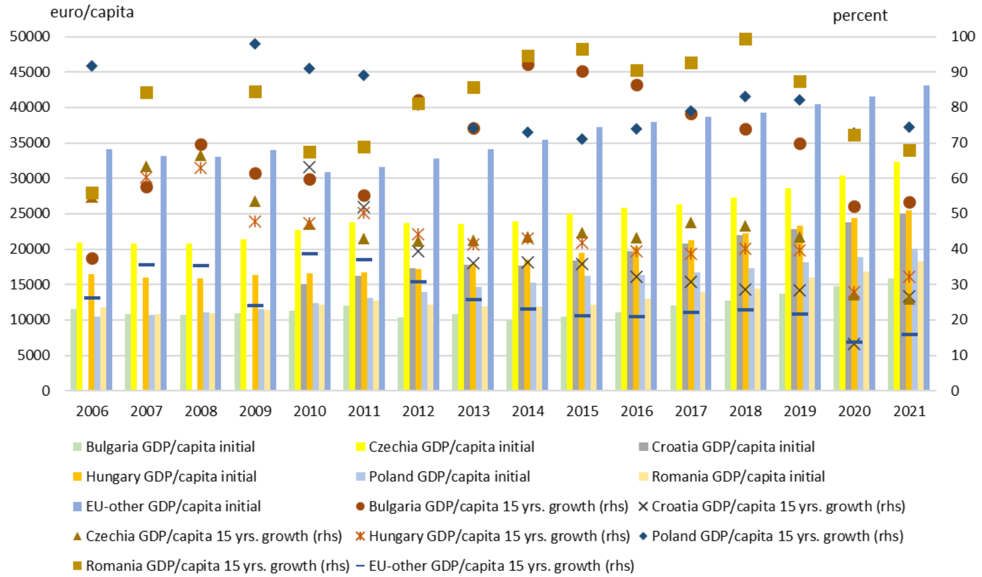

Figure 1: GDP/capita developments, international comparisons
Source: Eurostat, own calculations
As Figure 1 shows, Romania and Poland displayed significant 15 years growth rates of GDP per capita in the considered period (2006-2021), indicating substantial economic catch-up, as their initial GDP per capita stood at low levels in the 1990s. On the other side, countries with initially higher GDP per capita, such as Czechia or Croatia, registered rather moderate growth rates, suggesting a slower pace of convergence. These developments align with economic literature, as countries with lower initial income levels often grow faster when integrating into larger, more developed markets like the EU.

Figure 2 shows that Bulgaria and Romania, countries that registered high growth rates in GDP per capita as revealed in the previous figure, significantly improved the quality of their institutions from 2000 to 2021, but are still well below the EU average. Czechia, which also started with a high level of GDP in the 1990s, has maintained a very good quality of institutions that has improved significantly over time. Interestingly, the overall quality of institutions in the EU increased between 2000 and 2014, but subsequently declined after that.

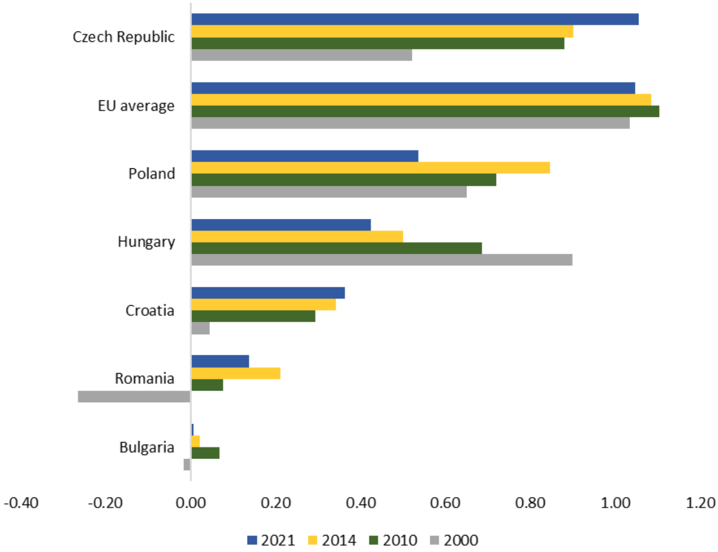

Figure 2: Worlwide Governance Indicators average, international comparisons
Source: World Bank, own calculations

4. Conclusion

In summary, the paper points that the public institutions quality significantly influences economic growth and integration in Central and Eastern European countries. Substantial improvements in institutional quality observed in Bulgaria and Romania, alongside their notable GDP per capita growth, underscore the importance of effective governance as a driver of economic performance. The literature, including seminal works by Acemoglu, Johnson, and Robinson, supports the notion that robust institutions are fundamental for sustainable growth and resilience. In order to further clarify the complex relationship between institutional quality and economic outcomes, we plan to employ an empirical model in a further paper to disentangle these effects and provide deeper insights for policymakers aiming to enhance economic development in the region.

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ESG ASSESSMENT AND REPORTING: A BIBLIOMETRIC ANALYSIS

Matteo Focaracci[1], Karinne-Alexandra Radu[2]
[1]*Finance Department, Doctoral School of Economics and Business Administration, Timisoara, Romania*
[2]*Accounting Department, Doctoral School of Economics and Business Administration, Timisoara, Romania*
matteo.focaracci11@e-uvt.ro
karinne.radu94@e-uvt.ro

Abstract: *Within the past two decades, ESG (Environment, Social and Governance) dimensions transitioned from voluntary corporate initiatives to a regulated context fuelled by frameworks such as the UN's Principles for Responsible Investment (2006) and the EU's Corporate Sustainability Reporting Standard (2022). The paper aims to analyse how the literature developed over time in respect of ESG assessment and reporting within the last two decades, focusing mainly on how the trends shifted in time, but also how the key themes involving these key concepts progressed throughout the studied period. The article used bibliometric analysis of scientific periodicals from Web of Science database between 2004 and the current period. The scientific papers selected by the keyword plus function, searching by „ESG and assessment or reporting" were exported for processing in the R Studio (bibliometrix package) computer program. The results of the analysis show an increase in the publication counts coupled with the changing focus of the research which indicates the relevant role that ESG factors play in promoting sustainable business practices.*

Keywords: ESG assessment, ESG reporting, reporting transparency, ESG factors, bibliometric analysis

JEL classification: Q56

1. Introduction

In recent years, significant changes occurred in the ESG landscape, mainly driven by the adoption of mandatory sustainability reporting standards in the EU, the US and the IFRS Foundation which highlighted the conceptual differences between sustainability and financial reporting (Wagenhofer, 2023). Unlike the early twenties, when disclosures about corporate social responsibility (CSR) were voluntary, nowadays there is a legislated requirement for companies to publish large sets of additional financial and non-financial data linked to ESG. In this evolving context, it is essential to understand the historical development of ESG and anticipate its future trajectory.

In recent years, several literature review studies have been carried out to explore several facets of ESG. According to Dwibedi et al. (2024), the main topics studied in recent years in this area are performance and content analysis of high-quality articles of ESG research, link between ESG and firm performance and trend, ESG disclosure and its impact on firm performance.

2. Data Sources and Analysis Method

To gain an understanding about the publication trends and key terms evolution involving “ESG assessment and reporting”, we used bibliometric analysis. The study consistently examined Web of Science (WoS) Core Collection database, a multidisciplinary database of scholarly journal articles. The sample of articles analysed was extracted as a result of the combination of the following keyword plus with Boolean operators “ESG AND assessment OR reporting”. The first search generated 60,369 documents. After scrutinizing, cleaning up and filtering the data with additional fields such as: “publication years”, “Web of Science Categories”, “languages”, “research areas” and “document types”, we obtained a dataset of 1,202 articles.

We then uploaded the final dataset in R Studio, biblioshiny package, for analysing and visualising the shift and possible patterns in the technical literature, through a bibliometric research approach (Aria and Cuccurullo, 2017).

R is a language and an environment for statistical computing and graphics (R Core Team, 2016) that offers diverse statistical and graphical techniques while being highly extensible (Matloff, 2011). As an object-oriented and functional programming language, R allows for automated analyses and custom function creation (Aria and Cuccurullo, 2023). Its open-source nature fosters community support and continuous contributions from prominent statisticians.

3. Methodology

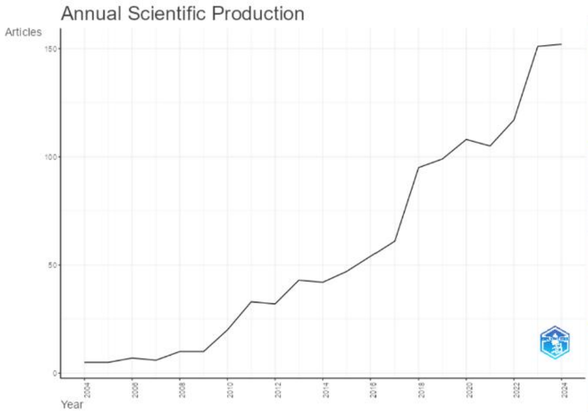
3.1. Annual scientific production

The analysis, shown in Figure 1, addresses the first research question, which in turn drives the research aim of this article: *What is the production trend for the topic of ESG assessment and reporting?* It depicts the increase in the number of studies related to ESG assessment and reporting from 2004 to 2024. This data can be subdivided into the following four periods: 2004-2009, 2010-2014, 2015-2019 and 2020-2024, for which the total number of publications is 43, 170, 356, and 633 respectively, doubling or more the production in each time frame.

During the early period of data collection, the growth trend from 2004 to 2009 seems to have low content as there were few publications aiming to further investigate the area of interest and about the significance of the concept (Eccles et al. 2014). However, with the increasing popularity of sustainable development, the scholarly attention spiked as well leading to a significant increase in publications during the years 2010-2014. This period also marked a new stance on the topic that shifted the focus towards the incorporation of ESG factors into business and investment practices.

The years between 2015 to 2019 saw more studies on the impact of ESG parameters and how key players in the economy can utilize them, the total output then was 356 articles. This growth also coincided with the stressed regulation as well as growing

concern towards climate change that attracted many scholars to research ESG disclosures and their influence on companies.
Starting from the year 2020 to 2024, there was a development in the number of publications with a total of 633 articles. A particularly sharp increase can be seen in the years of 2023 and 2024 where there are more than 150 articles published in each year.



Year	Articles
2004	5
2005	5
2006	7
2007	6
2008	10
2009	10
2010	20
2011	33
2012	32
2013	43
2014	42
2015	47
2016	54
2017	61
2018	95
2019	99
2020	108
2021	105
2022	117
2023	151
2024	152

Figure 1: Annual scientific production of publications, 2004-2024
Source: Authors' computation in R.

3.2. Thematic keywords evolution

Figure 2 provides a classification of the previous body of research which directly answers our second research question: *Which key themes contain the ESG assessment and reporting?* It, in fact, gives more information about the focuses of the different themes within the scope of ESG research throughout the years. The figure illustrates the evolution of the ESG research themes from one time range to another, indicating a change in trends of the academic, in line with the growth of the discipline.
In the first time frame, from 2004 to 2009, different themes dominate research which include "corporate annual-reports", "earnings", “self-reports”, and “transformational leadership” among others. These themes are focused on comprehending the basic mechanisms and motivation that drive the compilation of corporate reports, with particular interest on frameworks that motivate report disclosures (Gray, 2006).
In the period from 2010 to 2014 more themes began to be central issues such as “financial-reporting standards” and “model”. This indicates that during this period, scholars' focus was adjusted towards the interest in modelling, standardization and the understanding of how corporate decisions might be influenced by practices aligned with ESG principles.
Between 2015 and 2019, the emphasis shifted to assessing “the impact” of sustainable practices together with “self-reported affect” and “reporting quality”. In this regard, there was more focus on the impact of ESG factors on the companies' “performance” and also on the credibility and the accuracy and transparency of the data that was reported (Khan, Serafeim, & Yoon, 2016).
In the most recent period from 2020 to 2024, focus areas include “reporting practices”. In addition, “impact,” “annual-report readability” and “financial-reporting standards” emerged as key areas of focus. The presence of themes like “fees”

further enforces the motivation about the costs of capital for ESG compliance requirements (Boffo & Patalano 2020). Therefore, this period highlights an important stage of development of ESG research where the focus is now on the reporting quality and the economic costs of reporting.

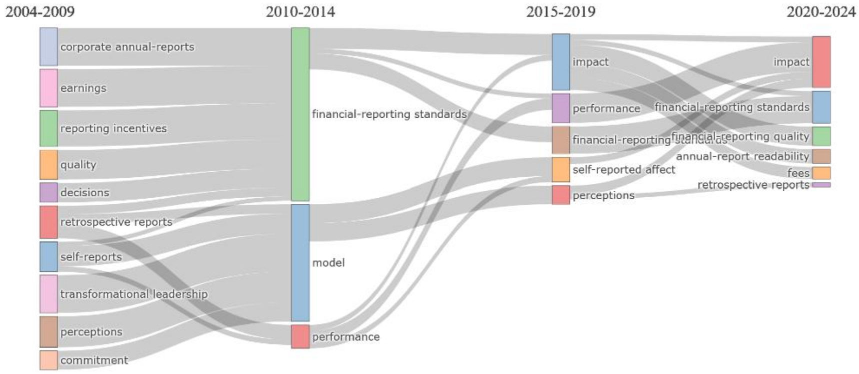


Figure 2: Thematic evolution of the keywords, four-time intervals (2004-2024)
Source: Authors' computation in R.

4. Conclusions

According to the data, ESG research will continue to develop because of new reporting frameworks and the increasing pressure from stakeholders for robust and transparent disclosures. This evolution indicates that since the field advanced, the academics' attention in the practice of ESG has now shifted towards an investigation of the interrelation of ESG mechanisms on business practices and their functioning within them, taking into consideration the issues of accountability and transparency in corporations (Sustainable Finance Disclosure Regulation [SFDR], 2021).
The development of the field of knowledge about ESG research and its application will remain a key area of interest including its qualitative and quantitative aspects concerning the reporting, governance and performance of firms. Therefore, as research developed, the importance of the themes covered in this article have been critical in forecasting on what ESG practice as well as research will focus in the future. In this connection, other roles with other technologies, such as AI, will be included, providing future research direction, which could include exploring the long-term effects of regulatory changes, the costs and benefits of ESG compliance, and others financial and non-financial topics.

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FINANCIAL REPORTING QUALITY AND SUSTAINABILITY. A BRIEF LITERATURE ANALYSIS BASED on PRISMA GUIDELINES

IURAȘ Andreea

Doctoral School of Economics and Business Administration, West University of Timișoara, Timișoara, Romania
andreea.iuras00@e-uvt.ro

Abstract: *In today's changing economy there is a lot of pressure from stakeholders for companies to present their financial position comprehensively and neutrally, emphasizing the financial reporting quality (FRQ) and also keeping track of all sustainability-related matters. Considering this fact, our research paper aims to find whether there is a significant link between FRQ and sustainability. The sustainability part was considered to be represented by corporate social responsibility, ESG, and integrated reporting. Considering the Web of Science database, we conducted a systematic literature review using the PRISMA 2020 framework and a bibliometric analysis using the VosViewer software. The analysis of the eligible data set and articles suggest that there is a notable link between FRQ and sustainability, this topic providing increasing research potential.*
Keywords: financial reporting quality, sustainability, CSR, PRISMA framework
JEL Classification Codes: G10, G32, M14, M40

1.Introduction

The actual context regarding social and environmental challenges puts pressure on companies to innovate the presentation of a comprehensive image of their performance (Dragomir & Dumitru, 2023). Financial reporting focuses on providing stakeholders with accurate, reliable, and timely financial information, for them to be able to make informed and objective decisions (Abed et. al, 2022). The importance of financial reporting quality (FRQ) is recognized by academics, standard setters, and market analysts who strive to develop accounting standards and corporate governance conceptual frameworks (Barac, 2021). Nevertheless, recent events such as the global financial crisis, several scandals, and unfair corporate behaviour raised awareness of social and environmental matters, highlighting the pitfalls of traditional corporate reporting (Zennaro et. al, 2024). Nowadays, we can hardly discuss financial reporting without taking into account aspects related to non-financial reporting (Stone and Lodhia, 2019). The quality of sustainability reports (sustainability report quality - SRQ) shows the quality of the reporting process, which denotes the ability of the organizational structure to ensure a higher quality reporting process (Justina and Lantara, 2024). Therefore, the main objective of our study is to find out if the current literature provides information that could notably link financial reporting quality and sustainability. In our research, by 'sustainability' we mean all the elements that are sustainability-related, such as corporate social responsibility (CSR), ESG, and integrated reporting.

2. Literature review

Financial reporting quality (FRQ) comprises the accuracy with which firms' financial reports present comprehensive and neutral information about a company's financial position (Chulkov and Wang, 2022). The quality of financial reports is often based on earnings reporting, management, and forecasting (Chulkov and Wang, 2021). Many studies in the current literature focus on measuring financial reporting quality through earnings management (EM) (Martinez-Ferrero et. al, 2013; Palacios-Manzano et. al, 2019; Habiba Al Saher, 2019; Choi and Pae, 2011). EM is considered to be the inverse of FRQ (Dechow and Dichev, 2002), meaning that the lower the EM, the higher the FRQ. In accordance, most studies examine the associations between financial reporting quality and CSR performance indicators, such as CSR ranking in the Corporate Responsibility Magazine (Timbate and Park, 2018), externally determined ratings provided by the Corporate Reputation Business Monitor (MERCO) database (Palacios-Manzano et. al, 2019), a based upon previous studies regression model (Mawih Kareem AL Ani, 2021), CSR performance measures from the MSCI ESG KLD database (Chulkov and Wang, 2022). The aforementioned authors came up with the following conclusions: Timbate and Park (2018) didn't find a significant relationship between CSR and investors' perceptions of earnings, while Palacios-Manzano et. al (2019) found a negative correlation between CSR and EM, which translates into a positive correlation between CSR and FRQ. The empirical analysis of the GCC-listed companies made by Mawih Kareem AL Ani (2021) finds a weak notable link of better-quality financial reporting by the companies who are prone to CSR disclosure. Chulkov and Wang (2022) find that companies with higher CSR scores have higher accuracy of financial forecasts and fewer earnings management practices. Other studies used ESG ratings to test whether they positively affect FRQ. Thus, Gafni et. al (2024) came along revealing that higher ESG ratings are not influenced by FRQ.
Addressing this topic, our study aims to collect and examine financial reporting quality and sustainability-related articles provided by the Web of Science database, to extract significant findings for our research.

3. Methodology

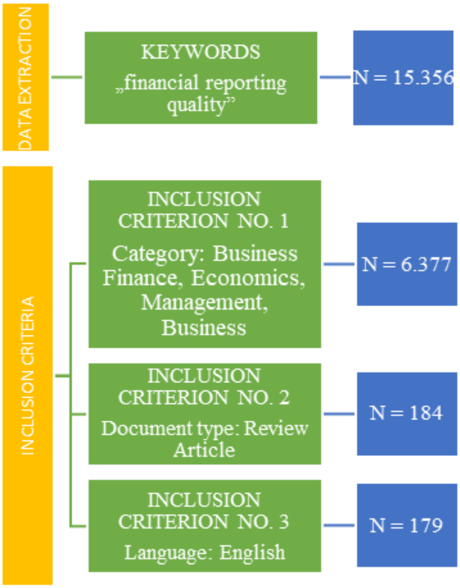

Figure 1. PRISMA flowchart
Source: authors' projection

To find out whether there is a link between financial reporting quality and sustainability, we conducted a systematic literature review based on the scientific PRISMA 2020 guidelines. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) was introduced by the British Medical Journal (Tripathy et. al, 2024) and it was primarily designed as a guide for systematic literature reviews (BMJ, 2021). The literature search for this study is conducted using the WOS database. WOS is one of the most widely adopted databases (Bohir, 2021). To select the most relevant articles to our study, first, we searched for the keywords in the WOS database, as, „financial reporting quality”, which returned 15,356 results. The inclusion criteria by which we refined the first results are category, document type, and language, as presented in the flowchart from Figure 1. Accordingly, upon the first refining, 6,377 articles were identified. In our study, the most relevant articles were the review articles, which were 184. The last filter that we used was the selection of the English language, which left us with a total of 179 articles.

Earnings management

Further on, to identify the trends in what concerns financial reporting quality we ran a bibliometric analysis of the co-occurrence of keywords with the aid of the VosViewer software, version 1.6.20. For this analysis, we exported the 179 eligible articles by author, title, abstracts, and keywords and we ran the co-occurrence analysis of keywords in VosViewer. The minimum occurrence of keywords was 5, resulting in 74 keywords that met the criterion. All keywords are separated into six clusters, as can be seen in Figure 2. The highly related keywords appear on top of the thicker circles, the most salient keywords being 'corporate governance', 'earnings management', and 'quality', which possess significant connections among them. 'Financial reporting quality` appears with a lower occurrence, but it is strongly connected with the three most dominant keywords and with 'corporate social responsibility' among others.

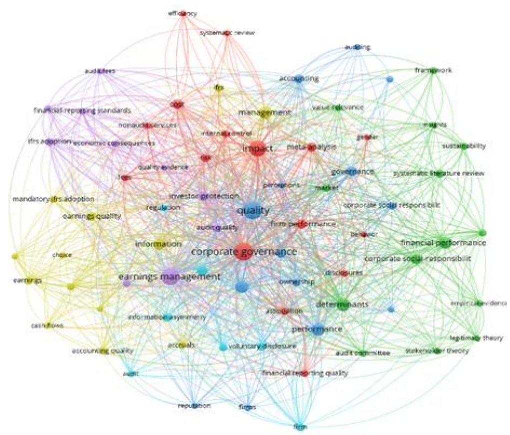

Figure 2. Co-occurrence of keywords on FRQ, made with VosViewer

The remaining 179 articles were skimmed by the authors by reading the titles and the abstracts to see if there is any mention of sustainability-related terms among them, such as ESG, corporate sustainability reporting, environmental matters, integrated reporting, corporate governance, a.s.o. After this stage, we found 6 articles that were relevant to our study, which will further be analyzed by their content. We did not set a specific period for our resulting articles, the final resulting timeframe being from 2013 to 2024. For us to see if there is any link between financial reporting quality and sustainability, we thoroughly read all 6 articles and determined their contribution to the current study's objective.

4. Results and discussion

Although this isn't such a popular subject yet, through the analysis of the 6 articles that met the inclusion criteria, we can say that there is mainly a positive and notable link between FRQ and sustainability. The main element through which the analyzed studies measured financial reporting quality is earnings management (EM) (Martinez-Ferrero et. al, 2013, Palacios-Manzano et. al, 2019), then linking it to CSR through various regression models. On one hand, Martinez-Ferrero et. al (2013) concluded that companies disclosing high-quality financial information tend to resort to EM less and are more socially responsible. On the other hand, Palacios-Manzano et. al (2019) found that CSR negatively impacts EM, which means that socially responsible companies provide quality financial reporting.
The other articles are based on literature reviews to asses links between FRQ and sustainability. Iwona Franczak (2019) found that the quality of the reported information is a determinant of effective corporate supervision and that corporate supervision allows companies to develop sustainable value. Landu et. al (2024) find that there is increased interest in integrated reporting being a factor for significantly improving the financial reporting quality. Accordingly, Purcheta-Martinez et. al (2018) review the past literature to find if a female board of directors influences the quality of financial reporting, CSR disclosure, and firm performance. The study finds that female directors improve FRQ and are more inclined to encourage the voluntary disclosure of CSR information.

The limitations of this study consist in the narrowness that comes with the use of one database, namely WOS and this study could be updated by using more databases, such as Scopus and Google Scholar, to try and identify whether there is more specific literature on FRQ and sustainability. Also, if more studies are found, it would be interesting to conduct a bibliometric analysis to see which are the trends in the literature. As Landu et. al (2024) mentioned, the emerging trends in integrated thinking, increased sustainability practices, new sustainability standards being set, and the general growing emphasis on CSR represents a new potential for FRQ research.

5. Conclusions

To conclude, the bibliometric analysis that we conducted results in FRQ being strongly linked with concepts such as corporate governance and earnings management, concomitantly being lightly linked with corporate social responsibility. In what concerns the systematic literature review of the six eligible articles, the analysis indicates mainly positive a notable correlations between (FRQ) and sustainability. Some authors established this connection by measuring FRQ through EM and then linking it to CSR by various regression models. Additionally, the previously conducted literature reviews from the included studies further support the connection between these key concepts, highlighting the need for continued exploration of this emerging topic.

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ESG ON THE RISE: A MARKET ANALYSIS OF ROMANIA'S PATH TO SUSTAINABLE INVESTMENT

Loredana Pamfile
Accounting Doctoral School, Bucharest Academy of Economic Studies, Bucharest, Romania
pamfileloredana21@stud.ase.ro

Abstract: *In 2022, the Bucharest Stock Exchange (BSE) implemented ESG guidelines to help Romanian companies align with European Union standards. This study used Python and R to analyse data from 362 listed companies, aiming to identify sectoral trends on the BSE and to map the macro-market configuration within Romania. A SWOT analysis further examined the challenges and opportunities associated with scaling ESG practices, particularly within smaller market sectors. By detailing both the adoption of ESG guidelines and sector-specific trends, this research provides valuable insights into Romania's progress toward meeting global ESG standards, offering critical perspectives on sustainable growth for an emerging economy.*

Keywords: Bucharest Stock Exchange; ESG guidelines; corporate governance; Romanian capital market; market trends; emerging markets

JEL classification: G10; G30; M14; Q56

1. Introduction

As ESG gains global traction, its impact on firms, investors, and overall capital markets becomes essential to understand. While mature markets have established ESG integration mechanisms, emerging economies like Romania face unique challenges related to market structure, high state ownership, concentrated market cap, and the capacity of smaller firms, all of which shape its path to alignment with global standards. (Hales, 2024; Odell, 2016; Mobius, 2021).

In 2022, the BSE released its first set of ESG guidelines to help Romanian companies align with EU standards such as the CSRD, SFDR, and EU Taxonomy (BSE, 2022; European Commission, 2023; European Parliament and Council, 2019; European Parliament and Council, 2020). These guidelines provide a structured framework for reporting on ESG practices, with an emphasis on key areas like greenhouse gas emissions, employee policies, and governance standards (BSE, 2022). Companies must disclose their operational emissions and reduction strategies, though setting specific targets remains optional. For social aspects, firms need to report on employee policies and workplace diversity across management levels (BSE, 2022). The framework primarily applies to companies with over 500 employees, including Romanian-headquartered European firms and local subsidiaries of foreign companies (BSE, 2022). Organizations must provide a business model overview, ESG policies, risk assessments, and key performance indicators in their annual reports (BSE, 2022). While initially allowing flexibility in reporting format, the 2023 CSRD now requires ESG information to be included in management reports. Though designed for listed companies, these guidelines also serve private enterprises, helping them navigate ESG reporting requirements while strengthening Romania's capital markets through enhanced transparency and investor appeal.

1. Research Methodology and Results

This study examined the 362 companies listed on the BSE. The author used financial data from Refinitiv Eikon, such as market capitalization, trading volume, employee numbers, ROA, debt levels, net income, and beta values. In addition to the descriptive statistics and correlation analysis, the study involved categorizing companies based on valuation metrics to identify industry trends and outliers. The analysis utilized R libraries, specifically dplyr for efficient data manipulation and ggplot2 for creating insightful visualizations. These tools facilitated the examination of sector distributions and the relationship between financial indicators, providing a comprehensive understanding of the market dynamics and valuation disparities across different sectors, Beta, market cap, and other financial indicators.

2.1. Market Overview

The data analysis shows that large companies in the Utilities and Finance sectors lead on the BSE, with an average market cap of 752.7 million RON. OMV Petrom SA is the most traded company and has 18.30% of the total BSE market cap, which indicates a strong market position.

The Manufacturing sector has the largest number of companies on the BSE, with 145 firms listed, highlighting this sector's diverse and competitive landscape. Real Estate has 29 companies, and Construction has 27 firms listed, but only a combined 1.65% of the total BSE market cap, reflecting their relatively smaller influence compared to other sectors on the exchange.

Banca Transilvania SA leads in asset size at 169.2B RON and a 10.29% of the total BSE market cap, proving that it has a substantial asset base and capacity for growth. Hidroelectrica SA is a major player on the BSE since it holds the largest market cap of 55.1B RON or 21.63% market share of total market capitalization. Additionally, Hidroelectrica SA’s high EBIT margin of 61.46% reflects its efficient operations and profitability.

2.2. Risk and Sector Sensitivity

The market shows a slight tendency toward defensive stocks with a 0.64 mean beta, suggesting relative stability even in turbulent economic conditions. Such traits can appeal to investors looking for safer investment opportunities amid increasing global market uncertainties. Energy and Utilities companies, particularly Hidroelectrica SA and OMV Petrom, combine strong performance with moderate market sensitivity. The Finance sector stocks show higher beta values, attracting risk-tolerant investors. Utilities dominate market capitalization, indicating stability, while Finance stocks offer growth potential despite higher volatility. Manufacturing provides balanced risk-return opportunities with the most listed companies.

The top 3 companies on the BSE account for over 50% of the market, and the top 6 companies represent 69.25% of the total market cap. This concentration suggests a concentrated market typical of emerging economies, with significant state ownership in strategic sectors like Energy and Utilities.

Key players such as Hidroelectrica SA with a beta of 0.551, making it less volatile than the market and indicating stable returns. OMV Petrom SA has a beta of 1.26, suggesting it is slightly more volatile than the market, offering the potential for higher returns – its EBIT Margin of 22.65% shows good profitability. Banca Transilvania has a beta of 1.25, so it has a similar volatility profile to OMV Petrom SA, but its higher EBIT margin of 52.51% reflects more efficient operations and profitability.

Romanian listed companies maintain strong financial health, with an average of 24.4% operating margins and lower than standard volatility. Valuation metrics differ notably by industry, for example, mining stocks command premium valuations, but most companies trade at modest multiples. The market's concentration in Energy and Finance sectors, dominated by state-controlled entities, reflects Romania's economic heritage while facilitating its shift toward sustainable practices.

2.3. SWOT Analysis on the Next ESG Steps on the BSE

The BSE's dominant Utilities and Energy sectors, led by Hidroelectrica SA and OMV Petrom, are ideally positioned to implement ESG guidelines. Their strong market capitalization (752.7 million RON average) and stable performance (0.64 mean beta) provide the financial foundation necessary for sustainable initiatives. The concentration of state-owned enterprises in these sectors facilitates faster adoption of ESG practices through centralized policy implementation.

However, market concentration (77.08% % held by top 10 companies) could slow ESG adoption across broader market segments, particularly in the Manufacturing sector which has the largest number of listed companies, but smaller individual market caps. The varying valuation metrics across industries might create challenges in standardizing ESG reporting and implementation, especially for smaller firms that may struggle with compliance costs. The Finance sector, led by Banca Transilvania SA's significant asset base (169.2B RON), can drive ESG integration through sustainable financing initiatives.

The defensive nature of the market (24.4% operating margins) provides stability for long-term ESG investments, while the strong presence of state-controlled entities ideally enables regulatory alignment with sustainability goals. One direction for focus should be on leveraging the Utilities sector's stability while supporting smaller companies' ESG transition.

3. Conclusion

This study’s results demonstrate a notable transformation in Romania's capital market as the BSE gradually adopts ESG standards, starting with the implementation of guidelines in 2022. The analysis demonstrates that the Utilities and Finance sectors are at the forefront of the BSE, reflecting their dominant market positions and stable financial health. Hidroelectrica and OMV Petrom can potentially demonstrate how sector leaders can leverage their strong market capitalization and operational efficiencies to drive sustainability initiatives. Their relatively low volatility, indicated by average beta values, makes them an attractive investment for those prioritizing ESG criteria. This stability is vital for fostering investor confidence, particularly in a context of global economic uncertainty.

The BSE's current structure provides a supportive environment for the growth of sustainability initiatives among larger companies, but this study also identified potential challenges for smaller firms. The significant market concentration, where a few companies account for the majority of market capitalization, could delay the broader adoption of ESG practices across diverse sectors, particularly Manufacturing. As smaller companies often face compliance costs and resource constraints, targeted support and strategic partnerships will be essential to ensure that the benefits of ESG practices are widely available throughout the market. Overall, Romania's alignment with EU sustainability goals further enhances its attractiveness to international investors focused on responsible investment.

Further research should investigate the long-term financial implications of ESG compliance for companies listed on the BSE, as well as investor reactions to more rigorous sustainability standards. Gaining insight into these dynamics will be vital for informing policy decisions and fostering an inclusive approach to sustainable growth in Romania's capital markets. The successful integration of ESG practices not only alters investor attraction but also contributes to the overall resilience and sustainability of the Romanian economy.

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THE RELEVANCE OF FINANCIAL-ACCOUNTING INFORMATION IN ASSESSING THE PERFORMANCE OF AN SME

Oana Letiția Cătuțoiu
Accounting, Doctoral School of Economic Sciences „Eugeniu Carada", Faculty of Economics and Business Administration, University of Craiova, Craiova, Romania
catutoiuletitia05@gmail.com

Abstract: *This article aims to present the importance of the information provided by financial accounting in assessing the performance of economic entities in the form of SMEs. The research question is: Are the financial-accounting information provided by the annual financial statements relevant in assessing the performance of SMEs? The knowledge and use of financial and accounting information relevant to the economic entity is the fundamental raw material in the adoption of managerial decisions. The dynamics of the economy, the current social and economic conditions, the complexity of SME activities in competitive economic circumstances with major influences on managerial decisions, require the disclaimer of routine and force the identification of new possibilities to increase the relevance of financial-accounting information in the context of performance evaluation.*

Keywords: financial-accounting information; profit and loss account; performance; financial statements; indebtedness indicators, profitability indicators.

JEL classification: M41

1. Introduction

The financial-accounting information provided by the financial statements is of interest, in particular, to users who adopt final decisions within some economic entities. The annual financial statements represent the main method that reproduces the activity of an economic entity and periodically presents the users with the information collected and processed by the accounting system (Horomnea et al., 2016). Financial statements are exhaustive documents, which provide information necessary to form an opinion on the real position held by an economic entity (Thalassinos I.E., Liapis K., 2014).
The balance of the profit and loss account shows the performance of the economic entity transposed into its ability to generate, in the future, cash flows using the resources at its disposal (țilică E., V., et al, 2019). The role of the balance sheet is to present information about the financial position of the economic entity, respectively about assets - being known as controlled economic resources and about debts and equity - known as financial structures by means of indicators such as liquidity and solvency (Petrescu S., 2008).

2. Study on the importance of financial-accounting information in assessing the performance of an SME

2.1. Research methodology

For the purpose of the research, the largest SME in Gorj County was selected by accessing the website https://membri.listafirme.ro/pagini/p1.htm. The choice of the SME was made after the application of the following filtering criteria: the selection of medium-sized enterprises in the County and their classification according to the size of the turnover in 2023. Thus, the selected SME was S.C. MARIGAB COM S.R.L. The economic-financial indicators were presented and the performance of this SME was assessed by calculating and analyzing the main indebtedness and profitability indicators.

2.2. The results of the research

The annual financial statements provide information that allows highlighting the positive and negative aspects of the financial management, aspects that can be used to substantiate managers' decisions. SC MARIGAB COM S.R.L. has as its object of activity *Retail sale in non-specialized stores with food, beverages or tobacco predominating*, according to NACE Code 4711. The SME is based in the locality of Turceni, Gorj County, Romania and was established on the date of 16.12.2002. In 2023, the SME had a turnover of 145,041,513 lei and an average number of 198 employees. The indicators found in the annual financial statements for S.C. MARIGAB COM S.R.L. are presented in Table 1, as follows:

Table 1. Structured data regarding the economic-financial indicators for SC MARIGAB COM SRL

	Classi fication indica tors	Component patrimonial elements	Year			
			2023		2019	
			lei	euro	lei	euro
1	Balance sheet indica tors	Total immobilized assets	27145939	5456909	6262291	1310295
		Total current assets	27544162	5536960	4719225	987430
		Expenses recorded in advance	328371	66010	100000	21
		Equity	35231026	7082183	9105457	1905186
		Debts	15624987	3140953	1930475	403924
2	Indica tors from the profit and loss account	Advance income	4162459	836742	45584	9538
		Net turnover	145041513	29156417	39788660	8325207

		Total incomes	179951643	36174093	46641558	9759077
		Total expenses	166679943	33506200	43382220	9077108
		Gross profit	13271700	2667893	3259338	681970
		Net profit	11625434	2336959	2758185	577111
3	Indica tors from informati ve data	Average number of employees	198	198	77	77

Source: own processing based on the annual financial statements of S.C. MARIGAB COM S.R.L.

The amounts in the table are expressed in lei and euros, the exchange rate for the euro on 31.12.2019 being 4.7793 lei, and 4.9746 lei on 31.12.2023. Making a brief analysis of the information summarized above, S.C. MARIGAB COM S.R.L. recorded in the period 2019-2023 significant increases both among fixed assets, reaching from 6,262,291 million lei in 2019 to 27,145,939 million lei in 2023, and among current assets with 22,824,937 million lei. The turnover recorded a jump of 365%, from 39.79 million lei to 145.04 million lei. Total revenues increased by over 100 million lei, which also determined a favorable evolution of profit during the analyzed period. In order to assess the performance of the analyzed SME, the main financial balance indicators were analyzed, according to Table 2, as follows:

Table 2. Financial balance indicators

Crt. No.	Name of indicators		Year	
			2023	**2019**
1.	Indebtedness indicators	Total indebtedness ratio	0.28	0.17
		Equity solvency	0.64	0.82
2.	Profitability indicators	Net profit margin	8.02	6.93
		Financial profitability (Return On Equity-ROE)	0.33	0.30
		Return on total assets (Return On Assets-ROA)	0.21	0.25

Source: own processing

Taking into account Table 1, the situation of the SME S.C. MARIGAB COM S.R.L. is presented as follows:

Indebtedness indicators: a) *Total degree of indebtedness* is a risk indicator that is of particular interest to institutions that grant loans. SC MARIGAB COM S.R.L has a good debt ratio, below the limit of 0.50 showing credibility and stability in front of creditors and can benefit from external funds to support the activity; b) *The estate solvency* **is** good throughout the analyzed period, which means that there is a financial balance that allows long-term debts to be covered from equity.

Profitability indicators: a) *The net profit margin* between 1% and 15% reflects a stable situation of the economic entity; b) *Financial profitability* (Return on Equity-ROE) measures the profit made from the investment made by the administrators. ROE provides a view of the performance of the economic entity in terms of how the assets are used to generate profit. In general, a high ROE indicates that that economic entity generates a high return on equity, and a low ROE may indicate a low return or even losses. S.C. MARIGAB COM S.R.L. has a good return on the use of own capital throughout the analyzed period; c) *Return on Assets* (ROA) measures the efficiency of capital allocated to the total assets, being independent of the financing policy. The rate level must be positive and as high as possible. The optimal reference range is between 5% and 15%, and S.C. MARIGAB COM S.R.L. falls within this range, thus recording a good economic performance.

3. Conclusions

Following the research carried out on the SME S.C. MARIGAB COM S.R.L., the answer to the research question - A*re the financial-accounting information provided by the annual financial statements relevant in assessing the performance of SMEs?* is affirmative because the information contained in the annual financial statements allows knowing the financial balance, establishing the profitability of the economic activity and implicitly assessing the performance. The annual financial statements represent the most important means by which financial-accounting information is made available to managers in order to assess their performance.
The performance evaluation of SMEs is in a bidirectional influence relationship with the relevant financial-accounting information. Thus, a relevant financial-accounting information actively participates in making an evaluation of the performance of SMEs as realistic, objective and last but not least useful. The superior valorization of the financial-accounting information involves informing the administrators about the performance, efficiency, effectiveness and economy with which the resources of the SMEs were managed.

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The impact of corporate governance quality on corporate financial performance

Radu RUSU
Faculty of Economic Sciences, Lucian Blaga University of Sibiu, Romania
raduav.rusu@ulbsibiu.ro

Abstract: The present paper sets out to analyse the existing relationship between the quality of a company's internal governance and its ability to perform within the socioeconomic environment. To this end, I target the context of the European countries, within the time range of 2019 to 2024. This choice is justified by the fact that the European continent, similar to the whole world, suffered economic and health damage due to the COVID-19 Pandemic. In addition, the European context is further strengthened as a scientific object by the Ruso-Ukrainian war in its eastern side. The choice of the indicators to be analysed comes from Refinitiv Eikon Thomson Reuters. As for the results, I conclude that between corporate governance and financial performance there exists a strong, positive correlation. As to the causality between them, governance quality has a mixt impact on financial performance.

Keywords: governance quality, finance, social, environment, performance, Europe.
JEL classification: O11, O15, O21, O31

1. Introduction

In the current micro and macroeconomic contexts, the quality of corporate governance plays a substantial role in the smooth functioning of socio-economic life. On one hand, when we talk about corporate governance, specifically its quality, we think of that component of a company directly linked to decision-making that demonstrates the highest level of efficiency. On the other hand, we consider those factors that ensure the company's activities remain within the legal boundaries imposed by governmental entities, as well as within the ethical standards set by the society in which the company operates. That said, we observe that both from the complexity of ideas that can be derived from the concept of corporate governance and from the multitude of other factors that can be correlated with it, the most relevant to empirical study relate to corporate financial performance, as well as social and environmental performance.

2. Corporate governance quality

Corporate governance primarily refers to the quality of decision-makers. These decision-makers are represented by the company's top executives and the members of the board of directors. One of the fundamental premises in empirical literature is that a way to reflect the quality of corporate governance is through studying the level of compensation (salary or any monetary benefits) received by these individuals. For instance, Core and colleagues (1999) choose to reflect the quality of corporate governance in their study, among other factors, through the level of compensation awarded to top executives. The monetary approach to assessing corporate governance quality is rooted in human capital concepts. Broadly, this concept refers to the totality of an individual's skills, knowledge, abilities, and innate talents that are inseparable from them. Consequently, an executive's compensation or salary tends to correlate strongly with their abilities. Therefore, executive compensation is defined as the totality of monetary benefits awarded to executives for their efforts in constructing organizational plans and strategies that respond to both opportunities and threats in the market where the company operates, based on the resources available to the company (Post C., et al., 2011).

3. Corporate financial performance

Established authors in the field define corporate financial performance as the company's ability to survive and thrive in the socioeconomic environment. To achieve this objective, a company implements strategies from a multitude of options, including capturing and maintaining a competitive advantage. A competitive advantage is characterized by rarity, difficulty in imitation, and replicability and can be represented, for example, by capturing a market segment, exploiting a niche where demand exceeds supply, or attracting the most talented employees. Regarding this last example, we observe the relevance of human resources, which are closely linked to executives and directors—core components of corporate governance.

4. Case study

The content of this section is dedicated to the practical component of this article. The following sections will cover the research methodology, including the selected data sample, its sources, the range of indicators used, and their relevance; the econometric model on which the analyses are based; and finally, the approach to interpreting the results.

4.1 Methodology

I aim to include all sectors as classified by the Global Industry Classification Standard (GICS), given their collective relevance to the socioeconomic landscape. The geographic context is complemented by a temporal context: due to the aforementioned circumstances, the study will span five years, from 2019 to 2023, a period deemed sufficient for panel data analysis to yield relevant insights. Corporate financial performance will be assessed via return on assets (ROA), the most widely used metric for evaluating corporate financial performance in academic literature. Regarding the primary independent variable, namely corporate governance, this will be represented by the Governance Pillar Score. The data source for these variables will be the Eikon Thomson Reuters online platform, widely used in academia for its extensive repository of financial and non-financial data that students and researchers leverage in their studies.

Having thus established the sample, the indicators, and their sources, the next objective is to define the econometric model. This objective will be achieved through Equation (1).

$$pf_{i,t} = \beta_0 + \beta_1 * cgc_{i,t} + \beta_z * k_{i,t} + \varepsilon_{q,t} \qquad (1)$$

where $pf_{i,t}$ represents the dependent variable, specifically the financial performance of company i in year t; β_0 is the coefficient for the constant's influence on the dependent variable; β_1 is the coefficient showing how the variable of interest impacts the dependent variable, with the variable of interest being the independent variable $cgc_{i,t}$ which represents the corporate governance quality of company i in year t. β_z represents the series of coefficients indicating how the control variables $k_{i,t}$ influence corporate financial performance; these control variables refer to factors such as company size and capital structure. $\varepsilon_{q,t}$ represents fixed effects related to the country where the company's headquarters q is located and the nature of year t.

In relation to model (1), I formulate the following research hypothesis:

"The quality of corporate governance exerts a positive impact on corporate financial performance." (H1)

4.2 Empirical analysis

The practical analysis section begins by presenting model (1), applied to a series of three indicators specific to corporate financial performance. These three are return on assets (ROA), return on equity (ROE), and total revenue. As previously mentioned, including multiple elements specific to corporate financial performance enhances the scientific rigor of the empirical analysis by contributing to a higher degree of robustness and relevance in the results.

Tabel 1: Regression analysis for corporate financial performance

	Model (1): dependent variable roa, roe, ln_revenue					
	roa		roe		ln_revenue	
	coef	p	coef	p	coef	p
gov	-0.0001	0.11	0.0003	0.13	0.01	0.00
ln_assets	-0.02	0.00	-0.02	0.00	0.86	0.00
ln_debt	-0.0005	0.66	-0.0001	0.98	0.07	0.00
ln_equity	0.04	0.00	0.04	0.00	-0.07	0.00
_cons	-0.27	0.00	-0.23	0.00	2.22	0.00
Fixed effects						
Year	Yes		Yes		Yes	
Industry	Yes		Yes		Yes	
Country	Yes		Yes		Yes	
Adjusted R^2	0.05		0.01		0.74	
Observations	10120		8593		9533	

Source: author construct

According to the results in Table 3.6, we observe a mixed impact of corporate governance on corporate financial performance. Firstly, the impact on return on assets (ROA) is negative, with a very low intensity of -0.0001, and is statistically insignificant (p=0.11). In the case of return on equity (ROE), the situation is similar, though with a positive effect this time. However, the analysis presents a more pronounced and statistically significant impact of corporate governance quality when examining total revenue. Here, the impact is positive, with medium intensity at

0.01 and statistical significance (p=0.00). Additionally, model 1 for ln_revenue explains 0.74 of the variation in observations, according to the adjusted R-squared (R^2). Based on these findings, we deduce that corporate financial performance, expressed through ROA and/or ROE, is not significantly influenced by the quality of corporate governance. Consequently, we partially reject the first research hypothesis (H1), as it is only fulfilled in the case of total revenue.

4. Conclusions

This paper achieves a range of objectives. In the initial chapters, theoretical concepts relating to corporate financial performance, along with discussions on corporate governance and its quality. Furthermore, these notions are reinforced by examining significant works from the specialized literature that address these concepts both theoretically and practically. These theoretical chapters tackle the challenge of synthesizing the concepts that will later be practically analyzed. By carefully processing these notions, an interconnected framework of the discussed concepts is also developed.

In terms of the practical analysis, the proposed objectives were successfully completed by identifying, obtaining, classifying, and analyzing the data. The identification process involved a thorough review of the specialized literature to determine the most relevant indicators for empirically reflecting the theoretical concepts. For this purpose, financial reports of companies are essential; however, for efficiency, I used centralized data from the Refinitiv Eikon Thomson Reuters platform. Data classification involved cataloging the information by industry and country of headquarters to emphasize the dataset that would be analyzed effectively.

Based on the regression analysis results, the most substantial impact of corporate governance on financial performance is observed when financial performance is represented by revenue. Conversely, when examining financial performance through return on assets or return on equity, the results are mixed and statistically varied. This does not necessarily imply that corporate governance is irrelevant to explaining financial performance, but rather that the chosen indicator in my analysis may not comprehensively capture the entirety of corporate governance. It is also possible that for the studied sample, return on assets and return on equity are significantly influenced by other factors that are not included in this dissertation or cannot be easily quantified, such as the quality and performance of human resources.

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THE EVOLUTION OF CONTROL FUNCTIONS IN ROMANIAN PUBLIC ENTITIES: FROM COMPLIANCE TO MODERN GOVERNANCE

Lucia-Maria Udrescu
Bucharest Academy of Economic Studies, Bucharest, Romania
udresculucia20@stud.ase.ro

Abstract: *This article explores the evolution of control functions in Romanian public entities, focusing on how these functions have changed from basic compliance mechanisms to more strategic tools for governance and transparency. Historically, internal controls in Romania's public sector were primarily focused on ensuring regulatory compliance and preventing financial mismanagement. However, with the introduction of modern governance practices and increasing demands for transparency, the role of control functions has expanded. Today, they contribute to better risk management, accountability, and performance in public institutions. Through a historical review and analysis of current practices, this article highlights key changes in the role of internal controls and their impact on improving public administration in Romania.*

Keywords: internal control, internal function, public institutions

JEL classification: H83, M42, M48

1. Introduction

Over the past 25 years, public institutions in Romania have undergone significant legislative changes, aimed at aligning public administration with the necessary standards and, later, with the requirements set by the European Union. These changes led to a major shift in the audit and internal control systems, which today receive far more attention than in the past. However, it wasn't always this way. This evolution was shaped by various events that contributed to building the system we have today. While this progression is a natural part of growth, these events have left—and continue to leave—a lasting impact on how public administration approaches audit and internal control.

2. Literature review

Internal control is a key aspect of governance, ensuring that organizations achieve their operational, reporting, and compliance goals. Modern internal control systems, like the COSO Framework (COSO, 2013), focus on risk management, helping organizations control risks, increase accountability, and ensure appropriate use of resources. The COSO framework, revised in 2013, outlines five key components: control environment, risk assessment, control activities, information and communication, and monitoring, all working together to create a flexible system that responds to changing risks.

Internal control systems have evolved from traditional compliance-focused approaches to risk-based methods that support strategic decision-making and organizational resilience (Spira & Page, 2003). These controls reduce fraud, errors, and inefficiencies, improving performance and governance (Arwinge, 2013). In the public sector, internal controls are essential for safeguarding public funds and ensuring compliance with laws and regulations, as highlighted by the European Commission (2017) and global standards like COSO. Strong internal controls promote transparency, trust, and accountability (Doyle, Ge, & McVay, 2007).

3. Research Question / Aims of the Research

The purpose of this research is to examine the evolution of control mechanisms in public institutions and to explore the signals coming from the market regarding future developments in these functions. Are there any new trends or innovations on the horizon?

4. Research Methodology

This paper uses qualitative research methods to examine specialized articles related to the subject from a research method point of view. These articles are stored in databases such as ScienceDirect, CEEOL, Wiley Journal, Google Scholar, Emerald Management Journal, and the keywords used in research include internal audits, public internal audits in Romania, and control functions.

5. Findings

Internal audit and control have played a vital role in Romania's public administration reform, particularly after joining the European Union in 2007. Ordinance no. 119, introduced in 1999, was the first significant step toward enhancing internal control and financial management in public institutions, emphasizing efficiency, effectiveness, and economy in managing public funds (Popescu et al., 2017). This was followed by Law no. 672/2002, which further shaped Romania's internal audit framework, defining its role in overseeing public funds and assets (Peculea, 2015).

In 2005, the Ministry of Public Finance issued the Internal Control Code (Order no. 946/2005), introducing 25 standards based on the COSO framework. This code, seen as a key management tool, was aimed at improving risk management, transparency, and accountability within public institutions (Gariette & Tomoială, 2020). Revisions in 2015 (Order no. 400/2015) and 2018 (Order no. 600/2018) strengthened these systems further by aligning internal controls with international standards, promoting better governance, and ensuring responsible management of public resources. These efforts have made Romania's internal audit system more proactive and robust, reducing risks and fostering transparency.

What is the current state of the internal control and audit functions within public institutions?

Tabel 1. Regulations in the field of public internal audit

No. Crt.	**Legal and regulatory framework**	**Content**
1.	Ordinance No. 119/1999 on internal audit and preliminary financial control (later strengthened by amendments in Law No. 301/2002)	• establishing internal control and preventive financial control in public institutions
2.	Law No. 672/2002 regarding public internal audit	• outlining the roles and responsibilities of internal

		• auditors in overseeing the use of public funds and the management of public assets • aligned Romania's internal audit systems with the recommendations of the European Commission
3.	Order No. 252/2004 approving the Code of Ethical Conduct of the Internal Auditor	• establishes the guidelines for conduct of the internal auditor
4.	Order No. 946/2005 for the approval of the Internal Control Code, including management/internal control standards at public entities and for the development of managerial control systems	• introduced 25 internal control standards based on the COSO model • marked an important step in aligning Romania's internal control systems with international best practices
5.	Order No. 400/2015 for the approval of the Code of internal/managerial control of public entities	• after 10 years, represented a major update to the internal control framework
6.	Order No. 600/2018 regarding the approval of the Code of Internal Managerial Control of Public Entities	• in line with the latest European Union regulations and international standards • this revision introduced stricter criteria for risk management and internal audits, focusing on enhancing the effectiveness and efficiency of control mechanisms

Source: own interpretation based on actual legislation

Romania's internal control system has evolved through key legislative revisions, starting with Ordinance No. 119/1999, which established internal audit and financial control in public institutions. Laws such as No. 672/2002 and Order No. 946/2005 introduced international standards like the COSO model, enhancing internal control practices. Further updates, including Order No. 600/2018, continued to refine risk management and audit practices, reflecting Romania's ongoing efforts to strengthen public fund management and governance systems.

What's coming next regarding public internal audit and control?

The future of auditing in public institutions is shifting towards digitalization, with advanced technologies like AI enhancing speed, accuracy, and risk detection (Udrescu, 2024). AI will automate tasks and improve audit efficiency and transparency. Another emerging trend is the potential application of Environmental, Social, and Governance (ESG) principles in the public sector, allowing institutions to demonstrate responsible and sustainable resource management (Udrescu, 2024).

6. Conclusion

In recent decades, Romania's internal control and audit functions in public institutions have evolved significantly, driven by legislative reforms and a focus on better governance and accountability. Starting with Ordinance No. 119/1999, key updates such as Law No. 672/2002 and Orders No. 400/2015 and 600/2018 have aligned Romania's systems with international standards like COSO. These reforms have strengthened public administration by reducing fraud and inefficiencies.

Looking ahead, digitalization and AI are set to enhance audit accuracy and efficiency, while discussions on integrating ESG principles into the public sector could further improve transparency and sustainability. Romania’s ongoing improvements reflect a strong commitment to responsible governance and global best practices.

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ROLE OF PUBLIC ACCOUNTABILITY IN INTERNAL MANAGERIAL CONTROL

Lucia-Maria Udrescu
Bucharest Academy of Economic Studies, Bucharest, Romania
udresculucia20@stud.ase.ro

Abstract: *This paper discusses the significant of accountability in the assurance of effective control of managerial attempts associated with the success of the public sector. Transparency and trust as well as good governance in the public sector hinges on effective public accountability. In this paper, examining the theoretical stock in addition to causative research, analyzation is induced and on the how accountability can be used for specific ends including managing institutions for developing institutional accountability, dealing with public finance and promoting ethical leadership, accountability controlling the public management construction and a strategic balance between ambition and control. The coverage will also include adjustments being geared towards accountability over managerial practices mainly in the built manifested by the current governance reforms.*

Keywords: public accountability, internal managerial control, public institutions, governance, transparency

JEL classification: H83, M42, M48

1. Introduction

Public accountability is a key part of good governance in public institutions. It means making sure public officials and institutions are responsible for how they act, especially in how they manage public money (Bovens, 2007). Recently, there has been more focus on using internal managerial control to improve accountability in public institutions. These control systems are designed to make sure public money is used efficiently, effectively, and in line with laws and regulations. They help monitor performance, manage risks, and ensure transparency in decision-making (Arwinge, 2013).

This article looks at the role of public accountability in internal managerial control systems. It focuses on how these systems are shaped by the need for transparency and making good use of public resources. It will also explore the challenges and benefits of adding accountability features to internal control systems.

2. Literature review

Public accountability ensures public officials justify their actions and use of resources, promoting transparency (Mulgan, 2000). Internal managerial control supports effective operations, reliable reporting, and legal compliance (COSO, 2013). Accountability strengthens internal controls, reducing risks of mismanagement (Dumitrescu Peculea, 2015), while the COSO framework emphasizes ethical behavior in fostering accountability (COSO, 2013).

Internal managerial control in the public sector has evolved significantly over the years, particularly with the adoption of frameworks like the COSO model, which outlines five key components: control environment, risk assessment, control activities, information and communication, and monitoring (Garitte & Tomoială, 2020). These elements work together to ensure that public institutions operate transparently, manage risks effectively, and remain accountable to the public. In Romania, the legal framework for internal control and audit, such as Order No. 600/2018, has emphasized the need for stronger internal controls to improve accountability and governance (Udrescu, 2024).

The purpose of this research is to examine the evolution of control mechanisms in public institutions and to explore the signals coming from the market regarding future developments in these functions. Are there any new trends or innovations on the horizon?

3.Research Methodology

This paper uses qualitative research methods to examine specialized articles related to the subject from a research method point of view. These articles are stored in databases such as ScienceDirect, CEEOL, Wiley Journal, Google Scholar, Emerald Management Journal, and the keywords used in research include internal audits, public internal audits in Romania, and control functions.

4.Findings - The Role of Public Accountability in Internal Managerial Control

Public accountability plays a crucial role in ensuring transparency within public institutions. Transparent internal control systems make it easier to detect inefficiencies and irregularities, thereby fostering trust between public institutions and citizens (Power, 2007). Accountability mechanisms, such as performance audits and financial reports, provide stakeholders with the necessary information to evaluate the effectiveness of public programs and the use of resources. These mechanisms are integral to internal managerial control as they reinforce the importance of ethical behavior and responsible decision-making within public institutions (Popescu et al., 2017).

Internal managerial control systems aim to manage operational, financial, and compliance risks (Arwinge, 2013). Public accountability enhances risk management by motivating officials to proactively address risks, crucial in the public sector where misuse of resources or regulatory failures can have serious consequences (Doyle, Ge, & McVay, 2007). Accountability strengthens internal controls, making them more responsive to emerging challenges.

Public accountability is also essential in promoting ethical governance in public institutions. Ethical governance refers to the adherence to ethical principles such as honesty, integrity, and fairness in the administration of public affairs (Bovens, 2007). Internal managerial control systems that are designed with accountability in mind can help prevent unethical behavior, such as fraud and corruption, by ensuring that public officials are held responsible for their actions. For example, Romania's Law No. 672/2002, which defines the role of internal auditors, emphasizes the importance of ethical behavior in managing public resources (Dumitrescu Peculea, 2015).

5.Conclusions. Challenges and Future Directions

While public accountability is essential for ensuring transparency and ethical governance, it can sometimes create challenges for public institutions. One of the main challenges is balancing the need for accountability with the demand for operational efficiency. Excessive accountability measures, such as multiple layers of audits and reporting requirements, can slow down decision-making processes and reduce the flexibility of public institutions to respond to emerging issues (Mulgan, 2000). Therefore, it is important to design internal control systems that maintain accountability without compromising efficiency.

The future of public accountability in internal managerial control is likely to be shaped by digitalization and the use of advanced technologies, such as artificial intelligence (AI) and data analytics (Udrescu, 2024). These technologies have the potential to improve the efficiency and accuracy of audits, risk assessments, and performance evaluations, making it easier for public institutions to meet accountability requirements. Digital tools can also help automate routine tasks, allowing public officials to focus on more strategic issues, such as policy implementation and long-term planning.

Public accountability plays a fundamental role in enhancing internal managerial control in public institutions. By promoting transparency, strengthening risk management, and encouraging ethical governance, accountability mechanisms help ensure that public resources are used effectively and responsibly. However, achieving the right balance between accountability and efficiency remains a challenge, particularly in the face of evolving governance frameworks and technological advancements. As public institutions continue to adapt to new challenges, the integration of accountability into internal managerial control systems will remain a key factor in promoting good governance and public trust.

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CITIZEN SENTIMENT AROUND THE IMMINENT CREATION OF THE DIGITAL EURO. A TWITTER ANALYSIS.

Silvana Prodan[1,2], Andreea-Mihaela Ciomag[3], Evelyn-Maria Sabo[4], Liana Stanca[5], Dan-Cristian Dabija[6]

[1,3,4,5,6]Department of Marketing, Faculty of Economics and Business Administration, Babeș-Bolyai University Cluj-Napoca, Romania
[2]UFR Langues et Communication, Centre Interlangues Texte Image Langage (EA4182), Université de Bourgogne, Dijon, France
[5]Department of Business Informatics, Faculty of Economics and Business Administration, Babeș-Bolyai University Cluj-Napoca, Romania

silvana.prodan@econ.ubbcluj.ro; liana.stanca@ubbcluj.ro
andreea.ciomag@ubbcluj.ro; dan.dabija@ubbcluj.ro;evelyn.sabo@ubbcluj.ro

Abstract:
This paper analyses tweets regarding central bank digital currencies (CBDC) in general and the digital euro in particular by performing a sentiment and emotion analysis on a set of tweets containing the keywords 'cbdc', 'digital' and 'euro'. It is the first study to focus specifically on a type of digital currency and not on CBDCs in general and it results that most tweets are neutral in sentiment, even though tweets with strong positive or negative opinions and thus sentiment have been identified, reflecting the pros and cons of introducing such currencies. Further research could focus on more country-specific analysis and on comparing sentiment regarding different types of CBDC.

Keywords: central bank digital currency (CBDC); digital euro; digital money; sentiment analysis.

JEL classification: E58

1. Introduction

For the past few years, people have been collecting data about digital currencies. As technology gradually advanced, people started to wonder why the central bank couldn't produce a more secure digital currency (Liu, 2023). In this context, the phrase "Central Bank Digital Currency" (CBDC) was presented to the public. There isn't a single, accepted definition of CBDC as of now. CBDC is a central bank digital liability that is accessible to the general public and can be defined as a central bank's easily available electronic currency. At the same time, blockchain technology and digital money are intimately related to CBDC. Compared to standard physical payment, this kind of payment provides more flexibility to function independently (Cotugno, Matteo et al., 2023).

CBDCs are separated into two categories: distributed-ledger-based systems (wholesale) and single-ledger-based systems (retail) and depending on their goals, different countries will adopt different types of CBDC systems (Liu, 2023). The mixed or hybrid CBDC model combines these two strategies, allowing new private firms to enter the payment system while maintaining the central bank's direct connection with the general population rather than only financial institutions (Vuković, 2020).

2. Literature review

2.1 CBDCs advantages & disadvantages

The efficiency and security of modern financial systems are improved by the significant benefits that CBDCs provide. They increase payment system liquidity, lower the cost of cross-border payments, facilitate more effective government monetary policy, and enhance data privacy by limiting the sharing of personal information with private organizations (Guley and Koldovskyi, 2023). Additionally, by offering a more secure framework for financial transactions, CBDCs aid in the prevention of illicit activities (Beerbaum, 2024). Among the significant drawbacks of CBDCs are the possibility of financial system restructuring and the central bank's complete control, which may restrict financial flexibility. As transaction tracking increases, privacy concerns could intensify. Widespread acceptance might also be difficult, and CBDCs might place commercial banks in competition (Guley and Koldovskyi, 2023; Beerbaum, 2024).

2.2 Digital euro advantages & disadvantages

Similar to CBDCs, the digital euro has several advantages, especially increased financial inclusion through widely available, affordable payment methods for those without bank accounts. By supporting quicker and programmable transactions, it may also boost efficiency and innovation. Moreover, the digital euro might enhance monetary policy transmission, empowering central banks to more successfully execute policies like negative interest rates. The digital euro presents a number of challenges. First, the shift toward digital euros might cause bank disintermediation by diminishing bank deposits, that could impact lending capacity and financial stability. Significant privacy considerations also demand establishing a balance between measures against illegal activity like money laundering and user anonymity. Technical issues associated with implementing a digital euro also include ensuring it is secure, scalable, and compatible with existing payment systems (Beerbaum, 2024).

2.3 Legislative implementation framework

The European Central Bank (ECB) was motivated to investigate the feasibility of issuing a digital euro by the proactive involvement of other major economies worldwide, along with novel economic trends, business and citizen demands, and concerns about competition from private digital currencies (Lupinu, 2021).

The issuing of a digital euro as legal tender is not prohibited by EU fundamental laws; however, the precise legal foundation would vary depending on its design. With four design possibilities being considered, the ECB proposes that the digital euro might be based on Article 127(2) of the Treaty on the Functioning of the European Union (TFEU) and corresponding articles of the European System of Central Banks (ESCB) Statute. For instance, Article 20 of the ESCB Statute would be applicable if it were utilized as a monetary policy tool exclusively for central bank counterparties. Article 127(2) TFEU and Article 22 of the ESCB Statute would be appropriate if considered a banknote equivalent that is available to everyone, and Article 128(1) TFEU would also enable issue (Lupinu, 2021; Zellweger-Gutknecht, Geva and Grünewald, 2021). Based on Article 133 TFEU, a specific regulation titled as the "Regulation on the Establishment of the Digital Euro" (REDE) is being proposed to provide a legal framework. This strengthens the digital euro's position as the single currency in the EU. Similar to actual currency, it is recognized as legal tender by Articles 10 and 11 of Council Regulation (EC) No 974/98. Establishing the digital euro as an essential component of the financial infrastructure of the euro area is the aim of this law (Zatti and Barresi, 2024).

A digital euro is currently being developed by the European Central Bank (ECB). Like the banknotes it creates, the digital euro is a liability of the central bank, which is how it varies from the present book money (bank accounts, checking deposits). The money in a bank account, or book money, is a retail bank's liability and is consequently shown on the banking system's balance sheet. Some people refer to CBDC as a digital banknote, however that analogy is overly simplistic. The CBDC is more intricate and won't be exactly like a banknote in every way. Like the cash and book money varieties, the digital euro will eventually be worth one euro (Boonstra, 2022).

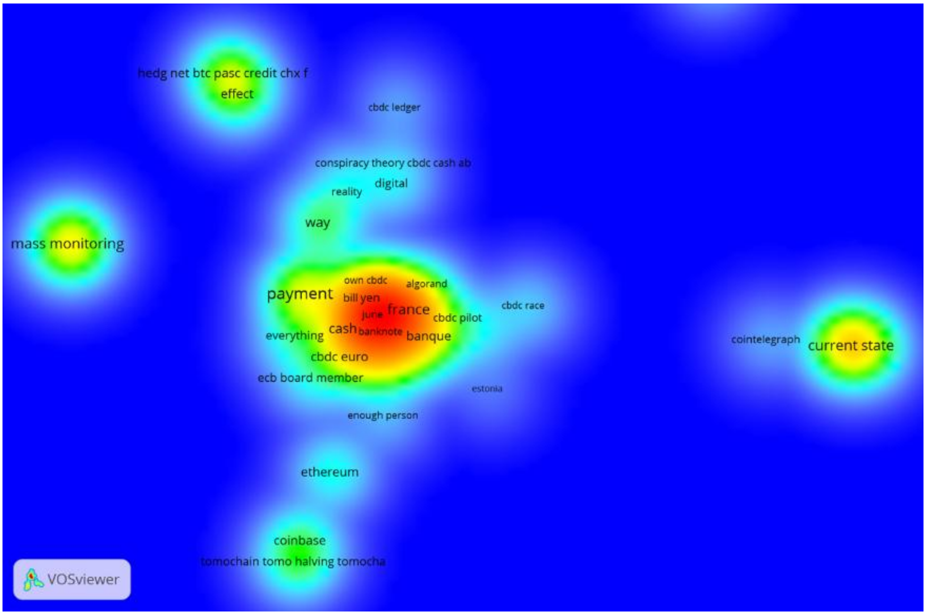
Currently, the full euro region is not covered by any European digital payment alternative. People use international card schemes to pay with their cards in 13 of 20 countries. A European electronic currency that is available and accepted in all nations that make up the euro region is called a "digital euro." An electronic wallet that you create with your bank or a third-party service would house a digital euro. Then, you could use your phone or card to make your regular electronic payments, both online and offline, to pals, or at the store around the corner. Commencing November 2023, the preparation phase will further prepare the potential construction of a digital euro. It will expand on what was discovered during the investigative stage. (ECB, 2024)

3. Methodology and research results

The methodology focuses on sentiment analysis via the extraction of tweets containing the words ‘euro’, ‘digital’ and ‘cbdc’ either in the tweet text or as hashtags. Following extracting in Excel, the tweets have been cleaned from symbols, images, emojis and sentiment analysis has been performed using TextBlob and ROBERTA. All analyzed tweets were in English language and were posted between 2018, when the digital euro was first mentioned, and 2023, when it became clear that such a digital currency will be introduced. In total, 4464 tweets matched the criteria and were extracted and analyzed.

Before performing the sentiment analysis, the tweets were fed into VOSviewer, a software used for bibliometric and co-occurrence analysis (Eck and Waltman, 2020; Eck and Waltmann, 2010), with the purpose of identifying the most frequent keywords, as well as the correlations between terms.

Figure 3. Term co-occurrence via VOSviewer



Source: Authors’ own contribution

The biggest cluster is the one with tweets containing words such as '*cbdc*', '*cash*', '*banknote*', '*payment*', '*bank*', '*ecb*', '*cbdc pilot*' and encompasses tweets about potential digital euro adoption in general and concerns regarding the disappearance of money as we know it today, as well as general changes stemming from the introduction of the digital euro. The other clusters mention cryptocurrencies in relation to the digital euro, with their cons and pros. The main themes, as per VOSviewer, are both the pros and cons of 'cbdc' implementation as well as about advancements and news regarding this topic.

Next, once the big topics of discussion were outlined via VOSviewer, sentiment analysis (using TextBlob) was performed.

The average sentiment for the entire dataset revolves around 0.044, with a standard deviation of 0.122 (implying only a moderation variation around the mean), a minimum of -0.8 and a maximum of 1.0, implying both strong positive and negative sentiment expressed in a minority of tweets. It results that most tweets are neutral in sentiment, stating neutral facts and events regarding 'cbdcs' and digital euro implementation and, with some extremely strong opinions on both ends of the spectrum, despite the marginally positive trend, which is understandable, given the novelty of the topic. ROBERTA also allows for emotion labels to further dig into the sentiment analysis. 26 emotions have been identified and the most frequently identified emotions are neutral (in 3848 tweets), followed by curiosity (in 217 tweets), approval (52 tweets), confusion (50) and surprise (31 tweets).

5. Conclusion and further research perspectives

All in all, it results that citizen sentiment regarding cbdcs and the introduction of the digital euro is mainly neutral, even though there are some outliers, conveying strong positive or negative sentiment, that coincide with the pros and cons of cbdc introduction, as per the literature (Ozili, 2022; Page, 2021).
Further research could focus on pinpointing citizen sentiment depending on the regions or countries they live and compare the sentiment across different countries and cultures. Moreover, the study could be replicated on tweets written in additional languages and the datasets compared, to verify if the language affects sentiment.

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CHATBOT TECHNOLOGY APPLIED IN RETAIL MARKETING

Miriam Tiutiu
Department of Marketing, FSEGA, Babeș-Bolyai University, Cluj-Napoca, Romania
Corresponding author, miriam.tiutiu@econ.ubbcluj.ro
Dan-Cristian Dabija[2]
Department of Marketing, FSEGA, Babeș-Bolyai University, Cluj-Napoca, Romania
dan.dabija@ubbcluj.ro

Abstract: *Retail marketing, along with the use of technologies based on Artificial Intelligence (AI) is gaining more and more relevance in different markets, as is the emerging economy, Romania. Compared to traditional retailers that sell their products exclusively through physical stores, companies that resort to the implementation of sales solutions based on artificial intelligence - such as chatbots - are increasingly attractive to customers. Companies in this sector of activity are going through important transformations thanks to new technologies. The possibility of their use offers consumers numerous advantages, provides them with memorable experiences, respectively increases their satisfaction and loyalty towards the commercial network and its entire product offer. The paper proposes a conceptual model consisting of some precursors of hedonic motivation (ease of use, empathy, interaction, trust, convenience and personalization) towards the use of the chatbot, which subsequently generates satisfaction towards this chatbot. The chatbot has significant potential to revolutionize customer experiences within retail stores. It increases operational efficiency and brings cost savings, providing convenience to customers.*

Keywords: Artificial intelligence; Retail; Chatbots; Technology; Customers.

JEL classification: O14; L81; L84; D83.

Introduction

IT-based technology in retail is relevant because it offers advantages to consumers, providing favorable experiences and increasing the level of customer satisfaction (Har et al., 2022). The chatbot has significant potential to revolutionize customer experiences within retail stores. It increases operational efficiency and brings cost savings to businesses while providing convenience to customers (Silva et al., 2023). Chatbots are used as voice assistants and also in conversational customer interfaces in the online environment. In this paper, a theoretical model is proposed, which is deduced from the specialized literature.

Theoretical model development

A chatbot is an example of technology used in computer-mediated communication, where AI-powered agents perform roles once performed by humans (Beattie et al., 2020). The hedonic motivation in using the chatbot facilitates the search for fun, pleasure and new and interesting experiences. Retail companies should make efforts to gain consumers' trust towards the chatbot service (Huang et al., 2024). Previous research states that hedonic motivation moderates the impact of customer chatbot usage (Gao and Xing, 2023). With the continuous upgrading of the Internet, chatbots in online shopping malls may gradually replace traditional human service as hedonic consumers pay attention to new and enjoyable experiences. The first precursor to hedonic motivation is ease of use of chatbot. The perceived ease of use refers to the degree to which it can be used easily, without effort (Iancu and Iancu, 2023). Users tend to accept a device or application if they feel added value, i.e. if it makes their work easier. The more someone enjoys interacting with chatbots, the friendlier they perceive them to be. The easier a chatbot is to operate and the more accurate the information it provides, the higher the satisfaction of hedonic consumers. The second precursor is chatbot empathy. Empathy is being considered as a receptive and spontaneous act of copying an implicit feeling (Markovitch et al., 2024). Chatbots can provide empathetic, human-like responses. Empathic chatbots become necessary for building emotionally intelligent conversational systems. Such a feature allows conversational systems to be perceived as authentic by users (Liebrecht et al., 2020).

The third precursor is interaction with the chatbot and how it influences hedonic motivation. Automation has led to a change in interaction methods, whereby automated chatbots are increasingly replacing human staff. Through consumer interactions with chatbots, consumers gain various benefits. (Pizzi et al., 2021).

The fourth precursor is trust towards the chatbot. Trust, like the precursors named above, influences hedonic motivation. Before deciding whether or not to trust the chatbot, the customer goes through a stage of building trust based on feelings. Empathetic and friendly chatbots have a favorable impact on the trust of their users. Customers prefer text-based chatbots over other forms of technology because they can better understand their needs and viewpoints. Empathy and friendliness are the essential hedonic background of consumer trust in chatbots (Ltifi, 2023).

The fifth precursor is the convenience offered by the chatbot. This influences hedonic motivation. Chatbots provide convenience and quality communication that positively affects customer perception of marketing efforts (Chung et al., 2020). Chatbots provide convenient and quick assistance to users by specifically answering their questions. The convenience provided by the chatbot can also increase user loyalty. Chatbots can also be seen as a way to pass the time, having some entertainment. Many people spend a good part of their free time in the virtual world (Marjerison et al., 2022). The accessibility of chatbots are appreciated, especially when using chatbots for convenience purposes (Rieke and Martins, 2023).

The last precursor is the personalization of chatbot technology and how it influences hedonic motivation. The chatbot can help the customer make their decision easier, such as comparing products and providing personalized recommendations. Chatbots also have a personalized search function. This feature is intended to create a unique, interactive shopping process. These features of chatbots lead to customer satisfaction. They also build beneficial relationships, reduce uncertainty and offer consumers a greater range of service offers, improving the efficiency of those in the retail sphere (Chen et al., 2021).

A hypothesis is proposed for each precursor:

H_1: The ease of use of the chatbot has a positive influence on the hedonic motivation to use the chatbot.

H_2: Chatbot empathy exerts a positive influence on hedonic motivation.

H_3: Interaction with the chatbot exerts a positive influence on hedonic motivation

H_4: Trust in the chatbot has a positive impact on the hedonic motivation.

H$_5$: The convenience provided by the chatbot has a positive impact on the hedonic motivation.
H$_6$: Chatbot customization has a positive influence on the hedonic motivation.

The literature shows that hedonic motivation shows a moderating effect on customer satisfaction (Gao and Xing, 2023). Customers satisfied (Gao and Xing, 2023) with an e-commerce platform or its various services will trust the product quality and e-commerce after-sales service, thus promoting re-use intentions. The more pleasant a chatbot is and the more accurate the information it provides, the higher the consumer satisfaction. Consumer satisfaction with the chatbot increases by implementing hedonic factors that make the interaction more enjoyable. Also, a combination of hedonic factors can enhance the experience and lead to greater satisfaction with the chatbot. Customer satisfaction is related to customers' affective reactions to chatbot technology. Customers can receive accurate information, get guidance and learn the latest trends in a simpler way (Klein and Martinez, 2023).

Based on these arguments, the relationship between satisfaction and hedonic motivation can be highlighted:
H$_7$: The satisfaction provided by the chatbot has a positive impact on hedonic motivation.

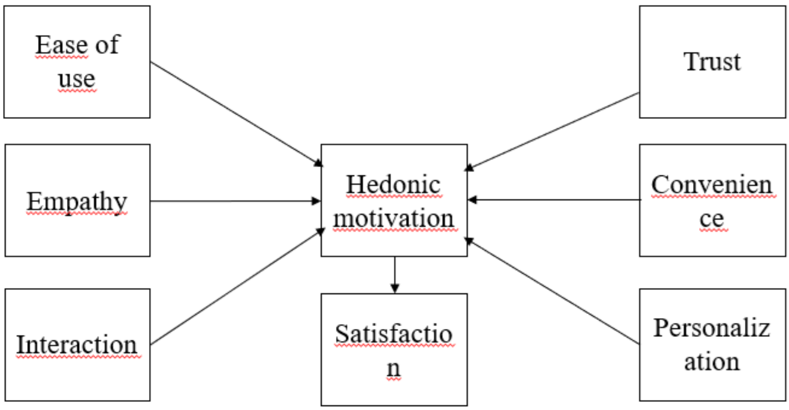

Figure 1: Conceptual model
Source: The authors' own development

Conclusions and Implications

A quantitative research will be implemented to calculate the model and see the relationships. As a data collection method, the questionnaire will be used. The platform used will be Google Forms. The number of people who will complete it will be at least 300 and will be made up of generation X. The software used for data analysis will be SPSS and SmartPLS. In terms of the managerial implications of using chatbots by retailers, this technology can be used to create unique experiences for consumers. This study will use a limited sample of respondents. Most being from Generation X. Future studies could focus on other generations of consumers.

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STRATEGIES FOR OPTIMIZING AIRPORT MARKETING RESOURCES

Ioana-Maria Stăniloiu, Teodora-Ioana Măciucă, Ștefan Bulboacă
Marketing, Tourism Services and International Business Department, Faculty of Economic Sciences and Business Administration, Interdisciplinary Doctoral School, Marketing field, Transilvania University of Brașov, Brașov, Romania
ioana.staniloiu@unitbv.ro
teodora.maciuca@unitbv.ro
stefan.bulboaca@unitbv.ro

Abstract: *This article explores efficient strategies for optimizing marketing resources in the airport sector, with a particular focus on digital technologies and personalized approaches that enhance customer experience. The study includes a comparison between Brașov-Ghimbav International Airport and Iași Airport, highlighting the unique features and innovations of each airport. The analysis emphasizes the role of modern technologies, such as the virtual control tower at Brașov, and the importance of effective route promotion to attract passengers and airlines. Conclusions provide suggestions for the continuous optimization of airport marketing strategies.*

Keywords: *airport marketing; optimization; digitalization; Brașov Airport; Iași Airport*

JEL classification: M31, L93.

1. Introduction

In the context of globalization and rising competition, airport marketing has become essential for enhancing operational efficiency and regional impact. Airports now function not only as transit hubs but also as economic engines, attracting passengers, securing airline partnerships, and building long-term commercial collaborations. These aims are achieved through strategic marketing, technological investments, and a customer-centered approach (Kotler, 2014).

This article explores strategies for optimizing airport marketing resources by analyzing Brașov-Ghimbav and Iași International Airports. Through comparative analysis, it demonstrates how airports can strengthen their market position, improve customer experience, and adapt to evolving demands. The study highlights the importance of digital advancements, like Brașov's virtual control tower, in enhancing customer engagement and service personalization (Wells & Young, 2020).

While Brașov focuses on digital transformation to boost operational efficiency and regional leadership in technology, Iași emphasizes route expansion to meet the needs of regional and diaspora travelers, reinforcing its status as a key hub in Eastern Romania. This paper contributes to airport marketing literature by identifying optimization strategies that enhance operational performance, passenger satisfaction, and an airport's global competitiveness (Freathy, 2019).

2. Market Analysis

The airport industry operates in a competitive environment where passenger needs and expectations evolve rapidly. Effective airport marketing hinges on precise market segmentation and an in-depth understanding of each audience's unique characteristics. Passengers are central to this approach, representing a diverse demographic with high expectations for comfort and personalized experiences. Iași Airport, for instance, enhances passenger satisfaction by expanding its services and network to meet the needs of residents, business travelers, and the Romanian diaspora (Graham, 2018).

Airlines are pivotal for route expansion and passenger attraction, making partnerships essential for airport growth. Brașov-Ghimbav collaborates with airlines like Fly Lili to connect with major European cities, establishing itself as a key gateway to the Carpathian region (brasovairport.ro). Likewise, Iași's partnerships with low-cost and full-service carriers bolster its role as a major regional hub in Eastern Romania (Doganis, 2006).

Moreover, partnerships with retailers, food providers, and transport operators enrich the passenger experience and boost non-aeronautical revenue. Iași Airport collaborates with both local and international suppliers, enhancing service diversity and financial stability, while Brașov-Ghimbav's collaboration with local vendors provides travelers with an authentic regional experience (Freathy, 2019).

3. Optimization Strategies

To stay competitive, airports must implement resource optimization strategies tailored to their market demands. Both Brașov-Ghimbav and Iași International Airports base their marketing on two core pillars: route promotion and enhancing passenger experience, with technological innovation as a key component. Brașov-Ghimbav has partnered with airlines like Fly Lili to connect with major European cities, boosting visibility and positioning itself as a gateway to the Carpathian region (brasovairport.ro). Similarly, Iași has strengthened its status as a regional hub by collaborating with low-cost and traditional carriers, providing frequent flights to popular European destinations and serving a wide audience, including the Romanian diaspora (Doganis, 2006).

Another essential focus is on personalized passenger experiences. Brașov-Ghimbav has introduced advanced facilities, including Romania's first virtual control tower, to enhance operational efficiency and passenger experience (brasovairport.ro). Iași, prioritizing accessibility and comfort, uses digital platforms for real-time updates on flights and services, ensuring a seamless journey from check-in to boarding and significantly enhancing passenger satisfaction (Graham, 2018).

4. Technologies and Digitalization

The integration of technology and digitalization is crucial for efficient airport management and an enhanced travel experience. Both Brașov-Ghimbav and Iași

Airports leverage advanced technologies to support operational efficiency and offer personalized services. Brașov's virtual control tower, Romania's first, provides similar functionalities to a traditional tower at nearly half the cost, enhancing operational flexibility and positioning Brașov as an innovative facility in the region (brasovairport.ro).

Both airports also utilize digital platforms for transparent communication with passengers. Brașov-Ghimbav provides mobile apps and automated notifications for real-time updates on flights and services, ensuring a seamless journey. Similarly, Iași offers real-time flight and transport information, improving accessibility and convenience (Freathy, 2019).

Digitalization is thus central to both airports' strategies, enhancing the passenger experience, improving service delivery, and promoting operational excellence.

5. Efficiency Evaluation

Evaluating airport marketing strategies is vital for understanding their impact on operational performance and justifying investments in technology and resource optimization. Key performance indicators (KPIs) such as passenger growth, route occupancy, customer satisfaction, and non-aeronautical revenue generation are commonly used in this assessment. At Brașov-Ghimbav, monitoring passenger flow and route occupancy enables more targeted marketing strategies. Partnerships with airlines like Fly Lili have proven effective, increasing occupancy on routes to destinations such as Munich and Istanbul (brasovairport.ro). Iași Airport also monitors passenger growth closely, particularly through collaborations with major European airlines, which has resulted in steady traffic increases to high-demand destinations, serving both local and diaspora travelers (aeroport-iasi.ro; Graham, 2018).

Customer satisfaction is another critical measure. Brașov-Ghimbav uses surveys and digital feedback to assess accessibility, service efficiency, and the overall experience. The virtual control tower and communication platforms have received positive feedback, highlighting Brașov's commitment to operational and customer service innovation (Freathy, 2019). Iași similarly utilizes feedback and digital tools, enhancing passenger satisfaction with real-time updates and improved facilities, fostering loyalty and repeat travel (aeroport-iasi.ro).

Non-aeronautical revenue, such as retail and catering income, is also crucial for financial sustainability. Brașov partners with local vendors for an authentic experience, while Iași collaborates with local and international brands, broadening shopping and dining options. These revenues not only diversify income streams but also enhance passenger satisfaction and loyalty (Shaw, 2011).

6. Conclusions and Recommendations

Brașov-Ghimbav and Iași International Airports employ distinct yet complementary strategies for optimizing marketing resources in a competitive aviation environment. Brașov-Ghimbav leads in technological innovation with Romania's first virtual control tower, enhancing operational efficiency and establishing itself as a key gateway to the Carpathian region. Meanwhile, Iași focuses on a robust European route network to serve regional and diaspora travelers, exemplifying effective resource optimization through route development and airline partnerships.

To further optimize airport marketing, expanding route networks to high-demand destinations would stimulate passenger flow and strengthen connectivity. Collaborations with local tourism agencies could help promote Brașov and Iași as tourist destinations, creating integrated travel packages that support regional economic growth. Investing in digitalization, such as virtual assistance and personalized service, would enhance passenger experience by reducing wait times and improving satisfaction. Continuous monitoring of passenger feedback allows for adaptive service improvements, crucial for maintaining loyalty and meeting evolving needs.

These strategies support sustainable growth for both airports, reinforcing their competitive positions globally and ensuring a high-quality travel experience for all passengers.

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THE IMPACT OF NEUROMARKETING ON SOCIAL MEDIA CAMPAIGNS

Guș (căs. Hladiuc) Iulia
West Univeristy of Timișoara, Timișoara, Romania

Iulia.gus86@e-uvt.ro

Abstract

Social media platforms engage billions globally, with users spending an average of 2 hours and 23 minutes online daily (Statista, 2024; Smart Insights, 2024). This extensive reach offers unparalleled access to potential customers; however, capturing user attention amid constant content requires strategic innovation, such as neuromarketing. Neuromarketing focuses on understanding consumer needs, preferences, and emotional responses, providing insights critical for campaign success. Techniques such as Electroencephalography (EEG) and fMRI allow marketers to analyze brain activity and assess consumer reactions to stimuli, offering a more efficient alternative to costly focus groups and surveys. Social media, with its interactive environment, shortens the distance between brands and consumers, enabling a dynamic, dialogic exchange (Zhang et al., 2021). Research also highlights that distinct brain pathways are activated by visually appealing and informative content, underscoring the value of combining aesthetics and novel information for effective social media campaigns (Jing & Eun-Ju, 2022). These neuromarketing strategies, optimized by engagement-driven social media features, thus pave the way for impactful, consumer-centered marketing.

Keywords: soial media; neuromarketing; influencer marketing; social platforms

JEL Classification: M31, D87

Introduction

Everybody nowadays uses social media. Either Facebook, TikTok, Instagram or Twitter, or more niched platforms like Linked In or Pinterest. According to Statista (2024), Facebook has 3,065 millions users in 2024, YouTube 2,504 millions and Instagram 2,000 millions. The data from Smart Insights (2024) show that 62.3% of the population uses a social network and the average time spent by users online is 2 hours and 23 minutes. These networks were not just a hype: it is a phenomenon that still grows. We can say that there is no easier way to reach all these potential customers than the social platforms. The purpose of this paper is to find out those messages that impact the most the consumer purchasing decisions.

Understanding Consumer Preferences and Aversions

As Micu A. and all state (2020), a key aspect of marketing lies in understanding what customers desire, how they respond, what captures their interest, and, most importantly, what they genuinely need. For babies, it is easy to see how they react to a product: it is either a smile or a grimace. But to find out what works for a successful campaign online, a company must follow several indicators and even conduct numerous experiments. As budgets to conduct focus groups, surveys or other traditional marketing research techniques are extremely high, neuromarketing can bring a quicker (and more reliable response to this). This emerging phenomenon is a transformative shift in marketing perspectives, going beyond a mere extension of advertising methods, technological innovation, or added functionality. (Huh J. & Malthouse E., 2020).

The neuroscientific approach to marketing seeks to investigate brain mechanisms to gain deeper insights into aspects of human behavior, such as decision-making, preferences, attention, and the impact of strong emotions triggered by advertisements. And it is more than predicting (and influencing) the consumer choice. Neuromarketing can dictate how potential customers interact, relate, and behave in the context of markets and organizations. This means that its effectiveness is in the present, as well as in the future.

A new way of communicating

To create an attractive message, users can use social media platforms to post pictures, links, videos or texts and they can react to posts with all these tools, and more. These more refers to the key that mare this social network so popular and addictive: the `Share` button and the emoji buttons (Like — Thumbs Up; Love — Beating Heart; Haha — Laughing Face; Wow — Surprised Face; Sad — Crying Face). Reaction is usually an impulse action that happens within seconds or milliseconds from when a post was seen. All these reactions create the most effective way to measure the impact of the social media campaign: engagement.

As Zhang, J; Yun, JH and Lee, EJ (2021) argue, social media creates for the first time a dialogue between the creator of the message and the receiver. The distance between the seller and the buyer is shorter than ever, regarding both space and time. In traditional advertising, communication was only one way. Now, it can be a live dialogue between the two parties. This dialogue can be initiated by both parties, although it is usually started by the one who wants to sell the product or service. If the consumer is the one who wants to send the message first, this means that a previous brand awareness moment existed, or the need for it was created before, in a conscious or unconscious manner.

Investments in building a strong image online are growing more and more as trends show that the younger generation (including Generation Alpha) uses social media to find information and purchase products. And what better place to advertise than the space that has a “buy now” button on it?

The big challenge is to find out what triggers consumer to click the button. Using functional Magnetic Resonance Imaging (fMRI), Jing Z. and Eun-Ju L. (2022) conducted a study that demonstrates that our brain contains two neural pathways that enable us to perceive distinct types of value. In other words, there are two cues that draw people’s attention. The first pathway in the brain (reward value area of the nucleus accumbens) reacts to attractive objects in social media ads. The second pathway (reward value area of the prefrontal cortex) is activated when consumer

receives new information. This duo (appealing message and valued information) are the key to an effective marketing strategy on social media.
This reaction to attractive visuals isn't accidental; rather, it’s a function of the brain’s evolutionary wiring. The nucleus accumbens evaluates stimuli to determine what is rewarding or desirable, helping guide behaviors by creating a sense of satisfaction or pleasure in response to certain visual cues. In the context of social media marketing, this process is essential: by capturing consumers' attention and invoking a reward response, ads that leverage appealing imagery can increase consumer engagement, foster brand affinity, and ultimately enhance conversion rates. Therefore the most successful campaigns are the ones that use dreamy landscapes, beautiful people or couples, fluffy animals or just a artistic display of text and colors. Videos are as well extremely popular, thus the rising popularity of this type of ad (Tik Tok videos, reels or shorts).
Useful information is another way to attract customers’ attention. Neuromarketing shows that one trick to increase the buyers` loyalty is to use hidden information. Whereas traditional media advertising presents all content simultaneously, offering consumers a comprehensive amount of information at once, social media marketing distributes information in a less direct manner. The consumer strives to get more information, and thus has the urge to “click here”, creating engagement. They need to satisfy an emotional need to fill up the `knowledge gap`, meaning the distance between what they know and what they wish to know. Furthermore, the more involved a customer gets in retrieving more knowledge about a product or service, the more prone he or she is to purchase it. This trend is more accurate as the trust in traditional media is decreasing due to corruption, bad journalism or paid news. Although staying in touch with friends and family is the main use of social media platforms, these slowly change towards news and information seeking. This is especially true for gen X (aged 41-59) and baby boomers (aged 60-64), while the young generation still uses social media to bust boredom.
Video, especially live streaming, is also a highly effective technique for Social Media. As Matthew G. (2019) states, 74% of consumers are more likely to buy a product or service after watching a branded video. Because live videos are typically viewed as "limited-time" experiences, they create a sense of urgency that taps into viewers' fear of missing out (FOMO). Many live events, like flash sales or product launches, leverage this urgency to encourage quick decision-making and impulse purchases. Further more, live video feels unfiltered and spontaneous, offering audiences an unedited glimpse into a brand, product, or person. This transparency builds credibility and reassures viewers, making them more comfortable with the brand and more likely to convert from viewers to buyers.
But engagement is not all. Just as Berridga K. (20030 stated), the pleasure or ”likeness“ of a piece of news or a picture can be conscious or unconscious. For the first one, the consumer has the reaction buttons that generate engagement. But for the latter, it can translate into a later effect of in-store buying. It may be believed to be a rational purchase at that time, but it is in fact the result of a neuromarketing technique.

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AUGMENTED REALITY MARKETING: A SYSTEMATIC LITERATURE REVIEW

Ioana DAN
Babeș-Bolyai University, Faculty of Economics and Business Administration, Marketing Department, Cluj-Napoca, Romania
ioana.dan@econ.ubbcluj.ro

Abstract: *Augmented reality (AR) enhances consumer experiences by overlaying virtual objects in real environments, particularly in marketing. Recent research shows AR's rising popularity in retail, allowing "try before you buy" experiences for younger generations in cosmetics, fashion, and furniture. A bibliometric analysis of 171 articles from 2022 to 2024 identified 522 authors in 133 clusters, revealing diverse insights into AR's impact on customer engagement and digital transformation. Key findings emphasize the role of advanced technologies in improving customer experiences and organizational marketing strategies, with a notable focus on the retail and tourism sectors.*

Keywords: augmented reality, marketing, literature review, bibliometric analyses
JEL classification: M31

1. Introduction
Augmented reality (AR) technology enhances consumer experiences by overlaying virtual objects onto real environments. It's gaining popularity in retail, allowing users to test products at home with "try before you buy" strategies. Notable AR apps include Snap Feet, L'Oreal, Ikea, and Scope AR, mainly in cosmetics, fashion, and furniture. Younger generations especially favour AR for making choices in furniture, decoration, fashion, and beauty products. (Statista, 2022)

2. Methodology
A bibliometric analysis of 201 scientific articles from 2022 to 2024 on "augmented reality" and "marketing" was conducted using data from the Web of Science. This was narrowed down to 171 articles from leading publishers. Utilizing VOSviewer software, co-authorship relations and keyword patterns were analyzed, resulting in a map of 522 authors in 133 clusters, indicating a scattered distribution of AR topics in marketing. A keyword co-occurrence map identified 40 keywords across four clusters. The review highlights opportunities, challenges, and consumer brand perspectives, along with the current research agenda.

3. Findings based on bibliometric analyses
A growing interest in AR has led to notable discussions and research on its applications, highlighting a diverse range of ideas and distinct clusters among contributors. The largest and oldest cluster captured in this analysis, featuring 8 authors, examines technology's role in enhancing customer engagement through tools like neuro-enhanced reality (Hilken, T. et al., 2022), augmented reality (Hilken, T., Heller, J., et al., 2022), and the metaverse (Golf-Papez, M. et al., 2022). It highlights the need to understand customer perceptions to effectively leverage these technologies. On the other hand, the largest and newest research cluster of 15

authors explores the effects of digital transformation on consumer behaviour in tourism and hospitality (Huang et al., 2023; Jalilvand & Ghasemi, 2024).
An analysis of keyword co-occurrence identified four research clusters, highlighting recent trends in the "metaverse," customer satisfaction, and augmented reality usage models.

5. Conclusion

AR in marketing is evolving, with research focusing on retail and tourism to enhance customer experiences and explore metaverse concepts. Zarantonello & Schmitt (2022) suggest future studies on integrating AR throughout the entire consumer buying journey.

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DETERMINANTS OF CONSUMER BEHAVIOR

Angela-Alexandra Valache-Daringa
Doctoral School in Economic Sciences, University of Oradea, Oradea, Romania
angela.daringa@gmail.com

Abstract: *The high level of environmental changes (and implicitly of uncertainty) is an issue that is affecting all the business activities, regardless of their size or type. The success of an international business demands the ability to fully understand the shades of different cultural patterns and traits. In developing the product strategy, it is essential to donate explicit recognition to both the objective and the subjective elements of the product. Whilst the objective elements are often easily copied, the subjective ones (such as image and reputation) are difficult to copy delivering higher value, affording effective basis for differentiation and, consequently, constructing a supplementary competitive advantage. Qualitative research is used to analyze the determinants of consumer behavior. A strong brand comes from the capability of delivering a message that is promising something that can be truly experienced by the consumer after having purchased the related product or service. The higher the trust the final consumer puts in the brand, the higher the probability that the linkage between the brand and the consumer will remain solid for a longer period; in particular, the element that creates the greatest degree of trust is the packaging.*

Keywords: Consumer; behavior; demand; advantage;differentiation; packaging.

JEL classification: D91; E71

1. Introduction

high level of environmental changes (and implicitly of uncertainty) is an issue that affects all business activities, regardless of their size or type. These changes and uncertainties translate into pressures and challenges that managers must deal daily. To do so, the main activities marketers and organizations must affront are those of monitoring and planning: the first activity involves the process through which it is possible to gain information about potential opportunities and threats in advance by analyzing the environment; the latter activity involves the organization of a structure and a system, key tools in minimizing the foreseen threats. Components that define the environment can be divided into two different levels: macro-environment and microenvironment.

2. Environmental determinats

The microenvironment level is that which is closest to the organization; it is composed of elements that directly influence the capacity of performing business activities within the market. The macro environment level is made up of elements, known as non-controllable elements, that result in a series of constraints for the company. To face the noncontrollable economic, demographic, technological, political, legal, social, and cultural factors, the marketer should adopt a highly proactive attitude.

2.1. The Economic Environment

The market can be seen from the prospective of infrastructure, population (with specific characteristics), and social development. In particular, the population of a market is indicative of the potential demand; this, in turn, provides the most basic indicator of market size; moreover, population income provides clues about market potential. Other important characteristics to be taken into consideration when performing international marketing activities are those related to the political and legal environment of a host-country; host-country parameters affect operations, and a wise manager, in order to be able to achieve his business objectives, must understand the logic behind the country in which he is operating, so as to anticipate and plan for any changes that may prove necessary.

- Political Action and Risk, where the ideal situation for a manager when carrying out business at international level would be to perform activities in a country with a stable and friendly government, but such countries are difficult to find. Therefore, his activities must include monitoring government stability and policies and identify the political changes which would pose a risk to the corporate operations. Political risks are related to potential investment losses (because of a country's policies) and structural political changes (to laws, assets expropriation, tax and tariffs, restriction in the repatriation of profits). Generally, a low political risk will characterize countries with a history of political consistency and stability.
- Domestic business conditions, in terms of share prices, investment, inflation, mergers, trade union actions.
- International business conditions, in particular foreign competition, exchange rates fluctuation, balance of payments.
- Technological progress (i.e., patents, new products, new processes);
- Competitive activities related to decisions concerning markets, products, prices and promotions.
- Distribution channels, transportation, infrastructure warehousing.
- Customers characteristics where the most important being related to ages,income, attitudes, education, and location.
- Suppliers' behavior in all its facets: issues related to goods and services, capital and labor markets;
- Social and political climate related to ethic and religious factors, image, ecology, culture, and public relations.
- Government activities (laws, taxation, lobbying, pay the price policies).

Considering the above, in a context characterized by a high degree of pressures, the first aim of management is to defend and enhance their marketing assets, both tangible and intangible, such as brand equity and external relations (e.g., with vendors, dealers, distributors, employees and customers). To do so, the monitoring of marketing metrics is important, in order to measure the performance of all those indicators that are not only related to the financial soul of a company, but also to the level of customer loyalty and satisfaction, to the retention rate and the perceived value of its business offering in comparison to that offered by the competition.

3. Understanding the consumer

The emergence of both new types of consumers and new types of competitive environment conditions began in the 1990's. It is still important to understand how consumers react to marketing stimuli. Even if the type of the stimulus used is the same for all potential consumers, the way in which a single stimulus (environmental and of marketing mix) interacts with the buyer's decision-making process depends upon his characteristics and results in a series of different outputs. The buyer's decision-making process is a sequential process that starts with the recognition of a problem, namely the need to be satisfied. With respect to the buying process, after the phase of problem recognition, the buyer will search for additional information, evaluating all the potential alternatives in order to finally make his decision and thus satisfy his need. The last, but not the least, phase is post-purchase buyer behavior, which is an issue of high importance for ongoing business; if the buyer is not satisfied becomes of fundamental importance for the company, in a way that determines whether he can be transformed from a "by chance" buyer into a frequent one. Loyal consumers purchase the same product or brand, on a regular basis, from the same source (website, catalogue, and store). Disloyal consumers shift from one brand to another, take advantage of price reductions, and have a spontaneous response to advertising of sale promotions; consequently, they foster price competition. Marketing strategies differ depending on whether consumer is more loyal (when it is more useful to build loyal consumer base) or less loyal (when it is more useful to adopt strategies and perform activities that persuade the customer to switch brands in the hope of transforming them into loyal ones). The 'consumer' is not automatically the customer, and for the marketing mix to be effective it is essential to understand not only what the customer wants (e.g. value for money), but also what the consumer wants (e.g. taste, image). Once the marketer understands what the consumer wants, strategies can be applied in order to adapt the company's offer to best suit his needs, by:

- Changing the physical product, e.g., adding features (real repositioning);
- Changing beliefs about the product by emphasizing to particular attribute (psychological repositioning);
- Changing beliefs about competitors' products by comparative advertising;
- Changing the relative importance of attributes (range of additional uses);
- Emphasizing product features that had been previously ignored;
- Changing buyer's expectations;

Buyer's buying decisions also depend on product attributes, and these deserve closer consideration in all their facets: price, quality, performance, style and their relative importance for the consumer.

4. Conclusions

Determinats of consumer behavior are stimulus that affect the decision making process. When making his buying decision, the consumers will be more discriminant and more demanding than consumers in the past. Consumers from today will be far less loyal and much more willing to complain. The explanation for this is that the new consumer is much more media/advertising/technologically/brand literate, brand discriminating and brand sophisticated.

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THE IMPACT OF THE YEAR OF ORIGIN ON THE PRODUCT PACKAGING

Angela-Alexandra Valache-Daringa
Doctoral School in Economic Sciences, University of Oradea, Oradea, Romania
angela.daringa@gmail.com

Abstract: *At an international level, the choice of packaging will depend upon different implications of color, packaging shape, the number of units inside the packaging, and of so-called four Rs (redesign, reduce, recycle, and reuse). The more a firm succeeds in differentiating his offer in the marketplace (by making use of different combinations of packaging and quality, intangible and augmented features), the higher the probability to gain a stronger position in consumers' minds. The concept of value is a relative one: the consumer himself will recognize, based on his perception, as much value as the product/service provides in terms of problem solving and needs satisfaction. This paper is using as esearch method quantitative analysis and is approching questions such as: "If I am a new or an old producer, in which case should I specify the year of origin in the brand label?". "Do you specify the year of origin or not? If yes, what year, recent/old one"? "Does the year of origin work in a scenario in which you, as a producer, are old but the other players are recent competitors? Does this have an impact? If yes, what kind of impact?"*

Keywords: Consumer; packaging; brand; choice; variable; need.

JEL classification: D12; D84

1. Introduction

A strong brand comes from the capability of delivering a message that is promising something that can be truly experienced by the consumer after having purchased the related product or service. The higher the trust the final consumer puts in the brand, the higher the probability that the linkage between the brand and the consumer will remain solid for a longer period; in particular, the element that creates the greatest degree of trust is the packaging. The existence of a specific business is strongly related with the degree of competition within the market.

2. Methodology and research methods

The main research question was: "If I am a beer producer, in which case should I specify the year of origin in the beer brand label?". For an unknown brand, I might be free to state the year of origin, and I could affirm that is old or recent. In general, making the year of origin visible might be useful when you have to compete with an old beer brand producer, who specifies an old year of origin. However, it is also possible to face an old beer producer that does not specify the year of origin at all.

It can be that if the old producer specifies the year of origin, it might result useful for the new producer to do the same. So, the question for the new beer producer is "Do you specify the year of origin or not? If yes, what year, recent/old one"? "Does the year of origin work in a scenario in which you, as a producer, are old but the other players are actually recent competitors? Does this have an impact? If yes, what kind of impact?". For what concerns the analysis of the impact of the year of origin, a questionnaire has been created to collect the impressions of consumers about a selected product. SPSS software has been used for the analysis of these questionnaires. SPSS Statistics is a software package used for statistical analysis, widely used especially in social science. It is also used by market researchers, health researchers, survey companies, government, education researchers, marketing organizations, data miners and others. Statistics included in the base software are:

- Descriptive statistics: Cross tabulation, Frequencies, Descriptive, Explore, Descriptive Ratio Statistics
- Bivariate statistics: Means, t-test, ANOVA, Correlation (bivariate, partial, distances), Nonparametric tests.
- Prediction for numerical outcomes: Linear regression.
- Prediction for identifying groups: Factor analysis, cluster analysis (twostep, K-means, hierarchical), Discriminant.

3. Questionnaire setting

The questionnaire used the criterion of randomization, and the criterion for the randomization of the brands of beer was "known beer" vs. "unknown beer".

The purpose inside the questionnaire was to put under analysis respondents' preferences for a known brand, the beer chosen after the pre-test, Peroni/Timisoreana, against an unknown beer, which do not exist/produced in reality but it is invented, named Rocce Rosa/Varful Moldoveanu. The reason for inventing a brand was that of assuring the fact that respondents do not know the brand, and their degree of agreement/disagreement with the statements of uniqueness, market requirements adequacy, quality, reputation, brand knowledge, tradition are not based on previous product experience. A solution could have been that of choosing a brand beer that exists, but that at the same time is not well known, but there might have been the risk that some respondents really know that beer brand. Rocce Rosa label beer refers to something natural, related to a specific zone, and Varful Moldoveanu beer label – Moldoveanu Peak – refers to the highest mountain (at 2,544 meters) in Romania (located in Argeș County, in the Făgăraș Mountains of the Southern Carpathians).

4. Technique used for the analysis of the questionnaire

While proceeding with the analysis for Peroni and Timisoreana beer brand the Exploratory Factor Analysis technique and the Multivariate analysis is applied. The starting point of the analysis is a questionnaire that has been given to 602 individuals constituting the Italian sample (Peroni brand), and 209 people for Timisoreana brand.

There are 18 questions for each one of the 6 conditions created. The questionnaire starts by showing two different labels to respondents and asking them to imagine to be in front of the shelves of the supermarket and to choose one of two different products. The following questions are related to respondents believes about product uniqueness, market required for that product, quality, reputation, consciousness, and tradition. The questionnaire ends with questions of demographic character: frequency of purchase, gender, age, education, and employment.

4.1. Data analisys

For the italian sampe it was find out that 46.2% of them have chosen the product who reported the YOO. Specifically, from this total of 46.2% 15.8 percent (which equals 34.2% of the total of YOO CHOOSEN) have chosen Peroni, our product under investigation, product which really exist on the market. There may be that even if the brand RR would exist people would have chosen it (65.8% of the total YOO chosen by respondents). For the Romanian sample it was find out that 43.7 % of them have chosen the product who reported the YOO. In specific from this total of 43.7%, 6.5% (which equals 14.87% of the total of YOO CHOOSEN) have chosen Timisoreana, our product under investigation, product which really exist on the market. There may be that even if Varful Moldoveanu would exist people would have chosen it (56.3% of the total YOO chosen by respondents). 53.6% of respondents have chosen the brand whose label report the year of origin.

4.2 MANOVA Process and considerations

Manova is a tool useful to understand data (is a sophisticated global test) and at the same time to compare them. While all variables seem to be relevant from a managerial point of view, the main task is to understand them. It fallows different multivariate analysis, taking as dependent variable brand image, in specific, the factors previously founded, the variable brand knowledge (for both known and unknown brand, which previously has been excluded from factor analysis in order to see if this has any impact on brand image) and variable choice; as fixed factors are used YOO, condition (the different six conditions used for questionnaire randomization) and demographic variables (gender, age).

It has been found out that for the Italian sample, in the case of the known brand, Brand image is not depending on the conditions used for randomizing the questionnaire; rand image is not depending on the year of origin reported on the product label (either recent or old); both brand knowledge and respondent's choice are not depending on the year of origin reported on product label. Alos, in the case of the unknown brand, respondent's choice is depending on the brand knowledge (the brand has been not chosen because respondents had no familiarity with the brand); instead, brand image is not depending on the brand knowledge. In relation with the Rumanian sample, in the case of the known brand, both brand image and choice of the brand are not depending on both the condition used for questionnaire randomization and the presence of the year of origin reported on the product label (despite the fact the year of origin was a recent or an old one)., in the case of the known brand, both brand image and choice of the brand is depending on the brand knowledge.

Moreover, in the case of the unknown brand, brand image is depending on the brand knowledge; instead, respondent's choice is not depending on brand knowledge. Higher the knowledge/awareness about the brand there will be a higher attached value to brand image in terms of uniqueness and reputation.

5. Conclusion

For the Italian sample, in the case of the known brand, brand image (both brand reputation and brand uniqueness) is depending on respondent's knowledge about the brand; instead, respondent's choice is not depending on the brand knowledge. For the Rumanian sample, in the case of the unknown brand, both brand image and the choice of the brand are not depending on either the condition used for questionnaire randomization or on the year of origin reported on the product label. In the process of the multivariate analysis, there have been also founded similarities and differences about Italian and Rumanian sample, but these similarities and differences can't be explained by Hofstede cultural dimensions. Moreover, the year of origin (for both Italian and Rumanian sample) has no impact on brand image or on respondent's choice and it makes no difference between the impact (that a new or an old producer) produced on brand image and/or on respondent's choice. Differences are based on either respondent has a familiarity with the producer offer or not. While for the Rumanian sample, for the known brand, brand knowledge had an impact on both brand image and respondent's choice, for the Italian sample it had an impact only for brand image. For what concern the situation of an unknown brand, while in the Rumanian sample brand knowledge has an impact on the brand image, in the Italian sample it has an impact on respondent's choice.

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CONSUMER BEHAVIOUR PSYCHOLOGY IN ENTERTAINMENT MARKETING

Ștefan Bulboacă, Teodora-Ioana Măciucă, Ioana-Maria Stăniloiu

Department of Marketing, Tourism, Services and International Business, Interdisciplinary Doctoral School, Programme of Marketing, Transilvania University of Brașov, Romania.
stefan.bulboaca@unitbv.ro
teodora.maciuca@unitbv.ro
ioana.staniloiu@unitbv.ro

Abstract: *Throughout each day, people engage in various decision-making processes, both on their initiative and from the influences of external environmental factors, but what causes consumers to make specific choices, and why? To explore this question, we analyzed specialized literature that will serve as qualitative and quantitative marketing research on the factors that influence consumption behaviour in the entertainment industry. Thus, the most effective marketing methods and elements can be identified and included in the promotion for each market. This paper looks at the analysis of the psychological effects corresponding to promotion in the entertainment industry, the main effects included in the research being the "Yerkes-Dodson" Law, the Illusion of Control and the State of Flow.*

Keywords: consumer behaviour, consumer motivation, entertainment, marketing.

JEL classification: M30, M31, M37, M39.

1. Introduction

The term "entertainment" has been defined through a considerable number of explanations and definitions over the past five hundred years. Nowadays, the most relevant definitions relate entertainment to consumer interest, amusement and satisfaction. This concept is considered a humanistic one because it involves an emotional response through the gratification of a human sensor type and concerns people's desire and/or need to obtain certain sensory inputs (sight, hearing, taste, touch and smell) that are perceived as attractive or captivating (Moss, 2015).

Nowadays, the entertainment industry has grown on a global scale both due to its economic implications and due to its sociocultural relevance (de Souza-Leao et al. 2023).

Entertainment includes four main components (psychological, cognitive, affective and behavioural components) that can be present simultaneously in an interaction with this industry. The four main components represent ways that changes can manifest in the consumer (Bryant & Vorderer, 2013).

This paper is divided into five categories: Introduction, Yerkes-Dodson Law, State of Flow, Illusion of Control, Conclusion and Future Research Directions.

2. ”Yerkes-Dodson” Law

The "Yerkes-Dodson" law formulated a theory regarding the correlation between the strength of the stimulus and the rapidity of the formation of physical reflexes depending on the difficulty of the tasks. Researchers used electric shocks to train rats, expecting that the intensity of the electric shock would be directly proportional to the speed of response and learning. But, contrary to expectations, the researchers found that a high-intensity electric shock is just as ineffective as a low-intensity one, and the optimal level of electric shock intensity is a medium one, varying over a very narrow range of intensity. Regardless of whether the distance from the optimal range involves increasing the intensity of the electric shock or implies decreasing it, the result is the same, namely that the distance shows a decrease in efficiency as the distance between the intensity and the optimal range is wider (Yerkes & Dodson, 1908).

In 1950, the foundations of this law were used and tested on an emotional level to observe the manifestation of the psychological effects determined by different factors, and the law analyzes the implications of the levels of certain factors (stress, excitement etc.) on people whom participating in an action or performing a task (Hanoch & Vitouch, 2004). Moreover, the law is potentially harmful at workplaces because the managers seek to increase or maintain levels of stress in the workplace as a mean to enhance employee performance (Corbett, 2015).

3. State of Flow

Appropriate management of the factors that determine the level of interactivity can lead to obtaining a state of flow. "State of Flow" is a state of concentration so deep that it causes an absolute immersion in the activity carried out. In this sense, consumer satisfaction is carefully pursued and is not left to the consumer or to chance (Csikszentmihalyi, 1990 & 2014).

Flow state is a subjective experience that people report when task performance is experienced as automatic, intrinsically rewarding, optimal and effortless (Alameda et al., 2022).

In addition to the primary factors, which determine the way the action unfolds, an equally important factor is the one related to the essence of the entertainment element, namely curiosity towards it. In this sense, the distance from reality is pursued in order to surprise consumers with novelty elements that will arouse their interest and enthusiasm towards the virtual environment (Murray & Maher, 2011).

Moreover, the flow leads to optimal experience by becoming completely involved in the moment (Nakamura & Csikszentmihalyi, 2002). However, when the flow state is achieved, a loss of self-consciousness occurs which is why athletes have a difficult time describing how they felt while in the flow state but their retrospective reports state that they felt terrific afterwards (Csikszentmihalyi et al., 2005).

The ways of managing consumer enthusiasm and motivation towards this component of the entertainment industry are similar to the "Yerkes-Dodson" law. Thus, the analysis of an experience, through the framework of this law, highlights a mathematical explanation with a graphic representation of consumer satisfaction.

4. Illusion of Control

The more similar a situation determined by chance is to one determined by skill, the greater the possibility of an illusion of control, that is, the perception of control over a chance event (Langer & Roth, 1975).

The illusion of control is defined as “the expectation that a probability is greater than it actually is” (Langer, 1975). For example, when someone tosses a coin in the air, the chance of landing on either face is 50%. After a few tosses, if the coin has landed on the same head more than once, a person can expect the streak to continue and consider the chances of landing on the same head to be greater than 50%. At the opposite pole, a person who expects the streak of identical results to be broken considers the probability of falling on the same face to be less than 50%. In both cases, an illusion of control is developed because a person may believe, based on previous results, that the current probability of heads is different than the actual one, even though in reality the probability has not changed and is still 50% for each face of the coin (Cantinotti et al., 2004).

5. Conclusion

Given the importance of achieving a State of Flow in the entertainment industry, success can bring both immediate benefits, such as rapid promotion among consumers, and long-term benefits, such as consumer loyalty. With the possibility of this situation, the following question is also formed: Is achieving a State of Flow beneficial during product promotion? If the Apple ad from 1984 is used as an example, it can be considered a good idea, but if the Flow of the ad is deeper than that during consumption there is a risk of generating a discrepancy between expectations and reality that can later lead to dissatisfaction.

In this sense, making a promotion that takes into account the illusion of control over the amount of information offered the management of the promotion and the experience offered in relation to the "Yerkes-Dodson" Law can considerably stimulate consumption through the impact of the promotion.

6. Future research direction

The analysis of specialized literature led to the generation of two future research directions that can be achieved through quantitative and qualitative marketing research. The first future direction of research involves identifying the types of information that bring benefits if present in promotion, as well as the type of information that may bring undesirable effects. The second future direction of research involves a cost-benefit analysis that presents the impact of using the State of Flow from the moment of promotion.

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NEUROMARKETING: A JOURNEY FROM DEFINITION TO EVOLUTION

Teodora-Ioana Măciucă, Ștefan Bulboacă, Ioana-Maria Stăniloiu
Department of Marketing, Tourism Services and International Business, Interdisciplinary Doctoral School, Programme of Marketing, Transilvania University of Brașov, Brașov, Romania
teodora.maciuca@unitbv.ro; stefan.bulboaca@unitbv.ro ; ioana.staniloiu@unitbv.ro

Abstract: *Neuromarketing is an emerging field that merges neuroscience and marketing to enhance our understanding of consumer behaviour and decision-making. This paper examines the overall evolution of neuromarketing, starting from early discoveries in neuroscience and leading to its formal recognition in 2002. It discusses significant studies, such as the "Pepsi Challenge", which illustrate how emotional and cultural factors can significantly influence consumer behavior. Utilizing technologies such as functional Magnetic Resonance Imaging (fMRI), neuromarketing uncovers the unconscious factors that shape consumer preferences. As its popularity grows among businesses, neuromarketing is increasingly used to refine marketing strategies. Furthermore, the integration of neuromarketing with modern technologies such as Virtual Reality and Big Data presents new opportunities for future research and practical applications. While the benefits of neuromarketing are noteworthy, it is crucial to address the ethical implications and limitations as the field continues to advance.*

Keywords: neuromarketing, consumer, behaviour, neuroscience, marketing

JEL classification: M31; D12; G41; D83.

1. Introduction

In an increasingly competitive world, countless experts are searching for the answer to the "Holy Grail" of marketing: What makes consumers to choose one product over another? Are their decisions deliberate or just impulsive? What factors influence their perception of a brand? Many believe that neuromarketing holds the key to answering these questions. This field has brought a shift in marketing and its application in the business world has provided a better understanding of diverse consumer behavior (Singh, Alhassan, Khoshaim, 2023).

According to the American Marketing Association (AMA), marketing is an organizational function, an activity, and at the same time, a set of processes aimed at creating, communicating, and delivering value to customers while managing relationships that benefit both the organization and its stakeholders (Kotler et al., 2015).

Philip Kotler, often called "the father of marketing", defines marketing as "the science and art of exploring, creating and providing value to satisfy the needs of a target market at a profit". He explains that marketing identifies unmet needs and desires, defines and measures the size of the identified market and determines its profit potential. It indicates the segments a company can best serve then designs and promotes appropriate products and services (Waheed et al., 2017).

Neuromarketing is a hybrid field positioned at the intersection of three primary disciplines: neuroscience, psychology and marketing. Its fundamental function is to explore the subconscious mint of the consumer in the decision-making process, as well as to understand emotional responses to various marketing stimuli (Alsharif, Salleh, Baharun, 2021). The term ”neuromarketing” has become increasingly popular in the media in recent years. However, defining it precisely remains challenging due to the wide range of perspectives found in the literature. Neuromarketing can be viewed as a customer relationship management (CRM) tool, which is based on insights into the core functional processes of the nervous system (Plakhin, Semenets, Ogorodnikova et al., 2018).

2. Historical overview

Neuromarketing traces its roots back to 1878, when the physicist and psychologist Richard Canton discovered electrical signals in animal brains. However, in a neuroeconomics report Professor Ale Smidts from the Erasmus University in Rotterdam introduced the term "neuromarketing" for the first time in 2002. He described it as the study of brain mechanisms and processes to better understand the consumer behavior patterns, aiming to improve marketing strategies, thus offering a unique approach to solving marketing problems (Bhardwaj et al., 2023).

Following this conceptualization, Bright House and Sales Brain were the first American companies to provide research and consulting services in neuromarketing. These two promoted the adoption of cognitive neuroscience technologies and knowledge in business. It was demonstrated that many of these techniques had already been used in marketing before this scientific approach was formally developed (Iloka, Onyeke, 2020).

3. Neuromarketing: Neuroscience and Consumer Behavior

Originally developed as part of neuroeconomics, a field bridging neuroscience and economics, neuromarketing aimed to explain decision-making process by developing neural models and systems (Pop et al., 2014). Neuroeconomics evolved from studying individual decision-making in social contexts to examining social preferences. It investigates the physiological and neural bases of phenomena in behavioral economics, exploring how brain function can influence economic behavior and how neuroscience discoveries can impact economic models. The study of the nervous system, including sensory networks called neurons and the brain is known as neuroscience. In addition, neuroscience delves into the entire nervous system, from form to function, development to degeneration, health to disease, focusing on the brain’s complexity, which defines who we are and what we do (Shukla, 2019).

It is clear that neuromarketing is now an interdisciplinary field combining neuroscience and psychology with consumer behavior marketing theories to explain their final purchase decisions (Marichamy, Sathiyavathi, 2014).

Neuromarketing is also known as the scientific study of how people's brains respond to advertisements and brand-related communications. Despite numerous existing studies on consumer perception and attitude, the applicability of neuromarketing techniques has significantly increased. Although studying neuroscience is challenging and time-consuming, but it benefits both consumers and marketers (Toma, Yadete, Kant, 2023).

Neuromarketing and consumer neuroscience research can identify implicit and automatic processes that influence their decision-making, providing more accurate reality and revealing hidden behavioral information. Traditional analysis techniques like surveys, questionnaires, interviews or focus groups often yield unreliable results because they rely on post-rational responses, while approximately 98% of our thoughts and actions come from the subconscious. Obviously, these answers are filtered and distorted by the act of thinking. Therefore, it is essential to measure people's reaction before their minds begin to rationalize the decision and neuromarketing provides the tools to do so, creating a significant impact on both society and companies (Yadete, Kant, 2023).

4.The Role of Neuromarketing in Shaping Consumer Preferences: Insights from the “Pepsi Challenge” Experiment

Neuromarketing gained popularity in 2003 thanks to the efforts of Read Montague, a Neuroscience Professor at Baylor College of Medicine, who conducted the first scientific neuromarketing research. His study, known as the famous "Pepsi Challenge " experiment, marked a significant milestone. The research aimed to reveal why consumers prefer one product over another, even when they are essentially the same. Participants were given two test tests, one blind and one where they knew which drink they were tasting. In the blind test, brain scans using fMRI (functional Magnetic Resonance Imaging) showed activity in the ventromedial prefrontal cortex, the brain’s “key reward center”. However, when subjects knew which brand they were consuming, there was increased activity in favor of Coca-Cola in the dorsolateral prefrontal cortex, the "memory and emotion center." In other words, people liked the taste of Pepsi, but believed they preferred Coca-Cola based on nostalgia and emotional connections. The researchers concluded that brand image, more than taste, influenced preferences. Sensory information played a minor role, while cultural and emotional information shaped thoughts, beliefs and behaviors, ultimately tipping the scale in favor of Coca-Cola (Durmaz, Bakan, 2023).

5. Conclusion

In conclusion, the main goal of neuromarketing is to better understand consumers' unconscious processes, specifically the neural correlates of emotion, attention, memory and decision-making in marketing campaigns. By tracking consumers’ preferences, expectations and motivation, marketers can predict behavior and assess advertising effectiveness. Neuromarketing research offers valuable insights for marketers to develop strategies targeting specific populations (Alsharif et al., 2021).

More than that, is an evolving field, constantly adapting to new technologies. Recently, experts have recommend combining neuromarketing techniques with Virtual Reality, Artificial Intelligence and Big Data. Additionally, the development of Mixed Reality and Virtual Reality has opened unexplored opportunities that seem promising for use in conjunction with neuromarketing (Royo-Vela, Varga, 2022).

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TO POST OR NOT TO POST? THE EFFECTS OF SOCIAL MEDIA CONTENT CHARACTERISTICS ON CONSUMER ENGAGEMENT – A SYSTEMATIC LITERATURE REVIEW

Flavia Herle
Marketing Department, Faculty of Economics and Business Administration, Babeș-Bolyai University, Cluj-Napoca, Romania
flavia.herle@econ.ubbcluj.ro

Abstract: *This paper explores the relationship between content characteristics on social media and consumer engagement. Utilizing a systematic literature review, we analysed 90 relevant studies, highlighting key findings on how various content types—such as text, photos, and videos—affect user engagement. Our findings reveal that while high-quality visual content generally enhances engagement, emotional appeal and interactivity are crucial for fostering connections with consumers. However, we identified current gaps in the literature, particularly concerning the impact of short-form video content and the emerging role of TikTok in consumer engagement, which leads to the need for further investigation to better understand consumer behaviour on social media.*

Keywords: social media; content; consumer engagement

JEL classification: M31

1. Introduction

Every minute, 4 million posts receive a “like” on Facebook, and a billion story-type posts are shared daily on social media (Statista, 2024). These are just some of the data that show us the extent of the phenomenon called social networks. All of us, individual users and companies, are now connected globally through these networks. Interaction between brands and consumers is easier than ever. And yet, how do you keep consumers engaged? What type of content should you post?

This paper aims to bring together the essential aspects from the existing literature regarding the characteristics of the content posted on social media and its impact on consumer engagement, while also highlighting the literature gaps.

2. Research Purpose and the Methodological Approach

To conduct a systematic analysis of the specialized literature, we primarily used the Web of Science as the main database to identify articles related to the main keywords: "social media", "content characteristics" and "consumer engagement". We focused on papers that are indexed in the Social Science Citation Index (SSCI) and Science Citation Index Expanded (SCIE) that pertain to the following fields: economics, business, psychology, communication, social sciences, management or computer science. In this initial phase of our research, we identified 280 suitable articles.

We then refined our selection by including only those papers published by prestigious publishers: Emerald, Elsevier, Taylor & Francis, Wiley, Springer. This criterion left us with 216 results.
From this dataset, we proceeded to exclude irrelevant articles based on their titles or abstracts, as well as those that did not specifically address the impact of content characteristics on consumer engagement on social media. This filtering process ultimately resulted in 90 relevant studies.

3. Results and Discussions

3.1. Social network sites and consumer engagement

Social Network Sites (SNS) are gaining importance as they have become one of the most popular activities online. Given the official data (Statista, 2024) most popular social networks worldwide, by number of monthly active users, are Facebook, YouTube, Instagram, WhatsApp and TikTok. This can easily explain the use of Facebook as the reference social network in 34% of the studies analysed (31 out of 90 studies), followed by Instagram (14% of studies) and X (formerly Twitter, analysed in 11% of research). Other social networks such as TikTok, YouTube, LinkedIn or Snapchat were considered in only 11 of the 90 results included in the analysis. More than 50% of the studies (48 out of 90) examined the content available on these networks while studying its effects on consumer engagement.
The findings indicate that consumer engagement varies across different SNS (Devereux, Grimmer, & Grimmer, 2020). While some consider Facebook the most engaging platform (Voorveld et al, 2018), others believe that Instagram excels in driving engagement (Romero-Jara et al, 2024). Despite these differing opinions, there is a noticeable trend of SNS becoming increasingly similar in the types of content they provide (Roma & Aloini, 2019).

3.2. Content type

Text, audio, photos, and videos are all types of content commonly found on social media. Researchers have discovered that these different content types have varying effects on consumer online behaviour (Luarn, Lin, & Chiu, 2015). For instance, posts that include high-quality photos tend to result in higher engagement rates, attracting the most likes and comments (Doyle, Su, & Kunkel, 2022). For Instagram in particular, publishing content in carousel format (including more than 1 photo per post) leads to a higher number of likes (Wahid & Gunarto, 2022). In contrast, video content generates limited engagement, even though it is shared more frequently (Balamurugan et al, 2021). Additionally, studies indicate that text-based posts lead to lower user engagement compared to audio-visual content (Li & Ensafjoo, 2024).

3.3. Content characteristics

Different types of content can exhibit various characteristics. Studies show that hedonic content is shared less frequently than utilitarian content (Hoang, Tran, & Le, 2024). Other research suggests that content should emphasize emotional appeal rather than simply promoting a product to increase likes and shares (Izogo & Mpinganjira, 2020).

Gupta, Mahajan, and Bhusan (2023) argue that emotional content fosters emotional engagement, whereas informational content impacts cognitive and behavioural aspects. Some authors suggest that interactivity is crucial for creating engaging content (Pathak & Kaushik, 2024). Incorporating questions into the content is likely to increase consumer responses (Li, Chang, & Liang, 2022). Additionally, offering promotional incentives can enhance audience engagement (Fan et al., 2023). Pancer et al. (2019) found that easy-to-read posts receive more likes, comments, and shares on social media. This finding is supported by Drossos, Coursaris, and Kagiouli (2024), who discovered that the length of a message plays a crucial role in consumers' intentions to share. Additionally, Shabbir-Husain et al. (2024) confirmed that the use of conversational language enhances consumer engagement. Moreover, the use of pronouns, particularly second-person pronouns, is also a significant factor in driving consumer engagement (Labrecque, Swani, & Stephen, 2020).

4. Literature gaps

Our systematic literature review (SLR) identifies several gaps in the existing research, suggesting opportunities for future studies to address these areas. For example, none of the studies included in the SLR have analysed short-form video content, which is increasingly popular on social media platforms, and its impact on consumer engagement. Additionally, very few studies have examined TikTok as a social media platform when investigating consumer engagement, despite data indicating that TikTok gains 8 new users every second, making it one of the most widely used social media platforms worldwide (DataReportal, 2023).

5. Conclusion

The current systematic literature review focused on content characteristics and the effects on online consumer engagement provides a valuable foundation for practitioners seeking to understand how to effectively create outstanding content for social media and obtain higher levels of engagement from consumers.
Additionally, the literature gaps identified in our review point to several topics that warrant further exploration in future research.

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IMPACT OF ORGANIZATIONAL CULTURE ON TEACHERS' REGULATION OF EMOTIONS IN ARAB PALESTINIAN HIGH SCHOOLS INSIDE ISRAEL

Manal Awad Hijazi
Doctoral School of Economics and Business Administration, West University of Timisuara, Romania
manalawadhijazi@gmail.com

Abstract: *The study investigates the effect of organizational culture on teachers' emotions in Arab Palestinian high schools within Israeli society. Emotions in teaching, both positive and negative, are seen as being integral to the learning environment, influencing job satisfaction, stress levels and overall teacher performance. The research utilized a quantitative approach, employing a cross-sectional study with 504 participants from 19 Arab schools, examining the relationship between organizational culture and emotional regulation at work. The findings reveal a significant positive correlation between all dimensions of organizational culture—such as clan, adhocracy, market, and hierarchy—and various aspects of teachers' emotions, including enhancing positive effect, perspective-taking, soothing and social modeling. The results underscore the importance of understanding the cultural diversity within Arab society and how it impacts teachers' emotional experiences. The study concludes that fostering a supportive organizational culture in schools is critical for improving teachers' emotional well-being and consequently their performance.*

Keywords: emotional regulation; emotional well-being; organizational culture; teachers' emotions

JEL Classification*:* A 12

1. Introduction

Teaching is widely recognized as an emotionally demanding profession, with emotions playing a crucial role in shaping learning and teaching processes. Research highlights that both positive and negative emotions significantly impact teachers' job satisfaction, stress levels and overall performance in the school environment. Teachers often experience a range of emotions due to their interactions with students, colleagues, and institutional structures. Organizational culture, particularly in educational settings, has been identified as a critical factor influencing these emotional dynamics (Paais and Pattiruhu, 2020).
In Arab high schools within Israeli society, the influence of organizational culture on teachers' emotions is particularly significant given the socio-political and cultural complexities that teachers navigate. Arab teachers often face unique challenges related to identity, cultural pluralism, and the interplay between traditional and modern values (Arar, 2018). These challenges, combined with the broader demands of the teaching profession, underscore the importance of examining how organizational culture shapes teachers' emotional experiences.

This study aims at exploring the relationship between organizational culture and teachers' emotions in Arab high schools, focusing on how different cultural dimensions, such as clan, adhocracy, market and hierarchy, impact teachers' regulation of emotions at work. By investigating this relationship, the research seeks to contribute to a deeper understanding of how fostering a supportive organizational culture can enhance teachers' emotional well-being.

2. Methodology

We used the quantitative research approach in this study, mainly to examine the arguments that arose in the study's literary background and to discover evidence about the phenomenon being studied and its media using quantitative tools.
The study was conducted in 19 high schools in Arab Israeli communities. A total of 504 teachers in Arab Palestinian Israeli schools participated in the study, representing different genders, ages, years of experience and education.
The tool was a questionnaire structured using a combination of questionnaires (emotions at work, organizational culture), along with new items (background data) that were built specifically for this study. The questionnaires had been tested by researchers in the past and were found to have sufficient validity and reliability. Various parts of the questionnaire are designed to measure the subjects' demographic variables, organizational culture and emotions at work.
The data collection spanned three months, from June 2023 to August 2023.

3. Findings

Tables 1-4 present the averages, standard deviations, skewness and kurtosis for the items that measured Enhancing Positive Effect, Perspective Taking, Soothing, and Social Modeling, respectively.

Table 1: Averages, standard deviations, skewness, and kurtosis for the items that measured Enhancing Positive Effect.

Item code	Item content	Mean	SD	Kurtosis	Skewness
	Enhancing Positive Effect	3.58	0.96	-0.35	**-0.59**
V71	I like being around others when I am excited to share my joy	3.84	0.93	-0.31	**-0.41**
V74	Being in the presence of certain other people feels good when I am elated	3.93	0.85	-0.38	**-0.74**
V76	I like being in the presence of others when I feel positive because it magnifies the good feeling	3.25	1.09	-0.56	**-0.37**

V86	When I feel elated, I seek out other people to make them happy	3.30	1.00	-0.18	**-0.85**

From Table 1 it is evident that the average responses of the participants to the items measuring their perception of Enhancing Positive Effect in the schools where they are employed are above the intermediate level (M=3.58). The distribution of responses to the various items is symmetrical, with skewness ranging from -0.85 to -0.37; the dispersion of responses to the different items was reasonable and close to one standard deviation. The kurtosis index approximated between -0.56 and -0.18.

Table 2: Averages, standard deviations, skewness, and kurtosis for the items that measured Perspective Taking.

Item code	Item content	Mean	SD	Kurtosis	Skewness
	Perspective Taking	3.39	1.19	-0.35	**-0.59**
V70	It helps me deal with my depressed mood when others point out that things are not as bad as they seem	3.40	0.97	-0.31	**-0.41**
V75	Having people remind me that others are worse off helps me when I am upset	3.84	0.84	-0.38	**-0.74**
V78	When I am upset, others make me feel better by making me realize that things could be a lot worse	2.96	1.09	-0.56	**-0.37**
V82	When I am annoyed, others can sooth me by telling me not to worry	3.73	1.05	-0.18	**-0.85**
V85	Having people telling me not to worry can calm me down when I am anxious	3.50	1.04	-0.22	**-0.82**

From Table 2, it is evident that the average responses of the participants to the items measuring their perception of Perspective Taking in the schools where they are employed are above the intermediate level (M=3.39). The distribution of responses to the various items is symmetrical, with skewness ranging from -0.85 to -0.37; the dispersion of responses to the different items was reasonable and close to one standard deviation. The kurtosis index approximated between -0.56 and -0.18.

Table 3: Averages, standard deviations, skewness, and kurtosis for the items that measured Soothing.

Item code	Item content	Mean	SD	Kurtosis	Skewness
	Soothing	3.14	1.04	-0.35	**-0.59**
V72	I look for other people to offer me compassion when I am upset	3.03	1.11	-0.31	**-0.41**
V80	I look to others for comfort when I feel upset	3.27	1.01	-0.38	**-0.74**
V84	I look to other people when I feel depressed just to know that I am loved	3.42	1.01	-0.56	**-0.37**
V87	When I feel sad, I seek out others for consolation	2.87	1.05	-0.18	**-0.85**

From Table 3, it is evident that the average responses of the participants to the items measuring their perception of Perspective Taking in the schools where they are employed are above the intermediate level (M=3.14). The distribution of responses to the various items is symmetrical, with skewness ranging from -0.85 to -0.37; the dispersion of responses to the different items was reasonable and close to one standard deviation. The kurtosis index approximated between -0.56 and -0.18.

Table 4: Averages, standard deviations, skewness, and kurtosis for the items that measured Social Modeling.

Item code	Item content	Mean	SD	Kurtosis	Skewness
	Social Modeling	3.33	1.01	-0.35	**-0.59**
V73	Hearing another person's thoughts on how to handle things helps me when I am worried	3.77	0.86	-0.31	**-0.41**
V79	Seeing how others would handle the same situation helps me when I am frustrated	3.05	1.09	-0.38	**-0.74**

V83	When I am sad, it helps me to hear how others have dealt with similar feelings	3.26	1.08	-0.56	**-0.37**
V88	If I am upset, I like knowing what other people would do if they were in my situation	3.26	1.04	-0.18	**-0.85**

From table 4, it is evident that the average responses of the participants to the items measuring their perception of Social Modeling in the schools are above the intermediate level.

Table 5: Person Correlation matrix between dimension of Organizational Culture and dimensions of Emotions at Work

	Clan	**Adhocracy**	**Market**	**Hierarchy**	**Enhancing Positive Effect**	**Perspective Taking**	**Soothing**	**Social Modeling**
Clan	-							
Adhocracy	.86***	-						
Market	.75***	.80***	-					
Hierarchy	.85***	.82***	.77***	-				
Enhancing Positive Effect	.35***	.39***	.31***	.33***	-			
Perspective Taking	.25***	.23***	.28***	.26***	.73***	-		
Soothing	.21***	.22***	.23***	.23***	.58***	.79**	-	
Social Modeling	.26**	.28***	.29***	.30***	.64***	.77***	.82***	**-**

From the findings presented in Table 5, it can be observed that there are statistically significant moderate positive correlations between all dimensions of Organizational culture and all dimensions of Emotions Regulation at work.

4. Discussion

The research findings reveal a clear and positive direct effect of all types of the school's organizational culture on teachers' regulation of emotions. These findings could be explained through various avenues.

As revealed by the quantitative data, the organizational culture of the Arab school combines four types of cultures. Teachers' responses to these four types have no significant difference among the different schools and inside the school itself. This indicates the variety within Arab society and the pluralism of cultures within the same school and within the same society.
The current study included teachers from all backgrounds, which contributed to the explanations of the phenomenon. Another important aspect that could explain the results is the Arab teacher's "split" identity between being a Palestinian Arab and an Israeli, and the global changes that affect him.

5. Conclusion

The study's findings may help in understanding the process by which a school's organizational culture impacts teachers' regulation of emotions. Such an understanding will enable the development of training and evaluation programs for school administrators that could strengthen desirable organizational culture elements and allow principals to know how to influence teachers' positive emotions as well as teacher performance. Investigating the key elements of school organizational culture in Arab schools in Israel and its contributions to Arab teachers' regulation of emotions may help in mapping emotional identities of Arab teachers and facilitate the way towards building a model of emotional-oriented school culture.

6. Acknowledgements

I am sincerely grateful to my research coordinators in West University of Timisuara, Prof. Doina Dianita and Prof. Nicolae Bibu, for their mentorship, guidance and invaluable insights that have greatly enriched my study.

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MEASURING CONSUMER ATTITUDES IN RELATON TO ARTIFICIAL INTELLIGENCE – A CRITICAL OVERVIEW

Kata Horvath
Marketing and Tourism Institute, Faculty of Economics, University of Miskolc, Miskolc, Hungary
kata.horvath@uni-miskolc.hu

Abstract: *The economic significance of artificial intelligence (AI) is rapidly increasing, influencing industries, employment, and consumer behaviour all around the globe. As AI applications become increasingly apparent and tangible in our daily lives, understanding consumer attitudes toward AI has become essential for businesses and policymakers aiming to drive adoption and trust in such technologies. This paper firstly explores the economic relevance of AI by highlighting its impact on various fields and its role in driving economic growth. A critical aspect of harnessing the full economic potential of AI lies in the accurate measurement of consumer attitudes, as public perception influences the adoption of technology, hence its final market success. This paper then proceeds to providing a critical overview of the different scales developed for assessing consumer attitudes towards AI. Comparisons between scales reveal distinct advantages and disadvantages in relation to reliability, robustness, contextual limitations or scope. These insights aim to guide researchers and practitioners in effectively measuring consumer attitudes.*

Keywords: artificial intelligence; attitude; scale development; consumer behaviour
JEL classification: C10; D11; O33

1. General Introduction
Artificial intelligence systems are capable of performing tasks that would require human intelligence (Lexcellent, 2019). Nowadays AI is gaining more popularity, mostly due to the spread of generative AI (Duan, Edwards and Dwivedi, 2019).

1.1. Economic Relevance of AI
The economic relevance of artificial intelligence is versatile and fundamental as it levies an immense impact on different aspects of economic growth and development by enhancing productivity and operational efficiency (Lukianenko and Simakhova, 2024), promoting significant transformations in various industries and their traditional structures (Wang *et al.*, 2024), and shifting the balance of global economic power, allowing new markets to exceed developed ones (Yu and Carroll, 2023). AI drives economic growth through several mechanisms, which include intelligent penetration of various sectors and boundary extension, knowledge creation and self-enhancement, as well as technological innovation efficiency improvement (Zuo, 2023). Nevertheless, from the point of society and consumers, the fact that AI is reshaping the labour market, parallelly taking and creating jobs, can be of the highest importance (Lukianenko and Simakhova, 2024).

1.2. Attitudes Towards AI

Understanding and quantifying consumer attitudes towards AI is critical for several reasons. First, consumer attitudes towards AI significantly impact their purchase intentions, as well as their acceptance of technology, which in the end affects general market success (Liang, Lee and Workman, 2020). Measuring attitude also allows us to understand the different dimensions and layers of consumer behaviour, their decisions and motivations, not to mention addressing cultural and personality-related differences or certain ethical issues (Park, Woo and Kim, 2024).

2. AI Attitude Scales and their Critical Evaluation

To measure consumer attitudes towards AI, several scales have been developed and proposed by researchers. These all provide a comprehensive tool for assessing different dimensions of attitude. Each scale has their own strengths and weaknesses, which is detailed in the following table, along with a short description of their general approach.

Scale	Description	Strengths	Limitations	Reference
AIAS-4	It is a refined 4-item scale focusing on perceived utility and societal impact.	Concise, easy to administer. Good internal consistency and structural validity.	Initial versions had consistency issues, needed refinement.	Grassini, 2023
GAAIS	The scale has positive and negative subscales, capturing emotions and utility against concerns.	Its structure captures a broad range of attitudes. Good convergent and divergent validity.	Too general for specific applications.	Schepman and Rodway, 2023
MALL:AI	It is a scale developed for the measurement of language learners' attitudes towards the integration of AI to the learning process.	Specifically designed, capturing relevant skills. Valid and reliable for educational contexts.	Limited to educational contexts, not generalizable.	Yildiz, 2023
Scale	**Description**	**Strengths**	**Limitations**	**Reference**
AAID	It is a specific scale, developed to measure public acceptance of AI in defense contexts.	Specific for defence contexts, captures positive and negative attitudes. Good internal reliability and validity.	Limited application, generalizability issues.	Hadlington et al., 2023
AAAW	This scale measures the personal perception of the integration of AI in their workplace	Comprehensive, covers 6 dimensions. Good psychometric properties.	Too detailed for general attitude assessment, more suited for workplace contexts.	Park, Woo and Kim, 2024

Table 1: Critical Evaluation of Different AI Attitude Scales
Source: edited by the author

It is important to note that apart from the above detailed scales there are some other alternatives for the measurement of AI attitudes. When selecting an AI attitude scale, researchers shall take into account several factors like dimensionality or contextual relevance (Schepman and Rodway, 2023; Yildiz, 2023).

4. Conclusion

As AI is becoming more significant in today's world, it is important to explicitly assess consumers relating attitudes. There is a wide variety of available AI attitude scales, whose critical evaluation was presented in this paper. A careful consideration of choice is advised for researches, with specific regard to dimensionality and contexts.

5. Acknowledgements

This paper was "Supported by the University Research Scholarship Program of the Ministry for Culture and Innovation from the source of the National Research, Development and Innovation Fund".

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PROPOSED MODEL FOR THE ANALYSIS OF THE IMPACT OF MOTIVATION METHODS ON EMPLOYEE RETENTION AND PERFORMANCE

Andrei Nistorescu
Doctoral School of Economics and Business Administration, Faculty of Economics and Business Administration, West University of Timișoara, Romania
andrei.nistorescu@e-uvt.ro

Abstract: *The goal of this paper is to provide a brief overview of the current literature in the field of human resource management, specifically pertaining to employee retention and performance. One of the primary objectives is to provide a comprehensive and surface level review of the theoretical understanding in this field, with the aim of identifying relevant examples of strategies and methods employed by various organizations in distinct fields of activity. Furthermore, this paper preludes more in-depth research into the subject matter, which will include a more practical approach further down the line. Concisely, this purely theoretical paper has the foremost goal of providing a framework for future research into the impact of motivation methods, by identifying gaps in knowledge as well as previously applied research methodologies.*

Keywords: human resource management; employee retention; employee performance; compensation and benefits; motivation methods; workplace satisfaction.

JEL Classification: O150

1. Introduction

Human resource studies can have both deep psychological overtones and important economic implications for the success of any organization. An important element of human resource management is staff motivation. This topic is relevant for human resource management, because it acts as a causal link for many important elements in the field, such as employee performance and staff retention. In turn, the employee motivation strategy includes different combinations of methods that can be both financial and non-financial. Furthermore, aspects such as leadership and organizational culture must also be taken into consideration. Identifying and implementing a staff motivation strategy can be the determining factor between the success or failure of an organization, since the human resource is difficult to cultivate and engage, but on the other hand is also a potent competitive advantage. Given the apparent importance of human resource management, extensive research has been conducted in the field, both theoretical and practical.

2. Literature review

Motivation is processual in nature, whereas personal motivation is the objective and subjective outcome. Motivational methods are considered essential tools whose purpose is to increase employee performance. Scientific studies overwhelmingly support the positive correlation between motivation methods and employee performance, the fundamental concepts being established by Taylor (2004), who analyzed management as a whole. Research with a more psychological tone is that of Herzberg (2015), that proposed the theory of dual motivational factors in organizational behavior. A more recent work that deals with these concepts in a comprehensive way is that of Murphy, B. (2015). Although these studies can be considered traditional human resource management theories, they remain the foundation of many studies even to this day.

Supporting the theoretical notions is practical research, which investigates the correlation between extrinsic motivation methods and employee performance in a quantifiable way. Internationally, such studies include Fomenky (2015) in South Korea, Aljumah (2023) in Saudi Arabia and Kadir et al. (2019) in Malaysia. Each of these studies analyzes the subject of motivation methods in different industries or sectors in both the private and public spheres. At the same time, there are multiple studies carried out at the level of the European Union, such as the research by Peters, P. et. al. (2009) investigating the importance of compensation and benefit strategies in the form of workplace flexibility in the Netherlands. More recent research is a comparative study conducted by Wang, W. and Heyes, J. (2020), analyze motivation strategies in Eastern Europe compared to Central European practices. Another relevant study is that of Darie, F.C. (2024) which addresses the impact of different leadership styles on organizational performance and employee retention in Germany, Austria and Switzerland.

Similarly focused research has been conducted in Romania. One such study was carried out by Marinaş, C.V., Igreţ, R.Ş., Triculescu, M. and Costache, G. (2023), which deals with what the authors call "rewards management". The importance and impact of motivation methods is also quantified in more niche fields, such as the gas extraction sector, with research carried out by Druică et al. (2024). Complementary studies have also analyzed the impact of non-financial motivation methods, while the previously mentioned studies only investigated financial motivation methods.

3. Proposed research

The research conducted both internationally and in Romania are valuable, but not without limitations. At the same time, neither of the aforementioned studies approached the subject matter from a full perspective, but rather from individual and highly specialized case studies. One other identified blind spot is particularly in the public sector, which has far less research done in human resource management and specifically in employee motivation. As such, an extensive and all-encompassing study is being proposed, with the following objectives:

- O1: Identifying the main extrinsic and intrinsic motivation methods and establishing their importance in generating employee satisfaction;

- O2: Highlighting the importance of job satisfaction and its role in raising performance and retention levels, as well as the perceived impact of motivation methods from the employee's perspective;
- O3: Discover the determining factors of staff retention;
- O4: Determine the correlation between motivation, job satisfaction, employee performance and staff retention.

In order to achieve the proposed objectives, a conceptual research model has been developed, which can be observed in the figure below.

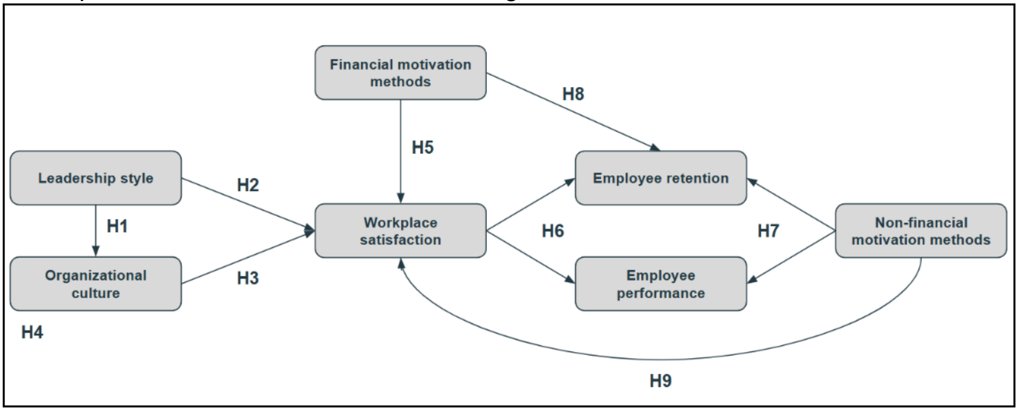

Figure 1: Proposed conceptual research model

According to a study conducted by Klein, A. S., Wallis, J., and Cooke, R. A. (2013), leadership style directly influences the type of organizational culture and implicitly the efficiency and effectiveness of the company. The research in question also highlights the fact that the size of an organization determines the impact of the leadership style on the organizational culture, the importance of the leadership style being inversely proportional to the size of the company. As such, H1: *Leadership style directly influences organizational culture*.

Leadership style has a direct and quantifiable impact on employees' attitudes and how they perceive their role within the organization. Saleem, H. (2015) tackles this subject and the findings suggest a strong correlation between leadership and job satisfaction, with different leadership styles having beneficial or harmful influences on workplace satisfaction. The transformational style was proven to be a beneficial leadership style, while an example of a leadership style with a negative impact was found to be the transactional style. These aspects lead to the following hypothesis, H2: *Leadership style directly influences job satisfaction*.

Another construct to be taken into consideration is the organizational culture, which helps to develop and attract qualified human resources. This indirectly results in an increase in performance and staff retention, by raising the levels of job satisfaction. Studies, such as that of Lund, D. B. (2003) support this perception and conclusively identify the types of organizational culture with positive impact. Moreover, the research shows that the degree of correlation between organizational culture and employee performance is extremely low, which emphasizes the third proposed hypothesis H3: *Organizational culture directly influences job satisfaction*.

Considering the previous hypotheses and the anticipated correlations between the three analyzed constructs, a fourth hypothesis can be formulated thusly H4: *Organizational culture is a mediating factor of the influence of leadership style on job satisfaction*.

The previously mentioned research carried out by Marinaş, C.V., Igreţ, R.Ş., Triculescu, M. and Costache, G. (2023) highlights the fact that motivational strategies indirectly influence employee performance by generating job satisfaction, which is directly responsible for an increase in performance. Thus, the following hypotheses were reached. H6.1.: *Job satisfaction directly and positively influences human resource retention*. H6.2.: *Job satisfaction directly and positively influences human resource performance*. At the same time, the researchers observed that the impact of financial methods is very low and does not directly stimulate the performance of employees or the satisfaction felt by them. Instead, the idea was proposed that financial motivation methods serve a completely different role H5: *Financial motivation methods are a necessary but not a sufficient condition for job satisfaction*.

Both the research carried out by Marinaş, C.V., Igreț, R.Ş., Triculescu, M. and Costache, G. (2023), as well as the study by Peterson, S. J., and Luthans, F. (2006) show that non-financial motivation methods have a direct and beneficial influence on employee retention and performance. Moreover, the results suggest that the impact of financial methods on employee performance is diminished with increasing seniority within the organization. On the other hand, the impact of financial methods on staff retention is much more consistent and at the same time constant, regardless of employee seniority. Comparatively, the impact of non-financial motivation methods is inverse to that of the financial methods, with the positive effects being reduced at the beginning of an employee's lifecycle but increasing with the passage of time. Thus, the final research hypotheses were proposed. H7.1.: *Non-financial motivation methods directly and positively influence human resource retention*. H7.2.: *Non-financial motivation methods directly and positively influence human resource performance*. H8: *Financial motivation methods directly and positively influence staff retention*. H9: *Non-financial motivation methods directly and positively influence job satisfaction*.

4. Future research approaches

The envisioned research will primarily be quantitative in nature, but with a qualitative component in order to identify the particularities of certain fields of activity. The currently chosen research tool for primary data collection will be a questionnaire, while SEM will be the research method. However, other research methods may be applied in a complementary manner depending on how the research proceeds. The formulated hypotheses will be tested and results compared for different industries. Key differences between the public and private sectors will also be highlighted and analyzed. The research intends to provide a full picture of the topic and serve as the basis for new and improved strategies in terms of employee motivation.

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UPSKILLING AND RESKILLING IN THE ERA OF ARTIFICIAL INTELLIGENCE

Bilyana Beloeva-Doynovska, Mariana Usheva
Department of Business management and Marketing, Faculty of Economics, South-West University "Neofit Rilski", Blagoevgrad, Bulgaria
bbeloeva@gmail.com
m.usheva@abv.bg

Abstract: *As the world is evolving rapidly, we are witnessing immense changes in workplaces across the globe. The advent of artificial intelligence (AI) has ushered in a new era of digital transformation, reshaping industries and revolutionizing the way we work. Advances in AI are changing very fast the business environment across all kinds of industries. For organizations to capitalize on these powerful new tools and technologies, it is essential that they have a workforce that possess the necessary skills and knowledge to change with the environment. That is why upskilling and reskilling become crucial facets of modern business strategies and give companies competitive advantage and opportunity for them and their employees to adapt to this changing landscape. In this article, we will explore how skills and job requirements are changing, why upskilling and reskilling in the era of AI is essential, and how could organizations build effective AI integrated talent management strategies.*

Keywords: artificial intelligence; reskilling; upskilling; workforce; skills

JEL classification: J24; O15

1. Introduction

Currently, advancements in technology are rapidly altering the demand for skills. Tasks that once required hours to complete can now be finished in mere minutes, aided by a range of new AI tools that enable professionals to save time and enhance efficiency—provided they possess the necessary skills to utilize these tools effectively. Emerging technologies are not only capable of executing an increasing number of repetitive and manual tasks but are also performing more complex knowledge-based activities—such as research, coding, and writing—that were previously thought to be immune to disruption. The average half-life of skills has now fallen to less than five years, with certain technology sectors experiencing an even shorter duration of approximately two and a half years. The Organisation for Economic Co-operation and Development (OECD) made the forecast that within 15 to 20 years new automation technologies were likely to eliminate 14% of the world's jobs and radically transform another 32%. These numbers are involving more than one billion people globally. In the coming decades, as the pace of technological change continues to increase, millions of workers may need to be not just upskilled but reskilled—a profoundly complex societal challenge that will sometimes require workers to both acquire new skills and change occupations entirely. New roles in the company will be created due to the need of AI expert who will support the transitions of the companies to a new more digitaliez and auotmated model of work.

2. The Impact of AI on The Industries

The use of algorithms and intelligent machines is increasingly being integrated into our daily lives, and digital skills are crucial for adapting to and thriving in the labor market. According to a report by McKinsey on AI (2024), three-quarters of executives anticipate that AI will bring about significant or disruptive changes in competition within their industry over the next three years. McKinsey's research indicates that all industries will experience some degree of disruption, though the level of impact will vary. Interestingly, compared to previous technological waves that have impacted industries such as manufacturing, automotive, and aerospace, knowledge-based industries like technology, finance, retail, eduaction, transportation and healthcae are expected to be the most affected by the current wave of AI. On the flip side of the conversation however, certain industries will feel the impact less and in more positive ways. Such industries are: arts and entertainment, human resources, social work, personal services. It's important to note that most, if not all, industries will be impacted in some way.The analysis of World Economic Forum (2023a) emphasize that apart from being seen as a threat to variety of position, AI can be viewed as a tool that has the potential to assist with many of the tasks professionals must perform in their daily activities. For instance, AI can have significant implications for data analysis and forecasting in fields such as finance and marketing, where the ability to process vast amounts of data rapidly is an advantage. AI can also serve as a valuable resource in healthcare, aiding in medical diagnoses, treatment recommendations, clinical practices, and biomedical applications (Yu et al., 2018). Similarly, in education, AI can enhance the learning experience by influencing teaching practices and teacher collaboration.

3. The Evolution of Skills

Top employers utilizing artificial intelligence are interested not only in technical skills but also in hiring professionals with leadership, management, and problem-solving abilities (OECD, 2023). OECD political analysts (OECD, 2022) have emphasized that as AI becomes more widely spread in society and the workplace, social-emotional skills are expected to be critical in future labour markets. Indeed, critical thinking, problem-solving, adaptability, and effective communication are becoming increasingly important. Soft skills further complement digital skills, enabling individuals to navigate a complex, continually evolving work environment. By combining digital skills with soft skills, individuals can become well-prepared professionals, prepared to tackle the challenges and opportunities presented by AI. Skills and jobs are changing rapidly – 44% of core skills are changing in the next 5 years, 44% of current core skills will change between 2023 and 2027 is predicted in Future of jobs report (2023). When we analyze what kind of skills are becoming increasingly more important, there are definitely interesting data: AI and machine learning is the fastest growing, together with environmental stewardship, marketing and media, Leadership and social influence and design and user experience. Figure 1 presents cross-functional skills ranked by the priority assigned by companies to them within their reskilling and upskilling strategies scheduled for 2023 to 2027, and an estimate of the composition of the average corporate skills strategy.

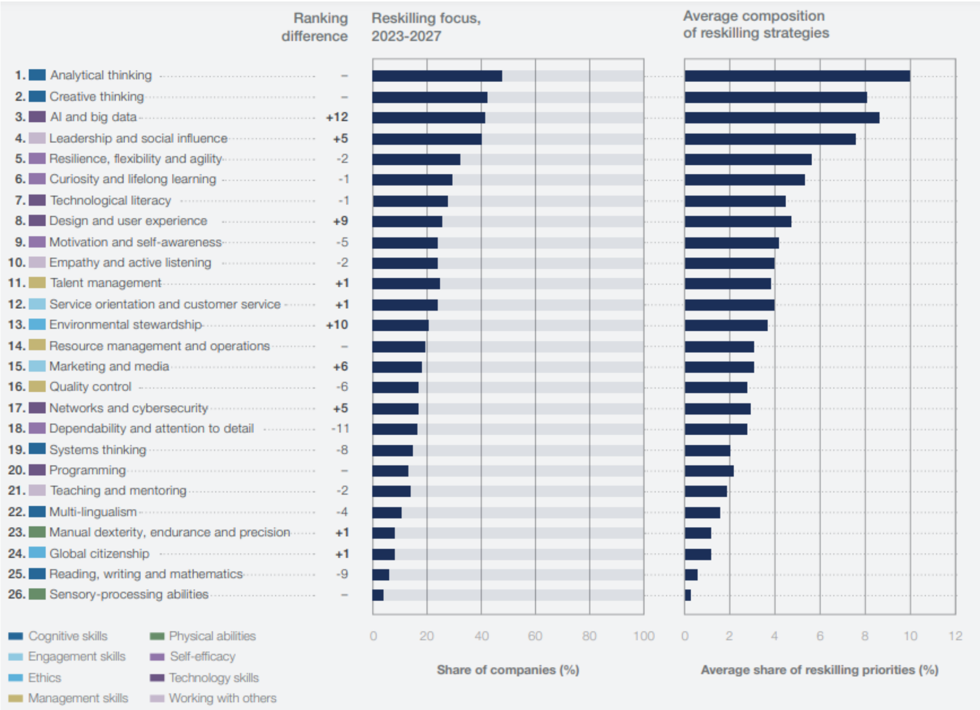

Figure 1: Reskilling focus
Source: World Economic Forum, Future of Jobs Report 2023

The skills that organizations identify as rapidly gaining importance do not always align with their upskilling and reskilling strategies. In addition to the top-ranked cognitive skills, two areas that companies prioritize significantly more than their current relevance to the workforce are AI and big data, as well as leadership and social influence. Companies assign a higher priority to AI and big data in their skills strategies, ranking them 12 places above their assessment of core skills. Furthermore, they project that approximately 9% of their reskilling initiatives will be allocated to these areas, representing a larger proportion than that dedicated to the more highly ranked skill of creative thinking. Leadership and social influence ranks five places higher than suggested by its current importance and is the highest ranked attitude.

4. Strategies for Effective Upskilling and Reskilling

Organizations are increasingly emphasizing skills training programs, particularly in the areas of digital and soft skills. Nevertheless, a considerable disparity exists between the skills that companies require and those that employees currently possess. To address this gap, it is essential for companies to reassess and modify their Learning and Development strategies. Moving forward, work roles will be designed and structured around a combination of skills and tasks rather than rigid titles and defined positions. Furthermore, proactive organizations should establish a sustainable approach that balances internal upskilling with external recruitment strategies to mitigate the escalating costs associated with acquiring AI talent. Leaders must recognize the value of bringing on new employees with AI aptitude, versus the value of developing their own people. They should prepare in advance their organization for the new model of working. Successful approaches in that direction are:

- Enhance upskilling and reskilling initiatives to emphasize AI literacy.
- Widen the scope of upskilling and reskilling programs.
- Prioritize interactivity and personalization within educational initiatives.
- Consider AI literacy as a catalyst for enhanced productivity.
- Adopt a proactive approach to change management.
- Establish continuous learning opportunities with a focus on long-term development.

Despite concerns about job displacement, however, forecasts are that by 2025 AI will create an estimated 97 million new jobs, and that's very soon. That's why the smart approach is to let these smart innovations help us achieve our work goals and achieve higher results.

5. Conclusion

AI is fundamentally transforming our work and daily lives, and what we are experiencing now represents only the initial phase of this evolution. For contemporary organizations of all sizes, the necessity to upskill and reskill employees will continue to intensify. For leaders tasked with this responsibility, implementing a comprehensive framework and fostering a data-driven culture is crucial. There are many challenges associated with reskilling the workforce for AI, but there are also numerous opportunities. By investing in training and development programs focused on AI and integrating a mindset of lifelong learning, companies can cultivate a more sustainable and competitive workforce. This can enable them to attract and retain top talent, enhance productivity and efficiency, and deliver improved services to their clients.

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A THEORETICAL PERSPECTIVE OF THE INDIVIDUAL ADAPTABILITY TO WORK OF GENERATION Z

Chiricoi Lidia
PhD Student, Business Administration, Faculty of Economic Sciences, University of Oradea, Oradea, Romania
chiricoi.lidia@student.uoradea.ro

Abstract: *This paper explores Individual Adaptability to Work (IAW) with a focus on Generation Z. IAW, or an individual's ability to adapt to evolving workplace conditions, is essential for managing change and stress at work, especially as continuous learning and flexibility become vital. By examining Social Exchange Theory, the study highlights the dynamic relationship between employees and employers, where adaptability is driven by a balance of perceived benefits and costs. Generation Z's adaptability is particularly notable due to their digital proficiency, collaborative mindset, and adaptability in fast-paced environments. A literature review sheds light on their work preferences and challenges in multigenerational workplaces. Future research directions include exploring how digital tools like AI can enhance adaptability skills, and how cultural and generational factors impact adaptability. Understanding these facets is crucial for organizations seeking to bolster workforce resilience and leverage Generation Z's unique strengths.*

Keywords: Individual Adaptability to Work; Generation Z.

JEL classification: M15; M21; Z32.

1. Introduction

In its simplest form, work adaptability is understood as the quality of a person to be able to adapt to new working conditions. Individual Adaptability to Work (IAW) is defined as an individual's ability to adapt to new and changing workplace environments, conditions, and situations (Ployhart and Bliese, 2006). Why do we care about the individual work adaptability of Generation Z? Firstly, because young people/ Gen Z are the future, and they tend to adapt more quickly when external conditions change. Additionally, it is important to understand how cognitively, behaviourally, and emotionally prepared young people are today to navigate their career paths and, by extension, shape the future of society. IAW is a complex and current concept, capturing the dynamics of self-management, continuous learning, anticipation, and self-evaluation. "Change" (as a choice) is a central concept in almost all definitions regarding individual work adaptability. The relevance and necessity of studying IAW stem from the increasing importance of continuous learning, creativity, and cultural flexibility as primary factors in managing workplace crises and stress.

2. The Social Exchange Theory

Social Exchange Theory was developed by George Homans (1958). This theory is based on the premise that the relationship between two people, such as that between an employee and an employer, develops through a cost-benefit analysis. It is particularly applicable to labor relations as it highlights a systematic process grounded in reason and logic when forming a working relationship (Cook and Hahn, 2021). Individuals tend to weigh the benefits (financial and non-financial) against the costs of an employment relationship. Efforts made, especially those related to adaptation—to tasks, to the environment, and to colleagues—are usually aimed at maximizing benefits and minimizing sanctions. It is important to note that the "estimated gain/benefit" varies from person to person and, for the same person, can shift over different life stages. For example, for Generation Z Romanians without work experience, work-life balance and dynamic work environments rank as top job expectations, whereas for those with experience, these expectations tend to take a secondary place (Botezat, Fotea, and Fotea, 2023). This theory helps us understand how the reciprocal exchanges within a work relationship can enable young people to tap into their adaptive potential, provided that the exchanges remain mutually beneficial.

3. Generation Z Individual Adaptability to Work – A Literature Review

Young employees from Generation Z are often characterized by their technological skills, adaptability, commitment to continuous learning, collaborative nature, and entrepreneurial spirit (Stillman and Stillman, 2017; Seemiller and Grace, 2019). These qualities equip them to succeed in dynamic and fast-paced work environments, enhancing their effectiveness as employees. Researchers frequently examine topics such as their digital nativity, social media use, educational preferences, career goals, and views on social and environmental issues (Seemiller and Grace, 2016; Twenge, 2017). Given the challenges employers face in balancing the values of multiple generations, understanding both the strengths and weaknesses of each employee is crucial for effective management (McCrindle, 2014). Organizational management and HR professionals may face difficulties due to the increase in generational diversity regarding Generation Z. Studies in this area can provide valuable insights for improving organizational efficiency. Table 1 summarizes key research on Generation Z's work adaptability and the Social Exchange Theory, presented in chronological order. Additionally, each study's main conclusions are briefly outlined. These findings not only highlight the adaptability strengths of Generation Z but also underline the necessity for tailored approaches in organizational strategies to maximize their potential and foster a supportive work culture.

Table 1: Important works regarding individual adaptability to work and Social Exchange Theory

Authors, *The titles*/ DOI	**Conclusions**
Pulakos E. D., Dorsey D: W., & White S. S., (2006), *Adaptability in the Workplace: Selecting an Adaptive Workforce*/ DOI: 10.1016/S1479-3601(05)06002-9	Workers need to be increasingly adaptable, versatile, and tolerant of uncertainty to operate effectively in these changing and varied environments--and this need will only increase as the pace of change continues to grow.
Chillakuri B., (2020), *Understanding Generation Z expectations for effective onboarding*/ DOI: 10.1108/JOCM-02-2020-0058	Unlike other cohorts, Generation Z would not like to do a job for which they are not hired. There are certain expectations that both the organization and the employees need to fulfill; therefore, they should engage in a psychological contract.
Nhat C. N., & Alang T., & Ba T. N., (2023), *Understanding generation Z's job engagement and performance in generationally diverse workplace*/ DOI: 10.46223/HCMCOUJS.econ.en.14.2.2633.2024	The findings reinforce the current literature on Employee Engagement (EE) and enhance knowledge of the engagement-job performance effect of Generation Z in a workplace with generational diversity.
Barhate B., Winton B. G., & Funderburk C. M., (2024), *The mediating role of career resilience on Gen Z's emotional intelligence and career outcomes*/ DOI: 10.1108/EJTD-01-2024-0014	The most significant finding of this study concludes that although small, Career Resilience has a positive mediating indirect effect on Gen Z's Career Satisfaction and burnout.
Katsaros K. K., (2024), *Gen Z Employee Adaptive Performance: The Role of Inclusive Leadership and Workplace Happiness*/ DOI: 10.3390/admsci14080163	The research findings suggest that inclusive leadership may positively influence Gen Z employee adaptive performance.

Source: Created by the author, using: Pulakos E. D., Dorsey D: W., & White S. S. (2006); Chillakuri B., (2020); Nhat C. N., & Alang T. & Ba T. N., (2023); Barhate B., Winton B. G., & Funderburk C. M. (2024); Katsaros K. K., (2024).

4. Future research

Future research on individual work adaptability could explore the role of technologies such as artificial intelligence and machine learning in building individual adaptability skills. As workplace environments become increasingly digitized, it is critical to understand how exposure to these technologies influences an individual's ability to adapt to new tasks and workflows. Furthermore, studies should examine the potential moderating effects of cultural factors and generational differences on adaptability, focusing in particular on how Generation Z, who have grown up in a highly digital world, may respond differently than generations previous. Finally, further research could investigate organizational strategies, such as customized training programs and flexible work policies, that effectively encourage adaptability, providing actionable insights for practitioners seeking to enhance workforce resilience. The individual adaptability of Generation Z could be correlated with the performance of entities.

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UNDERSTANDING GENERATIONAL ATTITUDES TOWARD HUMAN-LIKE ROBOTS

Maria Barbul[1], Irina Bojescu[2], Miruna Niculescu[3]
[1,2,3] The Bucharest University of Economic Studies, Bucharest, Romania
mariabarbul@gmail.com
irina0927@yahoo.com
miruna_niculescu@yahoo.com

Abstract: *The rapid advancement of robotic technologies and artificial intelligence (AI) has sparked widespread interest and debate regarding their integration into various aspects of daily life. As robots become increasingly capable of performing tasks traditionally carried out by humans, understanding public perception of these technologies becomes crucial. The objective of this paper is to explore the generational differences in attitudes toward robots. While younger generations may be more open to the integration of robots into daily life, addressing the concerns of older generations will be crucial for widespread acceptance. This analysis highlights the importance of considering generational perspectives when developing and implementing robotic technologies in various sectors.*

Keywords: AI; robots; consumers; anthropomorphic; acceptance; generations.

JEL classification: M31

Introduction
In recent years, interest in researching and implementing robots in society has grown. Human-robot interaction now encompasses consumer characteristics, robot roles, and consumer perceptions. Robots are increasingly integrated into various occupations and everyday life (Shen & Koyama, 2022). This study aims to identify and understand key factors influencing the acceptance and trust of robotics across different age groups.

Literature review
AI-driven robotics are expanding globally across sectors like retail, hospitality, banking, healthcare, and education, enhancing productivity, reducing labor costs, improving customer experiences, and enabling precise inventory tracking (Shehawy et al., 2024; Pelau et al., 2024). Consumers' acceptance of new technologies varies by age, gender, and cultural background, with younger people generally more receptive to humanoid robots (Shehawy et al., 2024). Anthropomorphism, the attribution of human-like qualities to non-human entities, significantly influences individuals' judgments and behaviors (Kim et al., 2018). Consumers quickly form impressions of robots based on physical attractiveness, familiarity, and nonverbal behavior, often anthropomorphizing humanoid robots more than mechanical ones, viewing them as more capable and emotionally engaging (Riegger et al., 2021; Lu et al., 2021).

Previous studies on humanoid robots' physical appearance have shown varied findings. Van Pinxteren et al. (2019) found that attractive facial features in Pepper robots positively influenced users' trust and acceptance in public service settings. Similarly, Song & Kim (2020) noted that the attractiveness of Pepper sale robots encouraged user adoption. However, Mende et al. (2019) observed that interactions with humanoid robots in a restaurant heightened consumer discomfort, supporting Mori’s Uncanny Valley theory. Appel et al. (2020) also found that humanoid robots displaying emotions like fear and embarrassment could induce eeriness. Conversely, Yoganathan et al. (2021) discovered that a human-like appearance in robots increased users' positive feelings and confidence in their competence compared to mechanical self-service machines.

Social capability, defined as a robot's ability to engage in interpersonal interactions, includes skills like communication, approachability, appropriate responses, and attentive listening (Song & Kim, 2020). Consumers often feel socially intelligent robots care about them and are dependable (Song & Kim, 2020). Humanoid robots are perceived as human-like, embodying qualities such as kindness, politeness, helpfulness, and attractiveness, which motivate user engagement (Haenlein & Kaplan, 2021; Ruijten et al., 2019). Conversely, robots lacking social capabilities are seen as awkward, leading to less trust and companionship (Mende et al., 2019). Studies show that robots with human-like appearances and social skills similar to humans increase users' trust and acceptance (Song & Kim, 2020; van Pinxteren et al., 2019).

Research methodology

This research paper examines generational differences in attitudes toward robots based on responses from 512 participants across tow age groups: (≤40 and ≥ years). It explores how familiarity and exposure to digital technology shape perceptions of robots' abilities in communication, emotional understanding, workforce replacement, and data management. The findings offer insights into generational acceptance and trust in robotic systems, underscoring the importance of tailored approaches in developing and promoting these technologies.

The analysis indicates that respondents ≤40 years are generally more receptive to AI, believing robots can replace human interaction (Q4), understand emotions (Q6), and that empathetic behavior and understanding sarcasm make robots seem more human (Q7, Q11). They also see conversational abilities (Q12) and interaction style (Q15) as adding to robots' human-like qualities. Younger respondents feel comfortable with AI, confident in society's preparedness for human-like robots (Q18, Q19), and more likely to engage with AI-assisted services (Q22) and trust robots with personal data (Q23). In contrast, respondents ≥41 years show discomfort with human-like AI (Q17).

These generational differences likely arise from younger respondents' exposure to advanced technology from an early age, leading to greater familiarity, comfort, and trust in AI-driven interactions. Older adults may find human-like AI unsettling due to their limited early exposure, which may heighten their skepticism about robots' roles and societal integration.

Table 1: Results of t-tests comparing age groups below 40 and over 40 years

Question	x̄ ≤40 years	x̄ ≥41 years	x̄ diff.	t-talue	p-value
Q1: I consider the capacity of robots to communicate as an innovative element of technological evolution.	5,147	5,368	-0,222	-1,282	0,200
Q2: I believe that the use of this robot will influence the future of the shopping experience.	5,255	5,319	-0,064	-0,367	0,714
Q3: I believe this robot has the ability to explain requested information very well.	4,736	4,747	-0,011	-0,061	0,951
Q4: I believe that interaction with this robot can replace interaction with a human employee.	3,486	2,915	0,571	2,511	0,012*
Q5: I believe this robot can manifest human emotions.	2,500	2,232	0,268	1,323	0,186
Q6: I believe this robot can understand human emotions.	2,681	2,200	0,481	2,344	0,019*
Q7: I believe the empathetic behavior of this robot makes it seem human.	3,216	2,747	0,468	2,096	0,037*
Q8: I believe the responsiveness of this robot makes it seem human.	3,334	3,011	0,324	1,522	0,129
Q9: I believe the way this robot understands contexts makes it seem human.	3,317	3,105	0,211	0,990	0,323
Q10: I consider the ability of this robot to learn from mistakes as the element that makes it seem human.	3,623	3,432	0,191	0,896	0,371
Q11: I consider the ability of this robot to understand sarcasm as the element that makes it seem human.	3,543	2,979	0,565	2,511	0,012*
Q12: I consider the ability of this robot to hold a conversation as the element that makes it seem human.	3,712	3,298	0,414	1,906	0,057
Q13: I consider the ability of this robot to apologize as the element that makes it seem human.	3,490	3,394	0,097	0,437	0,662
Q14: I believe this robot has the capacity to be human through the answers it provides.	3,489	3,147	0,342	1,581	0,114
Q15: I believe this robot has the capacity to be human through its way of interacting with human consumers.	3,526	3,137	0,390	1,829	0,068
Q16: I have experienced confusing a robot with a human employee.	2,101	1,895	0,206	1,137	0,257
Q17: I feel uncomfortable when artificial intelligence systems seem too human-like.	3,794	4,411	-0,617	-2,805	0,005*
Q18: I believe our society is prepared to interact with a robot with human-like characteristics.	3,661	3,232	0,429	2,103	0,036*
Q19: I believe our society is prepared to interact with a robot with human-like characteristics, even if it makes mistakes.	3,483	2,874	0,609	3,065	0,002*
Q20: I feel comfortable interacting with this robot.	4,153	3,421	0,732	3,650	0,000*
Q21: I believe this robot can successfully replace human employees.	3,465	2,884	0,581	2,606	0,009*
Q22: I intend to use the services of a company when I am assisted by this AI robot.	4,019	3,484	0,535	2,689	0,007*
Q23: I trust the way this robot manages my personal data.	3,638	3,242	0,396	1,834	0,067

Source: Own research; *A significant difference was found at $p < 0.05$.

Research limitations

The study has several limitations: a sample size of 512 participants that may not fully represent the broader population due to limited diversity in geographical location, socioeconomic status, and cultural background; potential biases from self-reported data and Likert scale questions; a cross-sectional design that only captures perceptions at a single point in time; and the influence of contextual factors and rapid technological advancement. Additionally, focusing on generational differences may overlook other important demographic factors.

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Stakeholders’ involvement in school management and its impact on students’ achievements: The case of Arab schools in Israel

Rawia Ashqar, Loureen Haddad
The Department of Education, Sociology and Management, University of Timisoara, Timisoara, Romani
rawiashqar@gmail.com
loureen_haddad@hotmail.com

Abstract: *Enhancing the role of external (parents) and internal stakeholders (teachers) in school management has been a reform theme since the early 1990s. This research proposal introduces the subject of stakeholders’ involvement in school management and its direct and indirect impact on students’ achievements in Arab schools in Israel. The study raises the following questions: Does a principal’s openness to parents' involvement affect students’ achievements? How do democratic participation and shared school leadership systems impact students’ achievements? The study conducts research within Arab elementary schools and examines how parents' involvement as external stakeholders affects students’ achievements. The literature shows that principals with more diffused leadership who create an atmosphere of teamwork and openness to societal involvement are more likely to achieve better results in terms of student achievements.*

Keywords: Stakeholders; School system; Principal leadership style; Parents' involvement; Students' achievements.

JEL classification: I20; I21.

1. Introduction

This study seeks to investigate the impact of stakeholders on students’ achievements while using several key intervening variables that directly affect the outcome of achievements. Stakeholders in a school organization could be divided into two: internal stakeholders that include teachers, principal, as well as students, and external stakeholders that include parents, non-governmental agencies, a local municipality, and central government officials including curriculum superintendents and policymakers from the ministry of education (Odhiambo & Hii, 2012). This research seeks to answer the following questions: How do internal and external stakeholders affect the achievement of school pupils (Leithwood et al., 2010). How are participatory and shared school leadership structures impact student achievements? Universal exams are external to schools and they are identical to all schools. These exams constitute a prism through which it is possible to evaluate and objectively evaluate students’ achievements. Universal exams include exams that are conducted nationwide as well as international tests, such as the PISA (Program for International Student Assessment), TIMMS (Trends in International Mathematics and Science Study), and PIRLS (Progress in International Reading Literacy Skills) (Baroutsis & Lingard, 2017). Thus, the evaluation of students’ achievements can be compared based on their scores in national or international exams. Thus my main independent variable is the interaction among external and internal stakeholders. The dependent variable is students' achievements in universal exams. The intervening variables include the following ones: style of management of the school principal, budgeting and allocation of resources, and the appointment of school teachers.

2. Principal Leadership Style

The principal in a school including the committee of management assume a job of guaranteeing that the school creates solid interrelationship with the school external and internal stakeholders. Likewise, the principal and committee create extensive and intensive corresponding channels with various stakeholders and that in order to maintain transparency and meet the diverse interests and expectations of the various stakeholders. Some scholars legitimize the stakeholders' activities that not only seek to put pressure on the school management committee, but also to help this committee to interact with various external agencies (Odhiambo & Hii, 2012). The idea of setting up a committee that interacts with stakeholders would empower the school management committee and allow it to keep improving teaching and foreseeing conceivable core interests from the external actors and set forth the best policies for improving communication with these actors. One study assumes that through legitimate correspondence channels set up by the committee, it would be possible to improve cooperation among the various stakeholders for the sake of realizing the various school ends (Kujala, Sachs, Leinonen, Heikkinen & Laude, 2022).

This study is interested in internal (teachers and principal) and external stakeholders (parents). Internal and external stakeholders' collaboration reflects the democratic assumptions underlying the organization of the school system in many democratic states around the world. Furthermore, research indicates that increasing external stakeholders, such as parents, involvement in education can lead to higher student achievement.

Table 1: Correlation between Principal Leadership Style and School Effectiveness

School effectiveness / Leadership style	Management and organization	Learning and teaching	Supporting pupils	Relations among teachers	Supporting teaching	Supporting children	Assessment of learning	School-parents relationship
Transformative	.750**	.564**	.515**	.515**	.680**	.539**	.654**	.551**
	197	191	194	192	196	194	195	194
Reward_Pr	.425**	.314**	.297**	.195**	.260**	.284**	.360**	.408**
	197	191	194	192	196	194	195	194
Avoid_Pr	-.315**	.272**	.232**	-.278**	.258**	-.275**	.301**	.250**
	198	192	195	193	197	195	196	195

Table 1 shows the three types of management styles: transformative, rewarding, and avoiding. The transformative style has highest coefficient in comparison to the rewarding style and certainly the avoiding one and these correlations are significant with the variables of "Management and Organization", "Learning and Teaching", " School culture of supporting children", "Relations between teachers", "School's programs of supporting both teaching and children, "Assessment of learning", and last but not least "School-parents relationships". The variable of "Avoiding style" has negative correlation with the variables of "Management and Organization", "Relations between teachers", and "Supporting children". All of this means that the management style of the principal impinges on the relations among the school teacher, the support of education within the school, the school culture of supporting children and relation with parents. All of this shows that there is a strong connection between the principal's management style and relations with internal and external stakeholders.

Inside the average Arab school in Israel, the school culture and conditions of supporting excellence in teaching and the school climate in which Arab teachers operate have a great influence on the teachers' motivation. Based on the questionnaire survey of this study that included 197 Arab teachers, these teachers reported several factors related to school leadership style, availability of resources, classroom climate, values, education, violence among students as obstacles that affect teachers' motivation and relations with parents. Many studies point to the principal leadership style as a factor that directly affects teacher motivation (Arar & Harzallah-Masri, 2016). According to the teachers, the Arab principal is required to use different management styles, to combine centralism and authority, between the transformative style of caring and rewarding style of carrot and stick style, which is usually advocated by Arab principals (Abu-Hussain & Essawi, 2014). Teachers in Arab schools complain that they are only involved in making decisions related to their class and participate in making decisions that concern only the classroom and not the school as a whole. Beyond that the teachers do not know and only hear from colleagues about other issues related to the school.

This study shows that, for the most part, elementary school principals in Arab society tend to be characterized by an authoritarian-autocratic leadership style (Arar & Oplatka, 2011). From this it can be learned that the style of school leadership in Arab society has negative consequences on the motivation of teachers and that it sometimes serves as an internal barrier which harms their motivation to work. However, the results of this study show that there is a gradual development among the young principals, who are integrated into management positions in Arab society, on the issues of teacher participation in decision-making, staff leadership and division of roles in the school (Oplatka, 2016). Such development may improve the motivation of the Arab teachers.

3. Findings from the Trust Research

Another theoretical foundation on the relationship between parents and school can be found in the trust research with reference to system-theoretical considerations on trust (Bektaş, Kılınç & Gümüş, 2022). These studies highlight the importance of the creation of a relationship of trust between clients and actors and the resulting consequences for organizations and professional actors, such as a school organization between parents and school actors in the education system. The

relationship between parents and the school is changing based on the expanded decision-making options for parents in the course of the educational policy change. Parents give the school they have chosen a leap of faith, which must first be answered by the school actors. Communication between professional actors and parents is particularly important for the creation of a relationship of trust (Hoover-Dempsey & Sandler, 1997). As part of this study, parents express criticism of the professional design of communication between the school and parents, specifically in relation to transparency, participation and the design of the interaction process. A lack of transparency manifests itself, for example, in a lack of information about everyday school life or learning objectives.
The aspect of participation becomes significant when parental expertise is not included in the learning planning. The design of the interaction process is experienced as unprofessional, for example through the perception of a lack of preparation for conversations or the signaling of effort and excessive demands by the teachers. Interaction-based trust/mistrust is based on the parents' satisfaction or dissatisfaction with the communication processes between them and the school actors in the context of face-to-face interactions, i.e. personal encounters (Arar, Abu-Asbah & Nasra, 2014). Against the background of these findings, the question arises as to how information-based and interaction-based trust is built between parents and school in Israeli schools, how the schools provide parents with information about their child's learning and how they organize the interaction process with parents.

4. Conclusion

The study shows that the principal management style has a tremendous impact on relations among teachers as well as relations between the school and parents. Close and constructive communication among these internal and external stakeholders has a major impact on students' performance. The duality of structure means that structures only exist when actors act and therefore must be constantly reproduced through action. Stakeholders' feedback is still rarely used at Arab schools in Israel to support learning processes. Against the background of the findings from school development research on the positive impact of involving stakeholders, stakeholders are not seen as sufficient partners for successful learning. Accordingly, the fit between stakeholders' activities and the school expectations of stakeholders' involvement that is necessary for successful learning is low, especially in Arab-Israeli schools with low parent satisfaction.

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INTEGRATING AI IN WORKFLOWS

Ioana Ciofu, Giulia Kondort, Stefana Pop, Roxana Cioc

The Department of Business Administration (UNESCO), Faculty of Business Administration in Foreign Languages, Bucharest University of Economic Studies, Bucharest, Romania
ioanaalexa.ciofu@gmail.com
kondortgiulia@yahoo.com
steffa_pop@yahoo.com
roxana.cioc@yahoo.com

Abstract: *This paper will give an insight on the impact of AI in everyday life and work-related activities. AI functionalities could nowadays transform businesses, in playing a critical role in enhancing decisions. From virtual assistants to automation tools, AI covers great amount of information, which could impact the core. Productivity and sense of failure of AI will be in this paper questioned. The productivity of AI such as, varies by tasks and industry. AI could excel in repetitive and high precision tasks. On the other hand, humans outperform AI in tasks requiring creativity and emotional intelligence. This qualitative study will show the perception of integrating AI into workflows and questioning the value added.*

Keywords: Artificial Intelligence; Productivity; Failure; Problem-Solving; Consistency; Precision

Introduction

Artificial Intelligence (AI) has rapidly become an essential component in various industries due to its remarkable ability to increase efficiency and productivity. This analysis explores the main drivers behind AI's effectiveness, emphasizing its data management capabilities, consistency, adaptability, and automation. Understanding these factors can shed light on how AI is transforming traditional processes and helping to accelerate decision-making and increase performance.

Efficiency of the artificial intelligence

The efficiency and productivity line of the AI could be described by several key reasons such as automation, data handling, consistency, and adaptation. AI could be productive because of its large capacity of processing high volume of data in a short period of time. Its ability to learn from data allows it to improve over time, while reducing human error and increasing efficiency. This fact could lead also to faster decision-making and enhanced overall productivity in various fields of application. (Ping Wang, 2024)
Therefore, the automation potential of AI can disrupt the employment market. Ethical considerations include how to manage displacement and support workforce transitions. (Wong, 2024) The negative impacts of AI being used to increase the productivity of a business are summarized by job displacement. (Taelim Choi, 2024)

Automation with the help of AI may lead to reduction or elimination of jobs in certain sectors, particularly in those involving routine or repetitive manual tasks. Employees may find themselves unprepared for new roles, due to the new requirements regarding learning skills. The reskilling and upskilling working tools will be needed to help employees transition to new roles in an AI-driven economy. (Mikael Wahlström, 2024)
Positive impacts of the integration of AI can refer to a more balanced work-life atmosphere among employees. AI can manage workloads, by reducing the high volume of processed data and embracing efficient work paths. Also, AI could take over repetitive tasks and let employees focus on developing competencies that are newly valuable in the evolving job market. (Chunlei Chai, 2023)

AI Failure

To start, AI systems might not align with user values, leading to a disconnect with the intrinsic motivations and expectations of diverse groups. This misalignment can worsen trust and privacy concerns, as users may view the technology as invasive or failing to protect their personal data adequately. Additionally, poor user experience and satisfaction can result from interfaces and functionalities that don't consider users' temporal preferences, making them appear unintuitive or cumbersome. Ineffective communication and marketing strategies that overlook these time orientations can result in promotional efforts failing to engage or attract potential users effectively. Resistance to change might also increase, especially among users who feel their long-standing habits and preferences aren't being valued or addressed by new technology. Ultimately, these issues can prevent AI from reaching its full potential, with underutilized features and hampered innovation due to a lack of alignment with users' temporal expectations and behaviours.
Regret frequently influences consumer decision-making due to the inherent performance uncertainty associated with products and services (Hur & Allenby, 2022). It is the sense of loss felt after making decisions in uncertain situations, only to later realize that other choices would have been better. Interestingly, regret ranks as the second most frequently mentioned emotion, right after love (Shimanoff, 1984). Consequently, regret can significantly impact post-choice evaluations, consumer satisfaction, and the likelihood of repeat purchases or continued use of services (Chen & Jia, 2012; Davvetas & Diamantopoulos, 2017).
Assigning responsibility for AI failures can be different depending on the specific circumstances (Kong J., et. al., 2018), which can stem from factors like inadequate training data, algorithmic bias, hardware issues, cybersecurity breaches, or human error, can be challenging, particularly when the root cause is unclear.
As AI continues to evolve, with its capabilities and limitations still being explored, it is essential to establish ethical guidelines and regulations to ensure responsible development and deployment of robots (Holder C., et.al., 2016).

Methodology

The objective of this research is to measure empirically if the robots can be efficient in what they do and if the mistakes of the robots are easily accepted by the consumers. To achieve the objective, a questionnaire was created. With the help of the questionnaire, we found out how efficient the robots can be and whether their mistakes can be accepted or not by the consumer. The respondents were asked to

choose the right answer depending on their interaction with the robots. The target group was not a specific one, the questionnaire was created for all people.
The questionnaire includes a series of demographic variables: sex, age and income. The questionnaire consists of 19 questions with scaled responses ranging from 1 (totally disagree) to 7 (totally agree), in which respondents were asked to check the statement that corresponds to them.
A total of 538 people participated in the questionnaire. Out of the total of 538 respondents, 335 were women, 194 were men, and 9 people preferred not to answer this question.
Most of the participants in the questionnaire (299 participants) belong to the age category <25 years; 136 participants are aged between 26-40 years; 63 participants belong to the 41-55 age group; 35 participants belong to the age category >55 years and 4 participants did not answer this question.
With the help of the T-Test, performed in Excel and with the help of discriminant analysis, a comparison was made between the age group 26-40 years and 41-55 years, between the age group 41-55 years and the age group >55 years, between the age group >55 years and the age group <25 years and between the age group <25 years and Blanks (people who did not answer this question).

Results

The table below presents the 19 questions from the questionnaire together with the average of the answers for each age category and question and the T-Test for the age categories. In the discussion part, we present the results of the research and compare the average of the answers for each question depending on the age category, to discover the opinions of the respondents when it comes to the efficiency and failures of robots.

Table 1: The average of the answers by age category and the T-Test

Questions	Average 26-40 years	Average 41-55 years	Average >55 years	Average <25 years	Average Blanks	Ttest 26-40 years & 41-55 years	Ttest 41-55 years & >55 years	Ttest >55 years & <25 years	Ttest <25 years & Blanks
This robot is efficient	4,97	4,98	4,99	4,98	4,52	0,93	0,92	0,94	0,01
This robot helps to increase the company's productivity	5,14	5,15	5,16	5,15	4,65	0,91	0,90	0,90	0,00
I can trust this robot to do its job correctly	4,66	4,66	4,64	4,66	4,30	0,98	0,86	0,81	0,04
This robot has the ability to adapt to unexpected situations	3,31	3,29	3,19	3,31	2,40	0,90	0,38	0,31	0,00
This robot has the ability to act independently without human help	3,76	3,75	3,67	3,76	2,93	0,94	0,49	0,42	0,00
I trust the decisions made by this robot	3,76	3,75	3,67	3,77	3,02	0,96	0,47	0,40	0,00
This robot reduces the company's error rate	4,44	4,44	4,41	4,45	4,03	0,99	0,82	0,73	0,02
This robot can be easily repaired	4,07	4,06	4,00	4,08	3,41	0,94	0,58	0,49	0,00
This robot is easily accepted by other human employees of the company	3,57	3,55	3,48	3,57	2,89	0,88	0,51	0,43	0,00
I trust that this robot can be integrated into customer service	4,67	4,68	4,67	4,68	4,17	0,99	0,97	0,91	0,00
I feel comfortable making purchasing decisions based on recommendations made by this robot	4,00	3,99	3,93	4,00	3,10	0,96	0,62	0,55	0,00
I think it is acceptable for this robot to make mistakes	4,17	4,17	4,11	4,18	3,75	0,99	0,64	0,59	0,03
I can accept the robot's mistakes in its recommendations	3,87	3,86	3,81	3,87	3,47	0,95	0,63	0,56	0,03
I can accept robot mistakes in the delivered food	3,14	3,14	3,04	3,14	2,31	0,95	0,40	0,36	0,00
I can accept robot mistakes in the invoiced price	2,52	2,53	2,46	2,52	1,90	0,99	0,55	0,58	0,00
I worry about the mistakes made by this robot	4,59	4,58	4,57	4,59	4,69	0,96	0,89	0,86	0,60
I consider that the mistakes made by this robot should be dealt with similarly to those made by human employees	3,75	3,73	3,64	3,75	3,39	0,91	0,45	0,39	0,11
I consider that this robot should apologize when it makes mistakes	4,52	4,50	4,48	4,51	3,85	0,89	0,88	0,81	0,00
I intend to keep interacting with this robot, even if it makes mistakes	4,13	4,13	4,08	4,14	3,38	0,97	0,70	0,64	0,00

Source: Own research results

Conclusion

The power of AI lies in its ability to process large amounts of data quickly, learn from it and continuously improve its operations. This leads to increased productivity, reduced human error and more reliable decision-making. As artificial intelligence continues to evolve, its role in promoting advances across all industries is set to expand, ensuring a future in which technology and human ingenuity seamlessly complement each other.

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ASSESSING THE IMPACT OF HUMAN CAPITAL ON ECONOMIC GROWTH: A DUAL APPROACH USING QUANTITY AND QUALITY PROXIES

UNGUREANU Anca Maria, POP-SILAGHI Monica Ioana
Department of Economics, Faculty of Economics and Business Administration, Babeș-Bolyai University, Cluj-Napoca, Romania
anca.ungureanu@econ.ubbcluj.ro
monica.silaghi@econ.ubbcluj.ro

Abstract: *In this paper we examine the relationship between human capital and economic growth by looking at human capital from two perspectives. First, we adopt a traditional view by including quantitative measures such as years of schooling and secondary enrollment rates as proxies for education and then we adopt a modern one where we emphasize the importance of skills through variables such as European Skills Index, Human Capital and Research Index and software skills which are new and limited in the availability. The sample consists of all the European Union countries during the period 2017-2023 and our results show that from the traditional perspective, only education expenses have a significant and surprisingly negative impact on economic growth, while the variables from the other perspective all proved to have a positive significant impact in different models. Therefore, our recommendations focus on improving the efficiency in which money is spent and enhancing abilities such as digital literacy, problem-solving and critical thinking.*

Keywords: human capital, economic growth, education, skills, innovation

JEL classification: I25, J24, O47, O15, C23

1.Introduction

For about six decades (Mincer, 1958), economic research and policy discussions have focused on the relationship between human capital and economic growth. Economic prosperity is now acknowledged to be significantly influenced by human capital, which is frequently represented by the workforce's skills, health, and education. Our motivation lies in better understanding how investments in quality of life, education, and training can boost a country's productivity and economic growth, as well as how to optimize these beneficial effects. Many theoretical and empirical studies (Affandi, Anugrah, & Bary, 2019), (Frank, 2009), (Garza-Rodriguez, Almeida-Velasco, Gonzalez-Morales, & Leal-Ornelas, 2020) have already emphasized the role that human capital plays in promoting economic development. In particular, the endogenous growth theory highlights that the accumulation of human capital is a key factor in determining long-term economic growth (Barro, 1997), and as a result, economies with higher levels of human capital typically grow faster and more sustainably. Positive side effects like increased labor productivity, innovation and the capacity to adopt new technologies demonstrate that this relationship becomes undoubtedly important. Furthermore, the need for a trained and educated workforce has increased due to globalization and technological advancements, making human capital an essential resource for gaining a competitive advantage in the global economy. Our objective is to investigate the complex relationships between human capital and economic growth for all European Union countries. We will examine how the traditional perspective which is based on education measured from a quantitative point of view (Garza-Rodriguez, Almeida-Velasco, Gonzalez-Morales, & Leal-Ornelas, 2020) (Affandi, Anugrah, & Bary, 2019), differs from a more modern perspective, which is based on the quality reflected in skills and competences (Deming, 2017).

2.Literature Review

Analyzing human capital and how it affects economic growth is a complicated process that implies a variety of proxies that adequately reflect its complex aspects. In this paper, we group the proxies in traditional and modern ones. Among the traditional ones, the most popular ones refer to education, for example: the average years of schooling (Affandi, Anugrah, & Bary, 2019) and enrollment rates in primary (Maitra & Chakraborty, 2021), secondary (Garza-Rodriguez, Almeida-Velasco, Gonzalez-Morales, & Leal-Ornelas, 2020) or tertiary education (Sghaier, 2022). We decided to incorporate also the secondary enrollment rate in our analysis being in line with several other studies that have included it, such as Garza-Rodriguez et al. (Garza-Rodriguez, Almeida-Velasco, Gonzalez-Morales, & Leal-Ornelas, 2020) who estimated a model using the ordinary least squares approach. In his study, the proxies for human capital were population growth and the secondary enrollment rate and his conclusion, employing the Granger Causality Test, was that a 1% rise in the secondary enrollment rate leads to a 1.08% gain in GDP per worker. Because human capital's estimated coefficients were nearly three times larger than those of physical capital, this study also proved that the former had a significantly greater influence. Another proxy included in the research is the years of schooling. Affandi et al. (Affandi, Anugrah, & Bary, 2019), for instance, investigated the impact of human capital on the Indonesian economy from 1985 to 2014. After analyzing the effects of capital stock, labor and human capital on the regional GDP, their study concluded that human capital was the main element influencing economic growth. As a result, the most profitable investments were made in human capital. Frank (Frank, 2009) also discovered a similar positive relationship between human capital and economic growth using the number of years of education as a measure for human capital. Using the yearly data from 1929 to 2000 for the United States, he applied Granger causality tests to study the link between income disparity, income growth and human capital. His conclusion was that years of schooling affect income levels, but he found no evidence that the top decile of income share is caused by increased years of education. One reason behind his result could be that perhaps specific skills (both technical and soft skills) in certain well-paid fields (for example ICT infrastructure) are additionally needed to greatly influence the incomes.

However, the recent research has shifted the focus to a qualitative perspective on human capital, emphasizing the importance of psychological and personality qualities. This includes knowledge, skills, experience, and expertise of employees. Diaz-Fernandez et al. apud Mubarik (Mubarik, Bontis, Mubarik, & Mahmood, 2022) further expand this idea, highlighting the importance of character traits like intelligence, creativity, and attitude for generating economic prosperity. Abraham & Mallatt (Abraham & Mallatt, 2022) suggest evaluating educational attainment based on qualifications. Deming's research (Deming, 2017) reveals that social skills in the US have become more economically valuable in the 2000s compared to the 1980s. Social skills offer employees a comparative advantage, allowing them to specialize and work together more effectively.

3.Methodology:

The current study builds models to illustrate the impact of human capital on economic growth, specifically on the growth of GDP per capita. The analysis employs the neoclassical growth model with the growth of GDP per capita as the dependent variable and includes variables representing both traditional and modern perspectives on human capital. Data from the World Bank and Cedefop Europe (2017-2022) for the EU countries support the analysis, covering variables like gross fixed capital formation, labor force participation, years of schooling, education spending (%of GDP), secondary enrollment, and modern skills indices such as: the European Skills Index[1] (Cedefop Europe, 2024), Human Capital and Research Index (The World Bank, 2024), Software Skills[2] (The World Bank, 2024).

4. Results

Initially, we conducted a basic OLS regression and then we applied the Breusch Pagan Lagrange Multiplier (BP) Test to find the most suitable estimation technique. The fixed effects model was found to be more suitable. Our statistically significant variables were education expenses as percentage of GDP (Ed), the Human Capital Research and Research Index (HCRI) and the Software Skills (Software) at one percent significance level. We also wanted to see how combining these perspectives would affect the economic performance. Therefore, we built some models that included the education expenses along with two of the three "modern" variables: the European Skills Index (ESI) and the Human Capital Research (HCR). The variable concerning education expenses maintained its significance and the direction of influence at 1 percent significance level in both models while the variable concerning the European skills index (ESI) and the Human Capital and Research Innovative Index (HCRI) variable had both a positive impact at 1 percent significance level, respectively at 5 percent. Finally, we built an interaction variable (lnESI * lnHCRI) based on two other variables with a small correlation (6%), namely ESI and HCRI. This final model also resulted in a fixed effects model and the built interaction variable proved to have a positive influence at 1 percent significance level on the growth of the GDP per capita.

[1] The ESI is consisting of three pillars; skills development, activation and matching, each of which measures a different aspect of a skills system. This is a composite indicator built on 15 individual indicators from various international datasets.

[2] Proportion of youth and adults who have found, downloaded, installed and configured software, both sexes (%)

4. Conclusions

This study explores the impact of human capital on the growth of GDP per capita in European Union countries from two perspectives and the findings suggest that educational quality matters more than quantitative measures. Average years of education and enrollment rates are indicators of the amount of education received, but they do not necessarily capture the quality of the education. The fact that the factors from the second perspective were relevant in multiple models highlights the significance of abilities. Our results show that nowadays successful education does not mean the same as in the past and that the governments must implement strategies according to the characteristics of the human capital with a focus on digitalization and building the right attitudes and skills, not only on formal competences or diplomas. As this study is constrained by a limited timeframe due to data availability, we aim to enhance future research by employing more sophisticated estimation methods. This approach will provide deeper insights and further refine our understanding of the subject.

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