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“DEVELOPMENT THROUGH RESEARCH AND INNOVATION - 2023”, IVth Edition,
online conference for young researchers, PhD Students and Post-Doctoral Researchers
August 25, 2023, Chisinau, Republic of Moldova



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HR EXCELLENCE IN RESEARCH



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“DEVELOPMENT THROUGH RESEARCH
AND INNOVATION - 2023”*

Online Conference for Researchers, PhD and Post-Doctoral
Students,
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CONTENT

TITLE	PAGE
LEGAL AID DELIVERY: TECHNOLOGY, PRO BONO SERVICES, AND COLLABORATIVE FUNDING MODELS	8
<i>GONCEARENCO LUDMILA, PhD Student</i>	
UNDERSTANDING GENDER-BASED WAGE DISCRIMINATION IN THE REPUBLIC OF MOLDOVA	21
<i>ROBU MARIANA, PhD Student</i>	
THE CONTRIBUTION OF THE HUMAN FACTOR IN THE EFFICIENCY OF THE OPERATIONAL MANAGEMENT OF ELECTRICAL NETWORKS (case study based on "Red-Nord" JSC materials)	38
<i>CORBU VIOREL, PhD Student</i>	
THE CURRENT STATE AND FUTURE TRENDS OF SCIENTIFIC RESEARCH ON ACCOUNTING AND MANAGEMENT CONTROL THROUGH BIBLIOMETRIC ANALYSIS	55
<i>JIZDAN ANDREI, PhD Student</i>	
MODERN MARKETS AND ECONOMIC DYNAMICS OF SILVER	69
<i>MARIYA ZDRAVKOVA YANEVA, PhD, Researcher</i>	
ASSESSING THE ENVIRONMENTAL IMPACT OF SMART HOMES	82
<i>CATRUC ADRIANA, PhD Student</i>	
THRIVING IN UNCERTAINTY: INTEGRATING PSYCHOSOMATIC AND INNOVATIVE APPROACHES TO STRENGTHEN ORGANIZATIONAL BEHAVIOR IN TURBULENT ENVIRONMENTS	88
<i>LORINA BUGA, PhD Student</i>	

FRAUD PREVENTION IN DIGITAL PAYMENT SYSTEMS AND CYBERSECURITY EDUCATION FOR CUSTOMERS OF NATIONALIZED FINANCIAL INSTITUTIONS	98
<i>KHUSHWANT SINGH, Researcher</i> <i>MISTREAN LARISA, Post-Doctoral Researcher</i> <i>YUDHVIR SINGH, PhD, Professor</i> <i>DHEERDHWAJ BARAK, Assistant Professor</i> <i>ABHISHEK PARASHAR, Assistant Professor</i>	
GLOBALIZATION CONTROVERSIES AS AN ANALYTICAL PLATFORM FOR IDENTIFYING THE DEGREE OF CONNECTION OF REPUBLIC OF MOLDOVA TO THE GLOBALIZATION PROCESS	116
<i>GHILEȚCHI Zorina, PhD Student</i>	
THE ROLE OF ARTIFICIAL INTELLIGENCE AND AUTOMATION IN SHAPING LABOR MARKETS	137
<i>PASLARI ANDREI, PhD Student</i>	
SISTEME CONTABILE ÎN UNIUNEA EUROPEANĂ	152
<i>INESA TOFĂNICĂ, PhD Student</i> <i>ALIONA BÎRCĂ, PhD, Assoc. Prof.</i>	
DIGITAL TRANSFORMATION OF SMEs IN THE REPUBLIC OF MOLDOVA: OPPORTUNITIES AND PERSPECTIVES	164
<i>COZNIUC OCTAVIAN, PhD</i>	
CONDITIONAL GENERAL COMPETENCE – IMPOSITION OF A CONSEQUENCE OR CONDITION OF COMPLIANCE WITH THE PRELIMINARY PROCEDURE IN THE LEGISLATION OF THE REPUBLIC OF MOLDOVA	180
<i>PRISAC Alexandru, PhD in Law, Associate Professor</i>	
THE DEVELOPMENT PERSPECTIVES OF THE ENVIRONMENTAL TAX SYSTEM IN THE REPUBLIC OF MOLDOVA IN ORDER TO ENSURE THE DEVELOPMENT OF A SUSTAINABLE ECONOMY	193
<i>CHIRONACHI CORINA, PhD Student</i>	

RELATION BETWEEN MORAL AND LEGAL NORMATIVITY IN IN WORKERS FROM LEGAL FIELD	205
<i>ALIONA MELENTIEVA, PhD Student</i>	
COMMUNAL INFRASTRUCTURE AS A NECESSARY CONDITION FOR THE SUSTAINABLE DEVELOPMENT OF THE REGION (case ATU Gagauzia)	218
<i>VITALI CHIURRCIU, PhD Student</i> <i>IGOR GUSEINOV, PhD</i>	
ABORDĂRI CONTEMPORANE AFERENTE CONTROLULUI DE GESTIUNE A VENITURILOR ȘI CHELTUIELILOR ÎN CADRUL INSTITUȚIILOR PROFESIONAL TEHNICE	229
<i>ȘCHIOPU ANA, PhD Student</i>	
ENTREPRENEURIAL BEHAVIOR IN THE HEALTH TOURISM MARKET	242
<i>COVALENCO (DOBROVOLSCHI) MARINA, PhD Student</i>	
GLOBAL INVESTMENT POLICIES IN THE CONTEXT OF THE COVID-19 PANDEMIC: PROSPECTS AND OBSTACLES	256
<i>SERGHEI PETIGHIN, PhD Student</i>	
DUAL EDUCATION DIGITALIZATION: UNPACKING FINANCIAL STRATEGIES ACROSS EUROPE	275
<i>ADRIAN ANDRONIC, PhD Student</i>	

LEGAL AID DELIVERY: TECHNOLOGY, PRO BONO SERVICES, AND COLLABORATIVE FUNDING MODELS

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Abstract: *This paper examines the delivery of legal aid services in the context of technological advancements, pro bono services, and collaborative funding models. The study employs a comprehensive literature review, comparative analysis, and case studies to identify key concepts, theories, and best practices related to legal aid delivery. The research findings suggest that technology can be a powerful tool for legal aid providers to increase efficiency, reach a wider audience, and provide better services. Pro bono services and collaborative funding models can also be crucial in expanding legal aid services and improving access to justice. The paper provides insights and recommendations for legal aid providers, policymakers, and funders to improve legal aid delivery through technology, pro bono services, and collaborative funding models. Overall, this paper contributes to the growing body of literature on the evolution of legal aid delivery and the role of technology and collaboration in improving access to justice.*

Key words: *legal aid delivery, technology, pro bono services, collaborative funding models, access to justice*

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1. Introduction

Access to justice is a fundamental human right; however, it remains unattainable for many individuals worldwide, particularly those who are low-income or marginalized (Albiston & Sandefur, 2013). Legal aid is crucial in ensuring everyone can access the legal help they need, regardless of income or social status. However, the delivery of legal aid services can be a complex and resource-intensive process. In recent years, legal aid providers have adopted innovative delivery models to enhance the efficiency and impact of their services. These models encompass pro bono services, online matching platforms, collaborative funding models, and shared services (Susskind, 2023). However, the COVID-19 pandemic has presented novel challenges and opportunities for legal aid delivery, requiring providers to adapt swiftly to new modes of service delivery while facing increased demand for their services. This article will

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examine some innovative legal aid delivery models utilized globally and how legal aid providers have addressed the challenges posed by the COVID-19 pandemic.

2. Methodology

The methodology used in this paper involved a comprehensive literature review in identifying key concepts, theories, and best practices related to legal aid delivery, technology, pro bono services, and collaborative funding models (Creswell & Creswell, 2017). In addition, various sources, such as academic journals, industry reports, government publications, and relevant sources, were reviewed to gain a broader understanding of the topic.

A comparative analysis was employed to identify similarities and differences in legal aid delivery approaches, collecting and analysing data from industry associations, government agencies, and academic research (Miles & Huberman, 1994). In addition, key factors such as technology, pro bono services, and collaborative funding models were analysed.

Case studies of several countries were evaluated to gain a more detailed analysis of the strategies and technologies used to deliver legal aid (Yin, 2003). The cases were chosen based on their relevance to the research questions and their potential to provide valuable insights.

A comprehensive literature review, comparative analysis, case studies, and qualitative research methods provide a comprehensive and insightful analysis of legal aid delivery, technology, pro bono services, and collaborative funding models.

3. Adopting Technology for Legal Aid Delivery

Technology has the potential to significantly enhance the provision of legal aid services by improving access to legal information and resources, streamlining the intake process, and facilitating communication between clients and lawyers (Brescia, McCarthy, McDonald, Potts, & Rivais, 2014).

Online portals can provide clients access to legal information and resources, including self-help materials, instructional videos, and frequently asked questions. These portals can be designed to be user-friendly and accessible to individuals with limited legal knowledge. Examples of websites that provide free legal information and resources include LawHelp.org (Legal Services Corporation, n.d.-a), the Community Law Manual (Community Law, n.d.), LawAccess NSW (LawAccess NSW, n.d.), Citizens Advice (Citizens Advice, n.d.), and MyLawBC (British Columbia government).

Chatbots are computer programs that use artificial intelligence to simulate conversations with human users. For example, legal aid providers can use chatbots to provide clients with automated assistance, such as answering

frequently asked questions, completing intake forms, and providing referrals to legal professionals. Examples of chatbots that provide legal assistance include DoNotPay (Browder, n.d.), LawBot (University of Cambridge, n.d.), Ask Izzy (Infoxchange, n.d.), Legal Robot (Legal Robot, n.d.), and Avvo (Avvo, n.d.).

Mobile apps can provide clients with on-the-go access to legal information and resources. For example, legal aid providers can develop apps allowing users to search for legal services, schedule appointments, and receive case notifications. Examples of mobile apps that provide access to legal information and resources include LegalAidSA (Legal Services Commission of South Australia, n.d.), Lawyers Without Borders (Lawyers Without Borders, n.d.), Alberta Legal Info (Centre for Public Legal Education Alberta, n.a.), JusticeHub (United Nations Development Programme, n.a.), and Legal Rights Handbook (Hong Kong Federation of Youth Groups, n.a.).

Videoconferencing can facilitate remote communication between clients and lawyers, overcoming geographic barriers to legal aid services. Videoconferencing can be particularly useful in rural areas or cases where clients cannot travel to a physical office. Examples of organizations that use videoconferencing technology to provide legal services include Legal Aid Ontario (Legal Aid Ontario, n.d.), the Legal Aid Society of New York (Legal Aid Society of New York, n.d.), Legal Aid Queensland (Legal Aid Queensland, n.d.), the Legal Aid Society of Hawaii (Legal Aid Society of Hawaii, n.d.), and Legal Aid South Africa (Legal Aid South Africa, n.d.).

Case management software can help legal aid providers to streamline their operations and manage their cases more efficiently. This software can provide tools for tracking client information, managing documents, and scheduling appointments. Examples of case management software used by legal aid providers include LegalServer (LegalServer, n.d.), Legal aid Online (Legal aid Online, n.d.), CLIO (CLIO, n.d.), Pro Bono Net (Pro Bono Net, n.d.-a), and Legal Aid Management Information System (LAMIS, n.d.).

By adopting these technological advancements, legal aid providers can increase their efficiency and reach, providing better and more accessible services to individuals needing legal assistance. Furthermore, these innovations can help bridge the gap between the demand for and the supply of legal aid services, ensuring that more people can access justice and receive the support they require.

Continued research and development in legal technology will likely lead to even more advanced tools and solutions, further enhancing the ability of legal aid providers to serve their clients effectively. In addition, a collaboration between legal aid organizations, governments, technology companies, and educational institutions can drive innovation and ensure that technology continues transforming the legal aid landscape.

4. Pro Bono Services

Pro bono legal services can be valuable for individuals who cannot afford traditional legal services (Rhode, 2005). Innovations in pro bono delivery can include programs that match lawyers with clients based on their areas of expertise, geographic location, and availability. Online platforms can facilitate these matches, making it easier for lawyers to find pro bono opportunities that fit their schedules and interests (American Bar Association, n.d.; LawWorks, 2023; Legal Aid Ontario, n.d.; Pro Bono Net, n.d.-b).

Online matching platforms have become increasingly popular in the legal aid sector, allowing lawyers to connect with clients needing pro bono legal services. For example, Pro Bono Net is a US-based nonprofit organization that provides online tools and resources to support pro bono legal services. Their online platform includes a directory of pro bono opportunities and tools for managing cases and tracking volunteer hours (Pro Bono Net, n.d.-b). Similarly, ABA Free Legal Answers is an online platform operated by the American Bar Association that connects low-income individuals with volunteer lawyers who can provide legal advice and guidance (American Bar Association, n.d.). LawWorks is a UK-based charity that connects volunteer lawyers with individuals and community organizations needing legal assistance. Their online platform includes a directory of pro bono opportunities and tools for managing cases and tracking volunteer hours (LawWorks, 2023). Legal Aid Ontario is a Canadian organization that provides legal aid services to low-income individuals across the province. Their online platform includes a directory of pro bono opportunities and tools for managing cases and tracking volunteer hours (Legal Aid Ontario, n.d.).

Collaborative pro bono models bring together multiple legal aid providers and law firms to offer pro bono services in a coordinated way. For example, the Pro Bono Collaborative in Rhode Island brings legal aid providers, law firms, and law schools to provide pro bono legal services to low-income individuals and families (Rhode Island Bar Association, n.d.). The Access to Justice Foundation is a collaborative initiative that brings together law firms, barristers' chambers, and legal aid providers to raise funds for pro bono legal services (Access to Justice Foundation, n.d.). The Australian Pro Bono Centre is a national organization that promotes pro bono legal work in Australia. The Centre collaborates with law firms, legal aid providers, and other organizations to develop pro bono programs and initiatives (Australian Pro Bono Centre, n.d.). The Canadian Bar Association's Pro Bono Program is a collaborative initiative that brings legal aid providers, law firms, and other organizations to provide pro bono legal services to low-income individuals and families (Canadian Bar Association, n.d.). The Pro Bono Partnership is a collaborative initiative that brings together law firms and legal aid providers to provide pro bono legal services to individuals and

communities in need (Pro Bono Partnership, n.d.). Finally, the Pro Bono Project is a collaborative initiative that brings legal aid providers, law firms, and other organizations to provide pro bono legal services to low-income individuals and families in New Orleans (Pro Bono Project, n.d.).

Pro bono technology platforms like Paladin and JustFix provide tools for legal aid providers to manage and coordinate pro bono legal services. These platforms can help to streamline the pro bono process, from matching clients with lawyers to tracking case progress and outcomes. They can also provide data and analytics on pro bono activity, which can help evaluate the impact of pro bono services and identify areas for improvement (JustFix, n.d.; Paladin, n.d.).

5. Collaborative Funding Models

Collaborative funding models can improve the sustainability and effectiveness of legal aid services by leveraging resources from multiple stakeholders (Massachusetts Executive Office of Administration and Finance, 2014; Social Finance, 2012; UK Government, 2015).

Social Impact Bonds (SIBs) are a form of pay-for-success financing where private investors provide upfront funding for social programs expected to achieve specific outcomes (Massachusetts Executive Office of Administration and Finance, 2014; Social Finance, 2012; UK Government, 2015). SIBs have been used to fund legal aid programs in several jurisdictions, including New York City, Massachusetts, and the United Kingdom (Massachusetts Executive Office of Administration and Finance, 2014; Social Finance, 2012; UK Government, 2015).

Legal aid providers can collaborate with philanthropic organizations, corporations, and law firms to secure funding for legal aid services. For example, Microsoft Corporation partnered with the Legal Services Corporation to create the Legal Services Corporation Technology Initiative (Legal Services Corporation, n.d.-b). The Open Society Foundations provide grants and other support to legal aid organizations worldwide (Open Society Foundations, 2021). The Ford Foundation supports legal aid organizations and initiatives through grants and other forms of support (Ford Foundation, n.d.). The Skoll Foundation provides funding and support for social entrepreneurs and organizations working to solve some of the world's most pressing problems, including access to justice (Skoll Foundation, n.d.). The Law Foundation of Ontario grants and supports legal aid organizations in Ontario, Canada (Law Foundation of Ontario, n.d.). The Public Welfare Foundation provides funding and support to organizations working to advance justice and opportunity for needy people (Public Welfare Foundation, n.d.).

Crowdfunding platforms can be used to raise funds for legal aid services from many individual donors (Tomlinson, 2018). For example, CrowdJustice is a UK-based crowdfunding platform that allows individuals and organizations to

fund legal cases and campaigns (CrowdJustice, n.d.). LaunchGood is a crowdfunding platform focusing on funding projects and causes within the Muslim community (LaunchGood, n.d.). Global Giving is a crowdfunding platform that supports various causes worldwide, including legal aid (GlobalGiving, n.d.). FundRazr is a global crowdfunding platform that supports a variety of causes, including legal aid (FundRazr, n.d.).

Legal aid providers can apply for government grants to support their services (Cohen, 2013). In some cases, government agencies may collaborate with legal aid providers to develop and implement legal aid programs (California Office of Emergency Services, n.d.). Legal aid providers can collaborate to share administrative and support services, reducing costs and improving efficiency (Community Law Partnership, n.d.; Legal Aid Society of New York, n.d.; Legal Services Society, n.d.; South African Legal Aid Board, n.d.).

Legal aid organizations can also partner with universities and law schools, providing students with opportunities to gain practical experience while offering legal services to the community (American Bar Association, n.d.). Through clinical programs, students can work under the supervision of experienced attorneys, offering legal assistance in various areas, such as civil rights, housing, and immigration law (Harvard Law School, n.d.; University of Michigan Law School, n.d.).

Moreover, legal aid providers can collaborate with community organizations and nonprofits to increase their reach and impact (National Legal Aid & Defender Association, n.d.). By partnering with organizations that serve low-income and marginalized communities, legal aid providers can enhance access to legal services, build trust within the community, and address systemic barriers to justice (National Legal Aid & Defender Association, n.d.).

Various funding sources and collaborative models can be employed to support legal aid services. By leveraging crowdfunding platforms, government grants, pro bono services, law school clinical programs, and community partnerships, legal aid providers can improve the sustainability and effectiveness of their services, ensuring access to justice for those who need it most.

6. Legal Aid Delivery in the COVID-19 Pandemic Context

The COVID-19 pandemic has significantly impacted the delivery of legal aid services globally (Sourdin, Li, & McNamara, 2020). Many courts have closed or reduced their operations to slow the spread of the virus (World Justice Project, 2020). This has led to delays and backlogs in court cases, including those involving legal aid clients. In some jurisdictions, remote hearings have been introduced to mitigate these delays, but this has also presented new challenges for legal aid providers who may not have the technology or resources to participate in virtual court proceedings (Sourdin et al., 2020).

The pandemic has led to a surge in demand for legal aid services, particularly in areas such as housing, employment, and domestic violence (Sourdin et al., 2020). Many individuals and families have been impacted by the economic and social effects of the pandemic and have found themselves in need of legal assistance.

Legal aid providers have faced funding challenges due to the economic downturn caused by the pandemic (Sourdin et al., 2020). Governments and philanthropic organizations that fund legal aid programs may have fewer resources available, and legal aid providers may need to compete for limited resources.

Legal aid providers have had to innovate to continue providing services during the pandemic. This has included the use of remote technology for client intake and consultations and the development of online legal resources and self-help tools (Sourdin et al., 2020). Some legal aid providers have also partnered with other organizations, such as food banks and healthcare providers, to provide wraparound services for clients in need.

Legal aid providers have also been involved in advocacy and policy work related to the pandemic. This has included efforts to ensure that government relief programs are accessible to all individuals and families and to protect the rights of vulnerable populations such as immigrants and prisoners (Sourdin et al., 2020).

Examples of legal aid initiatives during the pandemic include the Law Society in the United Kingdom creating a pro bono platform to connect lawyers with individuals and small businesses affected by COVID-19 (The Law Society, 2020). The platform also provided resources and guidance to help lawyers provide remote legal assistance.

In India, the Ministry of Law and Justice launched a tele-law service to provide legal advice and assistance to rural and remote communities during the pandemic (Ministry of Law and Justice, 2020). The service was delivered through a network of Common Service Centers and trained volunteers.

In the United States, the Legal Services Corporation launched the COVID-19 Pro Bono Portal, which provides a centralized location for lawyers to find pro bono opportunities related to COVID-19 (Legal Services Corporation, 2020). The portal also includes resources and guidance to help lawyers provide remote legal assistance.

In Canada, the Ontario Bar Association launched a COVID-19 Legal Helpline to provide free legal advice to individuals and small businesses affected by the pandemic (Ontario Bar Association, 2020). The helpline was staffed by volunteer lawyers and law students.

In Australia, the National Association of Community Legal Centres launched a COVID-19 Response and Recovery Plan to support the delivery of legal aid services during the pandemic (National Association of Community

Legal Centres, 2020). The plan included funding for technology and other resources to enable remote legal assistance.

In South Africa, Legal Aid South Africa launched a mobile legal office to provide legal assistance to vulnerable communities during the pandemic (Legal Aid South Africa, 2020). The mobile office was staffed by legal aid attorneys and traveled to areas with limited access to legal services.

In Brazil, the Public Defender's Office launched a virtual legal aid platform to provide remote legal assistance during the pandemic (Public Defender's Office, 2020). The platform includes a chatbot to help individuals identify legal issues and connect them with a public defender.

In Pakistan, the Lahore High Court launched a free legal aid service for individuals affected by the pandemic (Lahore High Court, 2020). The service provided legal assistance for issues related to employment, housing, and access to healthcare.

It is crucial to mention that the COVID-19 pandemic has accelerated the adoption of technology and innovative solutions in the legal aid sector (Sourdin et al., 2020). This shift is essential for enhancing the efficiency and accessibility of legal aid services during and after the pandemic.

7. Conclusion

The delivery of legal aid is a critical issue that affects many individuals and communities worldwide. This paper has explored various strategies and technologies that can be used to improve legal aid delivery, including technology, pro bono services, and collaborative funding models.

The literature review and comparative analysis have demonstrated many similarities and differences in legal aid delivery strategies and technologies used in different countries. However, the case studies have shown that successfully implementing these strategies depends on various factors, including the political, social, and economic context.

Furthermore, the study has highlighted the importance of collaboration and partnership between legal aid providers, philanthropic organizations, corporations, and government agencies to improve the sustainability and effectiveness of legal aid services.

Based on the findings of this study, the following recommendations are suggested for legal aid providers, policymakers, and other stakeholders:

- *Utilize Technology*: Legal aid providers should invest in technology to improve the efficiency and effectiveness of legal aid services. This includes the development of online platforms, mobile applications, and other digital tools to increase access to legal aid services.
- *Expand Pro Bono Services*: Legal aid providers should work with law firms, corporations, and other organizations to expand pro bono services.

This will increase the availability of legal aid services to low-income individuals and communities.

- *Collaborate and Leverage Resources*: Legal aid providers should collaborate with philanthropic organizations, corporations, and government agencies to leverage resources and improve the sustainability of legal aid services. This includes using social impact bonds, crowdfunding, and other collaborative funding models.
- *Develop Multidisciplinary Approaches*: Legal aid providers should develop multidisciplinary approaches to legal aid delivery that integrate social services, such as housing and healthcare, with legal services. This will address the root causes of legal problems and improve the overall well-being of individuals and communities.
- *Monitor and Evaluate Outcomes*: Legal aid providers should monitor and evaluate the outcomes of legal aid services to ensure that they meet clients' needs and achieve desired outcomes. This will allow for continuous improvement and the development of evidence-based practices.

Overall, implementing these recommendations will help improve the delivery of legal aid services, increase access to justice, and promote social justice and equality.

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UNDERSTANDING GENDER-BASED WAGE DISCRIMINATION IN THE REPUBLIC OF MOLDOVA

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Abstract: *This paper aims to analyse the legal framework surrounding gender-based wage discrimination in the Republic of Moldova. The Republic of Moldova has made significant progress in promoting gender equality and fighting discrimination, particularly through ratifying international conventions and adopting national legislation that mandates equal pay for equal work. However, despite these efforts, gender-based wage discrimination persists in various sectors and industries. This paper examines the legal instruments in place to address this issue, including the Constitution, labor laws, and international agreements. Furthermore, it explores the challenges in enforcing these laws and identifies potential gaps that hinder effective implementation. Through a comprehensive review of relevant legal provisions and case studies, this paper sheds light on the extent of gender-based wage discrimination in Moldova and provides recommendations to improve the legal framework and its enforcement mechanisms. Ultimately, understanding the legal framework is crucial for fostering gender equality and creating an inclusive society where all individuals can have access to fair and equitable employment opportunities.*

Key words: *gender-based wage discrimination, legal framework, equal pay for equal work, gaps.*

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1. Introduction

Gender-based wage discrimination continues to be a pressing issue in the Republic of Moldova, despite the country's efforts to promote gender equality and fight against discrimination. This paper aims to analyze the legal framework surrounding this issue, examining the Constitution, labor laws, and international agreements in place. By reviewing relevant legal provisions and case studies, this paper sheds light on the extent of gender-based wage discrimination in Moldova and identifies challenges in enforcing existing laws. Additionally, potential gaps hindering effective implementation are explored, with the goal of providing recommendations to improve the legal framework and its enforcement mechanisms. Ultimately, understanding the legal framework is essential for

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fostering gender equality and creating a society where all individuals have access to fair and equitable employment opportunities.

This paper begins by providing a background on the progress made by the Republic of Moldova in promoting gender equality and fighting discrimination. It highlights the country's commitment to international conventions and its adoption of national legislation that mandates equal pay for equal work. However, despite these advancements, gender-based wage discrimination remains a persistent issue in various sectors and industries.

To analyze the legal framework surrounding gender-based wage discrimination, this paper examines the Constitution of the Republic of Moldova and its provisions regarding equal rights and opportunities for men and women. It also delves into the labor laws that apply to the workplace, and the specific provisions that address wage discrimination based on gender.

In addition to domestic legislation, this paper investigates the international conventions and agreements ratified by the Republic of Moldova, which further strengthen the legal protections against gender-based wage discrimination. This paper examines the obligations imposed by these international instruments and their impact on the national legal framework.

An important aspect of this analysis is understanding the challenges in enforcing the existing legal framework. This paper considers factors such as the lack of awareness among employers and employees regarding their rights and obligations, insufficient monitoring and reporting mechanisms, and limited access to effective remedies for victims of wage discrimination.

Furthermore, this paper identifies potential gaps in the legal framework that hinder the effective implementation of measures to address gender-based wage discrimination. These gaps may include vague language in existing legislation, inadequate penalties for non-compliance, or the absence of comprehensive monitoring and reporting systems.

To provide a comprehensive understanding of the issue, this paper incorporates case studies that highlight real-life examples of gender-based wage discrimination in Moldova. These case studies serve to illustrate the extent and impact of the problem, as well as the challenges faced by victims in seeking redress.

Based on these findings, this paper concludes with recommendations to improve the legal framework and its enforcement mechanisms. These recommendations may include strengthening existing legislation, raising awareness about rights and obligations, enhancing monitoring and reporting mechanisms, and providing better access to remedies for victims of wage discrimination.

Ultimately, this paper seeks to contribute to the ongoing efforts in the Republic of Moldova to combat gender-based wage discrimination. By analyzing

the legal framework, identifying challenges, and proposing recommendations, this paper aims to promote gender equality and create an inclusive society in which all individuals have access to fair and equitable employment opportunities.

Moreover, this paper recognizes the importance of addressing the underlying societal and cultural factors that contribute to gender-based wage discrimination in Moldova. It delves into the stereotypes, biases, and norms that perpetuate unequal pay for men and women, and examines the role of education and awareness campaigns in challenging these ingrained beliefs.

In addition to legal and societal aspects, this paper acknowledges the economic implications of gender-based wage discrimination. It explores the impact on productivity, labor market efficiency, and overall economic growth, highlighting the need for equal pay as a means to foster sustainable development in Moldova.

2. Literature review

Gender-based wage discrimination has been a longstanding issue that has garnered significant attention from researchers and policymakers across the globe. This literature review aims to provide an in-depth analysis of the existing research on gender-based wage discrimination, focusing on its causes, consequences, and potential solutions.

Numerous studies have explored the factors contributing to gender-based wage discrimination. Socio-cultural norms and gender biases have been identified as key drivers of this phenomenon. Research has shown that societal expectations and stereotypes about gender roles often result in the undervaluation of women's work and skills, leading to lower wages compared to their male counterparts (Blau & Kahn, 2017). Moreover, occupational segregation, whereby women are concentrated in lower-paying industries and occupations, has also been found to contribute significantly to the wage gap (Altonji & Blank, 1999).

The economic implications of gender-based wage discrimination have also been extensively studied. Research suggests that pay inequality not only negatively affects individuals but also has broader macroeconomic consequences. For instance, it hampers productivity growth, reduces overall economic output, and limits the potential for economic development (OECD, 2012). Moreover, gender wage gaps can lead to income inequality, which has been linked to social and political instability (Bergmann & Bell, 2018).

Examining the legal framework surrounding gender-based wage discrimination is crucial to understanding its persistence. Many countries have implemented legislation to address pay inequality, such as the Equal Pay Act in the United States and the Equality Act in the United Kingdom. Despite these efforts, the effectiveness of legal measures in closing the gender wage gap remains questionable. Research indicates that enforcement mechanisms, transparency, and monitoring are crucial for the successful implementation of

equal pay regulations (Fagan et al., 2014). Furthermore, the presence of sector-specific wage-setting mechanisms, collective bargaining agreements, and pay transparency can also contribute to reducing wage differentials (Goldin, 2014).

Alongside legal measures, various proposed solutions and interventions have been suggested to combat gender-based wage discrimination. Affirmative action policies, such as quotas or targets for representation, have been used in numerous countries to increase female participation in leadership roles (Benschop & Doorewaard, 2012). Additionally, policies focused on promoting work-life balance, such as flexible working arrangements and childcare support, have been found to positively impact women's labor force participation and narrow the wage gap (Polachek & Xiang, 2015).

In conclusion, this literature review highlights the multidimensional nature of gender-based wage discrimination. It underscores the significance of socio-cultural norms, occupational segregation, and legal frameworks in perpetuating pay inequality. Moreover, it emphasizes the economic implications of wage discrimination and the potential solutions and interventions that have been proposed to address this issue. By gaining a comprehensive understanding of the underlying causes and consequences, policymakers can develop and implement effective strategies to promote gender equality and ensure equal pay for men and women.

Gender-based wage discrimination is a pervasive issue worldwide, including in the Republic of Moldova. This literature review seeks to analyze the legal framework surrounding gender-based wage discrimination in Moldova, examining relevant studies and publications on this topic.

Legal Framework of Gender-Based Wage Discrimination in Moldova: The legal framework concerning gender-based wage discrimination in Moldova comprises national legislation, international conventions, and European Union directives. A study by (Un Women 2021) emphasized the importance of compliance with international standards, such as the Convention on the Elimination of All Forms of Discrimination Against Women and the European Social Charter, which both advocate for equal pay for work of equal value.

Causes and Perpetuation of Gender-Based Wage Discrimination: Several factors contribute to the perpetuation of gender-based wage discrimination in Moldova. Occupational segregation is a widely cited factor (World Bank, 2018), with women often being concentrated in lower-paying sectors. Discrimination in hiring and promotion practices also plays a role, as demonstrated by (United Nations Moldova, 2021), who found evidence of bias against women in recruitment processes in Moldova.

Furthermore, the 'motherhood penalty' is a significant factor affecting women's wages. Studies (World Bank, 2018) highlight the negative impact of motherhood on women's career progression and earnings in Moldova. Negotiation

disparities have also been identified as a contributing factor, with women less likely to negotiate for higher wages compared to men (Katie Shonk, 2023).

Effects of Gender-Based Wage Discrimination: The economic consequences of gender-based wage discrimination in Moldova are significant. Research by (ILO, 2021) reveals that women in Moldova experience a substantial gender pay gap, leading to decreased lifetime earnings and a higher incidence of poverty. Moreover, the underutilization of women's skills due to discriminatory wage practices inhibits overall economic growth in the country (Un Women, 2020).

Effectiveness of Legal Measures: The effectiveness of legal measures in addressing gender-based wage discrimination in Moldova is a topic of interest. (Refworld, 2012) emphasizes the need for effective implementation of existing legislation, including rigorous monitoring and enforcement mechanisms. Establishing transparent and fair pay systems, as suggested by (USAID, 2022), is also crucial.

Proposed Interventions: To combat gender-based wage discrimination, various interventions have been suggested. These include promoting pay transparency, implementing family-friendly work policies, promoting gender equality in education and career choices, and enforcing equal opportunities in the workplace (UN Women, 2022).

3. Methodology

The methodology of this research involves the description of the approach and methods used to carry out the analysis of the specialized literature on gender-based salary discrimination. The following methodology was applied for this paper:

1. **Research Objective:** the literature review, which is to examine the existing research on gender-based wage discrimination, including its causes, consequences, and potential solutions.

2. **Research Question(s):** Following specific research questions will guide the literature review:

What are the main causes of gender-based wage discrimination? What are the economic consequences of pay inequality? What legal measures have been implemented to address gender wage gaps? The proposed interventions or solutions to combat wage discrimination?

4. Results

The legal framework surrounding wage discrimination based on gender in the Republic of Moldova is primarily regulated by the Law on Ensuring Equality and the Law on Wage.

1. Law on Ensuring Equality: The main legislation prohibiting discrimination on various grounds, including gender, is the Law on Ensuring Equality No. 121-XVI adopted in 2012³. This law provides a comprehensive framework for promoting equal rights and opportunities in all spheres, including employment. It prohibits both direct and indirect discrimination based on gender, including wage discrimination.

2. Law on Wage: The Law on Wage No. 847-XIV adopted⁴ in 2002 establishes the principles and general practices for determining wages in Moldova. While this law does not explicitly address gender-based wage discrimination, it provides a basis for assessing and comparing wages between employees with similar qualifications and responsibilities.

3. Labor Code: The Labor Code⁵ of the Republic of Moldova is a fundamental piece of legislation regulating employment relationships. It sets out the rights and obligations of both employers and employees, including provisions on equal pay for work of equal value. Article 10, paragraph 2, letters (g), of the Labor Code prohibits gender-based wage discrimination and states that men and women who perform the same work or work of equal value must receive equal remuneration.

4. National Action Plan on Gender Equality: The Republic of Moldova has also adopted a National Action Plan on Gender Equality⁶, which outlines specific measures and strategies to address gender inequality in various areas, including employment and wages. This plan aims to promote equal pay for equal work and reduce wage disparity between men and women.

5. Mechanisms for Enforcement: The Equality Council of Moldova, established under the Law on Ensuring Equality, is responsible for enforcing equal treatment and non-discrimination provisions. Individuals who believe they have experienced wage discrimination based on gender can file a complaint with the Equality Council. The Council has the authority to investigate and resolve cases, including ordering compensation for victims of discrimination.

6. Reporting and Monitoring: The Moldovan government periodically reports to international bodies such as the United Nations and the European Union on its efforts and progress in promoting gender equality and combating wage discrimination. These reports provide an overview of the legal framework, measures taken, challenges faced, and future plans in addressing wage disparities based on gender.

7. Collaboration with Civil Society Organizations: The government of Moldova actively collaborates with civil society organizations and women's rights groups to raise awareness about wage discrimination issues and advocate for

³ https://www.legis.md/cautare/getResults?doc_id=106454&lang=ro

⁴ https://www.legis.md/cautare/getResults?doc_id=110657&lang=ro

⁵ https://www.legis.md/cautare/getResults?doc_id=113032&lang=ro

⁶ <https://cancelaria.gov.md/sites/default/files/document/attachments/1-mmeps.pdf>

policy changes. These organizations play a crucial role in monitoring and reporting instances of wage discrimination, providing support to victims, and advocating for legal reforms.

8. Challenges and Future Outlook: Despite the existence of laws and regulations, gender-based wage discrimination continues to persist in Moldova. Limited awareness about rights and unequal power dynamics between employers and employees pose challenges to effective implementation and enforcement of these laws. Ongoing efforts are needed to strengthen awareness-raising initiatives, provide training for employers and employees, and ensure effective monitoring and enforcement mechanisms.

In conclusion, while the Republic of Moldova has established a legal framework to address wage discrimination based on gender, challenges still remain in fully enforcing and eliminating this form of discrimination. Continued efforts are necessary to raise awareness, improve enforcement mechanisms, and address underlying societal and cultural factors that contribute to gender-based wage disparities. It is crucial for the government, civil society organizations, and stakeholders to collaborate and implement comprehensive strategies to promote equal pay for equal work and create a fair and inclusive working environment for all individuals, irrespective of their gender.

Additionally, regular monitoring, evaluation, and updating of the legal framework and policies surrounding wage discrimination are essential to ensure its effectiveness and relevance in addressing contemporary issues and evolving labor market dynamics.

Some challenges in the application of the laws and gaps that prevent effective implementation of wage discrimination regulations in the Republic of Moldova include:

1. Lack of awareness: Many employers and employees may not be fully aware of their rights and obligations under the anti-discrimination laws. This lack of awareness can contribute to the persistence of wage discrimination based on gender.

2. Insufficient enforcement mechanisms: While there are legal provisions against wage discrimination, the enforcement mechanisms can be weak. There may be a lack of resources, expertise, and capacity within relevant government agencies responsible for enforcing anti-discrimination laws, which affects the effectiveness of implementation.

3. Limited data collection and monitoring: There is a lack of comprehensive data on wage disparities and gender-based discrimination at the enterprises of Moldova. Limited data collection and monitoring make it difficult to assess the extent of the problem and devise targeted strategies for addressing wage discrimination effectively.

4. Cultural norms and stereotypes: Deep-rooted cultural norms and gender stereotypes can perpetuate wage discrimination. Traditional gender roles and biases may influence employers' decisions regarding wages, leading to disparities based on gender.

5. Lack of transparency and accountability: Transparency in wage-setting processes is crucial for ensuring fairness and preventing wage discrimination. However, there may be a lack of transparency in how wages are determined, making it difficult to identify and address discrepancies based on gender.

6. Inadequate remedies and sanctions: If wage discrimination complaints are lodged, the available remedies and sanctions may not be sufficiently effective to redress the harm caused. This can discourage individuals from pursuing claims and contribute to the perpetuation of wage discrimination.

To address these challenges and gaps, it is important to focus on raising awareness, strengthening enforcement mechanisms, improving data collection and monitoring, challenging cultural norms and stereotypes, promoting transparency in wage-setting processes, and ensuring robust remedies and sanctions for wage discrimination cases.

What are the main causes of gender-based wage discrimination?

1. Occupational segregation: Gender-based wage discrimination is often exacerbated by the concentration of women in certain industries or occupations that are traditionally undervalued and underpaid [ROBU, 2023]. Women tend to be underrepresented in higher-paying sectors such as science, technology, engineering, and mathematics (STEM), and overrepresented in low-paying sectors such as healthcare, education, and social work [ROBU, Mariana 2020].

2. Discrimination in hiring and promotion practices: Women may face discrimination during the hiring process, where they are offered lower starting salaries compared to male counterparts with similar qualifications and experience. Similarly, women may encounter barriers to promotion, leading to a lack of upward mobility and stagnant wages. Biases in decision-making processes and unconscious biases can contribute to these disparities.

3. Motherhood penalty: Women often experience a wage penalty upon becoming mothers. This can be due to employers perceiving motherhood as a detriment to workplace productivity and commitment, leading to job downgrading or lower wage offers. The assumption that women's caregiving responsibilities will hinder their professional performance can contribute to a persistent wage gap.

4. Negotiation disparities: Studies reveal that women are less likely to negotiate for higher wages or assertively advocate for themselves compared to their male counterparts [ROBU, Mariana 2019]. This can result from societal expectations, stereotypes, and the fear of backlash or negative consequences for engaging in

salary negotiations. As a result, women may accept lower initial salary offers, perpetuating the gender wage gap over time.

5. Lack of transparency in pay systems: A lack of transparency in pay systems can enable wage discrimination to persist. When employees are unaware of the salaries of their colleagues, it becomes easier for employers to justify pay disparities between genders. The absence of clear and objective criteria for determining salaries can lead to subjective decision-making processes that may be biased against women.

6. Stereotypes and gender norms [Mariana, 2023]: Deep-rooted stereotypes and gender norms that assume men are more competent and valuable than women in certain jobs can contribute to gender-based wage discrimination. These biases can influence pay decisions, including the undervaluing of women's contributions and skills.

7. Limited access to and quality of education and training: Limited access to quality education and training opportunities can restrict women's ability to acquire the skills necessary for higher-paying occupations. This can perpetuate occupational segregation and limit women's earning potential.

8. Lack of effective legal and enforcement mechanisms: Inadequate legal provisions, weak enforcement mechanisms, and a lack of awareness about rights and protections can contribute to the persistence of gender-based wage discrimination. Limited resources for monitoring and enforcing equal pay laws may result in a lack of accountability for employers who engage in discriminatory practices.

It is important to note that these causes may vary in their significance and impact across different contexts and sectors. Identifying and addressing these causes is crucial to combating gender-based wage discrimination effectively.

What are the economic consequences of pay inequality?

Numerous studies [ROBU, 2020] have shown that gender-based wage discrimination leads to substantial economic disparities, including reduced lifetime earnings for women, increased poverty rates among female-headed households, and inhibited economic growth due to underutilization of women's skills and talents.

1. Low lifetime earnings for women: The gender pay gap means that women earn less over their lifetime compared to their male counterparts. This results in lower retirement savings, reduced access to financial resources, and increased financial insecurity for women in their later years. The impact of lower lifetime earnings also extends to reduced social security benefits and pensions, exacerbating gender disparities in retirement income.

2. Increased poverty rates among female-headed households: Pay inequality contributes to higher poverty rates among female-headed households. Women

who are the primary breadwinners often struggle to make ends meet, particularly if they face wage discrimination. Single mothers, in particular, face significant economic challenges, as they bear the full responsibility of supporting their families on lower wages.

3. Economic barriers to women's entrepreneurship [ROBU M., 2023]: Gender-based wage discrimination can limit women's economic empowerment and entrepreneurship. Lower wages and limited access to financial resources make it more difficult for women to invest in business ventures and access capital necessary for business growth. This hinders economic development and restricts the potential economic contributions of women entrepreneurs.

4. Increased reliance on social welfare programs: The gender pay gap contributes to higher levels of dependence on social welfare programs and government assistance. Women who earn less may require additional support, including subsidies for housing, childcare, and other necessities, placing a burden on public budgets and resources.

5. Underutilization of women's skills and talents: Pay inequalities can lead to the underutilization of women's skills and talents, as they may be discouraged from pursuing higher education, training, or careers in certain fields due to limited economic prospects. This results in a loss of potential productivity and innovation, hindering overall economic growth and development.

6. Diminished economic growth: Gender-based wage discrimination can hamper overall economic growth by restricting labor market efficiency and productivity. When qualified women are underpaid or excluded from certain industries and positions, it leads to a misallocation of human capital and reduces overall productivity potential. Closing the gender pay gap and ensuring equal access to employment opportunities can drive economic growth by fully utilizing the skills and talents of all individuals.

7. Increased economic inequality: The persistence of gender-based wage discrimination contributes to widening economic inequality. When women are systematically underpaid compared to men, it perpetuates existing wealth disparities and prevents equal access to economic opportunities. Inequality undermines social cohesion, creates social tensions, and hinders overall economic stability.

Addressing gender-based wage discrimination and promoting pay equality is essential not just for gender equality but also for achieving sustainable and inclusive economic development. It requires comprehensive policies and interventions that ensure equal pay for equal work, eliminate discriminatory practices, and promote women's economic empowerment.

What legal measures have been implemented to address gender wage gaps?

In the Republic of Moldova, several legal measures have been implemented to address gender wage gaps. These measures aim to promote gender equality in the labor market and combat wage discrimination. However, the effectiveness of these measures in reducing gender wage gaps may vary. Some of the key legal measures include:

1. Prohibition of wage discrimination: The Law on Ensuring Equality prohibits both direct and indirect discrimination based on gender, including wage discrimination. This legislation provides a legal basis for individuals to file complaints and seek remedies against wage discrimination.

2. Equal pay principle: The Law on Wage and the Labor Code state that employees should receive equal pay for work of equal value, regardless of their gender. This principle aims to prevent wage discrimination by ensuring that individuals in similar roles are compensated equally. However, the effectiveness of this principle may depend on the implementation and enforcement of the law.

3. Monitoring and reporting requirements: Employers are required to report on wage data and gender breakdowns, which allows for monitoring and analysis of gender wage gaps. The State Labor Inspectorate is responsible for monitoring compliance with labor legislation, including the principle of equal pay.

4. Gender auditing: Gender auditing is a voluntary measure aimed at identifying and addressing gender inequalities, including gender wage gaps, within organizations. This involves assessing wage structures, recruitment policies, and promotion practices for gender bias and discrimination.

5. Collective bargaining agreements: Collective bargaining agreements negotiated between employers and trade unions can include provisions that address gender wage gaps and promote equal pay. These agreements can establish mechanisms for wage transparency, evaluation of job positions, and monitoring of pay disparities.

The Republic of Moldova has made some progress in promoting gender equality and combating wage discrimination, although there are still challenges that need to be addressed. Here are some key areas of progress:

1. Legal framework: Moldova has developed a legal framework that promotes gender equality and prohibits wage discrimination. Laws like the Law on Ensuring Equality, Law on Wage, and the Labor Code provide the basis for protecting women's rights and promoting equal pay for work of equal value.

2. National Action Plan for Gender Equality: Moldova has implemented a National Action Plan for Gender Equality, which outlines specific goals, objectives, and actions to promote gender equality across various sectors. This plan includes measures to address gender wage gaps and enhance women's economic empowerment.

3. Gender-responsive budgeting: The government has started integrating gender-responsive budgeting principles into the national budgeting process. This

approach aims to analyze and address the different needs and priorities of women and men, including addressing gender wage gaps and promoting equal pay.

4. Gender auditing: Moldova has encouraged gender auditing as a voluntary measure for organizations to identify and address gender inequalities, including wage gaps. This helps organizations assess their wage structures, policies, and practices for potential biases and discrimination.

5. Awareness-raising and training: Efforts have been made to raise awareness about gender equality issues and combat gender stereotypes. Training programs and campaigns have been implemented to promote equal pay and address wage discrimination, targeting both employers and employees.

The proposed interventions or solutions to combat wage discrimination?

Based on the mentioned literature, the proposed interventions to combat gender-based wage discrimination include:

1. Pay Transparency: Implementing measures to increase transparency in the workplace regarding salary information can help identify instances of gender-based wage discrimination. This can include requiring employers to disclose salary ranges for different positions, conducting pay audits to ensure equal pay for equal work, and promoting salary negotiation training for employees.

2. Family-Friendly Work Policies: Providing flexible work arrangements, such as telecommuting options, job-sharing, and part-time or reduced-hour schedules, can help alleviate the burden faced by many women who juggle work and caregiving responsibilities. Additionally, offering paid parental leave, childcare subsidies, and on-site childcare facilities can support working parents and promote gender equality in the workplace.

3. Affirmative Action: Adopting affirmative action policies can help address gender-based wage disparities by actively identifying and rectifying imbalances in employment opportunities and promotion prospects. This can involve setting hiring and promotion targets for women, implementing diversity training programs, and creating mentorship and sponsorship programs to support female employees.

4. Cultural and Attitudinal Changes [ROBU, Mariana 2023]: Promoting a workplace culture that values gender equality and challenges traditional gender norms is crucial. This can be achieved through awareness campaigns, diversity training, and workshops that address unconscious bias and promote inclusive practices. Encouraging male participation in gender equality initiatives and promoting women's leadership roles can also help shift attitudes and create a more equitable work environment.

5. Legislative and Policy Changes: Advocating for stronger legislation and policies that protect against gender-based wage discrimination is essential. This

can include strengthening equal pay laws, enforcing penalties for noncompliance, and supporting advocacy organizations that work towards gender equality.

6. Education and Awareness: Investing in educational programs that focus on gender equality and women's empowerment can help challenge societal norms and promote equal opportunities. This can involve incorporating gender equality topics into school curricula, organizing awareness campaigns in workplaces, and supporting research and data collection on gender-based wage discrimination.

5. Conclusion and Recommendations:

1. Strengthen the legal framework: Moldova should amend existing laws related to labour and employment to explicitly prohibit gender-based wage discrimination. This should include clearer definitions of discrimination, equal pay for work of equal value, and the appropriate remedies and compensation for victims of wage discrimination.

2. Raise awareness and provide training: The government should launch awareness campaigns targeting both employers and employees to educate them about gender-based wage discrimination and its negative impact on individuals and society as a whole. Training programs should also be provided to human resources professionals and managers to ensure they understand their obligations under the law and can effectively promote pay equity.

3. Enhance enforcement mechanisms: The government should establish specialized divisions or agencies responsible for enforcing equal pay legislation, including the investigation and prosecution of wage discrimination cases. These divisions should be adequately funded and staffed with well-trained personnel to ensure effective enforcement.

4. Implement stronger penalties: To deter employers from engaging in wage discrimination, authorities should impose significant financial penalties on those found guilty of such practices. The penalties should take into account the severity and frequency of the discrimination, ensuring they serve as an effective deterrent.

5. Establish reporting mechanisms: Moldova should create easily accessible reporting mechanisms for victims of wage discrimination to seek redress. This could include designated helplines, email addresses, or online forms where individuals can report instances of discrimination. Whistle blower protection should also be guaranteed to encourage individuals to come forward without fear of retaliation.

6. Regularly monitor and report on wage disparities: The government should conduct regular and systematic studies to monitor wage disparities between men and women in different sectors and occupations. These studies should be publicly available to raise awareness and provide a basis for evidence-based policy decisions.

7. Promote gender diversity in leadership positions: Efforts should be made to increase the representation of women in decision-making positions, both within the public and private sectors. This can be achieved through the implementation of quotas or targets for women's representation on corporate boards and in senior management positions.

Enforcement Mechanisms:

1. Strengthen the capacity of labour inspectors: Labour inspectors should receive comprehensive training on gender-based wage discrimination and its detection. They should be equipped with the necessary resources and authority to conduct thorough investigations into complaints and to impose sanctions on non-compliant employers.

2. Establish a complaint resolution process: A clear and accessible process for filing complaints related to wage discrimination should be established. This process should outline the steps involved, the timelines for resolution, and the available remedies for victims.

3. Collaboration with civil society organizations: The government should actively collaborate with civil society organizations that specialize in gender equality and women's rights to enhance the effectiveness of enforcement mechanisms. This can include joint campaigns, information sharing, and capacity-building efforts.

4. Encourage transparency and equal pay reporting: Companies should be required to disclose information regarding their pay practices to ensure transparency and accountability. This information should include gender-disaggregated data on salaries and benefits, allowing for the identification of any gender-based wage disparities.

5. Strengthen international cooperation: Moldova should collaborate with international organizations and neighbouring countries to share best practices and experiences in combating gender-based wage discrimination. This cooperation can facilitate the exchange of knowledge, resources, and expertise to strengthen enforcement mechanisms and promote gender equality.

6. Establish a feedback mechanism: Regular evaluation and feedback mechanisms should be established to assess the effectiveness of the implemented recommendations and enforcement mechanisms. This will help identify any gaps or areas for improvement and ensure continuous progress in eliminating gender-based wage discrimination.

To ensure the effectiveness of the proposed recommendations, this paper emphasizes the need for multi-stakeholder collaboration. It calls for the involvement of government agencies, employers' associations, trade unions, civil society organizations, and international partners in implementing and monitoring the necessary changes. This collective effort will create a supportive environment

for promoting gender equality and combating wage discrimination in all sectors of Moldova's economy.

Furthermore, this paper recognizes the importance of data collection and analysis in understanding the scale and scope of gender-based wage discrimination. It proposes the establishment of a comprehensive database that captures information on wage disparities, occupational segregation, and other relevant indicators. This data will provide accurate information for policy development, monitoring progress, and evaluating the effectiveness of interventions.

Lastly, this paper emphasizes the importance of continuous evaluation and improvement. It suggests periodic assessments of the implemented measures and their impact on reducing gender-based wage discrimination. Lessons learned from these evaluations will inform future policy reforms and help Moldova move closer towards achieving gender equality in the labor market.

In conclusion, this comprehensive analysis of the legal framework, challenges, and recommendations related to gender-based wage discrimination in Moldova aims to contribute to the ongoing efforts towards a more equitable society. By addressing the legal and societal factors, promoting economic benefits, fostering collaboration, and emphasizing data-driven evaluation, Moldova can take significant steps towards ensuring equal pay for equal work and creating a fair and inclusive society for all its citizens.

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THE CONTRIBUTION OF THE HUMAN FACTOR IN THE EFFICIENCY OF THE OPERATIONAL MANAGEMENT OF ELECTRICAL NETWORKS (case study based on "Red-Nord" JSC materials)

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Abstract: *the present study represents a theoretical-methodological foray into the possibilities of making the operational management of electrical networks more efficient based on the exploitation of the human factor. Just as the operative management of electrical networks constitutes an activity of maximum responsibility, where the contribution of the human contractor contributes to ensuring the quality of the services provided, we believe that the main factor in the efficiency of the operative management of electrical networks is the development of the human potential of the employees. In this context, we highlight the purpose of the research, which is aimed at identifying the possibilities of making the operational management of electrical networks more efficient within the "Red-Nord" JSC company. Moving forward in the complex research approach, we tried to solve the research problem which is represented by possibilities for improving operative management through the development of the human factor. The research methodology focused on the use of multiple research methods, such as: analysis, synthesis, scientific abstraction, induction, deduction, abduction, qualitative research based on the case study. The paper begins by reviewing the conceptual approaches regarding energy management, as well as the possibilities for making energy management more efficient. Moving forward in the research approach, I researched the personnel indicators of the company "Red-Nord" JSC, the impact of capitalizing on the human factor on the efficiency of the analyzed enterprise was evaluated. As a result, the main changes that have occurred since 2014 within the company have been analyzed, through the lens of the effective capitalization of the human factor and the implementation of information technologies that allowed the optimization of the Central Dispatch Point (PDC) service that ensures the operative management of electrical networks within the company. At the same time, solutions to increase the efficiency of the operational management of electrical networks within were identified for "Red-Nord" JSC which boils down to the reorganization of the PDC service of the company, the merging of LVDP (Low Voltage Dispatch Point) which will contribute to increasing the efficiency of operative management by implementing advanced information systems within the enterprise.*

Key words: *electricity, energy management, human factor, human capital, information technologies*

JEL: L26, M1, Q40, Q42, Q47

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1. Introduction

The “Red-Nord” JS Company is the distributor of electricity from the northern part of the Republic of Moldova, it is a leader in the modernization and optimization of distribution processes, as well as in the digitalization of processes in order to increase the quality of the services offered, to increase customer satisfaction with the company’s services. The efficiency and optimization of the operative management of electrical networks has been the main concern of the company for the last 10 years, as it has been looking for effective solutions to connect the operative management of electrical networks to European standards.

According to researchers G. May, I. Barletta, B. Stahl, M. Taisch, 2015, energy management is defined as “a combination of industrial methods applied in business management to help make optimal use of energy resources for the efficient processing of tasks” [7, pp. 48-51].

On the other hand, M. Melo, L. Bueno, S. Campello, 2012, point out that energy management represents an evaluative perspective of the management of the energy system and it is important to evaluate and produce the efficient use of energy in order to maximize profits as well as to enhance competitive positions, through organizational measures and optimization of energy efficiency in the process [8, pp. 10-11].

In the same context, R. Kannan, W. Boie, 2003, appreciate that an efficient energy management is an essential tool both for saving energy costs and limiting the impact on the environment. The decisive factor for the effective implementation of energy efficiency is a proper energy management [6, pp. 946-948].

According to researchers L. Young Eal, L., K., Kyoo-Kun, a good management of energy consumption saves energy itself, on the one hand, as well as it is necessary to achieve the majority of technical energy-saving measures. Energy management, from any perspective approached, deserves attention from a triple perspective: financial, social, and environmental [17, pp. 1151-1154].

The continuous increase in the demand for energy resources on the international market has deepened the problem of efficient management of energy consumption, on the agenda of most states of the world. In terms of business, energy is vital as one of the fundamental input elements in almost every sector. Therefore, energy costs directly affect the profitability of an enterprise.

It is clear that countries that can keep their energy costs low offer their companies a competitive advantage [8, p. 12]. In this context, there is a strong relationship between the security of electricity supply of countries and their national security. The strong relationship means that when there is an inadequacy of energy supply, economic and political stability will deteriorate concurrently.

2. Managementul gestiunii operative în cadrul companiei

Throughout its activity, the “Red-Nord” Joint Stock Company went through multiple challenges, overcame and solved problems, showing professionalism on the energy market in the Republic of Moldova.

One of the most important departments of the company is the *Central Dispatch Point service (CDP)*, which ensures the operative management of the electrical networks within the company. A significant contribution in ensuring the increase in the performance of the “Red-Nord” JST was provided by the company’s dispatch service, which ensures the efficiency of the operative management of the electrical networks. Thus, the main object of activity of the dispatch service of the “Red-Nord” JSC is the operative management of the 10/0.4kV electrical networks.

The operational activity carried out by the employees of the dispatch service consists in monitoring the set of lines, installations, and electrical equipment 10/0.4kV, which starts from the departures from the electrical stations of “Moldelectrica” SE to the customer’s delimitation final point. Until 2014, the structure of the dispatch service was a complex one where 105 employees were involved, 80 dispatchers and 15 senior dispatchers who ensured the operative management of the company’s electrical networks. Schematically, the structure of the CDP service is shown in figure 1.

Later, major changes took place within the company, a restructuring and optimization of the operational management of electrical networks according to the European operational management models. Thus, the dispatching service was restructured from 15 territorial dispatching subdivisions of the company in which the main dispatcher and 5 other dispatchers worked in each subdivision, major changes were made and 3 CDPs (Central Dispatch Points) persisted in which 5 people work.

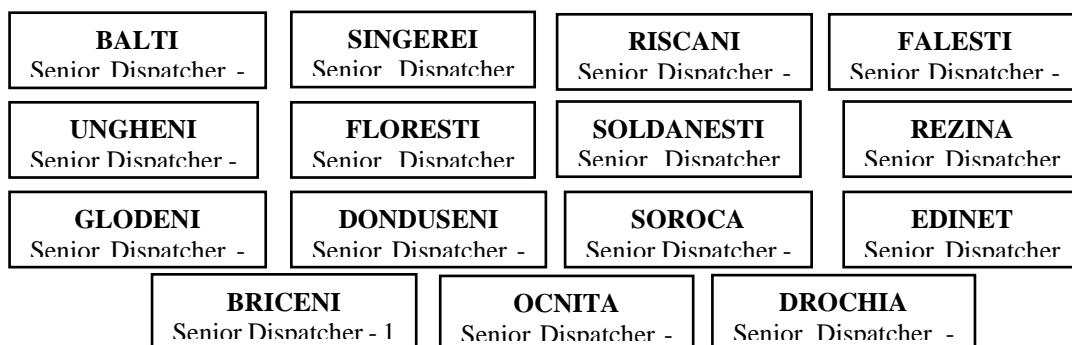


Figure 1. The structure of the dispatch service until the reorganization
 Source: developed based on data from the “Red-Nord” JSC CDP service

At the same time, a 24/24 Customer Service Group (Call-center) was created to serve the company’s customers and respond to their requests by phone. Until

the implementation of the reforms, 15 local dispatch points operated within the company, for each branch, where 5 dispatchers were involved in shifts and the superior dispatcher, a total of 90 dispatchers.

As a result of these optimizations, the structure of the service was reorganized, and the number of employees was reduced, with only 60 employees being trained in the activity of the PDC service. The optimizations had a significant economic impact on the company’s activity. In addition to this, the quality of electricity distribution services and the speed of service to the company’s customers also increased.

Table 1. Human resources of the CDP service within “Red-Nord” JSC

Position	No. of employees
CDP Chief	1
Dispatcher on functional regimes	1
CDP dispatches in 12-hour shifts	15 (3 CDPs of 5 people each)
LVDP Chief	3 (Balti, Ungheni, Donduseni)
LVDP dispatches in 12-hour shifts	15 (Balti, Ungheni and Donduseni of 5 people each)
LVDP dispatches with 8-hour shifts	12
Senior customer information officer “24/24 Customer Service Group”	1
Customer information officer “24/24 Customer Service Group”	12
Total employees:	60

Source: developed based on the activity reports of the “Red-Nord” JSC

As a result of the reorganization, currently, within the CDP service of the “Red-Nord” JSC 60 people are employed, including dispatchers and employees from the 24/24 customer service group. The competence of employees from the dispatch service of the “Red-Nord” JSC depends, in large part, on the efficiency of the electricity supply to the final consumers, the lack of electricity interruptions, the quick resolution of technical problems arising in the electricity networks. Thus, dispatch service employees are competent people, attend training courses and develop their electrical network management skills.

With the creation of the Central Dispatch Service, the “24/24h Customer Service Group” (Call center) was also established, where 12 employees work in 12-hour shifts and, depending on the weather conditions and other factors, can simultaneously work up to 6 employees but not less than two employees per shift.

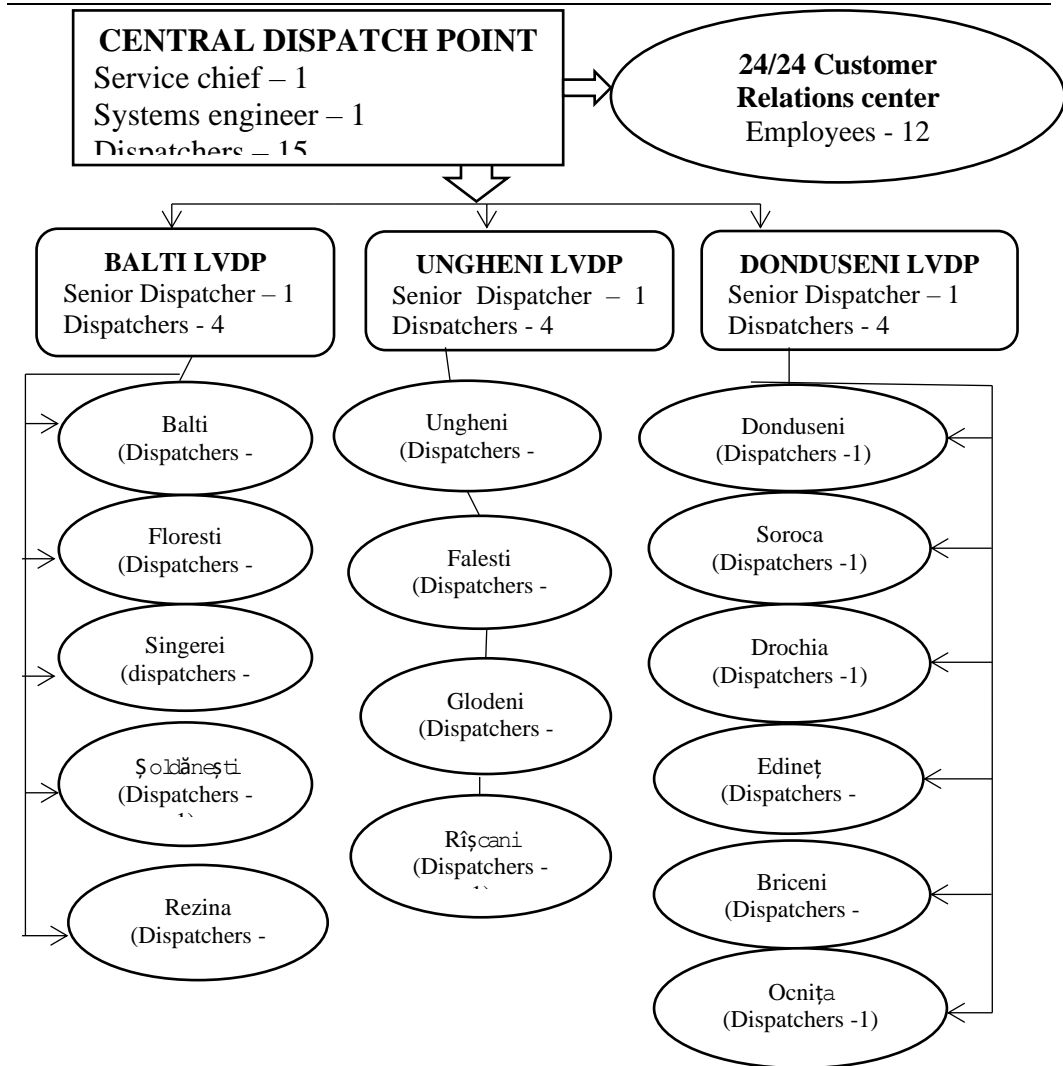


Figure 2. The structure of the dispatch service after the reorganization

Source: developed based on data from the “Red-Nord” JSC CDP service

The main factors that led to the organization of the “24/24 Customer Service Group” with the aim of making the activity more efficient in serving customers, are the following:

- ✓ centralization of some activities carried out in order to improve the efficiency of human resources;
- ✓ implementation of the “Non-Stop” telephone service (Call-Center) for receiving information about deviations, related to the distribution of electricity;
- ✓ implementation of the telephone service for handling customer complaints;

- ✓ notifying non-domestic customers by phone about the date and duration of the scheduled interruption of electricity supply;
- ✓ implementation of a new high-performance computer system for processing customer calls

3. The human factor: the premise of operational management efficiency

The human resource is the main resource that contributes to ensuring added value within companies, it is the creative, motivated resource that transforms all other resources within a company. The human potential of the company's employees is the most valuable asset of organizations operating in the 21st century, characterized by dynamism, turbulence, rapid changes that require employees to adapt to the new environment, to identify quick solutions to overcome market imbalances.

Thus, human resources are the success factors that, thanks to their skills, competences, potential, are meant to help companies survive on the market, or even become competitive.

Energy company employees are the most valuable resource that helps companies achieve their goals as well as increase their recorded economic performance. Safeguarding the continuity of electricity supplies is guaranteed, on the one hand, by the quality and functionality of the electricity distribution equipment, as well as by the competence of the employees in the operational management department, who ensure the functionality and continuity of electricity supplies.

Thus, we intend to analyze the human potential and the personnel indicators of all the employees of the “Red-Nord” JS company, on the one hand, as well as the CDP service, on the other.

Next, we will schematically represent the results obtained from the analysis of the dynamics of human resources within the “Red-Nord” JS company, as well as the personnel indicators within the enterprise in the period 2018-2022. At the same time, we propose to carry out an analysis of the dynamics and structure of the personnel within the CDP service within the “Red-Nord” JSC. The dynamics of employees of “Red-Nord” JSC and the CDP service, for the period 2018-2022, is represented in Figure 3.

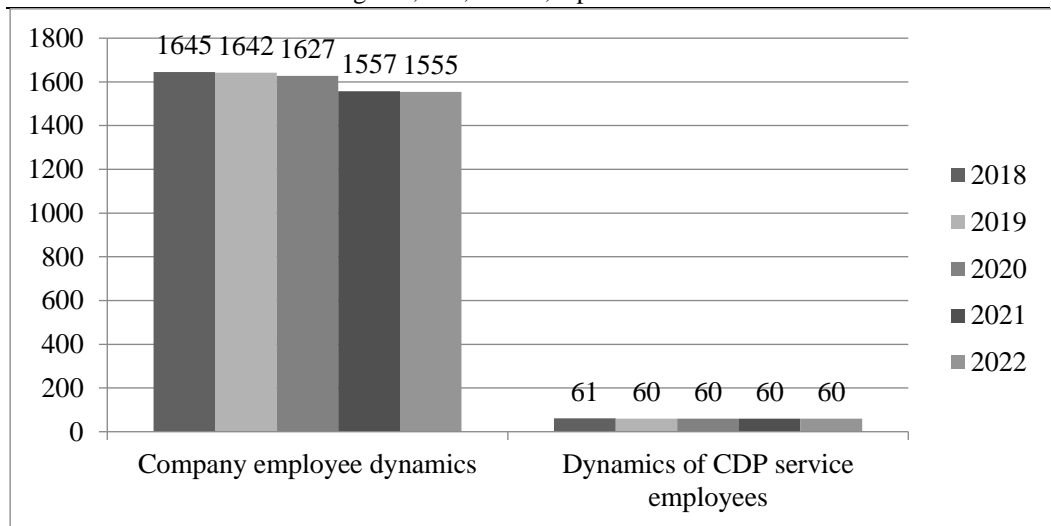


Figure 3. The dynamics of the employees of the “Red-Nord” JSC and the CDP service, 2018-2022, employees

Source: developed based on the research results of the “Red-Nord” JSC activity reports

Analyzing the data, we can see a slight decrease in the total number of employees within the “Red-Nord” JSC for the period 2018-2022. Although, we notice insignificant decreases, from 1645 employees in 2018 to 1555 employees in 2022. Thus, a slight decrease in the number of employees in 2022 by approximately 6% compared to 2018 can be seen. The trend of decrease in the number of employees is fueled by the optimization of positions that were carried out by the human resources department within the enterprise in order to increase the performance of human resources.

On the other hand, analyzing the dynamics of employees within the CDP service, we can observe an insignificant decrease in the number of employees in the period 2018-2022, from 61 in 2018 to 60 employees in 2022, or by approximately 0,02%. The slightly decreasing trend is based on the optimization of a position in the PDC service, in 2018.

The dynamics of the indicators of employee migration within the “Red-Nord” JSC and within the CDP service are summarized in Table 2.

Table 2. The dynamics of the human resources migration within the “Red-Nord” JSC, 2018-2022, employees

Employee migration		Years					Share, (%)				
		2018	2019	2020	2021	2022	2018	2019	2020	2021	2022
Employed staff	company	109	144	96	98	160	6,5	8,8	5,9	6,3	10,3
	CDP Service	4	2	2	3	1	6,6	3,3	3,3	5	1,7
Resignations	company	116	111	127	168	160	7,3	6,8	7,80	10,8	10,3
	CDP Service	5	3	2	3	1	8,2	5	3,3	3,3	1,7
Input coefficient	company	0,07	0,09	0,06	0,06	0,1	X	X	X	X	X
	CDP Service	0,07	0,03	0,03	0,05	0,02	X	X	X	X	X
Output coefficient	company	0,07	0,07	0,08	0,11	0,1	X	X	X	X	X
	CDP Service	0,08	0,05	0,03	0,05	0,02	X	X	X	X	X
Coefficient of total migration	company	0,14	0,16	0,14	0,17	0,21	X	X	X	X	X
	CDP Service	0,15	0,08	0,07	0,1	0,03	X	X	X	X	X
Total employees	company	1645	1642	1627	1557	1555	100	100	100	100	100
	CDP Service	61	60	60	60	60	100	100	100	100	100

Source: developed based on the activity reports of the “Red-Nord” JSC

According to the data in the table, we observe an increasing trend of new personnel hired by the enterprise in the period 2018-2022. Thus, during this period, there is a positive dynamic in the number of employees from 109 employees, in 2018, to 160 employees, in 2022. As far as we can see, the “Red-Nord” JSC is recruiting specialists to fill the vacant positions, released as a result of employee resignations. On the other hand, analyzing the dynamics of employment within the CDP service, we can observe a reduction in the number of employments within the department in the period 2018-2022, from 4 employments in 2018 to 1 employment in 2022. The results demonstrate a stability of the number of employees who provide added value to the company in increasing the recorded performances.

At the same time, we observe a positive dynamic in employee resignations, in the period 2018-2022. Thus, if in 2018, 116 employees resigned, then in 2022,

160 employees resigned. The reasons for resignations are very different, such as going abroad, family problems, etc. Analyzing the dynamics of resignations registered at the PDC service, we can observe a negative dynamic, from 5 resignations in 2018 to a single resignation in 2022. The results obtained point to a high rate of staff stability within the CDP service.

Just as in the period 2018-2022 there is an increase in the dynamics of hiring and resignations, the indicators of the movement of personnel are also increasing. Consequently, if the entry coefficient recorded the value of 0.07 in 2018, then in 2022, it reached to register the value of 0.1, or registering an increase of 0.03. On the other hand, we can notice an increase in the coefficient of outputs, where in the analyzed period we see an increase of 0.3 from 0.6 in 2018 to 0.1 in 2022. And the coefficient of the total movement of employees in the analyzed period increases from 0.14 in 2018 to 0.21 in 2022, therefore increasing by 0.07. On the other hand, analyzing the coefficient of entries within the CDP service, in the analyzed period, we see a downward trend for the analyzed period from 0.07 to 0.02. The coefficient of outputs within the CDP service is also decreasing for the analyzed period from 0.08 to 0.02. At the same time, the coefficient of the total migration of employees within the CDP service is also decreasing, for the entire analyzed period, from 0.15 to 0.03.

4. Energy efficiency indicators

Thus, the restructuring of the operative management of electrical networks within the “Red-Nord” JSC allowed the company to obtain multiple advantages, shown in Figure 4.

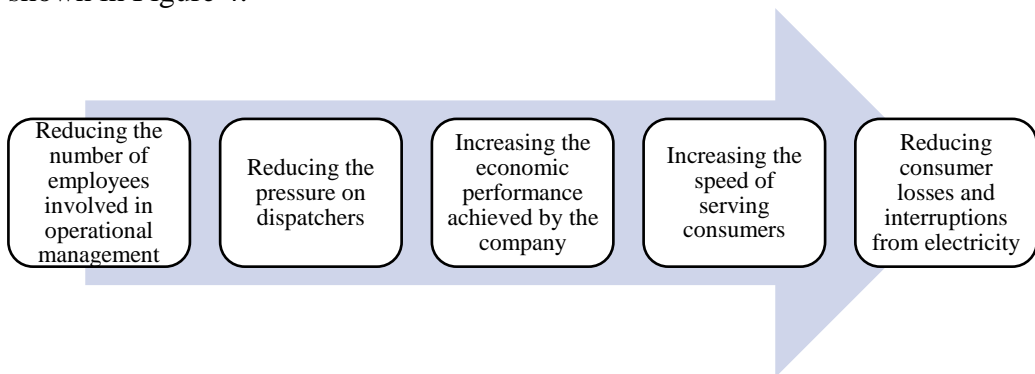


Figure 4. The advantages generated by the restructuring of the operative management of electrical networks within the “Red-Nord” JSC and the implementation of information technologies.

Source: developed by the author based on company data

From the data in the figure, we can see that, as a result of the implementation of information technologies in the dispatching service within the

“Red-Nord” JS company, there have been beneficial changes in the company’s activity, offering the possibility of obtaining economic performance of 30%, compared to the period before the restructuring.

Next, we have shown in Table 3, the dynamics of the investments made by the operators of the electricity distribution system, in dynamics for the period of 2017-2021.

Table 3. Investments of system operators and electricity suppliers, 2017-2021, thousands of lei

Companies/Years	Planned investments					Investments made			
	2017	2018	2019	2020	2021	2017	2018	2019	2020
“Moldelectrica” SE	306593	392556	275848	196037	302332	66254,1	39388	380392	136881
FCE “Premier Energy Distribution” JSC	302213	385459	310425	330647	310472	273159,9	340844	259710	321136
“Red- Nord” JSC	226494,75	227902	266636	272089	297075	161976,15	197352	255217	236834
FCE “Premier Energy” LLC	1661,3	1780	1103	3407	1223	1435,6	1382	454	3455
“Furnizarea Energiei Electrice Nord” JSC	719,01	294	281	119	576	201,5	195	202	66

Source: ANRE activity reports for 2017-2021

Analyzing the data in Table 3, we can see that the investments made by the system operators of the electricity suppliers are increasing, for the analyzed period of 2017-2021. The “Red-Nord” JSC has registered an increasing investment trend. Thus, the value of the planned investments for 2017 was 226,494.75 lei, while in 2021, the value of the indicator was 272,089 lei, or an increase of approximately 31%.

On the other hand, if we analyze the value of investments made by the “Red-Nord” JSC for the period of 2017-2020, then we observe an oscillating trend of the investments made. Thus, if during the period of 2017-2019 there is an increase in the investments made by the “Red-Nord” JSC, from 161976.15 lei, in 2017 to 255217 lei, in 2019, then, in 2020, the value of the indicator registers a decrease, reaching the value of 236 834 lei. Most of the investments were directed to the technical maintenance of the equipment and the modernization of the electricity distribution lines, as well as to the introduction of new information technologies that allowed the company to reduce its electricity losses, optimize processes, as well as reduce the duration of electricity interruptions for domestic consumers.

The quality of the operative management of the electrical networks of the “Red-Nord” JSC can be appreciated by observing the duration of unscheduled interruptions, reducing the number of compensations paid by the company to its consumers. The synthetic data of the quality indicators of the operative management of electric networks is shown in Table 4.

Table 4. Ensuring continuity of service to Moldovan OSD consumers, 2017-2020

	FCE “Premier Energy Distribution” JSC				“Red-Nord” JSC			
	2017	2018	2019	2020	2017	2018	2019	2020
Total number of scheduled outages	18442	14687	4431	13645	14178	10656	10841	4 431
Exceeding the allowed duration	313	116	24	20	73	77	159	12
Number of compensations paid	4	1	29	6306	0	15603	14850	1238
The number of compensations paid to final consumers (automatically), lei	2921	5073	23102	94806,72	0	0	0	53517,98

Source: elaborated based on the ANRE Reports, 2017-2020

According to the data in the table, we notice that the “Red-Nord” JSC performs an efficient operative management, given the fact that the value of the quality indicators indicates significant progress registered by the company through the dispatch service in the period 2017-2020. Thus, performing a comparative analysis of the two electricity distribution operators from the Republic of Moldova, “Red-Nord” JSC, in the period 2017-2020, recorded clearly superior values of quality indicators compared to the company FCE “Premier Energy Distribution” JSC.

Thus, within the “Red-Nord” JS company, in the period of 2017-2020, the total number of scheduled outages has been significantly reduced, from 14178 scheduled outages made by the company in 2017 to 4431 outages in 2020. So, we see a reduction of approx. 300% of scheduled outages. Making a comparative analysis, with the electricity distributor FCE “Premier Energy Distribution” JSC, the value of the indicator in 2020, is 13645 interruptions, or 300% higher than that of the “Red-Nord” JS company.

From the total number of scheduled disconnections/ outages, within the “Red-Nord” JSC, at the level of 2020, only 12 disconnections exceeded the allowed duration, while within the FCE “Premier Energy Distribution” JSC the

number of outages that exceeded the allowed period was 20, or 66% more than the “Red-Nord” JSC.

Another significant indicator, denoting the speed of solving problems of electricity consumers by the dispatch service, is the number of compensations paid by the company. If we were to make a comparative analysis, then we can observe that, for the analyzed period, the number of compensations paid to consumers of the “Red-Nord” JSC follows a downward trend in the period of 2018-2020, from 15,603 compensations paid by the distribution operator, in 2018, to 1,238 compensations paid, in 2020.

Compared to “Red-Nord” JSC, the operator of the electricity distribution system FCE “Premier Energy Distribution” JSC, in the period of 2018-2020, records an increasing trend of compensations paid, from 1 paid compensation, in 2018, to 6306 compensations paid, in 2020. Thus, the FCE “Premier Energy Distribution” JS company paid, in 2020, 5 times more compensations to its consumers, compared to the “Red-Nord” JS company.

On the other hand, if we analyze the amount of compensation paid by the operators of the electricity distribution system in the Republic of Moldova, in dynamics, we can mention that the operator FCE “Premier Energy Distribution” JSC registers a positive dynamic of the values recorded for this indicator, from 2921 lei, in 2017, to 94806.72 lei, in 2020. In the same context, the “Red-Nord” JS company, for the analyzed period, recorded clearly superior results, compared to the FCE “Premier Energy Distribution” JSC. Thus, during 2017-2019 the “Red-Nord” JSC did not pay any compensation, while in 2020, it paid compensations in the amount of 53517.98 lei, 77% less than the distribution system operator FCE “Premier Energy Distribution” JSC.

The efficiency of the dispatch service within the “Red-Nord” JSC company can be evaluated through the quality indicators of the operative management of electrical networks, registered by the company (Table 5).

Table 5. Quality indicators recorded by OSD, 2017-2020

	FCE “Premier Energy Distribution” JSC				“Red-Nord” JSC			
	2017	2018	2019	2020	2017	2018	2019	2020
Total Scheduled Outages	16230	14687	11402	11933	10441	10656	10841	11140
Unannounced scheduled outages	0	0	14	58	0	0	0	0
Requests for the release of the approval for connection to the electrical network of	6727	6741	9243	8016	3921	3161	3497	4052

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distribution of electrical installations of potential final consumers (10 days)								
Requests for the release of the approval for connection to the electrical network of power plant distribution (30 days)	121	136	318	514	0	11	149	176
Number of connection requests	11422	12569	12840	15501	2509	2342	1795	2287
Number of final consumers connected within more than 2 days	15	12	4	0	0	0	0	0
Compensation amount, lei	576,13	243	353	0	0	0	0	0
Total number of consumers reconnected	11480	9740	14349	6919	10848	10526	8091	6947
Number of consumers reconnected within more than 2 calendar days	5	3	5	3	0	0	0	0
Amount of compensation paid, lei	78,25	173	207	601,2	0	0	0	0

Source: ANRE Reports, 2017-2021

Analyzing the data in Table 5, we can see that the electricity distribution system operator FCE “Premier Energy Distribution” JSC registered an increasing trend of scheduled unannounced outages, from 0, recorded in 2017, to 58 unannounced outages, recorded in 2020. On the other hand, the “Red-Nord” JS company, for the entire analyzed period, did not register any unannounced disconnections, in the period of 2017-2020.

In the same context, we can mention that the electricity distribution system operator FCE “Premier Energy Distribution” JSC registered an increasing trend of compensations paid, in the period 2017-2020. If in 2017, the operator paid 78.25 lei in compensation to its consumers, then in 2020, the value of the indicator reached 601.2 lei. On the other hand, the system operator the “Red-Nord” JSC, for the entire analysis period, did not pay compensation for its consumers. This denotes the seriousness, the promptness of the reaction of the “Red-Nord” JSC to

consumer calls and the promptness of the actions taken by dispatchers from the company's operational management system.

Following the research carried out, we can mention that through the reform of the dispatching service, the implementation of information technologies in the operative management of electrical networks within the “Red-Nord” JSC, the company managed to become more efficient, competitive and react faster to the requests received from its consumers.

5. Conclusion

Following the research carried out in this paper, we highlight the following directions for improving the operative management of electrical networks within the “Red-Nord” Joint Stock Company:

a. *Reforming the operational management by means of dispatch service 0,4kV* - This extensive reform will also help reorganize the Central Dispatch Point and Low Voltage Dispatch Points. Currently, a large volume of work for the LVDP dispatcher is the redirection of the teams according to the requests received from consumers and their registration in the operational register, the SAIDI register, etc. After the implementation of the software, the teams in the field must have direct access to the program with requests and depending on the geographical location, but also after the waiting time of the requester (which currently must not exceed 6 hours), the algorithm will propose the next request for execution. On the way to the next request, the electrician who will not be behind the wheel will check the type of typical work that was performed and the materials that were needed to eliminate the disturbance. This would allow the automatic preparation of monthly work execution and material scrapping reports. After the implementation and testing of the software, it will be possible to reform the LVDP in several stages:

- liquidation of LVDP from the offices in Briceni, Drochia, Edinet, Falesti, Floresti, Ocnita, Riscani, Rezina, Singerei and Soroca;

- unification of the low voltage dispatch point in the Balti office, with the physical relocation of Donduseni and Ungheni LVDPs in this office with the following advantages:

- LVDP will be led by one senior dispatcher, two superior dispatchers will be optimized.

- During the night shifts, weekends, and holidays, when the weather conditions allow, there will be two dispatchers on duty and in critical situations it will be possible to increase the number of LVDP dispatchers to 4 to cope with natural weather conditions.

- Taking into account the fact that the technological process of routing through the low-voltage dispatcher is similar and the configuration of the

operative schemes are similar, it will be possible to replace the dispatchers equally.

• Following the change in the organizational chart, but also the physical location outside the offices, it will exclude any emission in the dispatcher's work.

- The unification of CDP with the LVDP and the formation of 4 mixed dispatches of 4x5 people each. The given reform will allow to optimize a senior dispatcher and 2x5 LVDP dispatchers.

b. *The implementation of SCADA 0,4V* – due to the installation of smart meters, the implementation of SCADA 0.4V will provide the possibility to send and record data directly from the site, a fact that will make the work of technicians more efficient, as well as allow the monitoring of the electricity quality indicators.

c. *The implementation of the informational program INTELTEH* - Information system for technical records that allows planning and recording of the scheduled activities, work permits, etc. and interconnection with other SCADA/OMS information systems, electricity records, processing requests received at the 24h Service desk, etc. The implementation of the program will offer multiple possibilities for the efficiency of the CDP service such as:

- ❖ Planning scheduled works/activities in the offices (10 and 0,4kV);
- ❖ Approving the works and their control by the head of the technical group of the district office and the CDP on hand engineer;
- ❖ Advance notification by the 24h Service of end consumers about disconnections, according to the works introduced and confirmed;
- ❖ Retrieving information from the SCADA/OMS system and recording actual disconnections in the database;
- ❖ Calculation (as necessary) of compensation in case of non-compliance with the provisions of the Electricity Quality Standard;
- ❖ Evidence of the electronic register of the work authorization, with the application of electronic signatures;
- ❖ Evidence of the Electronic Register of defects and their withdrawal for repair (CDP, LVDP);
- ❖ Automatic formation of the Technical Passport of electrical objects, using the information stored in the GIS system (MAPINFO);
- ❖ Forming different reports.

We believe that these recommendations will help the “Red-Nord” JSC to make the operative management of electric networks more efficient and to record a higher level of recorded performances.

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THE CURRENT STATE AND FUTURE TRENDS OF SCIENTIFIC RESEARCH ON ACCOUNTING AND MANAGEMENT CONTROL THROUGH BIBLIOMETRIC ANALYSIS

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Abstract: *Nowadays, entities are more frequently confronted with uncertainty, the complexity of the environments in which they operate increasing the role of financial-accounting information in the decision-making process. Thus, the present research aims to motivate the efficient management of the entity by applying a management and control system appropriate to its specificity. The research also focuses on the relationship between accounting and management control, with accounting playing a role in setting objectives, providing the information necessary for decision-making, and control implementing decisions and evaluating their efficiency, effectiveness and performance. An additional important aspect in the study of the topic is the bibliometric analysis, as a technique for evaluating scientific research in terms of research quality and productivity, research area and trends, thematic development and other relevant aspects. Thus, bibliometric analysis provides an overview of the theme's research at international level and identifies new research dimensions.*

Key words: *management accounting, management control, decision making, management, bibliometric analysis*

JEL: M40, M41

1. Introduction

In today's economic environment, entities are increasingly faced with uncertainty, the complexity and instability of the environments in which they operate resulting in an increasing role for information in the decision-making process, choosing from a variety of possibilities.

Within the entity, managers use information from management accounting to coordinate their decisions regarding the design, production and marketing of a product or service (Bădicu and Mihaila, 2020, p. 12). The information obtained in management accounting is collected, grouped and analysed in order to accurately and truthfully reflect the results of the activity and to determine the

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actual contribution of the subdivisions to the overall results of the entity's activity, in parallel, it is used to choose a strategy, communicate it and determine the best way to implement it (Nederița, 2000, p. 11).

In order to guarantee an efficient management of the entity, it is necessary to apply a management and control system, which would encompass all areas of activity, including the environment and directly external influencing factors, thus, the main problem in ensuring maximum efficiency of the control system is to adapt it to the organizational structure of the entity, which determines and divides responsibilities within the entity (Bădicu and Mihaila, 2020, p. 47).

The entities are particularly interested in the continuous improvement of their own management control, which is able to ensure the timely identification of deviations from the pre-set objectives and, in general, to carry out a profitable activity, which results in high profits, through the efficient use of financial, material and human resources (Ionescu and Iacob, 2015, p. 7). Therefore, management control must be carried out as an organized and coordinated activity. To this end, each entity must organise its own control system, focusing on its economic and financial objectives and ensuring efficient management at the level of the entity and its subdivisions.

The aim of the research is to highlight the relationship between accounting and management control and its implications for the entity's management and decision-making process. The present research also aims to highlight the level of research on the chosen topic at international level, through the prism of the largest scientific databases. Therefore, through bibliometric analysis, the aim is to identify the main research directions in relation to the research topic and potential research trends at national and international level.

The topicality of the subject is amplified by the wide area of knowledge and research on the topic among both researchers and practitioners. At the same time, the importance of the topic is amplified by the perpetual need for entities to know costs and consumption, to evaluate internal activity, to assess the productivity of the economic activity carried out, to set sales prices and others. Depending on this information, the entity's managers take decisions on supply, storage and disposal, etc.

2. Research methodology

The methodological approach to research involves a rigorous and methodical process that aims to ensure the validity, accuracy and relevance of the results obtained in scientific research. This means that the qualitative and quantitative approach lies at the core of the thematic research, as does the use of research methods characteristic of the social sciences, such as: Analytical method (study of literature in the perimeter of accounting and management control), Comparative method (research of relevant aspects of accounting and management

control, as well as their functioning in business entities together and/or separately), Systemic method (totalisation and interpretation of theoretical information and results of bibliometric analysis), Synthesis method (summarising the main links between accounting and management control, as well as synthesising the research directions of scientific research in the area of the topic under analysis and future research trends), Analytical deduction method (presenting one's own view of the topic under study).

The review of the literature is an essential component of the research process, so the focus was on collecting, reviewing and interpreting scientific articles, books and other relevant sources published up to the time of the current research. It can therefore be concluded that in the last few years, accounting and management control have been the subject of research in many national and international scientific papers. Accordingly, the analysis of the literature shows that among the most relevant local authors are: Nederița, A. (Nederița, 2000), Mihaila, S. (Mihaila, 2012), Bădicu, G. (Bădicu and Mihaila, 2020), analogically, in the international literature, the works of the authors Ionescu, I., Iacob, C. (Ionescu and Iacob, 2015), Schaltegger, S. (Schaltegger, 2016), Maas, K. (Maas, 2016).

In addition to Qualitative analysis, an aspect that deserves the attention of researchers is Quantitative analysis. In this regard, bibliometric analysis has been carried out as a fundamental method of examination, evaluation and analysis of scientific production in the field of accounting and management control, and the analysis undertaken also provides the reason for the evolution and impact of scientific research in the perimeter of the research topic, as well as the orientation of future research trends.

3. Accounting and management control - key components of entity management

In establishing the relationship between accounting and management control, it should be noted that management accounting contributes to the setting of the entity's future objectives by providing the necessary and timely information for decision-making. Therefore, management control establishes actions and implements decisions, likewise, it contributes to the planning and evaluation of the entity's performance and the necessary information to be provided for the adoption of future decisions.

In the same line of thought, management accounting facilitates the fulfilment of management's control function in order to identify the problematic activities of the entity, or, through the control performed, managers ensure that resources are obtained and used efficiently and effectively (Bădicu and Mihaila, 2020, p. 13-14).

Therefore, Figure 1 illustrates the functional link between management accounting and management control as components (tools) of entity management:

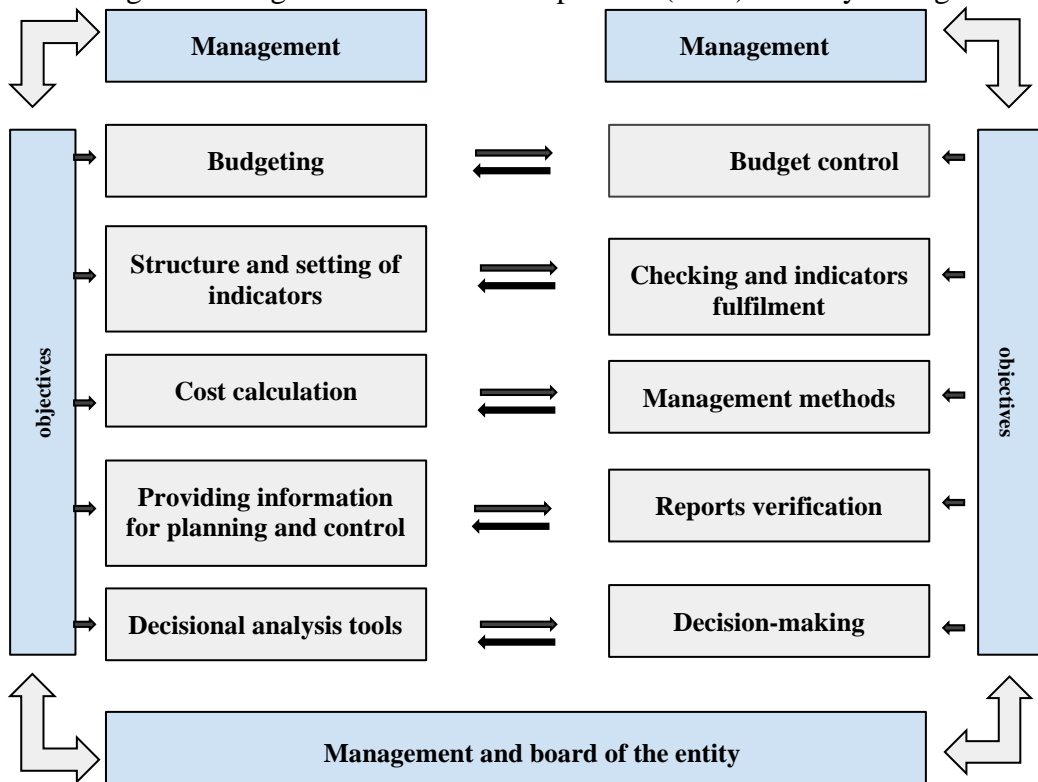


Figure 1. Relationship between accounting and management control and entity management

Source: elaborated and adapted by the author based on (Mihaila, 2012, p. 190).

As of today, control has begun to be regarded as a system that has its own object, method and functions, and accounting deals with the generalization of information about the organization's activity for the purpose of control actions, and is considered a component part of the control system (Mihaila, 2012, p. 190).

Based on Figure 1, it can be seen that the management accounting - management control relationship is an important point in the management of the entity, with accounting providing the information necessary for management control. Consequently, Figure 2 shows the comparative aspects between them, given that they are interrelated:

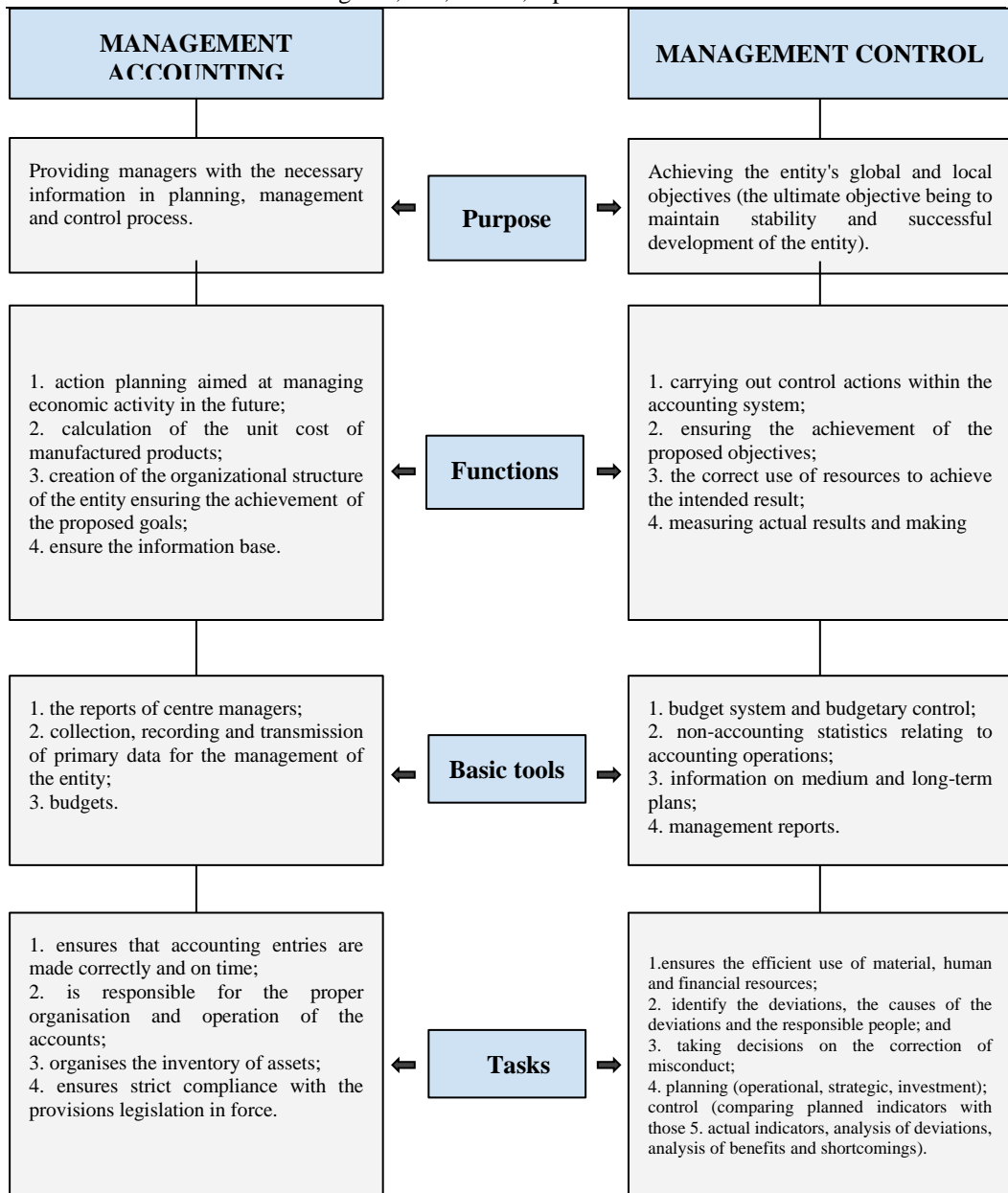


Figure 2. Comparative aspects of accounting and management control
 Source: elaborated and adapted by the author on the basis of (Mihaila, 2012, p. 190).

As the socio-economic environment has developed, management control has also evolved and has been oriented towards the information and management needs of the entity's management.

4. Scientific content analysis through bibliometric analysis

Quantitative analysis allows the analysis and measurement of scientific output and the impact of scientific research by applying certain statistical and mathematical methods to bibliographic information. Basically, the aim of bibliometric analysis is to assess the impact of scientific research, the relationships between authors, publications, institutions and research fields.

Therefore, in order to present an overview of scientific research associated with accounting and management control, two of the largest bibliographic databases, namely Web of Science (hereafter WoS) and Scopus, were used. Therefore, WoS is a global leader in providing reliable information and analysis to accelerate the pace of innovation, similarly, Scopus is a database that provides a variety of metrics to assess the impact of medical research (Scopus vs Web of Science).

In short, both WoS and Scopus are valuable platforms for researchers. Despite differences in coverage, metrics, open access and more, the platforms also share many similarities. Ultimately, the choice between WoS and Scopus depends on user preferences, WoS stands out for its stricter quality control measures and Scopus has a larger database of scholarly papers.

In the context of the above, both databases were used for bibliometric analysis, using the following research criteria: identification of the phrases "management accounting" and "management control" in the subject of the scientific publication, in the period 1975-2023, the results obtained were interpreted with the help of the bibliometric analysis tool Biblioshiny. Therefore, the results of the analysis are illustrated in Table 1:

Table 1. General information on scientific research published between 1975-2023

Description	Results	
	Web of Science	Scopus
General information		
Reporting period	1995-2023	1977-2023
Sources (magazines, books, etc.)	136	179
Works	287	371
Annual growth rate of publications, %	6,97	9,53
Average citations per work	28,06	30,69
Bibliographic references	15.333	23.347
Type of work		
Articles	194	275
Conference publications	38	21
Contents of works		
Keywords plus	677	325
Authors' keywords	851	932

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Description	Results	
	Web of Science	Scopus
Authors		
Authors	578	663
Authors of single-authored works	62	98
Multiple-author works authors	516	565
Authors' collaboration		
Works by author	0,497	0,56
Authors per work	2,01	1,79
Co-authors per work	2,33	2,16

Source: elaborated by the author based on data obtained using the Web of Science platform, processed through the Biblioshiny visualization tool.

According to Table 1, it results from the WoS database that the first scientific work on accounting and management control appears in 1995, with 287 scientific works published in 136 sources, based on 15,333 bibliographic references. Similarly, in Scopus, the first scientific paper on accounting and management control appeared much earlier, in 1977, with 371 scientific papers published to date, i.e. 84 papers more than in WoS, published in 179 sources and with 23,347 bibliographic references.

In terms of contents of the works, 677 (WoS) and 325 (Scopus) keywords plus 851 (WoS) and 932 (Scopus) author keywords were identified. Also, in both databases, the preponderance of scientific papers is in the form of articles, i.e. 194 publications and 275 publications, respectively, at the same time, it can be concluded that more authors who published in WoS presented their scientific research in conference publications, i.e. 38 and 21 works.

Overall, the 287 scientific works published in WoS were written by 578 authors, with an average of 0.497 works/author and 2.01 authors/work, which means that at least two authors contributed to each scientific work, with one author contributing 0.497 works. Analogously, 663 authors published their scientific research in the Scopus database, 98 of them authors of single-authored papers and 565 authors of multi-authored papers. Author collaboration shows that there are at least 2 authors per scientific paper, in WoS there are 2.33 co-authors per work and in Scopus 2.16 co-authors per work.

Therefore, considering that in the Scopus database the research area is larger, the following will present results interpreted by the Biblioshiny visualization tool following the analysis of the identified scientific contents by research category.

The annual scientific productivity and the annual average number of citations indicate that the most scientific papers were published in 2020, i.e. 30, while in 2018 and 2014 24 scientific works were published and in 2021 and 2016 23 scientific works were published, moreover, the annual growth rate of

publications in the period under review is 8.36%, which indicates a considerable increase in research in this direction. Similarly, on the basis of Figure 1 it can be seen that the top average citations per article are recorded in the years 1995, 1986, 2008 and 1994, with 175, 144, 138.5 and 109.5 average citations per article, similarly, the top average citations per year relieve the years 2008, 1995, 2016 and others, with 9.23, 6.25 and 6.15 average citations per year.

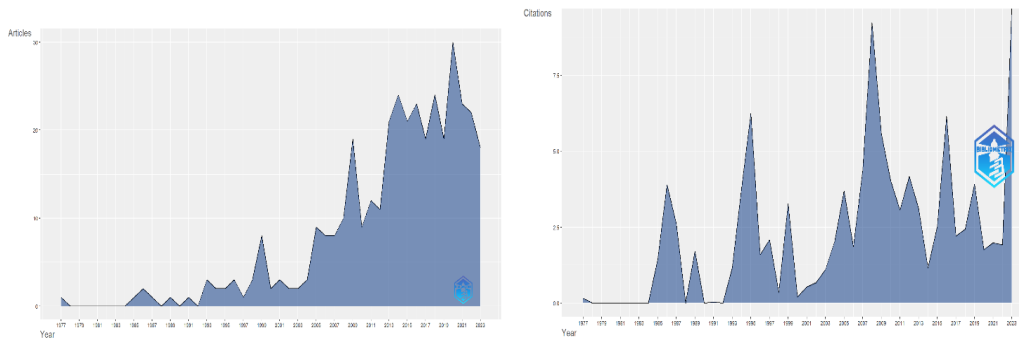


Figure 3. Annual scientific productivity and average annual citations from 1975-2023

Source: elaborated by the author based on data obtained using the Web of Science platform, processed through the Biblioshiny visualisation tool.

Relevant authors and affiliations highlights the most significant and productive authors in terms of publications on the researched topic, thus, based on Figure 4 highlights the author Schaltegger, D. who in 2016 published 3 articles on accounting and management control, with a total number of citations of 31.12, which highlights the relevance of his research in the perimeter of integrating corporate sustainability assessment, management accounting, control and reporting (Schaltegger, 2016). Likewise, the author Maas, K. is highlighted, who in 2016 published 3 articles on the topic of advancing the integration of corporate sustainability measurement, management and reporting (Maas, 2016), with a total number of citations of 31.12. In addition to the most relevant authors, it is appropriate to highlight the most relevant affiliations in terms of frequency of publication, namely: University of Turin - 9 publications, Copenhagen Business School, University of Colombo - 7 publications, University of Siegen, Lancaster University Management School - 6 publications etc.

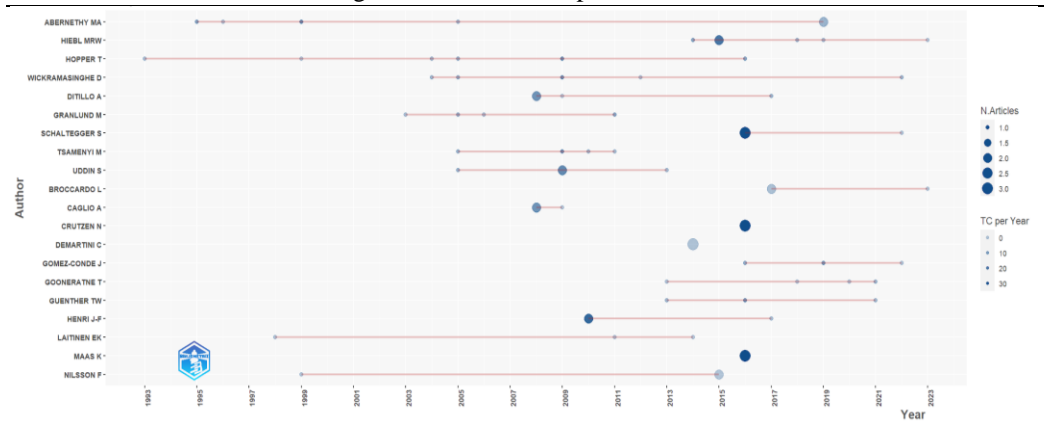


Figure 4. Annual scientific productivity of top authors from 1975-2023
 Source: elaborated by the author based on data obtained using the Web of Science platform, processed through the Biblioshiny visualisation tool.

Demographic distribution of publications and international collaboration highlights that most scientific works were published in the UK, i.e. 76 scientific works. Similarly, the most productive countries include Australia, Italy, Germany, the United States and Finland, whose researchers have published 64, 61, 57, 55 and 42 scientific works over time. At the same time, in terms of citations by other researchers in their papers, the most cited scientific papers come from the United Kingdom - 3,044 citations, Finland - 1,253 citations, Germany - 512 citations, Canada - 373 citations and others, so it can be seen that the countries that are most productive in terms of research on the subject of accounting and management control are also the most cited, but this is not an absolute rule.

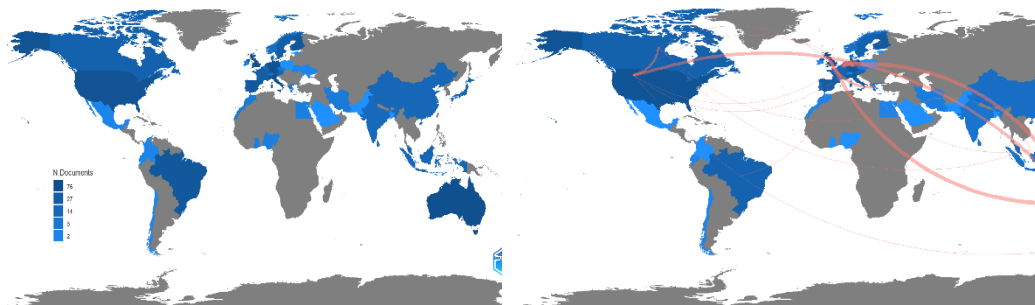


Figure 5. Demographic distribution of publications and scientific international collaborations between 1975-2023
 Source: elaborated by the author based on data obtained using the Web of Science platform, processed through the Biblioshinyvv visualization tool.

Similarly, Figure 5 shows that most international scientific collaborations took place between Australia and the Netherlands, the United Kingdom and Australia - 6 collaborations, Australia and the United States of America, Germany

and the Netherlands - 5 collaborations, Germany and Belgium, the Netherlands and Belgium - 4 collaborations and others.

The content of scientific works and the research axis are shown in Figure 6, by the topics frequently addressed in scientific research on accounting and management control, namely: management accounting - 128 appearances, management control - 85 appearances, management control systems - 56 appearances, performance measurement, performance management - 18 appearances, control - 12 appearances, budgeting, literature review, balanced scorecard - 10 appearances and others. Obviously, the topics reflect the authors' concern for improving the management of the entity, the decision-making process, the efficient use of economic resources and its performance.

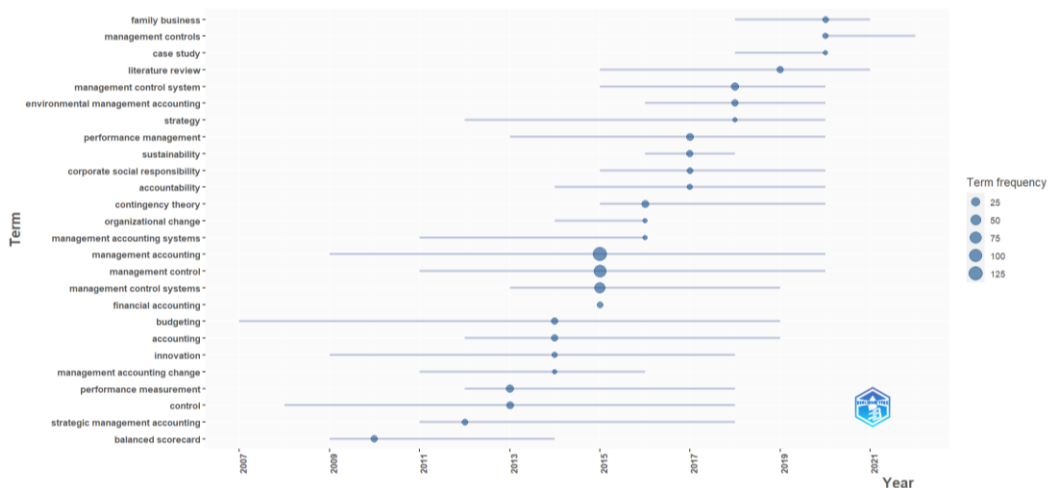


Figure 5. Graphical presentation of the areas of scientific interest in the period 1975-2023

Source: elaborated by the author based on data obtained using the Web of Science platform, processed through the Biblioshiny visualisation tool.

Relevant keywords used by authors of scientific works indicate the main direction of research. As can be seen in Figure 6, over the period analysed, certain keywords have shown a considerable upward trend, such as management accounting, management control, management control systems, performance measurement, control, which in 2023 had 128, 85, 56, 18, 17 and 12 cumulative occurrences.

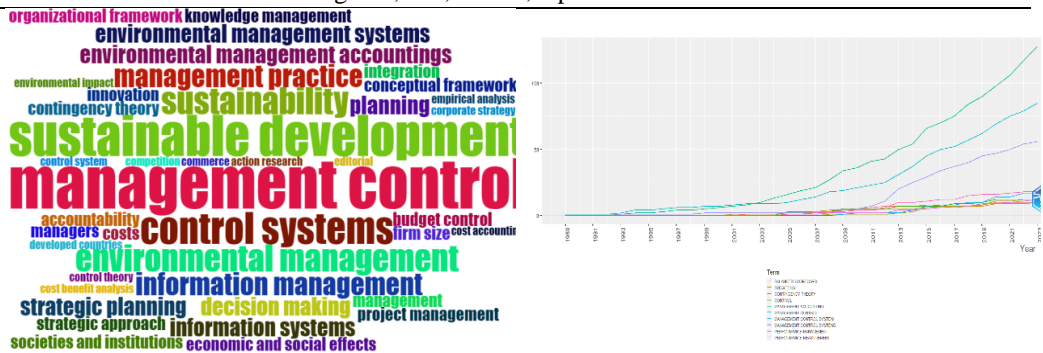
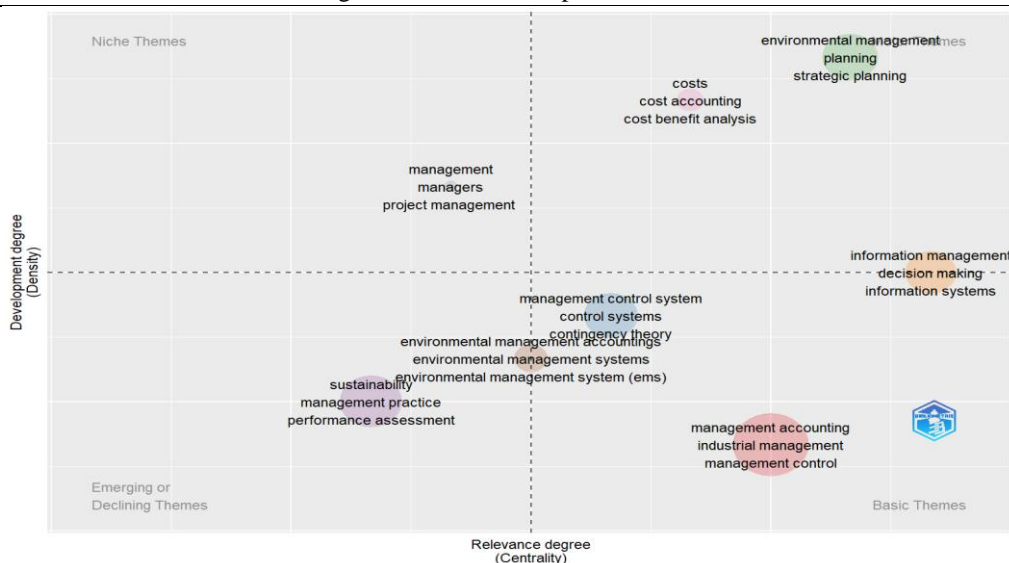


Figure 6. Evolution of relevant keywords in scientific papers between 1975 and 2023

Source: elaborated by the author based on data obtained using the Web of Science platform, processed through the Biblioshiny visualisation tool.

Analogously, Figure 7 shows the researchers' framework of interest, summarising the main keywords used within a coordinate system according to the degree of relevance (horizontal axis) and the degree of development (vertical axis). Thus, the keywords characterising the basic themes addressed by the authors of the scientific papers are: management accounting, management control, management control systems, control systems, contingency theory, information management, decision making, information systems. The authors also focus their research on keywords or driving subjects such as: costs, cost accounting, cost benefit analysis, planning, strategic planning, environmental management and others. In addition to the above, it can be concluded that the niche theme of the identified researchers is captured by the keyword "management", which focuses on the proper management of the entity and its processes. Moreover, the quadrant of declining themes points to the fact that there are less and less scientific works that address these keywords as the basis of scientific research, such as: sustainability, management practice, environmental management systems, etc.



*Figure 7. Thematic evolution of scientific research between 1975 and 2023
 by degree of relevance and development*

*Source: elaborated by the author based on data obtained using the Web of Science platform,
 processed through the Biblioshiny visualisation tool.*

On the basis of the bibliographical analysis carried out, it can be concluded that the first scientific study dealing with the relationship between accounting and management control dates back to 1977, over time, there is at least one scientific work on this topic, moreover, since 2000 there are at least 2 scientific works, the peak being reached in 2020 with 30 scientific works per year. The average age of scientific works is 9.53 years, which indicates that most of the research is relatively recent and that there is a constant flow of new information in the field of accounting and management control.

5. Conclusion

The management control, entity management and management accounting, is the science of entity management. Therefore, it is a new qualitative phenomenon in the theory and practice of entity management, in other words, a process of integrating traditional methods of planning, record-keeping, control and analysis into a single system of obtaining, processing and summarizing information and the process of making managerial decisions based on this system (Mihaila, 2012, p. 192).

To conclude, accounting and management control are present in every entity that carries out an economic activity, which is why the management system becomes the "right hand" of the entity's management, being a support and guide for executive management.

In turn, management accounting provides managers with the necessary information that enables them to understand the dynamics and processes taking place in the entity, operational information on the basis of which they can make relevant decisions, forecast the results of the decisions taken and, at the same time, have the levers necessary to carry out permanent and effective control, thus ensuring performance management (Bădicu and Mihaila, 2020, p. 9-10).

Moreover, management control extends to all areas of the entity's economic activity (production, supply, marketing, technical) and manages the influence of various internal and external factors on them. Moreover, the quality of management control depends on its ability to guarantee the quality of management through the use of control instruments.

Consolidating the results of the bibliometric analysis, the following research directions can be identified which could be discussed in future scientific research:

- the role of management accounting in the decision-making process;
- the relevance of costs in underpinning operational and strategic decisions;
- the organisation and exercise of management control within the entity;
- the implementation of systems for evaluating the entity's performance;
- the control of the entity's costs through budgeting.

Considering the ever-changing economic environment, there will be even more topics for analysis, and researchers must be constantly concerned with the transformations that have occurred, with the analysis of new methods and systems that would facilitate the management of domestic entities, in this endeavour, international practice constitutes a fertile environment for research and implementation of new innovative ideas.

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MODERN MARKETS AND ECONOMIC DYNAMICS OF SILVER

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Abstract: *The research paper examines the processes of silver application in the economy and its value for a selected period of time. In a world of economic and investment boom, economic entities are increasingly looking for ways to increase their financial capital by investing in various resources. Trade in precious metals and in particular silver is one of the most preferred areas for investment.*

Key words: *economic dynamics, financial markets, investment, silver.*

JEL: G10, G15

1. Introduction

This research paper examines the processes of the applicability of silver in the economy and its value for a period of time selected by the author. In a world of economic and investment boom, economic agents are looking for ways to increase their financial well-being through investment. Trade in precious metals and silver in particular is one of the most preferred areas. The object of the study is the metal silver as an investment tool. The object of the study is to investigate the price of gold using technical analysis for a time period selected by the author. The aim is to analyze the applicability and role of silver in a relatively global aspect and in the global economy.

2. Applicability of silver in the economy

Silver, as a noble metal, has existed and been known to humanity since ancient times. Silver, as a metal, has a shiny appearance and finds wide application in human life. When studying its geological origin, scientific data indicate that it is a result of natural hydrothermal processes. On the one hand, silver is a product of primary sources of silver (sulfide minerals, etc.), and the deposition of silver minerals is influenced by various factors, including temperature, pressure, fluid composition, and characteristics of the receiving rock. On the other hand, scientific data reveal that secondary sources, such as

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weathering and erosion of primary deposits, lead to the formation of placer deposits. Meanwhile, silver is also obtained from recycling silver-containing products through mining and metallurgical processes.

The study of the economic aspects of the metal silver unequivocally demonstrates its wide application in numerous sectors, including:

- industrial applications – silver is a fundamental component in the electrical and electronic industries. It is used in the production of circuit boards, batteries, solar panels, and more. Its high thermal and electrical conductivity, combined with its resistance to oxidation, make it a crucial industrial component;
- photovoltaic (PV) industry – silver paste is a component in photovoltaic cells for creating conductive gridlines that aid in the collection and transportation of electricity. The growth of the solar energy sector is increasingly driven by the demand for renewable energy sources, significantly contributing to the demand for silver;
- jewelry and silverware – in a historical context, this noble metal has been used to create jewelry, silverware, and decorative objects since ancient times. Its malleability and resistance to tarnishing make it a popular choice for these purposes. The demand for silver in the market for luxury goods, including jewelry and collectible items, significantly influences the silver industry and the economy as a whole;
- recycling and resource management – as a noble metal with limited resources, the recycling process plays a vital role in its sustainable use. Recycling efforts help recover silver from various sources, including electronic waste, jewelry, and industrial by-products. The recycling industry is linked to silver, contributing to resource conservation by reducing the need for primary silver mining and supporting a circular economy;
- medicine and healthcare – silver possesses antimicrobial properties, making it particularly valuable in the field of medicine and healthcare. Compounds based on silver, such as silver sulfadiazine, are used in the production of wound dressings, creams, and coverings to prevent infections. The demand and use of silver-based products in the healthcare industry also significantly contribute to its economic importance;
- investment and financial markets – silver, as a metal, is traded in global financial markets. Investors use silver as a means to hedge against inflation and as a store of value. Price changes associated with the demand for silver as a specific type of investment commodity can significantly impact financial markets, including futures exchanges, commodity trading, and exchange-traded funds (ETFs);

- currency and coins – historically, silver has been an essential element in the production of coins and currency. Collectible coins and silver bars serve as forms of investment and contribute to the growing development of the economy through processes in the numismatic industry, such as coin preservation, protection, and collecting, as well as various related industries;
- economic significance and global trade – undoubtedly, the production, trade, and consumption of silver as a metal have specific and proven economic implications at both the national and international levels. Countries with significant reserves or silver production contribute to the global supply chain. The fluctuating prices of silver and market dynamics have a specific impact on silver-exporting and importing nations, affecting their economies and trade balances. (Ferre, 2023)

Understanding the scientific aspects of the industrial applications of the metal silver, its economic significance, and market dynamics are essential elements that contribute to informed decision-making in policy development, resource management, and investment decisions related to this noble metal in the diverse economy.

From an economic perspective, accounting legislation is a key factor in the business environment in which a company operates. Practice shows that both at the national and international levels, the choice of appropriate accounting methods has a direct impact on the financial condition of the company. (Николова, 2005)

The study of the correlation between the applicability of silver in the economy and the possible accounting policy in trading companies highlights several important aspects that show how accounting policy in business companies relates to specific principles, methods, and procedures adopted by a given company for recording, measuring, and reporting its financial transactions and operations. These policies play a key role in preparing financial statements, including the balance sheet, income statement, and cash flow statement.

Regarding the valuation of inventory, companies dealing with products made of silver (e.g., jewelry or electronic components) must decide on the method of inventory valuation. The accounting policy can determine whether the silver inventory is valued at historical cost, market value, or at the lower of cost or net realizable value.

Accounting also plays a role in hedging and derivatives processes. Companies involved in silver mining or using silver in their production processes may be subject to price fluctuations. In such cases, accounting policy may be related to hedging strategies and derivatives accounting to forecast and manage risks associated with fluctuations in the prices of the precious metal (silver).

Another method used to protect against losses is depreciation testing. Companies that hold silver as an investment or as part of their production process

may be required to conduct depreciation tests to determine the current value of their silver assets.

3. Trends in the financial markets for silver over a selected period of time

Silver, as a noble metal, is a preferred investment tool in the global financial markets. Throughout different historical periods in the development of humanity, its value certainly changes but always retains investor interest. In the "Technology Era," there are numerous diverse methods for forecasting its value. One of the most preferred and utilized methods is the technical method, which relies on candlestick chart analysis. However, it should be noted that when this method is used independently, it cannot predict with precision, and there is always a risk of errors.

In the current scientific study, the author examines and selects three five-year periods for analyzing the price of silver against the US dollar (XAG/USD). In this case, the study aims to identify the factors that can influence and lead to an increase or decrease in the price of 1 XAG (one unit of silver).



Figure 1. Analysis of XAG/USD prices for the period from January 1, 2006, to December 31, 2010
Source: Author's calculations based on tradingview.com

Figure 1 presents a chart depicting the price for 1 XAG (silver) on a weekly basis against the US dollar for the selected period from January 1, 2006, to December 31, 2010. Over this five-year period, as shown in the figure, the price of silver gradually increased at a moderate pace. At the beginning of the analyzed period in 2006, on January 1, 2006, 1 XAG was exchanged for 9.11 USD, with an upward trend. The highest level reached by the silver price during the analyzed period was in the last week of 2010 (December 26, 2010) when one unit of the precious metal was exchanged for 30.91 USD.

From the presented data, it is evident that its price increased by nearly 300% over this five-year period. To support investors and identify the trend direction, the author utilized exponential moving averages (EMAs) in the charts, namely EMA 20 close, EMA 25 close, EMA 30 close, EMA 35 close, EMA 40 close, EMA 45 close, EMA 50 close, and EMA 55 close. At the beginning of 2006, the exponential moving averages were in an expanding position, and from April 2006 to May 2007, they maintained close to parallel positions, indicating a stable trend. The graph shows a definite contraction and a short "bearish" trend. Following the chronological processes in the graph (Figure 1), it is evident that after this price decline in August 2007, an "bullish" trend started. The period from July 2008 to January 2009 stands out, during which there was a noticeable decline in the price of silver. After this period, the value of silver returned to an upward trend. As of December 31, the values of EMA 20 close, EMA 25 close, EMA 30 close, EMA 35 close, EMA 40 close, EMA 45 close, EMA 50 close, and EMA 55 close were 25.39 USD, 24.51 USD, 23.78 USD, 23.15 USD, 22.61 USD, 22.14 USD, 21.71 USD, and 21.33 USD, respectively. From the values of the EMA close, it can be observed that they are in close parallel positions. This, in itself, creates a hypothesis that a stable upward trend in the price of 1 XAG is likely in the new selected period (January 1, 2011 – December 31, 2015).

For the scientific research, it is crucial to investigate hypothetical factors that may influence the price of silver during the period from January 1, 2006, to December 31, 2010, including:

- global economic factors – the analyzed period encompasses processes of global economic growth, recessions, and financial crises. The 2008 global financial crisis was triggered by and closely intertwined with the high-risk mortgage crisis in the United States, which had an impact on silver prices. Investment uncertainty and the search for safe-haven assets increased, leading to instability in silver prices on a global scale; (Jolly, 2008)
- USD (US Dollar) – when the US dollar weakens against other major currencies, including during periods of low-interest rates and quantitative easing measures, there is a tendency for silver prices to rise. Conversely, a strong US dollar is associated with a decrease in its influence on silver prices;
- industrial factors – silver has various industrial applications, including electronics, solar panels, and medical devices. Changes in industrial demand certainly influence the price of XAG/USD during the selected period. Economic expansions and increased industrial production lead to higher demand for silver, driving prices up. Conversely, economic slowdowns or recessions reduce industrial demand and exert downward pressure on prices;

- investment demand – silver is considered an investment asset, especially during market uncertainty and inflation concerns. The demand for silver as an investment can be influenced by factors such as geopolitical tensions, inflation expectations, and central bank policies. Increased investment demand for silver tends to drive prices higher, while reduced demand leads to price declines;
- stock market dynamics – silver is traded as a commodity, and its price is influenced by market dynamics. Factors related to supply and demand, speculative trading, and global market sentiment can significantly impact the price of XAG/USD. Changes in investor sentiment and shifts in trading patterns, including inflows or outflows of speculative capital, can also affect silver prices;
- Central Bank Actions – actions taken by central banks, including the US Federal Reserve, can influence silver prices. Decisions regarding interest rates, monetary policy measures, and interventions in currency markets can impact investor sentiment and the value of the US dollar;
- geopolitical factors – geopolitical events such as conflicts, political instability, and trade disputes have the potential to impact and also influence silver prices. These events can create uncertainty and increase demand for safe-haven assets, including the precious metal silver. The selected period includes events such as the Iraq War, tensions in the Middle East, and trade disputes between countries, which have a real impact on the price of the precious metal;
- other factors – there may be additional influences that are not explored in the current scientific research, as well as combinations of factors that lead to fluctuations in the price of 1 XAG.



*Figure 2. Analysis of XAG/USD prices for the period
from January 1, 2011, to December 31, 2015
Source: Author's calculations based on tradingview.com*

The second selected period (Figure 2) begins with the anticipated increase in the price of 1 XAG as shown in Figure 1. During this period, the highest value for one unit of the precious metal is recorded, trading at 48.00 USD. From the chronological study of the period from June 2011 to December 2012, stable trends are observed, during which the price of silver significantly decreases its value but does so relatively smoothly without sharp declines. Numerous intersections between long-term EMAs and the short-term EMA 20 create an impression of an expected "bullish" trend, but the graph (Figure 2) shows that it is followed by a period of decline, which continues until the end of the study period (2015). Indeed, it becomes evident that technical analysis alone does not accurately forecast data, and for this reason, it needs to be complemented with factor analysis. Analyzing the data at the end of the year, the lowest values of silver in the period from January 2011 to December 2015 are also considered, reaching 13.81 USD on December 27, 2015.

From the study of the position of exponential moving averages (EMAs), a trend of their parallel positioning is observed from August 2013. This could be interpreted as a signal of a prolonged trend of decreasing the value of the precious metal. Towards the end of 2015, it is noted that EMAs overlap, and their values range from 15.30 USD to 15.70 USD, hypothetically suggesting changes in the trend and logically pointing to a potential upward direction. Despite this analysis, the author explores the possible factors that may influence the price of 1 XAG:

- global economic conditions – similarly to the period studied in Figure 1, the world financial crisis of 2008 and its recovery continue to influence the analyzed period in Figure 2. This recovery is realized at different rates of economic growth in various regions, which definitely affects the price of silver for a more extended period;
- USD – the value of the USD directly impacts the value of XAG. During the selected and studied period, the value of the US dollar strengthens, affecting the value of other major currencies as well. This may result from factors such as improving economic conditions in the United States, differences in monetary policies, and demand for safe havens. Higher levels of the dollar tend to exert downward pressure on the prices of precious metals (silver) since the metal becomes relatively more expensive for holders of other currencies;
- industrial demand – these factors are related to the demand and supply of the precious metal. Therefore, changes in global industrial activity, especially in countries with developed economies, can create conditions for influencing the demand for silver during the studied period. Economic expansions and increased industrial production also lead to higher demand for silver, contributing to price increases. Similarly, during economic

slowdowns or recessions, industrial demand decreases, exerting pressure on prices;

- investment demand – precious metals are preferred investment assets, especially during periods of market uncertainty, inflation concerns, or a low-interest rate environment. The investment demand for silver can also be influenced by factors such as geopolitical tensions, inflation expectations, and central bank policies. Increased investment demand for silver is a trend that leads to price increases, while decreased demand solely leads to price declines;
- commodity market dynamics – silver is traded as a commodity, and its price is influenced by broader market dynamics. Factors such as imbalances in supply and demand, speculative trading, and overall market behavior undoubtedly affect the price of XAG/USD. Changes in investor sentiment, trading patterns, and the flow of speculative capital also influence the prices of silver during this period;
- actions of central banks – the actions and statements of major central banks, including the US Federal Reserve, significantly influence the prices of silver. Decisions regarding interest rates, quantitative easing programs, and other monetary policy measures affect investor sentiments, currency evaluations, and inflation expectations, thereby influencing the value of the US dollar and the price of silver;
- geopolitical factors – geopolitical events such as conflicts, political instability, and trade disputes possess specific potential to impact the prices of silver during this period. These events can create financial market uncertainty and increase demand for safe-haven assets. Major geopolitical events, such as the European sovereign debt crisis, geopolitical tensions in the Middle East, and economic challenges in emerging markets, are capable of affecting silver prices;
- Market sentiment and investor risk appetite – market sentiments and investor preferences for a particular risk play a decisive role in determining the price of XAG/USD during this period. Periods of increased risk aversion, driven by concerns about economic instability, financial market volatility, or geopolitical risks, typically boost demand for safe-haven assets like silver. Similarly, periods of optimism lead to decreased demand for silver as investors pursue higher-yielding or riskier assets.



Figure 3. Analysis of XAG/USD prices for the period from January 1, 2016, to December 31, 2020
 Source: Author's calculations based on tradingview.com

The third period investigated by the author covers January 1, 2016, to December 31, 2020 (Figure 3). The decoded signal in Figure 2 is based on the convergence of EMAs, and the expected change in the trend occurs around February 2016 when the moving averages start expanding, and there is a slight increase in the price of silver. From 2017 to 2019, the price of silver remains stable, with no significant fluctuations in its values. The period from 2019 to 2020 is also crucial as it corresponds to the years of the global pandemic and the emergence of crises in multiple aspects. During this period, both the lowest and highest values for silver are recorded throughout the investigated period. In mid-March 2020, 1 XAG is traded on the global financial exchanges for 12.58 USD, whereas in February 2020, it reaches 28.29 USD. This short period exhibits significant price amplitude, which can be interpreted as a signal of instability in international markets when trading precious metals.

When analyzing the exponential moving averages and their positions towards the end of 2020, it becomes evident that they are in a parallel position, indicating a stable trend, which signals a period of contraction and decrease in values. As of December 31, EMA 20 close has a value of 24.38 USD, EMA 25 close – 24.96 USD, EMA 30 close – 23.52 USD, EMA 35 close – 23.11 USD, EMA 40 close – 22.72 USD, EMA 45 close – 22.36 USD, EMA 50 close – 22.03 USD, EMA 55 close – 21.73 USD. Of course, similar to the previous periods, it is essential for the study to analyze the key factors that occur during these periods, namely:

- global economic and geopolitical factors – global economic conditions play a significant role in determining the price of XAG/USD during this

- period. From 2016 to 2020, we witnessed a combination of economic expansion, trade tensions, geopolitical uncertainties, and the impact of significant events such as Brexit and the COVID-19 pandemic. These are essential geopolitical events that influence silver prices. Economic indicators, such as GDP growth rates, industrial production, and employment data, influence investors' ideas and preferences in seeking silver as an industrial and investment asset. When considering geopolitical factors, events such as trade disputes, geopolitical tensions, and political developments in countries that can potentially affect silver prices during this period are of importance. These events create uncertainty in financial markets and increase the demand for safe-haven assets, including silver;
- USD – the strength or weakness of the US dollar (USD) directly influences the price of XAG/USD. Fluctuations in the exchange rate of the US dollar are due to factors such as decisions on monetary policy, differences in interest rates, geopolitical developments, and economic indicators. A stronger US dollar, in general, exerts downward pressure on silver prices, making it relatively more expensive for holders of other currencies, while a weaker dollar tends to support silver price values;
 - industrial demand – silver has broad industrial applications, including electronics, solar panels, healthcare, and more. Changes in global industrial activity, particularly in countries with strong economies, influence the demand for silver during this period. Expanding industries, technological advancements, and increasing usage of silver in renewable energy and electric vehicles significantly contribute to the growth of industrial demand. Conversely, economic slowdown or recession reduces industrial demand, which is reflected in silver prices;
 - investment demand and financial market dynamics – investment demand for silver as a safe-haven asset and inflation hedge plays a significant role in the dynamics of its prices during this period. Geopolitical tensions, trade conflicts, and decisions in monetary policy influence investors' sentiments in using and seeking precious metals. Periods of market instability, economic uncertainty, and a low-interest rate environment often increase investment demand for silver and contribute to its price rise. Silver is traded as a commodity and is subject to a broader market dynamic. Factors such as supply and demand imbalances, changes in investor sentiments and preferences, speculative trading, and overall market conditions affect the price of XAG/USD. Developments in financial markets, including changes in equity markets, bond yields, and performance of other commodities, also influence silver prices during this period;
 - Central Bank Policies – actions and policies of major central banks, including the US Federal Reserve and other global central banks, have a

- significant impact on silver prices. Decisions regarding interest rates, monetary stimulus programs, and quantitative easing measures influence investor sentiments, currency valuations, and inflation expectations. Interventions, actions, and measures taken by central banks to stabilize financial markets during the COVID-19 pandemic also affect silver prices;
- demand and Supply Factors - Demand and supply factors specific to the silver market, including mine production, recycling levels, and changes in silver inventories, can influence the price of XAG/USD. Changes in production levels, disruptions in mining activities, and fluctuations in scrap supplies have impacted the overall supply of silver. Meanwhile, changes in industrial demand, investment demand, and jewelry consumption have influenced overall demand for silver.

This period is specific due to the scale of the global COVID pandemic and its consequences, which affected political, economic, financial, social, and societal levels, impacting human society and changing its way of life. From Figure 3, it can be observed that the price of silver during this period reached higher levels, but the pandemic also influenced factors, including:

- safe-haven demand – the pandemic spread, and the global economy faced unprecedented challenges, leading investors to seek safe-haven assets, including silver. Uncertainty surrounding the virus's impact on public health, economies, and financial markets led to increased demand for silver as a store of value and protection against inflation and currency devaluation. The heightened safe-haven demand for silver contributed to upward pressure on its price;
- contracting industrial demand – the COVID-19 pandemic resulted in widespread lockdowns, travel restrictions, and reduced economic activities, inevitably leading to a contraction in industrial demand for silver. Industries directly involved in manufacturing, automotive, and construction experienced significant slowdowns, which negatively affected the demand for silver in various industrial applications. The decline in industrial demand has a significant impact on silver prices;
- supply chain disruptions – pandemic-induced disruptions in global supply chains delayed silver deliveries. mining operations faced numerous challenges due to lockdowns, travel restrictions, and labor shortages. These disruptions, combined with reduced recycling activities, led to limited supplies of silver. Supply chain disruptions affected the price of XAG/USD, altered the balance between demand and supply, and impacted investor well-being;
- government stimulus measures – to limit and mitigate the economic impact of the pandemic, governments and central banks have implemented unprecedented stimulus measures, including fiscal stimulus

packages and easing of monetary policy. These measures aim to support businesses, individuals, and financial markets. The injection of liquidity into the financial system and fiscal expenditure programs have the potential to increase inflation expectations, directing investors towards inflation-hedging assets like silver;

- volatility and investor sentiments – the COVID-19 pandemic has caused increased instability and uncertainty in financial markets. Fluctuations in the stock market, concerns about liquidity, and changes in investor sentiments and preferences affect the demand for silver as a safe-haven asset. Periods of heightened market instability and risk aversion increase the attractiveness of silver, leading to price increases. Improved market conditions, sentiments, and economic agents' risk appetite can have a reverse effect on silver's demand and prices.

Indeed, it is important to note that the impact of COVID-19 on the XAG/USD price is not uniform throughout the entire period. The initial phase of the pandemic, from early 2020 to mid-2020, is exceptionally severe and unpredictable, and the created conditions exhibit the most significant disruptions and price movements. The price of USD is influenced by the international monetary system, which is part of currency-financial relations that can function both autonomously and serve the international movement of goods, commodities, and other factors of production. (Димов, 2016)

Despite the difficulties, the global economy is gradually recovering, vaccines are becoming more accessible, and the impact of COVID-19 is being limited. During this period, silver prices are evolving in line with other market factors. The analysis presented so far provides a general and concise overview of the impact of the COVID-19 pandemic on the XAG/USD price during the specified period. It is important to consider additional factors for a more in-depth analysis, including examining specific market events and news to understand the full extent of the pandemic's influence on silver prices.

4. Conclusion

Noble metals find extensive applications in human society, including various fields such as investment and finance. The present scientific research is the author's interpretation, which examines, investigates, and analyzes the movement of prices in XAG/USD based on historical data. This historical analysis reveals a certain understanding of the potential drivers of silver prices. The interdependencies and interactions among different factors influence price changes. These relationships can be dynamic and subject to alteration based on evolving market conditions and unforeseen events.

Furthermore, as a recommendation for future research, in order to achieve more precise and specific forecasts for the price of 1 XAU, studies may focus on

analyzing correlations and market-specific events, investor interests, and other related factors.

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ASSESSING THE ENVIRONMENTAL IMPACT OF SMART HOMES

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Abstract: *This study examines the potential of smart homes to contribute to sustainable living by evaluating their environmental impact and resource efficiency. Through a comparative analysis, we assess energy efficiency, renewable energy integration, automation capabilities, sustainable materials, life cycle assessment and cost-benefit considerations. Valuable information about the viability of smart houses as ecologically clean housing solutions for a more sustainable approach to modern life was revealed.*

Key words: *remote control and scheduling, reduced energy consumption, optimize setting*

JEL: Q4, O3

1. Introduction

The concept of the "smart home" has gained significant traction in recent years, offering homeowners a range of technological innovations to enhance convenience, security, and energy efficiency. These homes are equipped with various sensors and devices that collect data on energy consumption, temperature, humidity, and more. This constant data stream can be harnessed not only for optimizing comfort and convenience but also for increasing environmental awareness. Residents can access real-time information about their resource usage, carbon footprint, and environmental impact.

By equipping with cutting-edge technologies the automation systems, promises improved comfort, convenience, and energy efficiency for homeowners. However, alongside these advantages, it is essential to examine the environmental consequences of this technological transformation. This study presents a comparative analysis of the positive and negative environmental impacts of smart homes.

2. Main perspectives

The smart home electricity service system is mainly composed of a main station system, a communication channel, a home intelligent interactive terminal and smart electric devices (Lin et al., 2018)

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Real-time Data for Environmental Awareness. This real-time data serves as a powerful educational tool. It can help individuals and families understand the immediate consequences of their lifestyle choices on the environment. For example, seeing a spike in energy consumption during peak hours or noticing excessive water usage can encourage people to take immediate actions to reduce their impact.

Customized Environmental Goals. Another key aspect is the ability of smart homes to set and monitor customized environmental goals. Residents can establish targets for reducing energy consumption, water usage, or waste generation. Smart home systems can then provide suggestions and automate adjustments to help achieve these goals.

For instance, if a homeowner sets a goal to reduce electricity consumption by 20%, the smart home system can automatically optimize lighting, heating, and cooling, or suggest changes in usage patterns. This personalization encourages more sustainable living practices, as it tailors recommendations to each household's unique circumstances.

Contribution to Smart Grids and Energy Efficiency. Smart homes do not exist in isolation; they can be part of broader smart grid systems. These interconnected systems can communicate with utilities and grid operators to optimize energy usage for entire neighbourhoods or communities. When smart homes collectively adjust their energy consumption based on grid demands, it can reduce the need for bigger plants and inefficient energy generation methods.

This integration into smart grids contributes to overall energy efficiency, lowers greenhouse pollutions, and promotes renewable energy adoption. It is an essential step towards building a more sustainable and resilient energy infrastructure.

Feedback Loop for Sustainable Choices. Intelligent environments can create a feedback loop that encourages sustainable choices. By providing immediate feedback on resource consumption and environmental impact, residents become more conscious of their decisions. Over time, this can lead to behavioural changes, such as reduced energy waste, more efficient appliance usage, and better recycling practices.

The increasing use of renewable energies sources in new buildings (either private or public) into the growing smart grids will be the most significant and effective means of decreasing CO₂ emissions to the atmosphere.

Moreover, data from smart homes can be anonymized and aggregated to provide valuable insights to policymakers and urban planners. This data can help in designing more eco-friendly cities and regions by identifying areas with high resource consumption and guiding targeted interventions.

The importance of smart home design in the context of mitigating the negative environmental impacts of smart homes cannot be overstated. Smart

home design plays a pivotal role in determining how efficiently and sustainably a smart home operates. In Table 1 are several key reasons why smart home design is essential in this context.

Table 1. Relative importance of smart home design factors considering user perception

Lifestyle balance	Securing long-term safety in use	Reducing environmental load	Relative importance
Operation of an integrated system	Standby power supply system	Response to change in inhabitant lifecycle	high
Sufficient number of power outlets	Standby power cut-off devices	Electricity consumption data management	
Proper form of the switches	Securement of safety in wet areas	Preparation for remodelling	
Adjustable lighting	Design of accessible storage spaces for network facilities	Use of modular furniture	low

Source: Buildings, MDPI.(Chang, 2022)

3. Environmental impact.

Switching to a smart home can potentially affect the environment, both positively and negatively. The overall impact depends on various factors, including how the inhabitants use and configure your smart home devices, the energy sources that power them, and the actions they take to mitigate potential negative consequences. Here are some ways in which switching to a smart home can affect the environment in positive way:

- Energy efficiency;
- Resource conservation;
- Renewable energy integration;
- Transportation efficiency.

However, it is crucial to recognize that the adoption of smart home technologies is not without its environmental consequences. There are negative environmental impacts generated by smart homes, shedding light on the various ways in which the integration of technology into our living spaces can have adverse effects on the environment. Here, a short list of them is shown:

- electronic waste;
- energy consumption of data centers;

- manufacturing and supply chain impact;
- complexity and maintenance.

It is important to note that while smart homes can have negative environmental impacts, they also offer opportunities for significant energy savings and resource conservation when used responsibly. Many of these negative impacts can be mitigated through sustainable practices, such as proper disposal of e-waste, energy-efficient data centres, and the use of renewable energy sources to power smart devices.

4. Comfort and energy consumption

The number of smart devices in a home can have a significant impact on comfort and energy consumption. While more devices can enhance convenience and customization, they also provide opportunities for energy-efficient automation and optimization. The key is to strike a balance between comfort and energy efficiency to create a smart home that meets your needs while minimizing energy waste.

In following graph, (Figure 1) “Comfort” generally increases as the number of installed devices increases. The curve might start steep and then gradually level off. “Energy consumption” might increase slightly as more devices are installed

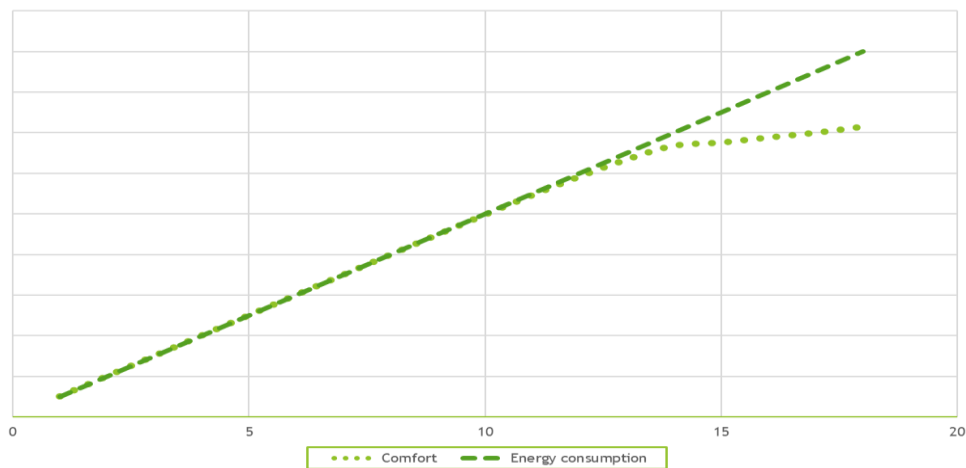


Figure 1. Appliances number impact

In this graph, a positive correlation between comfort and the number of installed devices is observed. As more smart appliances and devices are added to a smart home, comfort should generally increase. The relationship may not be linear, and there might be diminishing returns, meaning that adding a few devices can significantly improve comfort, but as you keep adding more, the incremental comfort gain may decrease. The graph might start with a steep incline, indicating

a rapid increase in comfort as the first few devices are installed. After a certain point, the slope of the graph might become less steep, showing that the additional comfort gained per new device decreases.

On the other hand, the utilization of renewable energy in smart homes is an interesting option to save energy supplied by the electric grid and hence save money and reduce electricity bills with the possibility of profiting from selling surplus energy to the electric grid (Enas Magdi Saadawi et al., 2022).

Smart devices often come with energy-saving features, such as energy-efficient sensors, scheduling capabilities, and adaptive controls. As adding more smart devices, the potential to improve energy efficiency increase. For instance, a smart thermostat can optimize heating and cooling based on habitants schedule, reducing energy waste. Nevertheless, once smart devices added to smart home, energy consumption increase slightly due to the energy needed to power and operate these devices.

5. Conclusion

The environmental impact of smart homes is a complex interplay of positive and negative factors. While these homes significantly enhance energy efficiency, resource conservation, and waste reduction, they also pose challenges related to electronic waste, data centre energy consumption, and manufacturing practices. The responsible adoption and use of smart home technologies, coupled with a commitment to sustainability, are key to maximizing their positive impact on the environment while mitigating potential drawbacks. Smart homes, when designed and employed thoughtfully, hold the potential to be a vital contributor to a more sustainable and environmentally conscious future

By optimizing energy consumption, conserving resources, and reducing waste, they can contribute to sustainability efforts. However, concerns related to electronic waste, data center energy consumption, and manufacturing practices must be addressed to ensure that the overall environmental impact of smart homes remains positive.

Smart homes play a crucial role in assessing and mitigating their environmental impact by offering real-time data, customization of environmental goals, contributing to smart grids, and fostering a feedback loop for sustainable choices. They empower individuals to make informed decisions and collectively contribute to a greener future.

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THRIVING IN UNCERTAINTY: INTEGRATING PSYCHOSOMATIC AND INNOVATIVE APPROACHES TO STRENGTHEN ORGANIZATIONAL BEHAVIOR IN TURBULENT ENVIRONMENTS

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Abstract: *This paper examines the role of psychosomatic and innovative approaches in strengthening organizational behavior in a turbulent environment. Turbulent environments, characterized by rapid change and uncertainty, demand adaptability and resilience from organizations. The study explores integrating psychosomatic approaches, including emotional intelligence, empathy, and mindfulness, with innovative approaches such as fostering a culture of experimentation, agile methodologies, and digital transformation. By combining these approaches into a holistic organizational behavior framework, organizations can enhance their adaptability, resilience, and competitiveness. The paper discusses the implications for organizations operating in turbulent environments. It offers recommendations for future research, focusing on the mechanisms through which psychosomatic and innovative approaches interact, the potential moderating factors, and the role of leadership in promoting their integration.*

Key words: *organizational behavior, turbulent environment, psychosomatic approaches, innovative approaches, adaptability and resilience*

JEL: L22, M12, O32

1. Introduction

A turbulent environment refers to a constant and unpredictable change in external factors that significantly impact an organization's operations and performance (D'Aveni, 1999). This may include economic fluctuations, political instability, rapid technological advancements, industry disruptions, and socio-cultural shifts (Ansoff, 2007). As a result, organizations face increased uncertainty, complexity, and ambiguity in such environments, making it difficult to predict and respond to changes effectively (Emery & Trist, 1965).

Adaptability and resilience are crucial qualities for organizations operating in turbulent environments, enabling them to withstand and recover from

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disruptions, maintain their competitive advantage, and thrive amidst change (Cameron & Dutton, 2003). Adaptability refers to an organization's ability to adjust its strategies, structures, and processes in response to changes in the external environment (Worley & Lawler, 2010). On the other hand, resilience is an organization's capacity to absorb shocks, recover from setbacks, and emerge stronger (Lengnick-Hall et al., 2011). Developing these qualities allows organizations to minimize risks, seize opportunities, and maintain long-term viability in facing challenges (Teece, 2018).

This paper aims to explore the effects of turbulent environmental conditions on organizational behavior and evaluate the role of psychosomatic and innovative approaches in promoting resilience and adaptability. Furthermore, the research aims to provide insights into various strategies and interventions to help organizations maintain their competitiveness and effectiveness in the face of challenges, focusing on integrating psychosomatic and innovative approaches.

2. Organizational Behavior in Turbulent Environments

External factors in turbulent environments can significantly affect organizational behavior by influencing employees' attitudes, motivation, job satisfaction, and overall performance (Aryani & Widodo, 2020). Such factors may include economic instability, causing job insecurity and financial stress; rapid technological advancements, leading to a need for continuous learning and adaptation; and shifting socio-cultural norms, affecting communication and collaboration within the organization (Griffin et al., 2016). As a result, organizations need to be vigilant in identifying and addressing the impact of these external factors on their workforce to maintain a healthy and productive work environment.

Organizations operating in turbulent environments face several challenges that can undermine their effectiveness and competitiveness, including:

- Increased uncertainty makes it difficult for organizations to proactively predict and respond to changes (Emery & Trist, 1965).
- Rapidly evolving customer needs and preferences require organizations to continuously innovate and adapt their offerings (Kotter, 2008).
- Accelerated pace of technological advancements creates a constant need for employees to update their skills and knowledge (Volberda et al., 2021).
- Heightened competition drives organizations to enhance efficiency and differentiation to maintain their market position (D'Aveni, 1999).
- Fluctuating employee morale and engagement is due to job insecurity, work-related stress, and shifting expectations (Pfeffer, 2010).

Psychosomatic factors refer to the interrelation between psychological processes and physical well-being, which can significantly impact an individual's performance in the workplace (Quick et al., 1997). Therefore, organizations must understand and address psychosomatic factors to promote a healthy work environment, support employees' mental and physical well-being, and ultimately enhance organizational performance (Grawitch et al., 2007). This may involve implementing stress management programs, flexible work arrangements, and fostering a supportive organizational culture that encourages open communication, empathy, and collaboration (Yang et al., 2008).

3. Psychosomatic Approaches

Psychosomatic factors refer to the interplay between psychological processes and physical well-being, which can significantly impact an individual's performance and behavior in the workplace (Quick et al., 1997). These factors are essential in organizational behavior as they influence employees' mental and physical health, job satisfaction, motivation, and overall productivity (Grawitch et al., 2007). By understanding and addressing psychosomatic factors, organizations can promote a healthy work environment, enhance employee well-being, and improve organizational performance.

Emotional intelligence (EI) is the ability to recognize, understand, and manage one's own emotions and the emotions of others (Salovey & Mayer, 1990). Empathy, a key component of EI, involves understanding and sharing the feelings of others (Goleman, 1995). EI and empathy play crucial roles in strengthening organizational behavior by enhancing communication, collaboration, and interpersonal relationships among employees (Druskat & Wolff, 2001). Organizations with emotionally intelligent leaders and employees are better equipped to handle conflict, support colleagues, and adapt to changing circumstances (Carmeli et al., 2009).

Mindfulness is a mental state achieved by focusing on the present moment while acknowledging and accepting one's feelings, thoughts, and bodily sensations (Reina & Kudesia, 2020). Mindfulness-based stress management techniques can help employees cope with work-related stress, enhance their emotional well-being, and improve their overall job performance (Lyddy et al., 2015). Some popular mindfulness techniques include:

- *Mindfulness meditation*: A practice that involves focusing attention on a single point, such as one's breath or a specific object, and gently bringing the mind back to that point when it wanders (Kabat-Zinn & Hanh, 2009).
- *Body scan*: A technique that involves mentally scanning the body from head to toe, noticing any sensations, tension, or discomfort, and gradually releasing them (Kabat-Zinn & Hanh, 2009).

- *Mindful breathing*: A practice that involves focusing on one's breath, observing each inhalation and exhalation, and maintaining awareness of the breath throughout the day (Chiesa & Serretti, 2009).

Google implemented a mindfulness-based emotional intelligence program called "Search Inside Yourself," which focuses on developing self-awareness, self-regulation, and empathy among employees (Tan et al., 2012). The program has reportedly improved employee well-being, job satisfaction, and productivity (Melnick, 2017). The health insurance company Aetna introduced a mindfulness and yoga program for its employees to reduce stress and improve overall well-being (Karlin, 2018). Aetna reported a significant decrease in stress levels, increased employee productivity, and reduced healthcare costs due to the program (Gelles, 2015). Intel introduced a mindfulness program called "Awake@Intel," aimed at enhancing employees' well-being, emotional intelligence, and resilience (Sorenson, 2014). The program has been reported to positively impact employee engagement, job satisfaction, and team collaboration (Sorenson, 2014). These case studies highlight the potential benefits of implementing psychosomatic approaches in organizations, including improved employee well-being, enhanced communication and collaboration, and increased productivity.

4. Innovative Approaches

Innovation is crucial for organizations to foster adaptability and resilience in turbulent environments (Teece, 2007). By continuously developing new products, services, and processes, organizations can respond to rapidly changing market conditions, meet evolving customer needs, and maintain their competitive advantage (Christensen, 2013). Moreover, innovation enhances organizational flexibility, facilitates problem-solving, and promotes a culture of continuous improvement, ultimately contributing to an organization's resilience (Tidd & Bessant, 2020).

Fostering a culture of experimentation and learning within organizations is essential for promoting innovation and adaptability (Edmondson, 2018). This involves creating an environment where employees feel safe to share ideas, challenge assumptions, and take calculated risks without fear of failure or retribution (Schein, 2010). Encouraging a learning culture can be achieved through practices such as:

- Providing regular feedback and opportunities for reflection;
- Encouraging collaboration and cross-functional communication;
- Offering training and development programs;
- Recognizing and rewarding innovative behavior;
- Establishing processes for learning from both successes and failures.

Agile methodologies, originating from the software development industry, emphasize flexibility, collaboration, and rapid adaptation to change (Sutherland, 2016). These methodologies can be applied across various organizational functions to enhance adaptability and innovation (Feldman, 2018). Implementing agile methodologies often involves forming cross-functional teams, which bring together employees from different departments and areas of expertise to collaborate on projects (Takeuchi & Nonaka, 1986). This approach facilitates knowledge sharing, accelerates decision-making, and enables organizations to respond more effectively to emerging challenges and opportunities (Larson & Gray, 2018).

Digital transformation refers to integrating digital technologies into all aspects of an organization's operations, leading to significant changes in its business model, culture, and customer experience (Kane et al., 2015). Digital transformation can profoundly impact organizational behavior by:

- Enhancing communication and collaboration through digital tools and platforms;
- Automating repetitive tasks, allowing employees to focus on more value-added activities;
- Enabling remote and flexible work arrangements, which can affect employee engagement and work-life balance;
- Facilitating data-driven decision-making, leading to increased accountability and performance measurement;
- Requiring continuous learning and adaptation as new technologies emerge and evolve.

Amazon is known for its culture of innovation, driven by its leadership principles, such as "Customer Obsession" and "Bias for Action" (Stone, 2013). The company continuously innovates in logistics, cloud computing, and artificial intelligence, allowing it to adapt and grow in a rapidly changing market (Lashinsky, 2012).

Netflix has successfully transitioned from a DVD rental service to a leading online streaming platform, primarily due to its innovative approach to content production, data analytics, and user experience (Hastings & Meyer, 2020). The company's ability to adapt and innovate has enabled it to maintain its competitive advantage in a rapidly evolving industry (Oh & Myer, 2016).

5. Integrating Psychosomatic and Innovative Approaches

Several synergies between psychosomatic and innovative approaches can help organizations thrive in turbulent environments. First, both approaches focus on enhancing employee well-being, engagement, and adaptability (Grawitch et al., 2007; Teece, 2007). For instance, emotionally intelligent and empathetic employees with strong psychosomatic skills can better navigate uncertainty and

contribute to innovative processes (Carmeli et al., 2009). Similarly, a culture of innovation can positively impact employees' mental health by providing a supportive and stimulating work environment (Edmondson, 2018). Thus, integrating psychosomatic and innovative approaches can lead to a more resilient and adaptive organization.

A holistic organizational behavior framework should incorporate psychosomatic and innovative approaches, addressing various aspects of individual and collective behavior. Key elements of such a framework may include:

- *Psychological safety*: Encouraging open communication, trust, and constructive feedback (Edmondson, 2018).
- *Emotional intelligence*: Developing emotional awareness and empathy among employees and leaders (Goleman, 1995).
- *Mindfulness and stress management*: Implementing practices to promote mental well-being and resilience (Lyddy et al., 2015).
- *Culture of innovation*: Fostering a supportive environment that encourages experimentation, learning, and risk-taking (Tidd & Bessant, 2020).
- *Agile methodologies*: Adopting flexible and adaptive processes to enhance organizational responsiveness (Feldman, 2018).
- *Cross-functional collaboration*: Facilitating knowledge sharing and teamwork across departments (Takeuchi & Nonaka, 1986).

Implementing a holistic organizational behavior framework may face several challenges, such as:

- *Resistance to change*: Employees and managers may hesitate to adopt new practices and behaviors (Armenakis & Bedeian, 1999). Addressing this issue requires clear communication, ongoing support, and demonstrating the benefits of the proposed changes.
- *Resource constraints*: Allocating time, money, and personnel to new initiatives may take much work, particularly in resource-constrained organizations (Tidd & Bessant, 2018). Prioritizing initiatives and demonstrating their potential return on investment can secure necessary resources.
- *Lack of leadership buy-in*: For a holistic organizational behavior framework to succeed, it is crucial to have the support of top management (Schein, 2010). Engaging leaders in the development and implementation process can help ensure their commitment and support.

6. Conclusions

This paper explored the role of psychosomatic and innovative approaches in strengthening organizational behaviour in a turbulent environment. The main findings indicate that turbulent environments, characterized by rapid change and uncertainty, pose significant challenges for organizations and require adaptability and resilience. Organizational behaviour is crucial in determining an organization's ability to respond effectively to external factors and navigate turbulence. Psychosomatic approaches, including emotional intelligence, empathy, and mindfulness, contribute to individual and collective well-being, resilience, and adaptability. Innovative approaches like fostering a culture of experimentation, implementing agile methodologies, and promoting digital transformation, can enhance organizational adaptability and competitiveness. Integrating psychosomatic and innovative approaches into a holistic organizational behaviour framework can help organizations thrive in turbulent environments.

Integrating psychosomatic and innovative approaches can provide a valuable roadmap for enhancing adaptability, resilience, and overall organizational behaviour for organizations operating in turbulent environments. By addressing employees' psychological and emotional well-being and fostering a culture of innovation, organizations can better cope with external pressures and maintain a competitive advantage. This paper's findings suggest that investing in developing emotional intelligence, empathy, and mindfulness among employees and promoting a culture of experimentation and agile practices can lead to more effective and resilient organizations.

Future research can further expand upon the concepts discussed in this paper by investigating the specific mechanisms through which psychosomatic and innovative approaches interact to strengthen organizational behaviour in turbulent environments, examining the potential moderating factors, such as organizational size, industry, or culture, that may influence the effectiveness of integrating psychosomatic and innovative approaches, conducting longitudinal studies to assess the long-term effects of psychosomatic and innovative approaches on organizational performance, employee well-being, and resilience, developing and validating measurement tools for assessing the impact of psychosomatic and innovative approaches on organizational behaviour and exploring the role of leadership styles and managerial practices in promoting and sustaining the integration of psychosomatic and innovative approaches in organizations.

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FRAUD PREVENTION IN DIGITAL PAYMENT SYSTEMS AND CYBERSECURITY EDUCATION FOR CUSTOMERS OF NATIONALIZED FINANCIAL INSTITUTIONS

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Abstract: *Information Technology and infrastructural development-based technology has taken important part and different dimension in building the future of Indian Financial System, especially in transition from tradition banking method to E-Banking services. One of the important reasons why this transition took place is because of time and convenience which caters the needs of customers in ease of transacting their accounts anywhere and at any time. Since, increased in the number of online transactions has paved the way to increased online frauds and hacking. In the present scenario cyber security and protection of customers information has become the biggest challenge. Hackers and Cyber attackers have become common marvel and get easy access to customer information anywhere and anytime. Customers in many stances have become a prey and victim unknowingly, believing the mechanism to be a genuine one. This research paper mainly focuses on customer awareness and methods of preventing electronic frauds, cyber security and throws spotlight on chances of users who fall as target to hacking and phishing attack which are*

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used to steal personal and bank information. This paper also examines the awareness of customer on digital frauds and cyber security provided by the perspective Nationalised Banks. Cyber security and infrastructure security can only be accomplished by sensing the techniques and practices of attackers and building a strong defence and security on the KYC of the bank customers. It also seeks to understand various factors that are responsible for bank fraud which are unidentified to the customer.

Key words: E-Banking, Cyber Security, Digital Frauds

JEL: G21, G23, C8

1. Introduction

Cyber security plays a very important part and role in Information Technology. Cyber protection has become a real concern in all entity of business. They spend heavily to ensure their security to protect information and their database this has become a greater challenge not only to businesses but also to banking sector as it plays a key role in Indian Financial System. In today's technical environment, technologies have changed the appearance of dissimilar business operation (Mistrear et al, 2021_a, Mistrear et al, 2021_b, Mistrear, 2023_a, Mistrear, 2023_b). In India, it has been recorded more than 60% of total commercial transaction are done online. This has flagged to all hues of cybercrimes in enormous forms. The tough fight against cyber-crimes needs a comprehensive and a safer approach to solve arising issues (Aithal, 2015).

Government through laws has enforced monitoring, investigation and prosecutes cyber- crime effectively through sector wise mechanisms. All over the world, Government has imposed strict laws on cybercrimes in order to prevent frauds and malicious activities.

In the realm of banking and financial transaction today Information Technology and Infrastructural development has become the prerequisite to compete in phase of national development amongst developing countries. In today's world it has transformation of development has been made through ease use of Internet of Things (IoT). The user-friendly technology, flexibility in terms of payment and transactions and also banking financial transactions have made an elastic from the way of traditional banking. Customers have started to depend on internet and websites to get information, compare and make decisions on the financial products or services of banking sector without mobility with one click (Mistrear, 2023_c, Mistrear, 2021_a, Mistrear, 2021_b). This is made possible because of Online and Core Banking transactional development. This has also given the way of other all possible cyber-attacks on the customer if they are not aware on the security systems and legal protections given by the Banks and Financial service sectors. With the same use of Internet of Things, it has laid a web for customers by cyber attackers and hackers who breaches and breaks the security systems with the help of the customers unawareness of these attacks.

Banks and other Financial Sectors are trying to instrument and protect customers information and defence against these attacks through layers of security protection on customers and designing many awareness programmes on Cyber Security and Cyber- Crimes (Animesh et al., 2017, Stiawan et al., 2017, Krishna, 2017).

According to Reserve Bank of India banks lost Rs.109.75 crores to theft and online frauds in the financial year 2018 (Report, 2016). Most of the cases which was registered were through their digital payment gateways. On this Basis RBI has advised banks to upgrade security at bank branches and all ATMs. Although challenges in terms of Information Technology ideas and skills seems to be fewer among customer and having a regular checks and monitoring has become more complex and challenging because of users are high and increased demand on online transaction. The cyber-attacks impact on banks and users can devastate not only personal loss but also financial loss, business loss, critical data loss, regulatory penalties, legalities etc. the attacks can be on malicious link attachments, Voice Phishing through Phone calls by faking the caller ID as Banks and Financial institutions, phishing baits, and false unsecured webpages where it captures the username and passwords. Fake money request and request for KYC from the customers from unknown sources, can be a possible cyber- crimes and attacks on the customers directly. Especially in the period of pandemic COVID-19 the rate of malicious and cyber-attacks has increased. In India, during the year 2020, the cyber-attacks have rose by almost 300% comparing the last year states the Union Home Ministry in Parliament based on the data from the Computer Emergency Response Team, India (CERT-IN). This is because of the lack of cyber security and awareness on phishing, cyber and malware attacks. Where the entire world was shifting and transforming to complete online for transactions, work, education, and other essential purposes.

Government and regulatory support and supervision.

There are significant ongoing efforts by Reserve Bank of India, MEITY, CERT-IN, IBCART, NCIIP in setting cyber security frame works, guiding, warning, and monitoring of cyber- attacks. Reserve Bank of India had, provided guidelines on Information Security, Electronic Banking, Technology Risk Management and Cyber Frauds through its Circular DBS.CO.ITC.BC. No.6/31.02.008/2010-11 dated April 29, 2011, wherein it was indicated that the measures suggested for implementation cannot be static and banks need to pro-actively create/fine-tune/modify their policies, procedures and technologies based on new developments and emerging concerns (More, 2016, Mohapatra, 2016). Reserve Bank of India issued a comprehensive Circular on June 2, 2016, underlining the urgent need to put in place a robust cyber security/resilience framework at banks and to ensure adequate cybersecurity preparedness among banks on a continuous basis. The salient features are (Ali et al., 2017, Pradeep, 2016):

- banks to have a Board approved Cyber-Security Policy which is distinct from the broader IT policy / IS Security Policy of a bank;
- banks to establish cyber risks in real time through SOC (Security Operations Centre) and make arrangement for continuous surveillance to monitor and manage cyber threats;
- a minimum baseline cyber security and resilience framework is given to be implemented by the banks;
- a Cyber Crisis Management Plan (CCMP) should be immediately evolved which should be a part of the overall Board approved strategy;
- banks should share information on cyber-security incidents with RBI;
- banks to bring Cyber-security awareness among stakeholders / Top Management / Board.

RBI had created a cyber-cell under the Department of Banking Supervision and conducted a separate IT audit of banks covering each bank for separate cyber-security and IT audit (Lakshmanan, 2019, Sravanthi, 2016, KPMG, 2017). RBI is also has done a gap analysis on the basis of the reports and asked banks to bridge the gaps. IB-CART, CERT-IN, NCIP help Banks in disseminating and foster sharing information associated with physical and cyber events (incidents/threats/ vulnerabilities) and resolution or solutions associated with the bank's critical infrastructures and technologies (Krishna, 2017, Anuraj, 2017). Information Technology Act 2000, and subsequent amendments focused on Digital Signatures, E-Governance, Justice Delivery System, Offences and Penalties. There is a need to enhance the scope and definitions of the Act in the light of ever-changing cyber space and attacks.

Transaction monitoring.

It is observed that cyber heists take longer to detect, and the damage would have happened by the time it is noticed. While focussing on cyber security, banks should not forget to monitor the transactions through FRM (Fraud Risk Management) solutions to identify fraudulent transactions on the fly. Banks should build some scenarios under which fraudulent transactions can take place and build alert mechanism for monitoring such online transactions. The catastrophic effect on cyber security and performance of the banking and financial sectors has made them to take stringent actions on the protections of the security systems in these industries. Transaction monitoring mechanism has given the means to find the clutches of the cyber breach mechanism and cyber-attacks on the customers by identifying the cyber-attacks and crimes zones based on place, time, and frequency of attacks on the security breach of systems and direct customer information KYC assortments.

Emergence in need for online banking innovation:

Unified Integration: Internet-based online Banking has become the need of the hour, to transact efficiently quick seamless banking transactions. Online

Banking systems provide integrated banking operations transactions which eases the demand and supply chain management in all their dealings with oversighted technology.

Reduction in Cost of Operations and Services: The digital information technology has evidently reduced the cost of operations and services provided to customer from traditional banking operations. It uses the operations of automations and Artificial Intelligent software program without human intervention.

Network Connectivity: with the use of internet and technology through proper networks makes the transactions easy and quick anytime and anywhere. Because cost efficient networks provided by the service provider has increased consumption of technology in an economical means.

Surge in Data Accessibility: Especially during Pandemic COVID-19, it has found an increase in data usage and increase in data accessibility and availability, where people began to shift from manual operations to digital methods. This has increased the usage of non-financial operations.

Cloud or Core Banking Technological Infrastructure: Due to the development of cloud or core banking systems in banking operations, has given customer to experience the ease of banking anywhere or in any branch as it acts like a centralized form of operations of transaction for customers daily needs. A core banking system is the centralized back-end software that handles everyday banking transactions for customer's financial records in terms of ledger and account maintenance of the customers data.

Clambering up Banking business operations: As the Indian Financial system is centered on the banking and financial sector functions as they build up the economy. It is very important to improve the technological development in these sectors. It can improve the overall Indian financial sector by providing cloud-based services to the customer and the economy. It helps in scaling up the banking business operations in much more fast and easier way both for the customer and bank if there is technological infrastructural development.

Cyber security and privacy systems in nationalised banks in India.

Cyber Security and Privacy system in Indian Nationalised Banks is a big-time challenge in today's digital era. Cyber space and use of online platforms have increased drastically over years and especially during pandemic in COVID -19 times. There is also a visible surge in cyber-crimes where users and customers are unaware of the facts of being hacked and tracked. Most of the cyber-crimes takes place as the user or customers themselves give information's about their credentials without knowing that they are attacked and cheated on cyber space. As the world is moving towards digitalisation in all the transaction, it has become inevitable that cybercrimes are variably increasing. To protect the security and privacy of the user customer all Banks and Nationalized Banks in India as well as

in the entire globe is trying hard to give a safely and encrypted system of operations. The following are the protection mechanism which is given by banks to prevent and safeguard customers from cybercrime:

Know Your Customer and Know Your Account: The nationalized banks have adopted the policy of updating the information on customer and their account through KYC (Know Your Customer) and KYA (Know Your Account). Banks yearly and if there are any changes in the customers details and account modifications, they are asked to update the form. Though this bank can have complete details and can provide secured service to the customer.

Secure system with up-to-date configuration: Cyber-attacks use different software to attack the computer if it is not up-to-date and configure to the security level. They can access the system through web content and internet downloads. Configuring with up-to-date operating systems can secure the information.

Anti-virus and firewall turned on actively: Installation of Anti-Virus and Firewall in the system can protect the computers from hackers and attackers by blocking and gives notification on the webpages. It protects from harmful threats and steal information of the users.

Set Strong Passwords and PIN: Setting up of strong username, passwords and Personal Identification Number can be a major way of securing the account. In some banks these credentials have an expiry period, and the customers are requested to change the credential often to prevent from hacking. Case and character sensitive credentials are also used to highly secure the accounts from any of the attacks.

Frequent Review Bank Statements and financial statement: One of the most important advice given by the banks is checking banks and financial statements frequently can help the customer to track debit and credit balance and transaction details. This helps the customer to monitor the transaction summary and any malicious transaction and prevention of fraud.

Alerts through SMS and Emails: In almost all the nationalized and other banks this system of SMS and Email alerts has been practiced. If there are any malicious or suspicious logins into the account or money request or withdrawal of money or ATM debit card and Credit card swipes are automatically indicated to the customers through immediate SMS and emails which is connected to bank account. This keeps the customer aware on the transactions details and if there is any suspicion takes place the customer can block and track the account by requesting the bank.

Awareness Programme from Apex and Nationalized Banks: The Reserve Bank of India is called as the Apex bank which guides, advice and monitors the bank system in Indian. It has designed awareness programme on digital frauds, hackers, attackers and protect the customers to secure their accounts credentials. It has instructed all the citizen and customers of the nationalized banks that the

nationalized banks will never ask any customer to reveal information or credentials through indirect source and not to respond to any phone calls, emails, and any form of indirect information collection for PIN, Passwords, CVV or OTPs and the nationalized banks will never collect information through these sources. If any customer information required, they are requested to come to the branch for verification.

Secret Socket Layer used in Banks: This is a back-end web application program which is used as a mandatory protocol to secure the webpage operations by verifying Secret Socket Layers (SSL) certificate. Before accessing and using any webpage the user can either verify the SSL certificate, expiry, and authentication. If all the provisions are right, then they can use those webpages to browse and feed in credentials for online banking transactions.

OTP, TP, QR: One Time Password (OTP), Transaction Password (TP) and Quick Response Code and Protocol is the most secured form of protecting and preventing the digital frauds and hacking of accounts for money transfers online. Each of these protocols are connected to the mobile number which is registered with the bank account. For any of the transaction related to transfer of money cannot happen without OTP and TP numbers which is sent via encrypted SMS. In QR codes the customer can scan digitally with the encrypted codes and make direct payments with the help of transaction and money request passwords. In India this is the highly secured way of defending the customer and user from digital frauds.

Authenticated Security Questions on transactions: According to Reserve Bank of India advice on multifactor authentication protection based on security questions. For every login or forget password logins this security question authorization is used. This is given by the customer at the time of creation of online bank account. There are three opportunities given to the customer is the security question is answered wrongly and after which account blocking will take place automatically.

Tokens: As part of Multifactor authentication scheme given by Reserve Bank of India, there are three forms of tokens such as USB Token device, Smart Cards and Password-Generating Token are provided for both bank customer and retail customer.

Digital Signature: Electronic or Digital signatures are created in form of authenticated certificate which is used to customer identification and access control on the account for transaction. For any digital payments and transactions, the digital signature should be matched for identification and authentication from any digital frauds.

Research study background.

In the contemporary world with upgrading Technological advancement has not only changed the business operations but also Indian financial sector

through Banking operations. It is benefitting both in terms of qualitative and quantitative manner which has brought development in the country at large. The rapid growth of data operations and sciences has changed the lives of human beings in modifying the standard of living of the people. As banking industry is the base for the Indian financial system it has contributed distinctively to the growth and development of the economy. The adaptation and utilisation of technology in banking operation through automated core banking and cloud banking services has given an upward push to customer online banking (Mistrear, 2023_a). At the same time due to growing technological advancement there is also increase in cyber-crimes and digital frauds where customers are cheated unknowingly. The background study focuses and build upon the protection, prevention and awareness of these cyber-crimes and digital payment frauds where customers fall as prey through bogus online banking systems. The study originates from the Indian perspective of study and understanding the banker and customer relationship in online banking services and focuses on the security and prevention of online financial crimes. There is a plenty of scope for the research as it understands and evaluates the bank customer awareness on online banking regarding to cyber security and digital payment fraud prevention particularly in nationalized banks (Mirdul, 2019).

Aims and objectives of the research study:

- to understand the level of awareness among consumers while utilizing the E- banking services;
- to review the recent scenario in cyber- crimes and digital frauds occurring in E-banking services;
- to examine the safety and security mechanism used to protect customers from cybercrimes and frauds;
- to study the preventive measures and safety tips given by nationalized banks for customers against cyber frauds and crimes.

Testing of hypothesis statement:

H1: There is significant difference among consumer's occupation and level of awareness on Laws relating to cyber security and privacy in E- banking;

H2: There is significant association on gender of the consumers on awareness towards cyber- crimes and cyber security systems;

H3: There is significant impact on the age of the consumer towards cyber-crimes and cyber security issues;

H4: There is significant relationship on the income of the consumer and experience on cyber-crimes, security issues;

H5: There is significant relationship on the occupation of the consumer and experience on cyber-crimes, security issues.

2. Literature Review

Esther Ramdinmawii and et al., (2014) cyber-crime studies that there is an increasing monetary damage which is nearly 781.84 million U.S. dollars. The study speaks about the different types of crime committed in today's world. There are many rules and regulations laid down by different laws across the world to prevent the cyber-crime, but it fails when people are not aware of these laws.

K. Mohapatra (2016), Cyber-crimes cases risen from 89% to 94% and the financial losses due to it had also grew from 45% to 63 %. It also revealed that around 70% considered that financial institution was well outfitted to combat cyber fraud.

Maarten Gehem et al., (2015) reports on cyber-attacks are in shortage of number of findings on menace of cyber assessments. Maximum number of reports are focused on large business houses, also states that Research must be conducted focusing on the awareness of cyber-attacks among the public.

Pradeep Mullekyl Devadasan (2015) The researcher highlights the sustainability of Banking sector across the world In this paper the author studies various banking services using information technology and shows the need for cyber security by stating the depth of cyber- crime committed during a period of three years from 2010 to 2013.

Animesh Sarmah and et.al., (2017) Customers are cheated with the prevailing technology, until these people publish their situations even the laws governing cyber-attack will not be saving them. So, it is important that people dealing with money to be careful with their transactions and come forward to stop this criminal act by recording the damages with the Police station. The authors also emphasis that there should be consistent efforts among all the nations with co- operation to act against the cyber-crime.

Jaafar.M.Alghazo and et.al.,(2017) These authors clearly sate in their work that banking using Internet platform is increasing as it is the comfortable way of banking. The increased access of banking using Internet has also increased the threat of cyber security and it is a big challenge for banking sector to protect their customers from cyber-attacks.

KPMG (2017), According to reports the offender's gained access by using spear phishing. In a survey conducted on cybercrime, it has been pre-meant that primarily banks were not well outfitted with adequate cyber security mechanism, because of which they were capitulated to impending cyber threats.

Union Bank of India, (2017) Indian banks have been witnessing persistent attacks from possible state, organized criminals, and hackers. The case of cyber-attack on Canara Bank in the year 2016 explains this better, where bank's e-payments were tried to be blocked by sabotaging its site through the attachment of malicious software. Union Bank of India also fell prey to an attack in July 2017, where close to USD 170 million was looted from its Nostro account.

Burra Butchi Babu (2018) Government's encouragement since demonetisation in November 2016 has brought unprecedented spurt in new digital Banking customers and Digital Payments have registered a record growth. Banks have scrambled to implement various new mobile banking technologies like Wallets, Utility Bill Payments, 24x7 money transfers etc. Lot of mobile applications were developed by banks and most of the new digital users were new to digital banking. This called for greater focus for revamping of cybersecurity in Banks and Financial Institutions.

Hussain Aldawood and Geoffrey Skinner (2018) one of the most straightforward solution for cyber security is through effective training and education programs. As such, in their paper they show the details of how innovative information security education programs can effectively increase user awareness and ultimately reduce cyber security incidents.

Mirdul Sharma and Satvinder Kaur (2019) Cyber-crime has become a menace to the society as majority of people are losing on their data with money to the hackers. The cyber criminals find the easy way to make money out of this updated technology and crack the information through unauthorized access.

Subodh Kesharwani (2019) states that, in the current situation, with the increase in the number of issues related to cyber security there has been increase in the issues connected to the area of digital privacy. Cyber-attacks look as a global threat; hence, organizations need to establish innovative methods in cyber digital world to cater cyber-attacks, focusing mainly on Banking industries.

Gupta Nakul and Jhamb Dharmender (2020) Provides insight into fraud mechanisms, and then addressing loopholes through relevant policy interventions, the paper develops an evolutionary history of fraud and preventive tools to control its various forms. They focus on the need to prioritize interventions, defining those interventions and analyzing their efficacy & potential for change.

3. Research design

This study research design includes both descriptive and exploratory research approach with some empirical background evidence. The study is done to find out the consumer awareness on cyber-crimes, security, and privacy in online banking with reference to nationalized banks. The exploratory research approach is done on the past and existing literature review in formulations of study focused objectives and hypothesis. The descriptive research approach was used to study the theoretical aspects for testing the hypothesis and to conclude the study. The study includes both qualitative and quantitative approach from the data analysis and for concluding interpretation.

This study has collected primary data from the customers based on their awareness of e-banking and related issues. It is a fact-finding inquiry with user

experience with nationalised bank e- banking services. The population characteristics are estimated based on data collected on the survey method.

4. Method of data collection

Based on past literature and research questions both the primary data and secondary data sources were used to collect information pertaining to the research requisites. The Primary data collected through survey method using questionnaire. The questionnaire contains questions relating to the study area on consumer awareness towards cyber-crimes and security/ privacy in Nationalized banks in India.

Data from secondary sources such as research papers, government documents, annual reports, journals, published academic working papers, report findings of RBI, NCRB, NITI Aayog and CERT-IN, data banks from nationalized banks, E- journals, Journal of Banking and Finance etc.

5. Findings of the research study

The key findings of the research are found on the analysis made on the respondent data collected in the research survey based on the awareness of customer towards safety, security and cybercrimes and frauds in online banking in Nationalized Bank in Bengaluru city. The major findings are classified based on demographic profile with study variables undertaken in the study.

The following are the key findings and hypothesis test interpretation of the results.

Findings on classifying 19 sector Nationalized Banks in India, inferring that the highest 44% of the respondents have bank account in SBI, 12.7% of the respondents have account in UCO bank, 6.9% of the respondents have account in Canara bank, 5.9% of the respondents have account in Indian Bank, Indian Overseas Bank and Union Bank of India.

The study finds 80.4 % of the respondents are using Online Banking and 19.6% of the respondent do not use online banking and observed using traditional banking for bank transactions.

It is found that 40.2% of the respondents are already using e-banking services and are aware of the usage, 28.4% of the respondents have started using online banking after suggestions given by family and friends, 21.6% of the respondents are using online banking because of the advice and recommendation given by the bank officials on online banking.

Customer usage of E-Banking Services provided by the Nationalized bank, where 54.9% of the respondent strongly agree, 24.5% of the respondents agree on the usage of the E-Banking services and majority of the respondents are convenient using them. 31.4% of the respondents use online banking for personal transactions, 25% of the respondents use for online transfer of money

(NEFT/RTGS), 20% of the respondents use paying all bill transactions, 13% of the respondents use for regular banking transactions and 11% of the respondents use for online shopping purposes. It is found that, 35.3% of the respondents always use online banking for every usage, 29% of the respondents use online banking occasionally, 16.7% of the respondents use online banking for every transaction and the remaining 18.7% of the respondents use sometime or never use online banking.

The study results show, 47.1% of the respondents strongly agree on cashless transactions, 36.3% of the respondents agree on the preference, 12.7% of the respondents are neutral on the either to use nor to prefer, 3.9% of the respondents strongly disagree on the cashless usage and prefer traditional methods of banking.

The results projects that, consumer perception on digitalization of banking services will increase digital fraud and cybercrimes as 40.2% of the respondents agree that digitalization increases frauds and cybercrimes 20.3% of the respondents agree on the same facts, 30.4% of the respondent are neutral neither to agree nor disagree, 7.8% and 1.0% of the respondents think that digitalization in banking services will not increase in the fraud and cybercrimes.

40.2% of the respondent's state that immediate notification sent from bank in case of problem with transactions. 23.5% of the respondents say that notifications regarding the logins to the bank account are indicated to them as a part of security, 18.6% of the respondents say that transparency of the transaction means security for them, 11.8% state that availability of an option to block account in case of misappropriation should be made. 5.9% of the respondents say easy transfer of money without a complicated process should be made for accessibility.

The results illustrate the importance of online banking in banking transaction as 86.3% of the respondents say that digitalization of banking services is very important in today's world for all financial transactions. 13.7% of the respondents say they don't feel the importance of online banking in banking transaction.

The results show, the ease of the respondents using online banking for all their financial transaction. 89.2% of the respondents say they feel online banking ease and 10.8% of the respondents say they are not comfortable with online banking. The technology and systems used in online banking are up to date according to the customer's experience. 63.7% of the respondents feel that the technology and systems used in online banking service is up to date. 36.3% of the respondents feel it is not updated according to the technological changes.

The findings exemplify the comparison of using online banking and traditional banking as customers convenience over the other. 91.2% of the respondents feel that online banking is more convenient and easier to use compared to traditional manual banking. 8.8% of the respondents feel that they are

convenient with the traditional banking system. The study represents that 25.5% of the respondents use mobile banking, 23.5% of the respondents use Online banking, 21.6% of the respondents use UPI based transaction, 20.6% of the respondents use debit/ credit card transactions and less than 8.8% of the respondents use traditional banking for their banking transaction. Majority 70.6% of the respondents haven't faced any cyber related issues in online banking. 29.4% of the respondents have faced some form of cyber issues in online banking.

The results shows that customer experience relating to cyber issues in Online Banking, 15.7% of the respondents faced issues with online email frauds, 7.8% of the respondents have faced financial crimes and online money request, 19.6% of the respondents have got phone calls requesting information of their details, 2% of the respondents took data survey for account details unknowing the cyberfrauds, 5.9% of the respondents have faced denial of transactions and re-login of pages, 3.9% of the respondents have faced issues on money deducted twice for single transaction and no refund of debited money from the bank and majority of the customers haven't faced any cyber related issued of the above mentioned and are very comfortable with their online banking services.

From the study it is found that customer awareness on banking security system and terms, 78.4% of the majority respondents are aware of Pin authentication, OTP, and UPI payment request. 17.6% of the respondents are aware of the One Time Password (OTP), 2.9% of the respondents are aware about pin authentication and 1% of the respondents are aware of UPI payment request. 51% of the respondents are aware on cyber security laws relating to online banking frauds and cyber-crimes and 49% of the respondents are not aware on the cyber security laws relating to cyber-crimes on online banking.

The result states that majority 86.3% of the respondents' experiences security and safety provided by their banks regarding their account holding. 13.7% of the respondents say that there is no safety and security provided by their bank regarding to their account. The findings show, 62.7% of the respondents feel that banks address the issues relating to cybercrimes regarding online banking. 37.3% of the respondent feel that banks do not address the issues relating to cybercrimes regarding online banking.

The study exhibits that what is most prominent advantage in using online banking in comparison to traditional banking. 32.4% of the respondents feel that online banking is more convenient and fast compared to traditional banking, 27.5% of the respondents feel that it is time effective, 18.6% of the respondents feel that it is user friendly and quick in transaction, 14.7% of the respondents feel that online banking provides varieties of services at one roof, 6.9% of the respondents feel that is safe to use online banking.

The outcomes states, kind of Cyber securities and fraud prevention are provided by your Bank are provided as opinions from the respondents. The

highest 58.8% of the respondents state that providing OTP for transactions prevents cybercrimes and fraud prevention in online banking, 31.4% of the respondents feel that providing SMS for each transaction are safe, 2% of the respondents states that yearly updating on KYC and awareness programs on cybercrimes and online frauds can provided regularly, 5.9% of the respondents feel technological updates and layers of protection can secure their account details and prevent cyber frauds and crimes.

It is found that, 38.2% of the respondents opted neutral option on their opinion that internet is secure for conducting financial transaction. 34.3% of the respondent agree that internet is secure for conducting financial transaction, 15.7% of the respondents strongly agree on the same. Less than 11% of the respondent disagree that internet is not secure for conducting financial transaction. The studied data projects that 49% of the respondents agree that customer services and account details of the recorded transactions are kept accurate and confidential, 26.5% of the respondents neither feel agreed nor disagree on the given statement, 19% of the respondents strongly agree on the given statement, less than 4.9% of the respondents disagree on the given statement.

The result of findings shows that 30.4% of the respondents feel that online banking is more convenient, 28.4 % of the respondents feel UPI based transaction is convenient, 23.5% of the respondents feel that mobile banking is ease and convenient, 11.8% of the respondent feel card transaction is convenient, 5.9% of the respondent feel that traditional banking operations are easy and convenient. Issues relating to customers online blocked payments that are solved by the banks show that, 46.1% of the respondent say yes on the given statement, 10.8% of the respondent feel banks don't clear issues relating to online block payments, 40.2% of the respondents say that there is delay in processing the issues relating to clearing blocked payments, 2.9% of the respondents say that the banks solve the issues relating to blocked payments online.

The findings states that 59.8% of the respondents feel that nationalised bank provide safety, security and quick in online banking, 34.3% of the respondents feel that private sector bank provide safety, security, and quick online banking, 4.9% of the respondent feel foreign banks provide proper service, 1% of the respondents feel that RRB provide service on safety, security and quick in online banking. The outcome shows that 57.8% of the respondents are satisfied with the services provided by banks, 18.6% of the respondents feel that they are highly satisfied with the online banks' services, 17.6% of the respondents feel neutral, 3.9% of the respondents feel dissatisfied and 2% of the respondents feel that they are highly dissatisfied with the online service offered by their banks.

Results of Hypothesis testing based on Chi- Square test and Pearson's Correlation test on demographic profile of the respondents with the study variables are listed below:

The hypothesis test result of Pearson's Chi-Square analysis show, the p value is greater than the selected significance level $\alpha=0.05$, we accept the null hypothesis and reject the alternative hypothesis stating that there is no significant difference among consumer's occupation and level of awareness on Laws relating to cyber security and privacy in E-banking.

The hypothesis test result of Pearson's Chi-Square analysis show, the p value is greater than the selected significance level $\alpha=0.05$, we accept the null hypothesis and reject the alternative hypothesis stating that there is no significant difference among consumers on awareness towards cyber-crimes and cyber security systems and gender of the respondents.

The hypothesis test result of Pearson's Chi-Square analysis show, significant impact on the age of the consumer towards cyber-crimes and cyber security issues (N=102). The analysis showed that there was significant evidence to accept the null hypothesis and conclude that there is a weak negative impact between age and cyber security issues in online banking. $r=-0.22$, $p<0.01$ indicates that there is no and negative correlation between age and cyber-crimes issues.

The hypothesis test result of Pearson's Correlation coefficient analysis shows no significant relationship on the income of the consumer and experience on cyber-crimes, security issues (N=102). The analysis showed that there was significant evidence to accept the null hypothesis and conclude that there is a moderate negative impact between income and cyber security issues in online banking. $r=-0.72$, $p<0.01$ indicates that there is no and negative correlation between income and experience on cyber-crimes issues.

The hypothesis test result of Pearson's Correlation coefficient analysis shows the evaluated no significant relationship on the income of the consumer and experience on cyber-crimes, security issues (N=102). The analysis showed that there was significant evidence to accept the null hypothesis and conclude that there is a low positive impact between income and cyber security issues in online banking. $r=0.110$, $p<0.01$ indicates that there is no correlation between occupation and experience on cyber-crimes issues.

6. Suggestions and Recommendation

Based on the findings from the research study, the following suggestions and recommendations are drawn in aspect of customer awareness towards Cyber Security and Digital Payment Fraud Prevention in Nationalized Banks. The customers should check and verify any of the information asked by the external sources while using online banking before transacting. Never share any information relating to personal data such as name, date of birth, PIN, card details to anyone especially while feeding data in any online platforms for transaction in e-retailing through online banking. customers can monitor their bank account regularly by checking the bank statements both online and book mini statements.

Verifying the webpage security settings and secured pages before logins. As directed by the RBI, no banks make call to any customer for information verification on KYC and getting their account and card related details, so they should never share information through phone calls.

In the case of banks, they can provide a real time solution through help lines and 24X 7 hot lines to the customers for any problems faced by customers in online banking. Updating and security checks in technology used in banks for user friendly secure online banking services to customer. Anti-cybercrimes policy and technical professional support can be implemented by the banks to secure customers from any fraudulent activities by the hackers. Quick response and detection of online frauds technological solutions can be implemented and digital certification on the site information can be provided by the banks.

7. Conclusion

In the past two decades there has been tremendous growth in information and technology which has given way to innovation in all sectors of business. This has greatly brought changes in the financial sectors as it is the base for any business operations. In the banking sector these financial innovations and technological developments have made the customer to do easy of transactions for every financial and retail requirement.

As developments are made in technology this has even given development in banking operations. Despite various technological developments offered to end customers by providing electronic banking services, it has also given some critical drawbacks in terms of complete security and privacy to online bank users. In the current scenario it has become like a basic necessity as more and more customers use online banking services in operating bank account for various purposes and for financial needs. As the apex bank, Reserve Bank of India has been giving directions to all banks and exclusively to all nationalized banks about cyber security and cyber protection from any online frauds in all moments in time, by creating awareness on cybersecurity, protection, hacking and other cyber frauds where customers are unknowingly cheated and fall as prey to all kinds of online frauds.

Therefore, this research project attempts to seek and analyze customer's awareness on cyber security and digital payment fraud prevention in nationalized banks based on the respondents view on e-banking services. According to the result analysis, it was identified that customers who ever uses online services for retail and banking services irrespective of age, occupation, income, gender, education level they are vulnerable to online frauds if they are instinctive towards online frauds, anonymous calls and hacking of information. There is no significant difference on the study variables with demographic profiles. Similarly, the outcome shows that customers are aware about all online products of e-

banking services, aware about cybercrimes and less aware about the laws relating to cyber protection while using e- banking services.

Thus, the analysis and findings of the study was useful to understand consumer awareness and variable factors that has determined their insight about their security, privacy and cybercrime protection while using online banking services.

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GLOBALIZATION CONTROVERSIES AS AN ANALYTICAL PLATFORM FOR IDENTIFYING THE DEGREE OF CONNECTION OF REPUBLIC OF MOLDOVA TO THE GLOBALIZATION PROCESS

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Abstract: *The article presents the format of a study that evaluates the dimension of engagement of a state (in the given case, the Republic of Moldova) to the global system, observing a series of quantitative indicators of interconnection. These indicators create data research premises to generate discussions about how to connect to all that global flows and networks mean. In other words, we are discussing the degree of advancement in this approach to the globalization of human activities in order to create visions, try predictions, follow routes to unblock possible processes of stagnation. The interconnection to global processes also highlights possible discussions on the role that the state assumes in this situation to create a radius of influence for its benefit. Neglecting this aspect implies not understanding the opportunities and threats to which we are exposed.*

Keywords: *globalization, extension, intensity, speed, impact*

JEL: F5, F6

1. Introduction

It seems that the tried-and-true metaphor of the "man of the planet" is increasingly becoming a platform of challenge for those who are not adherents of the concept of holistic world organization and a deep test for those who scrutinize the future. Both experiences reveal the need to understand the causes that produce the perception of the faltering of globalization and to what extent they are able to create vectorial deviations from what seemed until recently predictable and indisputable. More importantly, the agenda of the discussed topics cannot be hidden, otherwise we risk paying the salary of the ignorant, in a contemporary setting of triple disruption of pandemic, military and technological origins. We remind you that "The process of globalization concerns all fields: economic, financial, ecological, cultural, military-strategic, which, in turn, lead to a **globalization of threats and risks**" [1, p. 9]. In order to advance this situation,

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we consider it appropriate to identify **the agenda of "planetary" subjects**, the solution of which requires us to understand the costs of the carelessness of not taking them into account. One of the platforms contributing to the promotion of the global agenda is the International Economic Forum in Davos, which starts from the stakeholder theory by promoting ESG (Environmental, Social, corporate Governance) principles. Careful listing of the Forum's agenda and mission determines trends, creates forecasts, provides benchmarks. The report for the year 2021-2022 highlights the directions of activity underlining the centers of major interest and basic functions [2]. Even if the confluence of aspects of human activity in the global construct was recognized by common agreement, the impact of the economic system diminishes or, on the contrary, strengthens the activity of the other systems. And the topics of major interest that guide the attention of the Forum are:

✓ **Artificial Intelligence** and the challenge brought along with the **Chat GPT application**, and the statement of Tomas Chamoro- Premuzic, the director of the innovation office at Manpower Group really becomes a challenge "It is the first time in the history of humanity when we have to rethink what it means to be human. It is no longer "I think, therefore I am." The mentioned moment hints at the establishment of **the culture of the metaverse** in which man witnesses his "detachment" from finite reality and the extension into infinite reality through his apparent humanoid double [3], [4]. The result of the presented trends is oriented towards the smart version of the organization of the world (smart houses, smart cities, digital businesses, climate trade.

✓ **the climate change** and the collateral effects of this phenomenon is the key issue that unites all global initiatives. Even if steps have already been taken in this direction, we refer to the Paris Agreement negotiated at the UN with provisions for actions to slow growth below +2 degrees Celsius as a result of carbon emissions with a greenhouse effect; and the cultivation of "blue carbon" by aquatic ecosystems, such as giant algae, ends up being in this case a step to promote the de-carbonization strategy until 2050, especially for heavy sectors such as the cement and concrete industry and not only. Therefore, **green technologies** are a particular concern from now on, increasingly creating conceptual openness stakes for the sustainable, inclusive and circular economy and the promotion of the initiative for "Net Zero" technology, promoted in an EU strategic document "The Green Deal Industrial Plan". The collateral document fixes the contiguous areas advancing the idea of vocational changes and the promotion of the "skills first" concept, following this initiative. At the same time, the work of the COP27 Conference, held in Egypt 2022, for the aspect of climate change once

again invoked the common demand of the participating countries for clean technologies [5], [6], [7].

✓ **the disruption of economic activity implicitly felt also through the effects of social polarization**, following two consecutive shocks, the Covid-19 pandemic and the war in Ukraine, their experiences determined the unprecedented dynamics of the technological framework. Economic recovery is possible in the opinion of experts, stimulating mobility and opportunities to expand the workforce. In turn, the idea of economic recovery, at the suggestion of experts, in the absence of retraining with the aim of adjusting to the situational needs of the labor market is impossible. The "Skills gap analysis" method supports the economic recovery strategy.

✓ **the subject of security versus cybercrime** is being debated in an alert regime, because it addresses the issue from "identity theft" to the trading of information with the aim of dominating a person's field of choice. In other words, we are talking about a "technological and cybernetic ethics", which must set the limits of human behavior outside the visible space, therefore difficult to detect easily and to manipulate. The resonance of this moment is found in "Digital Justice" policies [8].

✓ **the modernization of the education and training systems** is seen rather as a response to non-conformities with the labor market that would ensure professional growth and social insertion. At the same time, education is reshaping its increasingly articulated purpose in the direction of the sustainability of the necessary skills for today's young people, a moment confirmed by the engagement of emerging technologies such as: machine learning, quantum computing, robotization of automated processes, virtual reality, augmented reality, the Internet of Things (IOT), the blockchain [9]. The evolutionary segment calls for a brainstorming regarding the hypothesis of the "fortification" of the 4th industrial revolution with a stake in the transition to the 5th, in the view of some experts.

2. Research methodology

The deciphered context of the not-so-simple, not-so-predictable globalization challenges us to identify a method that would offer descriptors to determine the degree of advancement of interconnection to global networks and flows. For this purpose, we started from known general principles. The specificity of globalization as a historically constituted phenomenon does not know a linear evolution, as a result its **analysis** substantiates the need for indicators that would facilitate the storage of quantitative data generating **qualitative observations** in relation to the **extension of global networks**, the **intensity** of global interconnection, **the speed** of global flows, **the impact propensity** of global interconnection [10, p 41-51]. Therefore, the data analysis will assess the impact

generated by globalization for this historical stage that accumulates events varied in magnitude and density. For this purpose, we will refer to 2 of the 5 categories of reference gearing indicators in the specialized literature under the aspect of the state's activity and the degree to which it is involved [10, p. 503]. The categories of indicators are:

- **political-legal indicators:** participation in international governmental institutions, the number and types of treaties and arrangements to which the state joins, interaction with regional intergovernmental networks and structures such as the EU,
- **economic indicators:** exports, imports, levels of outward and inward investment, engagement in regional and global markets, dependence on technology and various industrial sectors,
- **military indicators:** the proportion of defense spending and personnel allocated to alliance commitments, the arms trade and the degree to which the military depends on foreign technology and supplies, reliance on foreign operational command and military communications systems,
- **socio-cultural indicators:** the ethnic, linguistic, religious composition of the national population, the levels of post, telephone and international electronic communications, imports and exports of cultural products, dependence on foreign communication systems,
- **ecological indicators:** the degree to which states contribute to the problems of hazardous waste exports, ozone depletion, acid rain, global warming, the degree to which each nation suffers from these ecological threats.

3. Results and Discussion

3.1. The polemical character of globalization - premise for an analytical framework

Some authors identify 5 aspects of continuous polemical character in the debate on globalization: Conceptualization, Causality, Periodization, Impacts, Global trajectories. The sum of the divergent reactions is explained by the recurring polemic between seeing globalization as a "**fully integrated global market**" alongside the resulting confusion regarding a national economy that is not perfectly competitive, however it can be part of a market or even form a market [10, pp. 35-38]. In addition, globalization does not have a fixed condition, because the trajectory of its evolution is not a linear one, so that it can be analyzed by referring to an ideal state. Subsidiarily, we emphasize that a large part of the specialized literature interprets globalization as an economic and cultural interconnection, which neglects other aspects that are consistent with the concept of globalization. In turn, the question of the causality of the factors driving globalization oscillates between a determinant product (technological change)

and a combined product involving technological change, market forces, ideology and political decisions. The periodization profile of "globalization" brings to the fore a widely accepted view that "the existence of world religions and trade networks in the medieval era encourages a sensitivity to the idea that globalization is a process that has a long history... ” and yet, it is a phenomenon specific to the modern age. At the same time, it is believed that among the impacts attributed to globalization are those related to the disappearance of social democracy and the disappearance of the modern welfare state. Such an approach emphasizes a clearer understanding of how the social and political impact of globalization is mediated by internal institutional structures, state strategies, the location of the country in the global hierarchy. As a result, we trace the effects of contestation and resistance by states and people to this phenomenon. Overall, the concept of globalization accumulates non-homogeneous interpretations invoking distinct trajectories of approach. If the *hyperglobalists* interpret globalization in the parameters of a linear course, like an obvious constant of a course of humanity, then the *skeptics* want to identify the distinct time segments developing the idea of the "golden age" of globalization in relation to the contemporary period. *Transformativists* opine differently, emphasizing the idea of an influence on the course of globalization as a result of historical conditions and specific social forces. That is precisely why, in their view, **globalization is contradictory, because it "pushes and pulls societies in opposite directions, fragments as it integrates, generates both cooperation and conflict, universalizes and particularizes. Thus, the trajectory of global change is [...] indeterminate and uncertain"**. In turn, most research in the format of defining globalization starts from the idea of interconnection, which follows an increasing influence in magnitude and contiguity, "transcend(ing) the constituent societies and states of the global order", generating flows and networks. Therefore, the conceptual construct of globalization was analyzed through the prism of space-time indicators, because space highlights **the expansion of flows**, and time insinuates the idea of intensity quantified through the **regularized activities of the created networks**. Both attributes promote another derivative effect, **velocity, speed of spread**. The context of "spatiality" requires a recourse to the demarcation between local, national, regional, trans-regional, international. The differences in spatial terms mark not only the radius of influence that encompasses an action or activity, but also **the exercise of power that manifests itself in terms of the propensity of impact**. The last specificity also creates a route for modeling the type of globalization whose parametric profile we recognize is difficult to operationalize. In turn, in the specialized literature, the indicators that foreshadow an analytical framework of impact propensity are decisional, institutional, distributive, structural. The decisional impact, meets the effects established by the policies carried out and options for political action. Thus, the costs and benefits of the

decision process either individually or organizationally affect societies, being measured in terms of high and low impact. The decisional impact depends on the sensitivity or vulnerability of the "exposure" to globalization. We remind you that sensitivity fixes the costs that a country has to bear to changes in other countries, being in a position to react promptly and with responsibility by connecting internal policies to external effects. Vulnerability foreshadows the situation of some costs of a sui generis nature with long-lasting effects on exposure to external events, even if the changes in the deployed policies were foreseen [10, P. 42].

Returning to the determinants of the specificity of globalization, **the institutional impact** designates the ways of carrying out decision-making agendas. **Distributive impact** emphasizes the extent to which social forces within and between societies shape people's choices. And social, political and economic behavior conditions the **internal structural impact** that can be interpreted in terms such as the degree of adaptation to mediation, administration, resistance, contestation in relation to the globalization of states and societies. **The space-temporal dimensions** listed in a conjugation with the organizational dimensions will facilitate the creation of a more accurate profile of contemporary globalization. **Organizational dimensions** include: both physical and symbolic infrastructures; the institutionalization of flows, networks, global relations, to create the possibility of their regularity; the exercise of power seen as a relational capacity, so not apart from the exercise of its potency to influence by shaping a social and cultural model. In other words, **power** becomes a structural phenomenon because it generates the impetus for change and influence as a whole. The context of what was discussed inculcates a valuable observation such as that **Globalization transforms the organization, distribution, game of power**, which reveals the idea that, depending on its magnitude, it produces inhomogeneous versus homogeneous structure and hierarchy as well as equality versus disparity, a mechanism of relations and global control. As a result, we trace distinct **stratification** patterns of globalization in different historical time periods. The exercise of power, in turn, calls for different **modes of inter-action**: coercive or imperial, cooperative, competitive, conflictual, and **instruments of power**: economic versus military.

Table 1. Forms of globalization, their modeling according to parameters/variables

Type 1	Thick globalization (high extension, high intensity, high velocity, high impact)	Type 3	Expansive globalization (high extension, low intensity, low velocity, high impact)
Type 2	Diffuse globalization	Type 4	Thin Globalization

	(high extension, high intensity, high velocity, low impact)		(high extension, low intensity, low velocity, low impact)
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Source: Developed by the author after Held D., McGrew A., Goldblatt D., Perraton J. (2004). Global Transformations .Politics, economy, culture. Bucharest: Polirom Publishing House, [10, p. 45-49].

The parameters listed for the space-temporal dimension and the organizational dimension offer, in our view, a methodical and analytical platform for researching the way of manifestation and the form/type of globalization in the national territory of the Republic of Moldova. At the same time, the method offers the simple description of four forms of composition that can be modeled, through the prism of the valences of extension, intensity, velocity and the impact they generate. So, we know four typologies.

3.2. Globalization phenomenon, process, strategy

The globalization process is defined by Adrian Gorun and Eric Hobsbawn primarily in terms of the reconfiguration of the state following decisional, institutional, distributional, structural impacts, which restores the need for renegotiation of the cumulative effects [11], [12]. At the same time, the attempt to identify the causality of its dynamics cannot coincide with a scientific study of deductive research, because the complex processes of historical changes cannot be ignored. The relevance of those invoked refers to different dominant forms of globalization established historically. If in the pre-modern period of globalization the spreading tendencies were generated by military expansion, religious/cultural expansionism, migratory movements, the modern period comes to display the primacy of the economic one alongside the political and military one. It is important to emphasize that each time globalization has been stimulated by technical progress in communications and transport, as a result the emergence of global infrastructure has increased people's ability to interact. **An increasingly extensive and intense interaction in speed and extension power creates cumulative consequences, the most obvious being the distribution of power. Power, as a factor promoting a strategic vision, increasingly acts in concert, thus recognizing the global framework as being dominated by political, military, economic, migration, cultural, ecological confluences.** The last clarification reveals another specificity of globalization related to "systemic dynamics", i.e. the ability to gather under the dome of "its activity" in a certain rhythmicity that self-reproduces the link between interconnections, flows, networks and global interactions. As a result, the announced specificity inevitably presupposes a structural change in the organization of activities in a general understanding of human life, generating a priori changes in the exercise of power [10, p.486].

In turn, the above remark deflates the conviction with reference to the globalization process increasingly interpreted in terms of the magnitude of **the institutionalization of global regulatory policies** with the aim of connecting the initiatives and actions to promote some state policies to the policies of coexistence in a global system. So, the space-temporal dimensions of globalization intertwine with the organizational dimensions. Organizational dimensions primarily imply an infrastructure of globalization that manifests itself through the institutionalization of global networks and the exercise of power.

Table 2. List of international institutions, of which the Republic of Moldova is a member

EXTENSION / INTENSITY
<p>International Institutions</p> <p>The Republic of Moldova joined the UN on March 2, 1992 UN activity brings together over 24 UN Agencies, Funds, Programs in the Republic of Moldova.</p> <ol style="list-style-type: none"> 1. UN Development Program (UNDP); RM signs Standard Basic Assistance Agreement, 02.10.1992. 1092 (Project Actions), 344 (completed projects)/ 1065 (assets), (thematic areas) 19. Country program document for the Republic of Moldova (2023-2027) with 4 priorities: 1) Fair and inclusive institutions and equal opportunities for human development 2) Participatory governance and social cohesion 3) Sustainable economy 4) Green development, mitigation and adaptation to climate change. 2. The UN Children's Fund (UNICEF); The Republic of Moldova has acceded to the Convention on the Rights of the Child, 1993. 4 development programs: Health, Early Child Development, Child Protection, Education . 3. The UN Population Fund (UNFPA); 4 programs: Sexual and Reproductive Health and Rights, Adolescent and Youth Empowerment, Gender Equality and Women's Empowerment, Population and Development. 4. World Health Organization (WHO); RM member WHO 04.05.1992. 5. International Labor Organization (ILO); RM active in IOM since 2005. 2 active projects, 2021-2024, 13 completed, with a total budget of 1 mln. USD. 6. United Nations Entity for Gender Equality and the Empowerment of Women (UN WOMEN); approximately 370 actions, period 2017-2023. 7. Food and Agriculture Organization (FAO); The Republic of Moldova joined the FAO in May 1995.), 8 active projects, in progress 2021-2025, total budget 3.855 billion. USD; 15 projects worth about 2 million dollars., period 2021-2023. 8. International Fund for Agricultural Development (IFAD); RM beneficiary since 1999.), 7 programs, beneficiaries 135 thousand people from rural areas. 9. UN Program on HIV/AIDS (UNAIDS); following the connection of the GD legislative initiatives of 18.06. 2001. Presents a continuation of the National Program 2016-2020. 10. International Organization for Migration (IOM); RM became a member in 2003. 47 foreign donors; completed projects 5 in (Immigration and border management), 4 (Migration and development), 2 (Prevention and protection), 2 (Migration and Health). 11. United Nations Educational, Scientific and Cultural Organization (UNESCO); The Republic of Moldova joined on May 27, 1992, 4 key areas (Education, Science, Culture, Communication and Information). RM - 39 participation programs, 4 fields.

12. **United Nations Industrial Development Organization (UNIDO); established on June 21, 1985, the Republic of Moldova joined on June 1, 1993, 3 objectives: sustainable supply chains, limiting climate failures, fighting hunger.**
13. **UN Office on Drugs and Crime (UNODC); created October 2002**
14. **UN Environment Program (UNEP); The Republic of Moldova joined in 2013: workshops, seminars, meetings -21, period 2013-2021.**
15. **UN Commission for Europe (UNECE); The Republic of Moldova joined on 03.12.2008. 4269 program actions, meetings, seminars, projects in total, period 2008-2023.**
16. **UN Conference on Trade and Development (UNCTAD); created 30.12.1964.**
17. **The World Trade Organization (WTO); The Republic of Moldova joined on July 26, 2001. The Republic of Moldova signed The Central European Free Trade Agreement (CEFTA), on 19.12.2006, 27.06.2005 regarding the application of the system of generalized tariff preferences (GSP + System) provides free access for all products on the EU market, (about 7200 product groups out of 11000 possible).**
18. **Office of the UN High Commissioner for Human Rights (OHCHR); 5 objectives the online platform monitor.drepturi.md, launched in 2018, will collect the data and present the data in a biannual report, for 15 thematic groups; 18 studies-reports.**
19. **International Atomic Energy Agency (IAEA); ANRANR joined the IAEA Statute on 17.07.1997.**
20. **World Bank (WB); World Bank Group (IBRD, AID, IFC, MIGA ISCID). IBRD on August 12, 1992. Currently Strategic Partnership Framework for the period 2023-2027 (SPF) International Finance Corporation (IFC) on March 10, 1995; International Investment Dispute Settlement Center (ICSID) June 4, 2011 .RM, and June 9, 1993 member of the Multilateral Investment Guarantee Agency (MIGA). It is important to emphasize the history of these relations since 1992, which during 30 years, almost 2 billion US dollars were allocated for more than 120 projects in the country. Currently, the BM portfolio includes 12 active projects with a commitment of 650 mln. USA**
21. **International Monetary Fund (IMF); RM August 12, 1992. The share distributed 172.5 mln. /overdue purchases and loans 494.77 mln. on 31.03.2023, voting share 0.06% of the total.**

Source: Data processed by the author based on the information provided by the website of the Ministry of Foreign Affairs and European Integration of the Republic of Moldova as well as the websites of the agencies in the current list.

Table 2. presents the magnitude of the state's connection to the most important globalization networks, represented by international institutions, as well as the sustained dynamics of these relationships that are manifested through participation in various actions, workshops, programs, projects.

3.3. The extent and intensity of globalization

The Republic of Moldova became a subject in international relations in 1991, with the declaration of independence through which the State manifested the assumption of the power of political decisions. With this fact began the growth of communication and interconnection of the state to processes of global resonance. This is precisely why the extension of government policies merged with the processes that ensured the "exit" to the outside alongside the "open door" policy, a proof supported by those who created a convincing political discourse.

The proof of the employment request in this process was to begin with the institutionalization process which in the vanguard produced the extension effect. A fundamental proof in the process of internationalization of relations is (Table 2) which demonstrates the reality of what was said regarding the membership status of the Republic of Moldova within the most representative international organizations such as the UN (United Nations Organization), IMF (International Monetary Fund), WB (World Bank), WTO (World Trade Organization), EBRD (European Bank for Reconstruction and Development), EC (Council of Europe) and OSCE (Organization for Security and Cooperation in Europe). The integration of the Republic of Moldova into the global dimension of multilateral cooperation was completed after 1991 by outlining the regional dimension with participation in [13]:

- **Central European Initiative (CEI)**, a flexible form of regional cooperation with 17 states. The initiative was created in 1989 with the aim of promoting political, economic, cultural cooperation between member states, supporting reforms in countries in transition, increasing cohesion in Europe.
- **Stability Pact for South-Eastern Europe** a long-term conflict prevention strategy with an emphasis on economic recovery, political development and social security. The Republic of Moldova joined on June 6, 2001.
- **Cooperation Process in South-Eastern Europe** represents a non-institutionalized regional cooperation structure, created in 1996, which groups 9 states. Its defining element is the fact that it represents the only forum in Europe created and managed exclusively by the participating states in accordance with the "regional ownership" principle, with the aim of favoring political dialogue and consultation in the process of integrating the area into European and Euro – atlantic, Moldova has observer status and its most important objective is integration on the regional energy market, which also represents one of the two major initiatives of the Process, along with the action plan for regional economic cooperation.
- **Cooperation Initiative in South-Eastern Europe.** The initiative was launched in December 1996 by US Ambassador Richard Schifter, after the signing of the Dayton Peace Accords, with the aim of developing a viable economic and environmental strategy in the region. The initiative currently brings together 12 states.
- **Danube Cooperation Process.** Launched in Vienna on May 27, 2002, the Danube Cooperation Process is a non-institutionalized structure, a political framework for cooperation and promotion of the common concerns and interests of the states in the Danube region: economic development, navigation and sustainable transport, environmental and river basin management, tourism, cultural and subregional cooperation. In the activity of the Danube Cooperation Process participate 13 states.
- **Black Sea Economic Cooperation Organization (BSEC)** (was launched as a consultation forum and flexible political coordination mechanism on June 25, 1992, the OCEMN has 15 working groups, the most important being those regarding cooperation in the fields of transport, energy and combat organized crime. With observer status are: Austria, Egypt, France, Germany, Israel, Italy, Poland and Tunisia. After the "Charter for

Black Sea Economic Cooperation" entered into force on April 30, 1999, CEMN became a regional organization with an international identity - the Black Sea Economic Cooperation Organization (BSEC). In the same year, following the adoption of Resolution A/54/5, BSEC acquired observer status at the UN.

➤ **GUAM/ GUUAM** (acronym for Georgia, Ukraine, Azerbaijan and Moldova), established in 1997. Two years later, Uzbekistan became a member, its attitude towards this structure, which wanted an alternative to the CIS, proving ambiguous by -over time.

➤ **Council of Europe (EC)** has a major impact in the development of regional cooperation, even though it is an international organization. Moldova became a member of the Council of Europe on July 13, 1995

➤ **Commonwealth of Independent States (CIS)**. The Republic of Moldova joined in 1994, largely due to pressure from Russia, and only has the status of a participating state (it has not ratified the status). Until now, regional cooperation has been marginal in this organization, because the Republic of Moldova refuses action in the direction of political cooperation that would involve supranational structures. This explains why, although its economic interests with the CIS member states are major, Moldova does not participate in the Single Economic Space.

➤ **Cooperation between the Republic of Moldova and NATO**. On January 6, 1994, on the occasion of the high-level meeting of the North Atlantic Alliance, at which the American initiative "Partnership for Peace" was examined, the Republic of Moldova expressed its interest in joining this Program. On March 16, 1994, at the NATO Headquarters in Brussels, the first meeting of the President of the Republic of Moldova with the Secretary General of NATO took place, followed by the signing of the Framework Document of the "Partnership for Peace" Program. In order to coordinate activities on the NATO line as effectively as possible, on December 16, 1997, the Mission of the Republic of Moldova to NATO was established. The position of head of the Mission is exercised by the ambassador of the Republic of Moldova in the Kingdom of Belgium.

Multilateral cooperation is a solution for the political management of such a vast ensemble, operating in a system of concentric circles with variable geography, and the adoption of the functionalist method of integration of neighboring countries through the economic dimension, on the pillar of the common market, in a model of cooperation that allows the accentuation of interdependencies and the development of solidarity, based on a cumulative logic of integration, will strengthen the long-term success of this objective. We remind you that the documents, which attest to the increase in the number of organizations, international agencies, forums to which we joined, talk about the request of the state to create connections with the most powerful international platforms in the act of organizing a global order [12], [13]. The data in Table 2 presents the list of the most genuine **actors of globalization** who at the same time contributed to **the intensity of connections** through cooperation alliances supported logistically, infrastructurally, financially, etc. In fact, among the most well -versed actors of globalization that generate the impetus for training and

versatility in external processes, creating a section to activate mobility in this sense, are considered: **governments, international economic institutions, multinational / transnational corporations, civil society** [1, p.145-152].

For the "civilization" of relations with foreign states, the Republic of Moldova, traditionally, delegates responsibility to the Ministry of Foreign Affairs (original name: August 1991 - July 2005), the institution in charge of the state's foreign policy. As of today, the competent ministry - MAEIE, delegates the share of responsibility for external relations to ministries, agencies and departments, a moment that further demonstrates the increase in international connections in various fields. The nominated ministry, on April 19, 2005, was renamed the Ministry of Foreign Affairs and European Integration, thus emphasizing the idea of a political decision to join the EU. Following the assumed political commitment, on June 27, 2014 in Brussels, Belgium, **the Association Agreement** was signed between the Republic of Moldova and the European Union and the European Atomic Energy Community and their member states. The RM-EU Association Agreement establishes a new legal framework for the advancement of relations towards a qualitatively higher level related to a political association and economic integration with the EU. The Association Agreement is based on an innovative and ambitious approach through the creation of a Complex and Comprehensive Free Trade Area - DCFT. We can see the reasoning behind the steps forward on this path on March 4, 2022, when the Republic of Moldova officially submitted its application for accession to the European Union, in response, on June 23, 2022, the EU Council granted the Republic of Moldova the status of a candidate country, a moment considered the point turning point of the Republic of Moldova in the direction of approach policies for this route. These actions had **the resonance of a high decision-making** impact with the participation of decision-makers at summits, conferences, international forums, therefore moments interpreted as steps to advance connectivity to the most important platforms for the dissemination of global policies. A conclusive example in this sense is the participation of the President of the Republic of Moldova, Mrs. Maia Sandu, at the World Economic Forum in Davos, January 17-19, 2023, with **a dense agenda of meetings with clear stakes for the future**. Thus, within the Forum, the head of state had a meeting with the president of the European Bank for Reconstruction and Development (EBRD) to discuss the continuation of pro-business programs in the key of the new country strategy for the years 2023-2028, reinforcing his political message with the president of the Bank European Investment Bank (EIB), in the context of investments that would facilitate overcoming economic and energy crises, alongside the crisis related to refugees from Ukraine.

At the same time, the presented events substantially color the state's interest in building a **strategy of opening up to the outside** in order to align with

the most important international development trends. The proof is the elaboration of the "**European Moldova 2030**" National Development Strategy, by promoting 10 objectives around the 4 priorities, approved by the Parliament of the Republic of Moldova on 17.11.2022, aiming for a sustainable and inclusive economy, human capital and socially robust, honest and efficient institutions, healthy environment. Returning to the topic of future stakes, the reverse side of the government's policies is collaterally determined by the degree of "receptivity" of the agents promoting foreign relations between countries. Well, the American Chamber of Commerce from Moldova, with 157 members, presents 9 axes of activity, meaningfully called "priorities", among which [14]:

1. Guaranteeing the fundamental premises for sustainable economic growth and the well-being of society,
2. Strengthening the business climate favorable to investments,
3. Consolidation of a business system favorable to investments,
4. Ensuring a regulatory framework of the labor market,
5. Streamlining cross-border trade and increasing market access,
6. Increasing the degree of use of financial services,
7. Ensuring the transition to a green economy,
8. Stimulating the development of regulated sectors,
9. Advancement in the field of digital transformation.

To what extent these priorities agree with government policies, we will observe through the 5th level of activity. Therefore, the American Chamber of Commerce in Moldova is committed to promoting international trade policies by advancing trade relations with EFTA countries by concluding free trade agreements that were signed on 23.06.23, as well as identifying new opportunities to conclude free trade agreements with other countries, in the hope that in this way it will be possible to overcome the current unsustainable economic model based predominantly on remittances and consumption rather than investment and export, which fuels emigration and is counterproductive to economic development. And the share of foreign direct investment in the national gross domestic product is among the lowest in the region. For the year 2022, the figure of foreign investments (US dollars) reached Serbia 4.646 million US, Albania 1.434 million, Armenia 998 million, the Republic of Moldova 587 million, a clear suggestion of the country's level of competitiveness as a destination for direct investments in relation to the countries in the region (compared to Armenia, Albania) in the conditions when we have competitive advantages such as **investment platforms**: 7 Free Economic Zones, 8 Industrial Parks, 16 Multifunctional Industrial Platforms, Moldova IT Park; Advanced ICT infrastructure: 6th place for the lowest broadband costs, 100% mobile penetration, 98.2% fiber optic network coverage, 6th place in the world Gigabit Internet; Favorable tax system: profit tax 12% (7% farmers, 6% ZEL, 3% PLG), VAT 20%,

insurance contributions 23%, single tax 7% for Moldova IT Park; 44 Free trade agreements [15], [16]. It should be emphasized that *Free Trade Agreements and Free Economic Zones* have a pragmatic value as **instruments of globalization**, seen by some as platforms for cooperation, and by others as cuffs to constrain the power of the status. The figures, however, become an encouraging pretext especially since they form a very eloquent framework of economic power for the only 22 companies from 15 countries that make up the Foreign Investors Association (FIA) with a value of 13% contribution to the gross national product with a total investment of 1 billion 400 million euros, in all spheres of activity carried out in the country. Enterprises with foreign direct investments (FDI) represent only 7.5% of the total number of enterprises in the Republic of Moldova, while they contribute significantly to the formation of the budget of the Republic of Moldova - enterprises with FDI contribute 29.4% of all income taxes accumulated to budget: We also have moments of attention at the same time because we record a 0.7 percent decrease in foreign direct investments between 2010 and 2019 [17], [18], [19]. **Moldova remains significantly behind many countries in the region in terms of attracting foreign direct investment.** Hard conclusions come from experts who observe, based on several international and local studies, that there is a directly proportional relationship between the economic and social indicators of a country and the foreign investments attracted. The framework of the discussion related to the presence of foreign companies favors a discussion about combating the strategy of multinationals to avoid increasingly dense taxation in the international public space. The Republic of Moldova has not yet declared its intention to be part of the BEPS (Base Erosion and Profit Shifting) project, to which 140 countries have already joined. **The Republic of Moldova regarding the engagement in this long-term project will have to review its capital escalation in the face of possible dangers.** We want to emphasize that **there is a distinct connection between the shaping and organization of the political decision-making infrastructure and the creation of socio-economic infrastructures.** The graph below reconfirms what was invoked. Statistical data come to dismantle the axiom of economic advancement only as a result of the establishment of diplomatic relations, demonstrating that diplomacy is becoming increasingly focused on the strategy of economic growth.

The example of the countries with which diplomatic relations were established immediately after the Declaration of Independence did not ensure an evolving dynamic of the volume of commercial exchanges, on the contrary, the lack of a dynamic fixes the non-utilization of the potential for diplomatic extension of these bilateral relations.

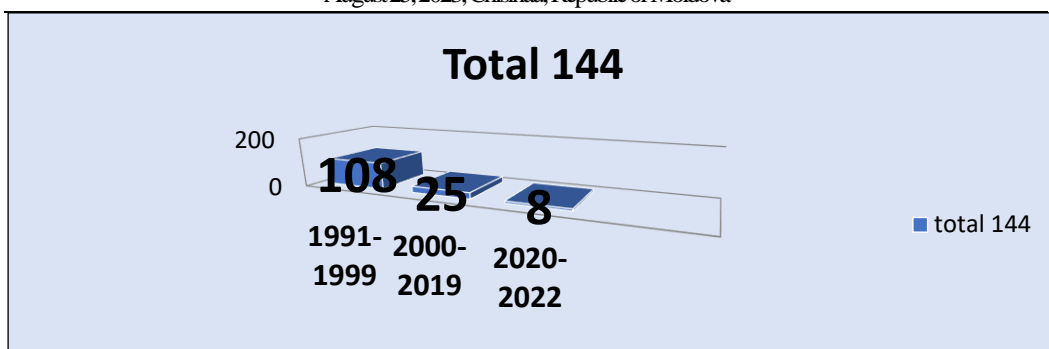


Figure 1. The countries with which the Republic of Moldova has bilateral cooperation relations, over time periods

Source: Prepared by the author based on the data provided by the website of the Ministry of Foreign Affairs of the Republic of Moldova.

In other words, the extension does not necessarily project an intensity. To what extent the Republic of Moldova capitalizes on the potential of cooperative relations on the diplomatic line, the numbers speak for themselves.

3.4. Velocity and impact

We can judge about the strategy of the Republic of Moldova in enhancing bilateral cooperation, starting with the area of coverage of the countries with which the state has established diplomatic relations in total 144 out of the 195 existing countries on the globe, which means 73.84%. Of the number of countries with which the Republic of Moldova has established diplomatic relations, 75% return for the period 1991-1999, the remaining 17.36% for the period 2000-2019, and another 5.55% return for the period 2020-2022. In other words, the **velocity** with which diplomatic relations were agreed for both parties involved was in the period after the proclamation of the independence of the Republic of Moldova, 1991, with an average of 12 countries/year, otherwise the most dynamic period compared to the period 2000- 2020, on average 0.76 protocol units of establishing a diplomatic relationship. At the same time, **choosing geographical targets** as destinations of strategic interest in promoting bilateral cooperation, for the period of 2000-2019, diplomatic relations were established with 12 countries in South and Central America, 6 countries in Africa, 3 in Europe (Montenegro, Liechtenstein , Monaco), 1 Pacific Ocean, 2 Indian Ocean, 1 Southwest Asia. In turn, we can follow **Table 3** below about the expansion of the scope of promoting bilateral cooperation for the period 2020-2022

Table 3. List of countries with which the Republic of Moldova has bilateral cooperation relations, period 2020-2022

Country	Type	Continent	Population	Export/import (\$)
1. Barbados	Island country	North America	281.200 thousands	- / -
2. Republic of Djibouti	Mainland country	Africa	1,106 million	- / -
3. Dominican Republic	Island country	North America	11,12 million	62, 6 th. / 147, 2 th.
4. Republic of Senegal	Mainland country	Africa	16,88 million	363, 13 th. // 21, 52 th.
5. Republic of Palau	Island country	Pacific Ocean	18.024 thousands	- / -
6. Republic of Uganda	Mainland country	Africa	45,85 million	- / 88, 51 th.
7 Saint Lucia	Island country	Central America	178,696 thousands	- / -
8 Belize	Island country	North America	400.031 thousands	- / -

Source: Prepared by the author based on information from the web pages of the Ministry of Foreign Affairs and European Integration and the web of the National Bureau of Statistics

The data presented indicate that more than half of the states of the world with which we have established a protocol of bilateral cooperation in the period 2020-2022 are island countries, with which until now we have no commercial exchange, with the other three countries the trade volume is only in a single case produces an economic return taking into account a positive trade balance 365, 13 thousand US dollars. It is the Republic of Senegal with a potential consumer market of 16.88 million population. Deciphering the data in the table reveals a low degree of capitalization of cooperative relations, largely unexploited, especially we have consumer markets such as Uganda with a population of 45.85 million, at the same time with a negative trade balance in the case of the Republic of Moldova for the year 2021 **The extension**, therefore, will demonstrate the rationality of its **decision-making impact by intensifying relations**, the speed can be determined by the ratio between the number of official visits and the agreements concluded, an indisputable proof of the state's negotiation style in achieving some strategic objectives. In this context, we note that there are countries with which, in the absence of commercial exchange agreements, an economic relationship has been generated or, on the contrary, there are countries with which we have cooperation agreements without being capitalized on by concrete commercial activities. At the same time, we notify a list of countries with

which diplomatic relations do not exceed a minimum protocol of their agreement, the potential of cooperation not being exploited. **The analyzed data creates a working hypothesis regarding the causal link between the number of official visits and concluded agreements and the volume of commercial exchange.** We follow this correspondence in Table 4, by selecting the list of countries with which we have concluded at least 5 agreements (or treaties, memoranda).

Table 4. Countries with which the Republic of Moldova carries out bilateral cooperation, (2022)

Country	Official visits	Agreements	Export(\$), thousands	Import (\$), thousands
1. Bosnia and Herzegovina	7	9	2 060,66	8 331,95
2 United Arab Emirates	16	6	6.850,91	8.493,60
3..Russian Federation	92	150	190 090,61	1 145 272,23
4 Georgia	33	30	19,5 mil.	4 mil.
5 Japan (on the 3rd don.)	18	40	2.8 mil.	73,9 mil.
6 Kingdom of Belgium	32	32	17 851,27	52 747,37
7 Spain	10	9	42 925,48	105 527,10
8 Netherlands	13	21	33 mil	67 mil
9 Armenia	7	14	3 311,42	2 320,66
10 Austria	20	16	21 281,17	82.667,01
11 Azerbaijan	19	50	4 862,16	11 256,02
12 Great Britain	18	15	----	62 005,76
13 Albania	10	14	1 858,35	1 782,87
14 Belarus	30	100	81 160,67	95 263,56
15 Bulgaria	40	44	142 130,83	147 522,74
16 Czech Republic	42	34	104 112,41	138 269,04
17 Hellenic Republic	20	25	33 041,69	165 862,39
18 Estonia	28	27	3 971,13	5 764,35
19 Cyprus	11	11	18 901,60	720,93
20 Croatia	29	18	---	10 220,58
21 Sri Lanka	5	5	35,35	1.635,36
22 Germany	32	83	230 789,26	578 097,04
23 USA	116	89	9,87 mil.	29,19 mil
24 Ukraine	42	160	720 033,45	853 786,24
25 Hungary	29	64	41.8 mil.	121.6 mil
26 State of Israel	30	28	8.005,09	34.066,51
27 State of Kuwait	7	8	133,78	10,42
28 Romania	105	180	1 240 798,38	1 647 484,96

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29 Uzbekistan	4	40	7,5 mil.	12,6 mil.
30 Turkey	46	68	304 925,16	661 241,94
31 Poland	68	43	122 380,45	302 837,27
32 China	23	61+5	9 773,33	947 163,85
33 Italia	26	43	331 143,47	438 304,65
34 Kazakhstan	15	35	28 542,69	38 132,93
35 Kyrgyzstan	13	30	4 917,21	7 030,66
36 Latvia	39	30	6 866,45	19 059,66
37 Lithuania	53	49	16 645,93	17 600,01
38 Macedonia	9	11	1.18 mil	961 th.
41 Finland	15	7	446,31	20 481,41
42 France	28	15	37 930,45	177 616,01
43 Iran	10	13	51.848,51	4.388,33

Source: Prepared by the author based on information from the web pages of the Ministry of Foreign Affairs and European Integration and the web of the National Bureau of Statistics

The analysis of the data in Table 4 projects the following surface observations: the statistics of official visits on the diplomatic line are relevant through the conclusion of bilateral cooperation agreements. The density of the bilateral cooperation relationship can be confirmed by referring to the number of agreements reached. There are clear examples when the number of agreements generates a higher trade volume between the Republic of Moldova and the partner country (Romania, Russian Federation, China, USA, Germany, Belarus, Ukraine, etc.) compared to cases when the cooperation dialogue is not prolific, respectively, it decreases the volume of economic exchange. At the same time, cases of negative trade balance must be analyzed through the prism of other indicators such as: assistance, investments, donor status, etc.

Returning to the idea of globalization, the presence of civil society is considered a propensity factor that exerts a distributive impact, it inclines people's attention towards social problems. The effect of unblocking their activity demonstrates that civil society has a growing influence and asserts its right to censor the actions of the government, to defend the interests of citizens. We follow a short history that presents the dynamics of the organized social movement together with Parliament's decision no. 267 of 11.12.2008 which was the basis for the launch of the Civil Society Development Strategy 2009-2011, which stipulated an Action Plan aimed at increasing the involvement of citizens in the decision-making act, being resumed later. Thus, in 2012, 8200 CSOs were registered in the Republic of Moldova, which corresponds to the figure of 65% located in Chisinau, a clear suggestion of the lack of representativeness of all localities as well as the ratio per 1000 inhabitants which reaches 1.9 (Croatia-9.6) [20]. Since the mid-2010s, CSO coalitions and platforms have become more involved in the act of governance.

An example of this is the Urban Civic Network – a horizontal network of activists, urban initiatives and CSOs, which appeared in 2015. However, according to CSO Meter 2020, only 29% of Moldovans trust CSOs. It is a significantly lower number compared to the one reported, for example, in the rate of trust in the church (65%), however somewhat higher than the rate of trust in political parties [21]. And in 2022, according to the data from the State Register on non-commercial organizations, over 10,962 public associations are registered [22]. Another document stipulates the figure of 961 [23]. Finally, we would like to specify that **the activity of civil society has a distributive impact through the force of spreading some desired global convenience. To what extent civil society assumes the drifts for their promotion remains to be analyzed.**

A relevant analysis provides the data of the Public Opinion Barometer, for the year 2022, carried out on a sample of 1132 people, in a time segment October 29-November 10 [24]. We specify that to the question "Do you think that in our country things are going in a good direction or are they going in a wrong direction?", 21.3% answered "in a good direction", 65.8% answered "in a wrong direction". Regarding "How do you rate the current relations of the Republic of Moldova with the following and organizations?", the relationship with the EU is scaled by the respondents in the following way "very bad" -3.7%, "bad" -8.5%, "good" -58.%, "very good"-13.7%. We also have the perception of interpretation blockages in the case when we project an explanation between the percentage ratio above and the answer to the question "In your opinion, how quickly can the Republic of Moldova become a full member of the EU?", "never"- 28.7%, "did not answer"-16.3%, in the coming years 2020-2025"-15.5%, "in the next 10 years"-20.4% decreasing years "5"- 11.20 %.

Data insinuates perceptions, exposes threats, establishes preferences as well as identifies certain cracks in the mechanism of globalization. In the given case, the European Union is associated with a propensity agent of the globalization strategy. Detaining the population is a moment that requires taking into account multiple factors. A sociological study carried out by CBS-Research (repeatedly carried out in January, then April 2023, on a sample of 1015 people) reports the following figures: EU accession-53.5% versus Eurasian Economic Union UEEA -23.8% (January) ; EU accession-58.8% % versus Eurasian Economic Union UEEA -22.9% (April). The above data in relation to the latter show an apparently positive dynamic with a trend of maintaining Euroscepticism (we refer to the share of those who opt for the UEEA).

4. Conclusion

The framework of these new trends requires the refinement of some observations that stimulate the understanding of a characteristic approach of contemporary globalization and presented through the whole collage of events,

data, information, which ultimately contribute to determining the degree of involvement of the Republic of Moldova in the globalization process. Therefore, the strategy of globalization related to the activities that maximize the interconnections of the state to global networks and flows is in action, because it attests both indicators of **high extension** and **intensity** proven by the level of connection to global governance institutions and by the area of expansion of networks and flows. At the same time, we reach a high level of **velocity** through competitiveness indicators for rapid technological changes and low costs for communication services. The map of the activities listed underlines that there is an interest in achieving standards of national economic efficiency, by leveraging the way of coordinating commercial activity in a global competitiveness framework, so as to stimulate the internationalization of activities that would maximize the national competitive advantage. It should be noted, however, that the societal environment interprets the phenomenon of globalization, by referring to the actors of globalization still largely equivocally, with caution. **The distributive and structural impact of globalization is still low. The findings above indicate that the level of involvement of the Republic of Moldova in the globalization process is of the Diffuse Globalization type**, a moment confirmed by the globalization index of the Republic of Moldova being 65.2 (62nd place out of 158 states in the ranking).

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THE ROLE OF ARTIFICIAL INTELLIGENCE AND AUTOMATION IN SHAPING LABOR MARKETS

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Abstract: *This article provides a comprehensive exploration of the role of Artificial Intelligence and automation in shaping labor markets. Through an interdisciplinary lens, the paper examines technological disruptions, economic implications, societal challenges, future perspectives, and environmental considerations. It highlights the transformative impact of AI and automation on industries and job markets, analyzing the potential for growth alongside the risks of inequality and job displacement. The paper also delves into ethical and social aspects, emphasizing the need for collaboration across sectors, innovative policies, and continuous learning to harness the benefits of these technologies while addressing their multifaceted challenges.*

Keywords: *Artificial Intelligence, Automation, Labor Markets, Skill Gap.*

JEL: J24, O33; O38.

1. Introduction

As we enter 2023, labor-market transformations are no longer mere predictions; they are our present reality. Driven by the coming of age of generative artificial intelligence (AI), these shifts are further intensified by wide-ranging economic, health, and geopolitical factors. High-income countries are experiencing tight labour markets, while low- and lower-middle-income nations grapple with unemployment rates that remain elevated in the wake of the COVID-19 pandemic. The divergence is also evident at an individual level, with workers possessing only basic education and women facing reduced employment opportunities. Alongside declining real wages due to a persistent cost-of-living crisis, concerns about the quality of work and changing worker expectations are emerging as prominent global issues. These trends underscore the complex relationship between technology, economy, and society. The rapid progression of AI and automation technologies holds the promise of transformative growth and innovation but also raises critical challenges. Job displacement, widening

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inequality, and ethical considerations are among the complexities that require thoughtful examination.

Artificial Intelligence and automation technologies have become central to the modern world, with their applications spanning diverse fields, from manufacturing to healthcare, finance to transportation (Brynjolfsson & McAfee, *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*, 2014). Rapid advancements in machine learning, robotics, and intelligent systems have ushered in what many term the "Fourth Industrial Revolution" (Schwab, 2016), characterized by the fusion of digital, physical, and biological technologies. This transformation has far-reaching implications, reshaping economies, industries, and individual lives. Particularly, the intersection of AI and automation with labour markets has ignited robust debates among economists, policymakers, and business leaders (Acemoglu & Restrepo, 2018). As automation replaces various manual and repetitive tasks (Frey & Osborne, 2017), and AI-driven systems augment human decision-making (Davenport & Kirby, 2016), the traditional landscape of employment is being fundamentally altered.

While there is consensus that these technologies are revolutionary, the evaluation of their impact on labour markets yields a more complex picture. Optimists see vast potential for increased efficiency, productivity, and the creation of new types of jobs (McKinsey & Company, 2017). Pessimists, however, warn of significant job displacement, widening inequality, and societal disruption (Bessen, 2018).

This article seeks to explore the multifaceted role of AI and automation in shaping labour markets, delving into technological disruptions, economic implications, societal challenges, and future perspectives. By examining empirical evidence, theoretical insights, and real-world examples, we aim to provide a comprehensive understanding of this critical and timely issue.

2. Technological Disruptions

Job automation enabled by advances in robotics, computer vision, and machine learning, has led to the replacement of various manual, repetitive, and routine tasks with machines. Historically, automation has been confined to industries like manufacturing, but it now permeates sectors ranging from retail to transportation (Autor, 2015).

The benefits of automation include increased efficiency, productivity, and safety, particularly in hazardous or monotonous jobs. However, these advancements pose significant challenges concerning job displacement, particularly for low-skilled workers (Arntz & Gregory, 2016). Economists like (Acemoglu & Restrepo, 2018) highlight a negative correlation between

automation and employment, especially in local labour markets heavily reliant on routine jobs.

A study by McKinsey Global Institute estimates that by 2030, activities that account for up to 30 percent of hours currently worked across the US economy could be automated. Generative AI appears to be augmenting the working methods of professionals in STEM (Science, technology, engineering, and mathematics), creative, business, and legal fields, rather than leading to a substantial reduction in employment within these areas. Instead, the most pronounced impacts of automation are likely to be felt in other job categories. Sectors such as office support, customer service, and food service may continue to experience a decline in employment. As workers exit professions that are contracting, the economic focus could shift toward higher-wage positions. Those in lower-wage roles may face up to 14 times greater likelihood of needing to switch occupations compared to individuals in the highest-wage positions, and acquiring new skills will likely be essential for a successful transition. Furthermore, women might face a 1.5 times greater need to move into new professions compared to men. (Ellingrud, Sanghvi, & Dandona, 2023).

(World Economic Forum, 2023) report suggests that the boundary between human and machine labour has shifted, but not as rapidly as many expected. Businesses are implementing automation more gradually, with current estimates indicating that machines perform 34% of all business-related tasks, leaving humans to handle the remaining 66%. This reflects a minor 1% growth in automation since the 2020. Contrary to the predictions from the 2020 survey, where almost half (47%) of business tasks were expected to be automated within five years, today's projections have been revised downwards. Now, businesses anticipate that 42% of tasks will be automated by 2027. The range of expected automation spans from 35% for reasoning and decision-making tasks to 65% for information and data processing. Even though there's been a decline in the expectation for machines to displace physical and manual work, the outlook for automation in areas such as reasoning, communicating, and coordinating – where humans typically have an edge – has increased. Artificial intelligence, a significant factor in this potential algorithmic shift, is forecasted to be embraced by nearly 75% of the companies surveyed. The impact on employment is mixed, with half of the organizations foreseeing AI-driven job growth and a quarter predicting job losses. This changing landscape indicates a more nuanced and evolving integration of human and machine collaboration in the workplace.

As illustrated in Figure 1, there is a noticeable trend of increased prioritization of AI strategies across different industries. This increase, however, is not directly aligned with specific projections for the coming years. There is no clear correlation between the emphasis on training employees to utilize and interpret AI and big data and the anticipated direct investment in AI over the next

five years. The figure underscores a complex landscape where the push towards AI competencies does not necessarily reflect broader strategic intentions or investment predictions related to artificial intelligence and automation.

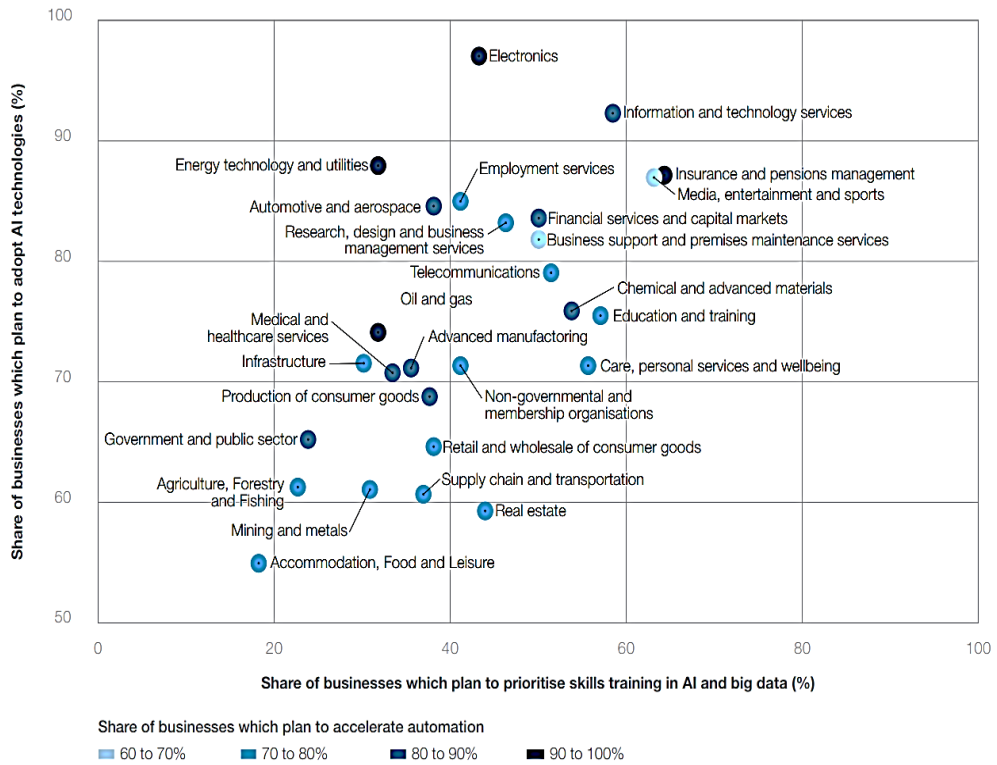


Figure 1. Artificial intelligence strategies, 2023 to 2027
 Source: (World Economic Forum, 2023)

Recent IBM study shows a steady growth pattern of AI adoption on Global level (Figure 2). As of now, 35% of companies have integrated AI into their operations, marking a four-point increase from 2021. Additionally, 42% of companies are currently exploring AI possibilities. This adoption is not merely about embracing new technology but also driven by a desire to augment automation of tasks and cut expenses. A noteworthy aspect of this trend is the widening gap between larger and smaller companies in terms of AI deployment. Larger firms are now 100% more likely to have incorporated AI into their operations compared to smaller companies, a substantial increase from the 69% likelihood in the previous year. This growth underscores the accelerating pace at which AI is becoming a central part of the business strategy, especially among

larger organizations, and the emerging disparities between different sized companies.

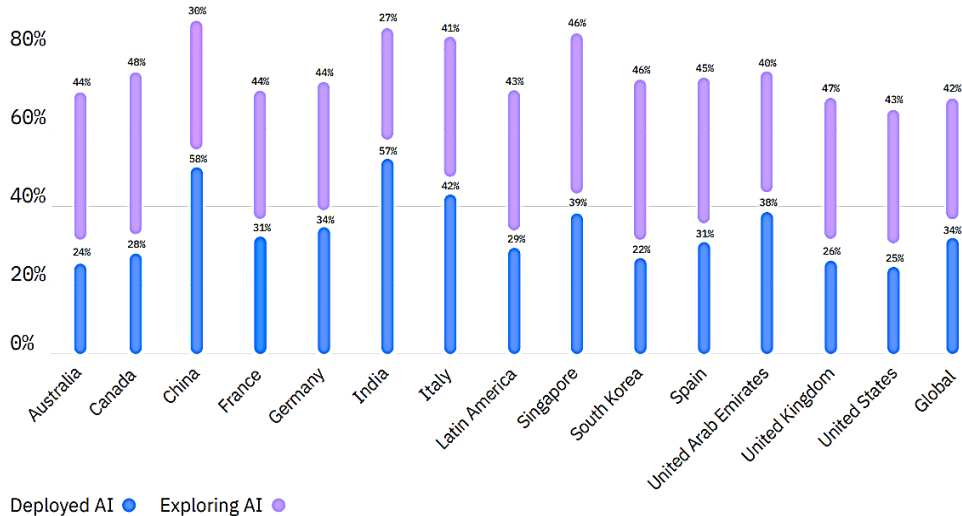


Figure 2. AI adoption and strategy.

Source: (IBM, 2022)

AI-Enhanced Jobs. Simultaneously, AI is not merely replacing human labour but also complementing and enhancing it. Many professions now rely on AI-driven tools to augment human decision-making, as in the cases of diagnostic AI in healthcare or algorithmic trading in finance. This synergy between human intelligence and artificial intelligence is fostering creativity and innovation, leading to new job roles and career paths that require specialized skills. For instance, AI-powered marketing platforms enable personalized customer engagement, creating roles for data analysts and digital marketing specialists.

Ultimately, the narrative surrounding AI and automation is not one-dimensional. While some jobs are indeed susceptible to automation, others are being enriched and transformed, revealing a complex interplay between technology and human capital (Brynjolfsson, Tom, & Rock, *What Can Machines Learn, and What Does It Mean for Occupations and the Economy?*, 2018)

3. Economic Implications

Impact on GDP. The integration of AI and automation technologies into various industries is leading to significant increases in productivity and efficiency, which in turn positively impacts Gross Domestic Product (GDP). Generative AI’s impact on productivity could add the equivalent of \$2.6 trillion to \$4.4 trillion annually to the global economy. This would increase the impact of all artificial intelligence by 15 to 40 percent. (Chui, Hazan, & Roberts, 2023) In

manufacturing, automation technologies have streamlined production lines, reducing labour costs, and minimizing errors (Daugherty & Wilson, 2018). In sectors like healthcare and finance, AI-driven solutions have not only enhanced service quality but also made services accessible to broader segments of the population (Bughin, Seong, & Manyika, 2018)

Wage Gap. While the broader economic benefits of AI and automation are evident, these technological advancements are also contributing to a widening wage gap between high-skilled and low-skilled workers. Automation has displaced many low-skilled jobs, leading to wage stagnation or decreases in these segments (Frey & Osborne, 2017). Simultaneously, high-skilled workers who can leverage these new technologies are experiencing wage increases (Goldin & Katz, 2008). Some researchers emphasize that automation has created a "hollowing-out" effect, eroding middle-wage occupations and polarizing the labour market into high and low-wage segments. This polarization has implications for social mobility and income inequality, which could lead to broader societal challenges if left unaddressed (Piketty, 2015).

Shift in Economic Power. The regions and countries that are at the forefront of AI and automation technologies may also experience shifts in economic power. Being a hub for technological innovation, the United States, along with China, is positioning itself as a global leader in the AI arena (Lee & Li, 2018). Such technological dominance might lead to a redistribution of global economic influence, possibly affecting international trade dynamics and geopolitical relationships.

4. Societal Challenges

Skills Gap. The rise of AI and automation has led to a shift in the skills required in the workforce. Traditional skills, particularly those related to manual and routine tasks, are becoming less relevant, while the demand for technical, analytical, and soft skills is increasing (Bessen, 2019). According to the (World Economic Forum, 2023), more than half of all employees will require significant re- and up-skilling by 2027. Educational institutions are grappling with this transformation, and there is a growing need for continuous learning and adaptability in curricula. Collaborations between industry and academia to design relevant educational programs have shown promising results in some regions (Haenlein & Kaplan, 2021)

Research conducted by World Economic Forum (Figure 3) depicts overarching shifts that will redefine cross-functional workplace abilities over the next half-decade. Although self-efficacy skills are currently deemed highly significant, they are expected to take a back seat in skills strategies from 2023 to 2027, following recent upheavals. In contrast, technology-related competencies

will garner more attention relative to their present importance, with specific focus on areas such as AI and big data.

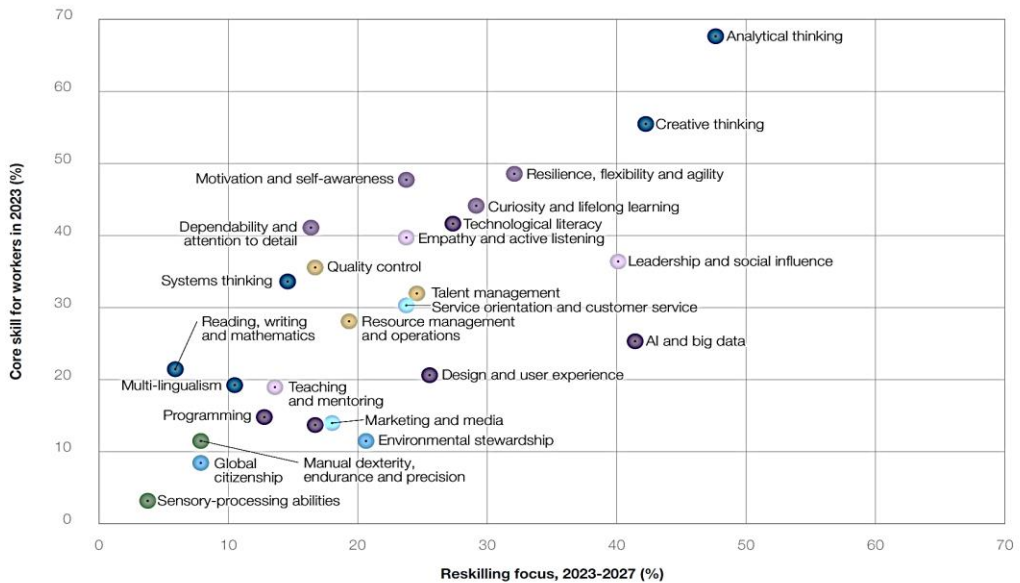


Figure 3. The evolving skills landscape, 2023-2027
 Source: (World Economic Forum, 2023)

Ethical Considerations. The proliferation of AI and automation also raises ethical concerns, particularly in terms of bias, privacy, and accountability. Algorithmic bias, where AI systems unintentionally reproduce societal biases, has been a significant concern, leading to discrimination in areas like hiring, lending, and law enforcement (O’Neil, 2017). Efforts to create fair and transparent algorithms are a subject of ongoing research and policy debate. The increased reliance on data-driven systems also raises privacy concerns, as personal information becomes central to AI-enabled services. The implementation of regulations like the General Data Protection Regulation (GDPR) in Europe has been one step towards addressing these challenges.

Social Cohesion. As AI and automation reshape labour markets, the potential increase in inequality and job displacement may lead to social tension and unrest (Acemoglu & Restrepo, 2018). Policies that ensure the benefits of technological progress are widely shared, and mechanisms to support displaced workers are critical to maintaining social cohesion.

The societal response to these technological changes is complex and multifaceted, requiring coordinated efforts across government, industry, education, and community organizations. A thoughtful approach to the integration of AI and automation can help build a society that leverages technological

advancements while preserving human dignity, equality, and social stability. (Stiglitz, 2020)

5. Future Perspectives

a) Continuous Evolution of the Job Market

The labour market will continue to evolve in tandem with advancements in AI and automation. Future jobs may require even more specialized skills, not just in technology but in the understanding of interdisciplinary applications. The integration of AI into creative fields, such as art, music, and literature, will likely forge new career paths that blend technology with human creativity.

2023 World Economic Forum research provides a more detailed inside of the future transitions. Though AI and big data currently rank 15th as a vital skill for widespread employment, their priority is set to soar in the coming years. They stand as the third-most prioritized skill in general company training plans through 2027 and number one for larger corporations with over 50,000 employees. Certain industries, including Insurance and Pensions, Management, Media, Entertainment and Sports, Information and Technology Services, Telecommunications, and Electronics, prioritize AI and big data most strongly. The emphasis on AI and big data even surpasses traditional technological skills like human computer programming, networks, cybersecurity, and design and user experience by a significant margin. Predicted to constitute over 40% of tech training programs in the next five years in countries like the United States, China, Brazil, and Indonesia, AI and big data have become central to technological evolution. Design and user experience follow as the next significant skill but fall behind AI and big data in most countries and industries. Despite some opinions that AI and big data may have been overemphasized and will decline in importance, a net 59% of companies predict their growth. Thus, while generative AI has the potential to displace jobs, the emphasis on training in these areas highlights the shift toward new opportunities and business goals. (World Economic Forum, 2023)

The Pew Research Centre has undertaken a study (Table 1) to explore the exposure of American workers to artificial intelligence, focusing on how AI might replace or assist various job activities. The term 'exposure to AI' refers to how likely job activities are to be replaced or augmented by AI. The researchers show that jobs differ in their levels of exposure to AI. Some activities, like equipment repair, have low exposure, while others may have medium or high exposure. Certain tasks like "getting information" or "analysing data" may be replaced or aided by AI. Jobs such as judicial law clerks and web developers are more exposed to AI, while others like nannies are less exposed, as AI cannot perform tasks like caring for others.

It's still unclear if exposure to AI will lead to job losses. AI may replace some jobs but may also create new opportunities and enhance existing roles, leading to more overall employment. Higher-paying, white-collar jobs may see more exposure to AI. Industrial robots might reduce employment and wages, particularly impacting low-wage workers, and those with less education. Analytical skills like critical thinking, writing, science, and mathematics are more essential in jobs with more exposure to AI, while mechanical skills are more vital in jobs with less exposure to AI.

Table 1. Occupations with different levels of exposure to AI

low exposure to AI	medium exposure to AI	high exposure to AI
Barbers	Chief executives	Architectural and civil drafters
Child care workers	Credit authorizers, checkers and clerks	Billing and posting clerks
Dishwashers	Customer service representatives	Biological technicians
Elevator and escalator installers and repairers	Education and child care administrators	Bookkeeping, accounting and auditing clerks
Fence erectors	Fashion designers	Commercial and industrial designers
Firefighters	Financial examiners	Computer hardware engineers
Gambling services workers	Fundraisers	Court reporters and simultaneous captioners
Helpers – installation, maintenance and repair workers	Human resources managers	Credit analysts
Janitors and building cleaners	Interpreters and translators	Data entry keyers
Landscaping and groundskeeping workers	Lodging managers	Judicial law clerks
Laundry and dry-cleaning workers	Marketing managers	Loan interviewers and clerks
Maids and housekeeping cleaners	Materials engineers	Medical transcriptionists
Nursing assistants	Medical scientists	Other drafters
Orderlies and psychiatric aides	Postsecondary teachers	Paralegals and legal assistants
Passenger attendants	Public relations specialists	Payroll and timekeeping clerks
Personal care aides	Purchasing managers	Production, planning and expediting clerks
Pipelayers	Sales engineers	Proofreaders and copy markers
Pressers, textile, garment and related materials	School psychologists	Switchboard operators, including answering service
Sawing machine setters, operators and tenders, wood	Teaching assistants	Tax preparers
Skin care specialists	Veterinarians	Title examiners, abstractors and searchers

Source: (Which U.S. Workers Are More Exposed to AI on Their Jobs?, 2023)

b) Universal Basic Income (UBI)

The rise of automation and artificial intelligence has accelerated the conversation around UBI, a radical policy proposal that seeks to address job displacement and income inequality. At its core, UBI represents an unconditional payment made to all citizens of a nation or region, regardless of employment status, income level, or any other factor. As automation continues to replace or augment human labour across various sectors, there is a growing concern over the potential loss of jobs and the resulting social and economic impact. UBI aims to provide financial stability and a safety net to individuals, allowing them to pursue education, entrepreneurship, or other activities without the immediate pressure of earning a livelihood.

Several countries have explored or experimented with UBI.

- Finland conducted a two-year UBI trial from 2017 to 2018, providing monthly payments to a select group of unemployed individuals. The outcomes indicated positive impacts on participants' well-being and trust in social institutions, though the effects on employment were mixed. The experiment sparked global interest and provided key insights into how UBI might function in a society grappling with automation's effects.
- Canada. A pilot program in Ontario offered payments to low-income residents but was prematurely terminated, leaving mixed evidence about its success.
- The Netherlands: Several Dutch cities experimented with variations of UBI, focusing on removing conditions from existing welfare benefits. Initial findings were inconclusive.
- Namibia: A pilot project in a Namibian village showed promising results in terms of poverty reduction and economic activity.

Real-world experiments with UBI have provided valuable data but also revealed the complexities of implementing such a system on a larger scale. As automation continues to reshape the labour landscape, the lessons learned from these trials may prove essential in crafting policies that balance financial stability, social welfare, and economic vitality. The debate on UBI is far from settled, but these real cases provide a foundation for ongoing exploration and consideration of how UBI might fit into a future where automation plays a significant role.

c) Emphasis on Lifelong Learning

Technological advancements are occurring at an unprecedented pace, underlining the critical importance of continual learning and adaptability. A cooperative effort between governments, educational entities, and employers is essential in crafting lifelong learning opportunities. This ensures that workers remain equipped to transition into new roles and industries as technological paradigms shift.

In the job market, the traditional career path is becoming obsolete. Lifelong learning helps in maintaining relevance in a fluid market where roles and requirements constantly shift. Automation and digitization may render certain jobs redundant, but lifelong learning empowers individuals to transition smoothly into new roles or industries, fostering career longevity.

Economically, lifelong learning provides avenues for social and economic mobility, offering education and skill development opportunities to all, regardless of age or background. It plays a crucial role in bridging the skill gap between different social groups, promoting equal opportunities for employment and advancement.

On a personal level, continuous learning fosters intellectual curiosity, critical thinking, and creativity, contributing to overall growth and satisfaction. It also cultivates a mindset of adaptability and resilience, essential for personal and professional success in a rapidly changing world.

The necessity of lifelong learning transcends traditional educational goals and permeates every aspect of modern life. It's a vital component in shaping resilient, innovative, and inclusive societies that can adapt to the incessant flux of technological, economic, and social changes. (Field, 2006). As highlighted in the (European Commission, 2020) 'European Skills Agenda for sustainable competitiveness, social fairness and resilience' an emphasis on continuous learning and skills development is crucial for maintaining competitiveness in the global economy. This agenda emphasizes not only the economic benefits but also the social importance of lifelong learning in fostering inclusion and resilience.

d) Ethical AI Governance

The emergence of AI has prompted an urgent need for ethical governance. Alongside technological advancements, AI has also brought forth complex ethical challenges requiring international attention and cooperation. One such international guideline is the OECD Principles on Artificial Intelligence, which sets forth key values including transparency, fairness, and accountability in AI systems (Salvi del Pero, Wyckoff, & Vourc'h, 2022). This framework serves as a global standard, guiding countries and organizations in their responsible management of AI.

However, ethical governance extends far beyond these principles. Many countries have taken significant legislative steps. For example, the European Union's General Data Protection Regulation (GDPR) has provisions that impact AI, particularly regarding the right to explanation for algorithmic decisions. Further, the EU has proposed specific legislation on AI, addressing high-risk AI systems' compliance and governance.

In the United States, the Algorithmic Accountability Act of 2022 mandates that companies evaluate the effects of the automated systems they

utilize and market. This legislation not only brings about greater transparency regarding the usage and implementation of automated systems but also enables consumers to make knowledgeable decisions concerning the automation of essential processes.

These legislative actions highlight a growing recognition of the unique challenges that AI presents, such as algorithmic biases, potential infringements on privacy, and ethical dilemmas related to autonomous systems. Addressing these issues requires ongoing collaboration and the development of new standards, auditing tools, oversight committees, and educational initiatives around AI ethics. The future of AI will undoubtedly be shaped by both its technological capabilities and how it is governed. This continuous journey towards ethical AI governance, though complex, is essential. It involves legal, ethical, and social considerations that uphold the dignity and rights of individuals, ensuring a future where AI can enhance human life without undermining human values.

e) Environmental Considerations

Environmental considerations are becoming an increasingly vital aspect of AI and automation development. As these technologies continue to proliferate, so does the demand for energy and resources required to power and produce them. From data centres consuming vast amounts of electricity to the manufacturing processes involved in creating hardware components, the environmental footprint of AI and automation cannot be overlooked.

A significant study by (Strubell, Ganesh, & McCallum, 2019) pointed out the energy consumption of training complex AI models, raising awareness about the environmental impacts of these technologies. Such findings highlight the need for a balanced approach that considers not only the technological advancements but also the sustainability of the methods employed.

As AI and automation evolve, the focus must increasingly shift towards energy-efficient and environmentally friendly innovations. This involves developing less power-consuming algorithms, utilizing eco-friendly materials, and incorporating sustainable practices such as responsible recycling of hardware components. Regulations, industry standards, and consumer expectations are instrumental in steering this transition. Collaborations among technologists, environmental experts, policymakers, and other involved parties can align the growth of these technologies with broader environmental stewardship goals. Recognizing and addressing the environmental impacts of AI and automation will not only shape our technological landscape but also determine the sustainability of our planet. The choices we make today will resonate with future generations, underscoring the importance of a balanced and responsible approach to AI and automation development.

6. Conclusion

The integration of AI and automation into various aspects of daily life and industry sectors is far more than a mere technological shift. It represents a profound transformation, influencing the core structures of our economy, society, and prospects. The multifaceted findings of this comprehensive analysis extend well beyond simple improvements in efficiency and productivity.

On one hand, there's a tangible risk that widespread implementation of AI technologies could lead to significant job displacement, particularly in roles heavily dependent on routine tasks. The slower pace of automation, as evidenced by recent data, provides some cushion, but the direction towards increased machine involvement in functions such as reasoning and decision-making highlights the need for vigilance.

On the other hand, AI and automation present opportunities for positive transformations within the workforce. They can augment human capabilities, foster innovation, and create new roles and industries that we might not yet fully envision. The integration of AI into business operations has already shown potential for enhancing efficiency, opening doors to job growth in sectors such as tech development, ethical AI governance, and environmental sustainability of technology.

The exploration of lifelong learning underscores the necessity of continuous skill development as the landscape of work changes. The notion of adaptability and the need for education that evolves alongside technology is central to ensuring that workers are equipped to thrive in an ever-changing labour market. It's a call for both individual growth and systematic efforts to provide training, resources, and support.

The study of Universal Basic Income as potential remedy for job loss due to automation indicates that although its effectiveness remains a subject of discussion, the introduction of UBI marks a revolutionary shift in considering how society may adapt to changes in employment caused by automation.

The balance between human and machine labour, the ongoing dialogue around ethical AI governance, and the renewed emphasis on sustainable development all reflect a labour market in flux. It's a market that is being shaped by technological advancement, ethical consideration, environmental stewardship, and the broader social and economic context of the past three years.

In conclusion, the labour markets of today and tomorrow are characterized by transformation, adaptation, and innovation. The way forward requires collaboration between educators, policymakers, industry leaders, and individuals, all working towards a labour landscape that recognizes the potential of AI and automation while valuing human skills and ingenuity. The insights gleaned from this analysis contribute to an essential and ongoing conversation about how to

navigate the evolving world of work, fostering an environment that is both technologically advanced and human centric.

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SISTEME CONTABILE ÎN UNIUNEA EUROPEANĂ

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Abstract: *Informația contabilă este foarte importantă pentru utilizatorii financiari. Modul de prezentare a informației contabile este în strânsă corelație cu sistemul contabil adoptat de țară. Sistemele contabile internaționale au suferit modificări de-a lungul timpului. Există mai multe clasificări ale sistemelor contabile, dintre care cea mai importantă este cea a lui Nobes (1998), care împarte sistemele contabile în anglo-saxon și continental-european. Între țările Uniunii Europene regăsim reprezentante din ambele categorii de sisteme contabile.*

Cuvinte cheie: *sisteme contabile, Uniunea Europeană, sistem contabil anglo-saxon, sistem contabil continental-european*

JEL: A11, F60, M41.

1. Introducere

Uniunea Europeană înglobează state cu istorie, tradiții, cutume, cultura diferite. Este de așteptat ca și sistemele contabile naționale să prezinte caracteristici distincte. În vederea delimitării lor, vom face referire întâi la rolul social al contabilității.

2. Rolul social al contabilității

Contabilitatea a avut dintotdeauna un rol important în societate. Pentru a înțelege acest lucru, trebuie să ne referim întâi la obiectivul pe care îl urmărește. O definiție a obiectivului contabilității este dată de Financial Accounting Standards Board (FASB) în Cadrul Conceptual (IFRS, 2015):

Raportarea financiară trebuie să furnizeze informația utilă investitorilor actuali sau potențiali, precum și creditorilor sau altor utilizatori ai informațiilor financiare care să le folosească la luarea deciziilor raționale pentru investiții, creditare și alte decizii similare.

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Pentru simplificare, FASB folosește termenul ”raportare financiară” cu referire la activitățile care sunt înglobate în contabilitatea financiară și raportare, mai exact, prezentarea situațiilor financiare precum și a notelor acestora. Conform acestei definiții, scopul este acela de a furniza informații care permit utilizatorilor să ia decizii mai bune decât cele pe care le-ar fi luat în absența acestor informații. În acest mod se realizează ”satisfacerea durabilă a intereselor economice ale tuturor subiecților care au legătură cu întreprinderea” (Mironiuc, 2012).

În calitate de limbaj formalizat de comunicare în lumea afacerilor, contabilitatea este utilizată în mod diferit în variate medii istorice, politice, economice și sociale (Georgescu, 2004). Diferențe mari pot fi identificate între sistemele contabile. Când spunem ”sistem contabil” ne referim la un set de practici contabile, adică politicile privind recunoașterea, măsurarea și prezentarea informațiilor financiar-contabile de către o entitate economică în alcătuirea situațiilor financiare.

Anumite entități economice dintr-o țară pot folosi sisteme contabile diferite atunci când întocmesc situațiile financiare. Spre exemplu, societățile listate la burse de valori pot întocmi situații financiare folosind standardele internaționale de raportare financiară în vederea asigurării comparabilității internaționale a datelor financiare raportate. În același timp, sunt întocmite și situații financiare folosind referențialul contabil național în vederea raportării rezultatului obținut către autoritatea fiscală.

Clasificările sistemelor contabile sunt un mod eficient de a descrie și de a compara sisteme contabile diferite. Ele ajută la evidențierea progresului realizat de diferite țări pe măsură ce ele trec de la un sistem la altul, la evidențierea progresului ideilor unei anumite țări sau gruparea altora în jurul ideilor comune. În științele sociale clasificarea poate fi folosită pentru a contura dezvoltarea unei simple descrieri. De exemplu, clasificarea sistemelor contabile ajută la evidențierea logicii ce stă în spatele armonizării contabile, precum și a impedimentelor întâlnite în calea acesteia. Aceste informații sunt prețioase atât pentru mediul academic, cât și pentru organismele implicate în procesul armonizării contabile (Douppnik, 1987).

Clasificarea este folosită, de asemenea, în cursurile de formare ale specialiștilor contabili și auditorilor care operează la nivel internațional. În plus, țările în curs de dezvoltare pot să recurgă la clasificare în adoptarea unui anume sistem, precum și în previziunea eventualelor obstacole pe care ar putea să le întâmpine în acest proces (pe baza experienței altor țări).

De-a lungul timpului au fost realizate mai multe clasificări ale sistemelor contabile existente la nivel mondial. De departe, cea mai importantă dintre ele este cea propusă de Nobes.

3. Clasificarea sistemelor contabile în viziunea lui Nobes (1998)

În 1998, Nobes propune anumite motive de diferențiere internațională în contabilitate, în funcție de mai mulți factori, detaliați mai jos.

Sistemul de finanțare

După cum a fost enunțat anterior, Zysman (1983) delimitează două tipuri de finanțare a unei companii: sub formă de credit și sub formă de investiții ale acționarilor. Modalitatea de finanțare determină ulterior scopul raportării financiare. În țările în care companiile se finanțează predominant de la instituții de credit (majoritatea țărilor continental-europene), piața de capital este insuficient dezvoltată, iar nevoia de situații financiare detaliate este scăzută, deoarece băncile au acces la ele în mod direct, aflându-se într-o relație privilegiată cu entitatea economică. La celălalt pol se situează țări ale cărei companii se finanțează majoritar de pe piața financiară (SUA, Marea Britanie). Pentru a atrage investitorii, companiile fac publice mai multe informații în cadrul situațiilor anuale, pentru ca potențialii investitori să poată evalua performanța afacerii.

Sistemul de raportare financiară

Nobes propune clasificarea sistemelor contabile în două mari grupuri, ale căror caracteristici sunt redată mai jos.

Clasa A:

- Practicile contabile în cazul provizioanelor pentru depreciere diferă de regulile de taxare;
- Contractele pe termen lung sunt înregistrate ca un procent din indicatorul de completare;
- Câștigurile din fluctuația de curs valutar sunt încorporabile în venit;
- Nu se regăsesc rezerve legale;
- Cheltuielile sunt înregistrate pe funcții;
- Este obligatorie prezentarea situației fluxurilor de trezorerie;
- În rapoartele financiare se regăsește și mărimea dividendelor pe acțiune.

Clasa B:

- Pentru înregistrarea provizioanelor de depreciere, practicile contabile se supun cerințelor de impozitare;
- Contractele pe termen lung se înregistrează atunci când sunt realizate în totalitate;
- Veniturile realizate din diferențele de curs valutar sunt amânate sau nerecunoscute;
- Rezervele legale sunt obligatorii;
- Cheltuielile sunt înregistrate după natura lor;

- Situația fluxurilor de trezorerie se regăsește doar sporadic, la fel ca și mărimea dividendelor pe acțiune.

Clasa A corespunde sistemului anglo-saxon de raportare financiară, pe când clasa B – celui continental-european. Conform lui Nobes, există țări în care se regăsesc toate caracteristicile esențiale ale unui sistem contabil. Pentru modelul anglo-saxon aceste țări sunt Australia, Statele Unite și Regatul Unit. Țările din sistemul continental-european care înglobează toate caracteristicile sistemului din care fac parte sunt Franța, Germania și Italia. Majoritatea țărilor face dovada unui melanj de caracteristici din ambele clase, cu predominanța unui anumit sistem contabil.

Nobes consideră că asocierea unei țări cu una dintre clase poate fi prevăzută în funcție de apartenența acesteia la unul din sistemele de finanțare. Astfel, statele cu o puternică piață financiară, de unde entitățile economice își finanțează activitatea, aparțin clasei A, pe când statele ale căror entități economice se finanțează preponderent de la instituții de credit aparțin clasei B.

Modelul propus de Nobes poate fi simplificat după cum urmează:



Figura 1. Model simplificat al diferențelor internaționale în contabilitate
Sursa: prelucrare proprie

Au existat autori care au negat dihotomia sistemelor contabile propusă de Nobes. Spre exemplu, d'Arcy (2001) și Alexander și Archer (2000) și-au exprimat dubiile cu privire la existența cu adevărat a unui grup de practici financiar-contabile specifice sistemului anglo-saxon distincte de cele ale sistemului contabil continental-european. Dar ambele studii au fost criticate de către profesorul Nobes pentru logica și metodologia lor slabe (Nobes, 2003 și 2004). În apărare, d'Arcy (2004) și Alexander și Archer (2004) exprimă puncte de vedere menite a fi luate în considerare, dar care nu sunt în măsură să susțină demontarea dihotomiei sistemelor contabile propusă de Nobes.

În contextul dat, este utilă prezentarea statelor definitorii pentru cele două sisteme contabile care se regăsesc în cadrul Uniunii Europene.

Franța

Statul a manifestat o influență semnificativă asupra contabilității franceze încă din a doua jumătate a secolului XVII. În 1673 a fost emisă Ordonnanțe de Commerce a lui Colbert, care a stat la baza Codului Comercial al lui Napoleon din 1807 (Howard, 1932). Codul Comercial s-a răspândit atât în Europa, cât și în alte țări (Japonia, de exemplu). Influența statului a fost la un nivel ridicat până la

mijlocul anilor 1980, dar a scăzut o dată cu procesul de armonizare contabilă și creșterea importanței piețelor financiare globale în care țările anglo-saxone sunt dominante.

Conform lui Colasse și Standish (1998), se pot distinge patru perioade importante în evoluția contabilității franceze:

- 1946-1957, perioada de reconstrucție postbelică, în care au avut loc reforme economice menite să susțină restabilirea țării pe un versant economic ascendent, dar, în mod esențial, a fost realizat planul contabil general (Plan comptable général);
- În perioada 1958-1973 economia Franței a înregistrat o puternică dezvoltare. Drept urmare, aplicarea Planului contabil general a fost extinsă, fiind deseori tot mai invocat în stabilirea taxelor;
- În perioada 1974-1983 Franța a integrat Directivele Europene în cadrul propriilor reglementări contabile, sporind în acest mod convergența contabilă;

Începând cu anul 1984 demarează o perioadă a dereglementărilor, privatizărilor, globalizării, perioadă în care au fost reorganizate instituțiile contabile, iar profesia contabilă a crescut în importanță datorită procesului de globalizare. Factorul determinant al acestor schimbări a fost reprezentat de concurența standardelor contabile naționale cu cele internaționale.

Imixtiunea standardelor internaționale a produs un dualism în contabilitatea franceză cu privire la practicile contabile de la nivelul întreprinderilor simple față de întreprinderile care fac parte dintr-un grup consolidat.

Sursele regulilor contabile, conform lui Raybaud-Turrillo și Teller (1998) sunt:

- Surse publice ale statului francez (legi, decrete, ordine ale ministrului, planul contabil național) și ale Uniunii Europene (Directive, care sunt implementate prin intermediul legilor naționale);
- Surse private/mixte (Consiliul național de contabilitate – Conseil National de Comptabilité, Comitetul de reglementare contabilă – Comité de la Réglementation Comptable).

Trăsătura distinctivă a sistemului contabil francez o reprezintă planul contabil general ("Plan comptable général"). El nu reprezintă doar o listă a conturilor contabile franceze, așa cum ne-am fi așteptat din denumire, ci un manual detaliat al practicilor contabile financiare. Planul contabil general stă la baza multor tratate contabile, descriind practici de evaluare, modele de declarații financiare, definiții ale termenilor contabili, fiind lucrarea de căpătâi pentru inițierea profesioniștilor în contabilitate.

Planul contabil general francez a suferit de-a lungul timpului schimbări și adaptări. În varianta planului promulgată în anul 1947 se regăsesc atât idei franceze, cât și idei germane. Pentru a adopta prevederile Directivei Europene

(Directiva a IV-a și a VII-a) a fost emisă o nouă versiune în anul 1957. Spre deosebire de versiunile anterioare, versiunea planului din anul 1982 devine obligatorie pentru entitățile patrimoniale. Pentru a apropia practicile contabile franceze de IFRS, periodic au loc amendamente ale planului contabil general. În acest fel se realizează convergența contabilă la nivel mondial.

Cele mai importante grupe de conturi care stau la baza planului contabil general sunt următoarele (Nobes și Parker, 2012):

Conturi bilanțiere:

- Capital;
- Active imobilizate;
- Stocuri;
- Creanțe și datorii;
- Conturi bănești.

Conturi operaționale:

- Venituri și
- Cheltuieli.

Fiecare ramură a economiei are un plan contabil adaptat specificului activității. Clasificarea veniturilor și cheltuielilor are loc după natura lor, ceea ce permite aplicarea planului contabil general în același mod de către toate companiile.

Consiliului Național de Contabilitate îi revine sarcina administrării planului contabil, prin emiterea de păreri, care sunt impuse ulterior prin practici obligatorii. Părerile care nu își găsesc finalitatea în reglementări sunt tratate ca "bune practici". Tot Consiliului Național de Contabilitate îi revine și sarcina de a stabili standardele contabile (Colasse și Standish, 2004).

În Franța sistemul legal joacă un rol important pentru conturile anuale. Astfel, regulile privind stabilirea profitului contabil conduc la același rezultat ca în urma aplicării regulilor pentru profitul taxabil. Au fost luate măsuri pentru convergența Codului fiscal ("Code général des impôts") și a Planului contabil general.

Anglia

Principala trăsătură a sistemului contabil englez este simplitatea. În același timp, este un sistem în care profesia contabilă are un cuvânt greu de spus în reglementarea contabilă.

Istoria contabilă englezească este una cu tradiție. Principala sursă legislativă comercială pentru companii o reprezintă Legea societăților comerciale. Această lege a suferit nenumărate modificări și amendamente de-a lungul timpului, fiind toate înglobate în versiunea din 1985 (Nobes și Parker, 2012). La începutul anilor 2000 a fost demarat un proces amplu de modernizare a legislației comerciale. Drept urmare, în anul 2006 a fost publicată o Lege a societăților comerciale care includea reforme, implementări ale Directivelor Europene,

precum și toată legislația din domeniu emisă până la acea dată. Versiunea din 2006 a Legii comerciale reprezintă cea mai completă și complexă versiune din istoria Angliei.

Pe lângă legislația comercială, și profesia contabilă joacă un rol important în viața economică. Profesia contabilă asigură (Tabără, 2012):

- Consultanță pentru guvern cu privire la legislație, practici financiar-contabile;
- Normalizare contabilă;
- Normalizarea profesiei contabile, prin prisma experienței acumulate.

În Anglia avem o puternică organizație a contabililor, Institute of Chartered Accountants in England and Wales (ICAEW) – Institutul contabililor autorizați din Anglia și Țara Galilor. În 1969, ICAEW a înființat Comitetul pentru standarde contabile – Accounting Standards Committee. Fiind acuzat de preferința față de practicile contabile americane, el a fost înlocuit de Corpul pentru Standardele Contabile – Accounting Standards Board, ASB, care este supravegheat de Consiliul pentru raportare financiară. ASB este organismul care emite standarde contabile, și care se numesc Financial Reporting Standards.

ASB a preluat și Declarațiile privind standardele contabile, emise de către ASC și care rămân în vigoare până la emiterea unor noi standarde contabile de către ASB. Atât standardele emise de ASB, cât și cele de către ASC cuprind reguli de raportare financiară și de evaluare a elementelor patrimoniale.

Standardele contabile naționale sunt aplicate de majoritatea companiilor mari și medii, cu excepția cazurilor când se impune aplicarea IFRS. Societățile mici aplică doar Standardul de raportare financiară pentru companiile mici – Financial Reporting Standard for Smaller Entities, care este revizuit periodic și care impune o formă simplificată a raportării financiare. Începând cu anul 2002, principalul scop al ASB este de a realiza convergența standardelor naționale cu IFRS.

Sistemul contabil anglo-saxon, al cărei reprezentant este Anglia, este caracterizat printr-o transparență ridicată a raportărilor contabile. Legea societăților comerciale din Anglia prevede ca societățile să publice orice abateri de la standardele contabile.

Conceptul de ”*imagine fidelă*” este de asemenea regăsit în contabilitatea englezească. Pentru a asigura furnizarea unei imagini fidele, Legea societăților comerciale prevede obligativitatea furnizării de informații suplimentare acolo unde este cazul.

Spre deosebire de celelalte țări europene, contabilitatea englezească nu are ca principal produs baza de determinare a impozitului pe profit. De fapt, cerințele fiscale au efect redus asupra practicilor contabile. Profitul contabil nu reprezintă baza de calcul a impozitului pe profit, companiile furnizând conturi separate

pentru a calcula impozitul. Autoritățile din domeniu încearcă o apropiere a bazei de calcul pentru impozitul pe profit față de baza de calcul a profitului contabil.

4. Sistemul contabil anglo-saxon versus sistemul contabil continental-european

După trecerea în revistă a principalelor trăsături ale contabilității statelor reprezentative din cadrul Uniunii Europene, apreciem necesară comparația între sistemele contabile anglo-saxon și continental-european.

1) Sursele de drept

Cu toate că delimitarea dintre dreptul comun și cel civil nu este totdeauna foarte clară ca urmare a evoluției sistemului legal, există anumite elemente de diferențiere. În acest sens, în țările caracterizate de sistemul de drept jurisprudențial (comun) legile sunt elaborate de curțile judecătorești prin deciziile luate. Țările cu un sistem de drept civil au legile elaborate de către autorități competente ale statului, cum ar fi legi emise de parlament sau ministere, iar rolul curților judecătorești este de a interpreta legile respective.

2) Ordinea prezentării elementelor bilanțiere în situațiile financiare

Ca o consecință a diferențelor privind utilitatea situațiilor financiare, țările celor două sisteme prezintă diferit conturile. Conform viziunii continental-europene, scopul principal al situațiilor financiare este de a demonstra conformitatea cu cerințele legale și satisfacerea nevoilor diferitor categorii de utilizatori ai situațiilor financiare, printre care statul, investitorii, creditorii, angajații ș.a.

În antiteză, țările anglo-saxone pun accent în prezentarea conturilor financiare pe situația economică a companiei, în care deținătorii capitalului societății sunt diferiți de managementul operațional de cele mai multe ori. În acest caz, elaboratorii situațiilor financiare prezintă "starea de sănătate" a societății pentru deținătorii capitalului societății. Se pune accent pe furnizarea de informații către investitorii societății. Conform IASC, "din moment ce investitorii sunt furnizorii de capital de risc pentru întreprindere, informațiile furnizate în situațiile financiare pentru aceștia vor satisface nevoia de informații a oricărui altui utilizator" (IFRS, 2015).

Astfel, putem sesiza diferențe între priorități în prezentarea situațiilor financiare. Țările continentale prezintă întâi bilanțul companiei, ca urmare a preocupării lor pentru proprietatea asupra capitalului. Țările anglo-saxone prezintă întâi situația veniturilor prin contul de profit și pierdere, ca o dovadă a performanței companiei.

3) Conținutul situațiilor financiare

IASC prevede că un set complet de situații financiare include următoarele componente (IFRS, 2015):

- Bilanț;

- Contul de profit și pierdere;
- O situație care să ateste fie:
 - Schimbările survenite în capitaluri;
 - Schimbări de capital, altele decât cele realizate din tranzacții cu deținătorii de capital sau distribuirea de capital către acționari.
- Situația fluxurilor de trezorerie;
- Politici contabile și note explicative.

În practică, în țările anglo-saxone companiile prezintă un set complet al situațiilor financiare. Țările continental-europene, ca urmare a Directivei a IV-a și a VII-a a Uniunii Europene, au drept cerințe de publicare a bilanțului, contului de profit și pierdere și notele explicative. Unele țări prezintă opțional și celelalte componente ale situațiilor financiare pentru a veni în întâmpinarea investitorilor.

4) Situația fluxurilor de trezorerie este prezentată de țările anglo-saxone împreună cu celelalte componente ale situației financiare.

În țările continental-europene Directiva a IV-a a fost ”tradusă” prin legi naționale care nu impuneau situația fluxurilor de trezorerie. În Franța, spre exemplu, a fost propus un model de situație a schimbării poziției financiare. Acest model este oarecum asemănător cu situația fluxurilor de trezorerie. În cadrul conturilor consolidate, companiilor franceze le este lăsată mână liberă în a alege oricare dintre cele două modele. Totuși, este sugerată alegerea modelului francez.

Chiar dacă statul francez a propus alternativa proprie, între cele două modele există diferențe. Situația schimbării poziției financiare își propune să explice în ce circumstanțe compania a reușit să păstreze structura financiară. Pe când situația fluxurilor de trezorerie este destinată anticipării generării viitoare de cash-flow de către întreprindere.

5) Prezentarea bilanțului face referire la formatul bilanțului și la clasificarea elementelor bilanțiere.

Formatul bilanțului poate fi ”orizontal” și ”vertical”, cu activele pe primele poziții. În Anglia și Irlanda este folosit așa-zisul bilanț în ”pași multipli”, care grupează activele, datoriile și capitalurile în trei categorii. Conform lui Nobes și Parker (2002), formatul vertical este folosit preponderent de către companii din Regatul Unit, în timp ce țările continental-europene folosesc formatul orizontal al bilanțului.

Clasificarea elementelor din bilanț se realizează în funcție de durata la care sunt înregistrate pornind de la probabilitatea de transformare în lichidități (pe termen scurt, mediu și lung) și în funcție de natura lor (financiare, curente, intangibile, tangibile). În țările anglo-saxone elementele de bilanț sunt clasificate în funcție de durată și prezentate în funcție de gradul de lichiditate. La celălalt pol, țările continental-europene prezintă elementele bilanțiere în funcție de natura lor.

6) Prezentarea activelor

Activele sunt prezentate în țările anglo-saxone la valoarea lor netă, spre deosebire de țările continental-europene care pentru active au trei coloane: valoarea de înregistrare, deprecierea acumulată și valoarea netă.

7) **Formatul contului de profit și pierdere**

Contul de profit și pierdere poate fi prezentat sub formă orizontală (cheltuieli în stânga și venituri în dreapta), sau sub formă verticală, cu detalierea cheltuielilor. Cheltuielile pot fi categorisite în funcție de natura sau funcția lor. Exemplu de cheltuieli grupate în funcție de natura lor: cheltuieli de achiziție a materialelor, taxe și impozite, cheltuieli de transport etc. Cheltuielile clasificate după natura lor nu sunt atribuite unui sector sau altuia al companiei.

Cheltuielile clasificate după funcție sunt considerate ca o componentă a costului bunurilor vândute. O astfel de clasificare este utilă întreprinderilor din industrie, reprezentând contabilitatea de gestiune.

În țările continental-europene cel mai utilizat format al contului de profit și pierdere este cel bazat pe clasificarea cheltuielilor după natura lor. În Anglia este întâlnit un model simplificat al formatului contului de profit și pierdere.

5. Clasificarea statelor membre UE funcție de sistemul contabil căruia aparțin

După trecerea în revistă a câtorva trăsături ale celor două sisteme contabile, abordarea noastră are în vedere clasificarea statelor membre ale Uniunii Europene în funcție de sistemul contabil adoptat.

Conform clasificării lui Nobes (1998), statele care aparțin sistemului contabil anglo-saxon sunt Irlanda și Regatul Unit, restul statelor din Europa continentală având un sistem contabil continental-european.

Anglia și Irlanda, având tradiție pe piețele financiare, denotă o orientare spre nevoia de informare a utilizatorilor de date financiare într-o măsură mai mare decât cea către instituțiile statului. Aceste două state prezintă un sistem contabil anglo-saxon.

Statele membre ale Uniunii Europene au adoptat un sistem contabil continental-european. Acest lucru este și firesc, dacă facem referire la tradiționalismul formei de finanțare a companiilor, orientarea practicilor contabile spre fiscalitate.

Nu ne putem aștepta să regăsim exact aceleași practici contabile în cadrul statelor care au un sistem contabil continental-european sau unul anglo-saxon. Statele se diferențiază între ele printr-o multitudine de factori, dar se și aseamănă în același timp prin evenimente istorice și influențe comune la care au fost supuse. Spre exemplu, este de așteptat ca statele est-europene, care au fost sub conducerea unui regim comunist, să aibă aproximativ aceleași principii, dar și aceleași dificultăți în ce privește sistemul contabil. Aceste state sunt, de obicei, cele care s-au trezit după prăbușirea sistemului comunist că trebuie să ”reinventeze”

întreaga economie. Cu o contabilitate care nu era în măsură să răspundă noilor realități. ele au preluat, de cele mai multe ori, modelul sistemului contabil al unui stat din Europa cu care aveau trăsături culturale și tradiții comune.

Dintre statele Europei continentale, se deosebește grupul statelor nordice (Danemarca, Estonia, Finlanda, Suedia și Țările de Jos). Tradițional, aceste state au un sistem contabil continental-european, aflându-se sub influență germanică. În ultimii ani, însă, ele au promovat legi și reforme care le-au apropiat mai mult de sistemul anglo-saxon (Lewis și Salter, 2006). Practicile contabile adoptate apropiate aceste state de sistemul anglo-saxon, dar trăsăturile preponderente sunt ale celui continental-european. Una din țările care a fost mereu greu de clasificat a fost Olanda, care are un sistem contabil continental-european, dar care demonstrează practici puternic influențate de sistemul anglo-saxon.

Germania reprezintă un stat cu tradiție în sistemul continental-european. Studii recente arată, însă, că ea a promovat legi prin care au fost impuse numeroase practici caracteristice sistemului anglo-saxon (Hellmann et al., 2013). Practicile contabile tradiționale din Germania au fost ajustate cu scopul de a răspunde noului mediu instituțional, născut din cerințele economiei și globalizarea companiilor mari listate la bursele de valori. În acest context, Germania nu se mai prezintă drept o țară cu un sistem de finanțare bazat preponderent pe creditare, care ar situa-o în grupul țărilor cu un sistem contabil continental. În fapt, ca urmare a legii menite să modernizeze contabilitatea germană, adoptată în 2009, multe din practicile contabile au fost reorientate spre sistemul anglo-saxon. Totuși, Germania a decis să nu adopte IFRS în totalitate, astfel încât, în acest moment mai există diferențe semnificative între standardele germane și IFRS. Germania rămâne un stat cu sistem contabil continental-european, însă cu puternice imixțiuni din sistemul anglo-saxon.

6. Concluzii

După cum se observă, clasificarea statelor suferă schimbări de-a lungul timpului, astfel încât, până și state cu tradiție într-un anumit sistem contabil pot să migreze către celălalt sistem. Acest lucru derivă firesc din schimbările economice care au loc în special la nivel mondial.

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DIGITAL TRANSFORMATION OF SMEs IN THE REPUBLIC OF MOLDOVA: OPPORTUNITIES AND PERSPECTIVES

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Abstract: *prezentul studiu reprezintă o incursiune teoretico-metodologică privind posibilitățile de transformare digitală în cadrul IMM din Republica Moldova. Scopul studiului este identificarea soluțiilor de transformare digitală a IMM din Republica Moldova. În vederea atingerii scopului cercetării au fost studiate abordările conceptuale ale tehnologiilor informaționale și aportul lor în eficientizarea sistemului de management modern. Totodată, au fost analizate strategiile de transformare digitală în țările din UE. Deasemenea, au fost analizate direcțiile și oportunitățile de transformare digitală a IMM din cadrul domeniului „Activități financiare și asigurări”. Pe de altă parte, au fost evidențiate programele de susținere a IMM în doemniul transformării digitale din partea ODA care oferă multiple avantaje și încurajează implementarea tehnologiilor informaționale în cadrul IMM din țară. Metodologia cercetării s-a axat pe utilizarea multiplelor metode de cercetare, precum: analiza, sinteza, inducția, deducția, abducția, abstracția științifică, cercetarea calitativă pe baza studiului de caz. Drept urmare, putem evidenția că în vederea intensificării transformării digitale a IMM din țară, apare necesitatea de a aplica programele de susținere a procesului de digitalizare, oferite de către ODA; precum și organizarea sesiunilor de instruire pentru antreprenori privind utilizarea tehnologiilor informaționale, a inteligenței artificiale, a sistemelor de management modern axate pe utilizarea TIC.*

Key words: *information technologies, SME, artificial intelligence, modern management system*

JEL: L26, M1, L96

Abstract: *the present study represents a theoretical-methodological foray into the possibilities of digital transformation within SMEs in the Republic of Moldova. The purpose of the study is to identify digital transformation solutions for SMEs in the Republic of Moldova. In order to achieve the goal of the research, the conceptual approaches of information technologies and their contribution to the efficiency of the modern management system were studied. At the same time, digital transformation strategies in EU countries were analyzed. Also, the directions and opportunities for digital transformation of SMEs in the field of "Financial activities and insurance" were analyzed. On the other hand, the SME support programs in the field of digital transformation from the ODA have been highlighted, which offer multiple advantages and encourage the implementation of information technologies within the country's SMEs. The*

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research methodology focused on the use of multiple research methods, such as: analysis, synthesis, induction, deduction, abduction, scientific abstraction, qualitative research based on the case study. As a result, we can highlight that in order to intensify the digital transformation of SMEs in the country, there is a need to apply the programs to support the digitization process, offered by the ODA; as well as organizing training sessions for entrepreneurs on the use of information technologies, artificial intelligence, modern management systems focused on the use of ICT.

1. Introduction

Information and communication technologies (ICT) play a significant role in all aspects of modern society. ICTs have changed the way we communicate with each other, the way we need information, work, conduct business, interact with government agencies, and manage our social lives. As ICTs affect everyday life, they also influence macroeconomic growth, which in turn further affects society, enabling improvements in infrastructure and living standards.

A conceptual model regarding the role of ICT in the economic development of society was developed by researchers Tallon and Kraemer (2000), who links ICT to economic profits and economic development. However, conceptual approaches that simultaneously focus on the social and economic aspects of development are rare. In general, we were able to identify only six approaches, which try to explain the effects of ICT on some aspects of socioeconomic development. We will briefly discuss them in the order of their publication, starting with the oldest.

Researcher Madon (2000) proposed a conceptual framework that attempts to explain the interaction between ICT and socio-economic development in developing countries. The framework was developed based on literature, evidence and assumptions. It suggests that the Internet has a mainly positive impact on four main factors: economic growth, as evidenced by economic productivity; social welfare, including health, education and poverty reduction; political welfare, that is, democracy; and the physical environment through sustainable development.

Uttama (2012) proposed a model describing the effect of foreign direct investment on socio-economic development in the Association of Southeast Asian Nations (ASEAN) countries. The author argues that foreign capital investment is a powerful engine for socio-economic development, through the effect of increasing the product market, the labor force and the capital market, which, in turn, result in improvements in incomes, places of employment work, productivity and human development.

Roztocky and Weistroffer (2016) proposed a broad framework linking ICT and socioeconomic development. The authors' research points to the role of ICT, such as software, Internet, mobile telephony, GPS and Wi-Fi, which enable business activities and services, such as e-commerce, e-government, online social networks, online teaching. The authors' research demonstrates that these

commercial activities have an impact on the socioeconomic development of individuals, organizations, and the country as a whole. These are manifested in individuals' education, health, income, quality of life, etc., as well as in the competitiveness and global resources of organizations, as well as in the country's national product, political freedom, wealth, esteem and the labor market. At the same time, the authors' research points out that these socioeconomic developments, in turn, influence government policies, business culture and infrastructure, which further generate developments in business activities and services.

Ashraf, Grunfeld, Hoque and Alam (2017) developed a conceptual model to explain the contribution of ICT to socio-economic development at the community level. Specifically, the authors analyzed three community centers (BRAC Gonokendra) in Bangladesh that provide economic and social programs to individuals and communities in situations of poverty. The model also includes social constraints that may present obstacles to development. Thus, while ICT can provide a means of socioeconomic development, social constraints such as religious perceptions and mobility restrictions on women must be addressed to achieve the desired improvements in access to information, employment opportunities, social status, education and social awareness.

Roztock, Soja and Weistroffer (2017) proposed a model linking the adoption of enterprise systems to socioeconomic development in economies that are in transition or have recently moved from a centrally planned to a market-based economic system. The model shows that the implementations of information systems within enterprises enable business activities, which have an impact on socioeconomic development primarily at the organizational level. These socio-economic developments in turn influence government policy, business culture and the business environment, as well as determine human and social capital.

More recently, Palvia, Baqir, and Nemati (2018) proposed a model that is based on Sen's capabilities approach (Sen, 1999). The research carried out by Palvia et al. is based on data collected in Pakistan and attempts to explain how citizens of a country view the impact of ICT on socio-economic development. According to the authors, citizens' views could be classified into five major categories: social contacts, economic transformation, cultural evolution, personal security and empowerment. According to Palvia et al. ICTs have enormous effects on social capital, labeled in the framework as social contact, because ICT can be used as a means of keeping in touch with family, friends and business partners.

Also, ICT manifest effects on business activities, labeled by the authors of the model as economic transformation, because the use of ICT allows efficient business management and the pursuit of additional business opportunities by entering new market segments. The model also shows the impact of ICT on

cultural evolution, indicated by changes in human behavior. In addition, the model presents the impact of ICT on personal security and criminal use.

Finally, Palvia et al. show the effects that ICTs have on education, learning and access to health care as well as entertainment, labeled by the authors as empowerment in life domains. A useful feature of the study by Palvia et al. is that it also presents the possible negative effects of ICT, such as inattention (as part of cultural evolution) and criminal use.

As a result, following the research carried out, we have developed a chart, where we present the effects of ICT use on socio-economic development.

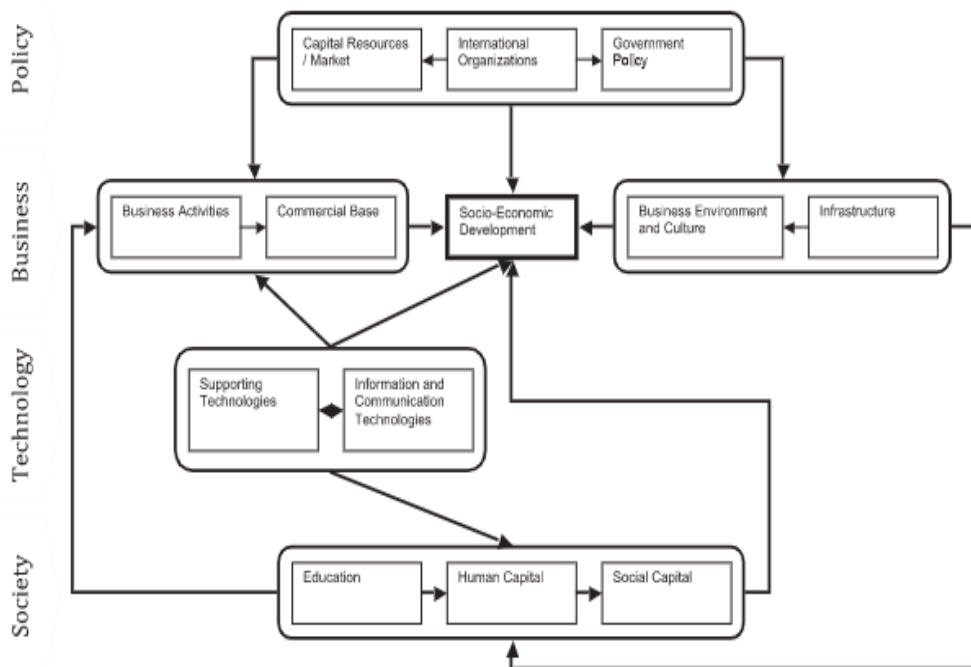


Figure 1. Multidimensional approaches to the impact of ICT on socio-economic development

Source: Roztocki, N., Soja, P., Weistroffer, H.R. The role of information and communication technologies in socioeconomic development: towards a multi-dimensional framework. Available: <https://www.tandfonline.com/doi/epdf/10.1080/02681102.2019.1596654?needAccess=true&role=button>

Thus, we can observe a strong socio-economic impact of ICT that affects all sectors of life from the educational, commercial, business sector to all other sectors in order to make activities more efficient, reduce the time of activities, online presence, 24/24, as well as of easier interaction with citizens, customers, business partners. ICT makes operations more efficient, improves

communication, reduces costs, increases turnover, increases market share, broadens the horizon of society development.

6. The impact of information technologies on the efficiency of the modern management system

The contribution of information and communication technologies from a macroeconomic perspective is huge, because it streamlines activities and dynamizes processes, modernizes society, offering the possibility to interact effectively, regardless of where you are.

If we were to analyze the impact of ICT on business, we can reiterate that information technologies offer a wide spectrum of advantages for the business world. To present the impact of ICT on business management, we can highlight the following aspects:

1. *Streamlining operations* – information technology is now used in the daily operations of any business. IT has made it easy to manage the general expenses as well as to offer the opportunity to recruit human resources, manage market uncertainty, manage inventory, monitor employee performance, handling employee grievances, customer grievances, and more. Nowadays, IT has also automated various manual and time-consuming tasks to speed up regular operations. For example, there are several software available today to record daily attendance of employees, to process the leave and calculate the monthly salaries of employees with minimal human interference.

2. *Implementing cloud-based solutions* – cloud technology is another useful tool that helps companies store their data on third-party servers through the Internet. It is a revolutionary technology that has helped businesses to massively reduce costs and opt for subscription packages to suit their business needs. Businesses don't have to worry about hiring a substantial IT team to maintain and manage large servers in their workspace. They may pay third party companies to store relevant data. Things like server crashes, downtime and data loss are now a thing of the past with cloud technologies.

3. *Facilitating cyber security* – as more companies store data online, the risk of cyber attacks arises. Even third-party companies that provide cloud solutions to businesses need to protect their customers' data from cyber attacks. Businesses in the banking and financial sector need to be more concerned about cyber security.

4. *Performing data analysis* - companies depend on IT professionals to collect, assimilate, separate and study relevant data to understand current market trends and customer behavior. Afterwards, they use the data to make various decisions at the organizational level to grow their business. Data analytics is another important tool used by companies to develop business strategy, analyze market forecasts, stay ahead of competition, understand customer behavior and

develop product development strategies accordingly. It can also help companies stay ahead of the competition.

5. *Streamlining business communication* – easy and effective communication is one of the main advantages of information technology. Communication does not only refer to the communication carried out at the organizational level, but also means the communication carried out with customers. IT software such as emails, Whatsapp, custom chatbots, feedback forms, etc. can be classified as forms of communication. Living in the age of information technology means that businesses can receive instant communication. This communication includes sales figures, consumer feedback, customer questions, market trends and more.

6. *Improving the customer experience* – most companies nowadays use the IT to improve their customer experience and maintain excellent customer relationship. Companies use tools like CRM (Customer Relationship Management) to keep track of customer behavior or any issues a customer is facing, and to ensure a quick solution to any of the other general issues. Suppose a customer has a problem with a purchased product or with a service used, he/she can call the company that will be informed by CRM. A customer relationship manager will then review the customer’s purchase history through the CRM program and resolve the issue efficiently without any problems or delays.

7. *Reducing the operational costs* – at large, implementing the aforementioned IT software and programs can help companies reduce their operational costs by a large margin. They don’t need to recruit more staff members to perform tasks that can be done by software and programs. Instead, they can recruit top industry professionals to run their business.

8. *Online presence* – e-commerce is currently a growing industry that offers the possibility to penetrate the global market, to increase the competitiveness of the business, to be present 24/24 in the market, to interact efficiently and quickly with customers, to react quickly to suggestions received from customers.

As far as we can see, the impact of ICT on business is significant, because it offers multiple advantages contributing to the increase of business competitiveness, from a global presence to effective communication with all business stakeholders. The ways of doing business have changed drastically in recent years. New technologies allow companies to better understand their target market and increase their efficiency. Nowadays, small businesses are able to compete with the giants of the market and this has been possible with the advent of the internet.

Companies are investing heavily in technology globally. There are countless examples of technology being used in business, including social media. According to the US Chamber of Commerce, 84% of small businesses use at least one digital platform to share information with their audience. About 80%

advertise products and services on social media. Furthermore, 62% of small businesses say that having strong digital and media skills is a key factor in the recruitment process (Mgunda, M. I., 2019).

The forms of ICT used in the business world are different. Next, we present the most representative information technologies used in business:

1. *Artificial intelligence (AI)* – artificial intelligence has been one of the biggest advances in technology. It has changed the game for both small and large businesses. Its importance can be understood by looking at the investments being made for AI. IDC in its Global AI Spending Guide estimates that global AI spending will double over the next four years, rising from \$50.1 billion in 2020 to over \$110 billion in 2024. The reason is the deployment of AI by organizations as part of their digital transformation efforts in staying competitive in the digital economy. Artificial intelligence is concerned with the intelligent behavior of machines, and today it has become an integral part of our lives without us even realizing it. AI enhances the user experience and is used in the latest gadgets. We are assisted with the help of software like Google Assistant in Android. This ultimately helps companies better serve their consumers. “AI is the technology that will help companies be agile, innovate and further expand. Companies that become “AI-powered” will have the ability to synthesize information (using AI to convert data into information and then into knowledge), the ability to learn (using AI to understand relationships between knowledge and apply learning to business problems) and the ability to deliver insights at scale” (Mgunda, M. I., 2019).

2. *Machine Learning (ML)* – machines can become intelligent on their own, intelligence is imparted to them, and this is where machine learning comes in. Machine learning is an application of artificial intelligence that makes it possible for machines to automatically learn and improve from experiences without having to explicitly program them. Machine learning focuses on developing computer programs that can access data and later use it to learn. The main goal is to make computers capable of learning automatically without any human intervention. Companies use ML in various ways, the manufacturing industry uses ML for predictive maintenance. Manufacturing firms require regular maintenance and correction practices, so they use ML to gain meaningful insights. This helps them reduce the risks of unexpected failures. E-commerce platforms use ML for product recommendations. Here, ML algorithms use the customer’s purchase history and match it with the large product inventory to identify hidden patterns and group similar products.

3. *Cloud Computing* - in simple terms, Cloud Computing is the provision of computing services over the Internet. Services include servers, storage, databases, information, networks, software and analytics. Cloud computing offers businesses faster innovation, flexible resources and economies of scale. Cloud

computing is no less than a boon for small businesses that cannot afford their own computing infrastructure and data centers. Businesses can rent access to things from servers, applications and storage from cloud service providers. This helps businesses reduce the cost of owning and maintaining heavy IT infrastructure, as they can simply pay for what they use and when they use it.

4. *Mobile Applications* - smartphones have seen a great increase in their demand. As everything shifts to digital platforms, smartphones have become a useful tool to carry around. Businesses also know that people have the option to search for business and anything else that comes to mind whenever they want. Research shows increased use of mobile apps among businesses.

5. *Augmented Reality (AR) and Virtual Reality (VR)* – augmented and virtual reality are among the most important technological trends of the century. Both technologies are very useful for businesses. Augmented reality is a technology that works on computer vision-based recognition algorithms to augment sound, video, graphics, and other sensor-based inputs on real-world objects. AR is a good way to render information from the real world and present it in an interactive way so that the virtual elements become part of the real world. AR helps in the development of translation applications that can interpret a text in different languages. Video game companies are using AR to create more games and provide a more realistic experience.

6. *3D Printing* – this is a digitally operated manufacturing technology where physical objects are printed by a 3D printer based on a 3D digital model specification. This technology implies that the manufacturing process is additive, i.e., it takes place layer by layer instead of molding a larger object into the required shape. Manufacturing through a 3D printer is performed by allowing an object to be printed in successive horizontal layers of materials such as plastic or metal until the object is properly produced.

7. *Digital Assistants* – a digital assistant is basically an advanced computer program that stimulates an interaction with the people who use it, generally through the Internet. They are generally represented by technologies such as Robotics Process Automation (RPA), chatbots and voice assistants. These assistants will help future organizations meet productivity, accessibility and quality requirements, while also improving customer or employee response times.

8. *Blockchain* - a blockchain, in simple terms, is a transactional database where every party involved generally has access to the same information about transactions. It is difficult to change database information unless the majority of participants agree that this change is in harmony with the rules defined for an approved transaction. Blockchain enables the execution of secure transactions between multiple parties while eliminating the need to verify the transaction with a third party. Trust is established between parts of a network that would

communicate. This technology has a critical role to play when it comes to innovation and value creation.

Information technologies have an extremely significant impact on the development of any company and organization, contributing to the development of various competitive advantages that make it attractive and open multiple opportunities to its competitors.

7. Digital transformation options for SMEs from the Republic of Moldova

To create an impression regarding the contribution of SMEs in the development of the national economy, as well as the role of information technologies in the development of enterprises, we have reproduced the main data regarding the dynamics of SME activity in the Republic of Moldova, in the period 2017-2021.

Table 1. The main indicators regarding the activity of SMEs in the Republic of Moldova, 2017-2021

	2017	2018	2019	2020	2021
Number of enterprises	53573	55705	55918	57247	59357
Average number of staff	323277	328018	336059	316823	314925
Sales revenue, mill. lei	137506,06	144160,76	157346,55	150112,07	183569,70
The financial result before taxation, mill. lei	10568,87	11220,01	12386,36	9050,91	20237,44

Source: developed based on data from the National Bureau of Statistics, 2017-2021

Analyzing the data in the table, we notice that in the period 2017-2021, SMEs in the Republic of Moldova registered a spectacular growth, even despite the pandemic crisis. Thus, if in 2017, there were 53573 SMEs in Moldova, then in 2021, their number increased by approximately 11%, reaching the value of 59357 registered enterprises.

Although the number of SMEs in the Republic of Moldova is increasing, the number of employees of enterprises followed, in the period 2017-2021, a negative trend, from 323,277 employees who worked in SMEs in 2017, to 314,925 employees who were active in 2021. If by 2019 there is an increase in the number of employees of SMEs reaching the value of 336059 employees, then, with the pandemic crisis, SMEs had to reduce their activity, thus optimizing personnel expenses, in this context, layoffs being significant.

Even if the number of employees working in SMEs during the period 2017-2021 decreased, the volume of sales recorded by SMEs during this period was still increasing, from 137,506.06 million lei, in 2017, to 157,346.55 million

lei, reaching, in 2020, the value of 150,112.07 million lei, to subsequently increase, reaching 183,569.70 million lei, in 2021. The decrease produced at the level of 2020 is as a result of the effects of the pandemic crisis that drastically affected the turnover of SMEs in Moldova and troubled the activity of enterprises, they being dependent on the internal market, the suppliers of raw materials and the imported materials.

On the other hand, the financial result of SMEs in the Republic of Moldova, in the period 2017-2021, shows an increasing trend, in the period 2017-2019, from 10,568.87 million lei, in 2017, to 12,386.36 million lei, in 2019. In 2020, there is a sharp decrease in the financial results obtained by SMEs in Moldova as a result of the pandemic crisis, where we can see a decrease, reaching the value of 9,050.91 million lei, as subsequently, in 2021, to witness a spectacular increase of over 91% compared to 2017, with SMEs registering a spectacular increase in financial results, registering the value of 20,237.44 million lei.

A special importance for the national economy, but also a special place within Moldovan SMEs is held by economic agents operating in the field of “Financial activities and insurance”, which, in the period 2017-2021, constituted 1.80% of existing SMEs in the country. Analyzing the table data, we can see that the share of economic agents operating in the field of “Financial and insurance activities” in the period 2017-2021, registered a downward trend from 1162 enterprises (2.16%) in 2017 to 1068 enterprises (1.80%), in 2021.

Table 2. The dynamics of the main indicators of Moldovan SMEs in the field of “Financial activities and insurance”, 2017-2021

	2017	Share in SMEs	2018	Share in SMEs	2019	Share in SMEs	2020	Share in SMEs	2021	Share in SMEs
Number of enterprises	1162	2,16%	1200	2,15%	1128	2,02%	1109	1,94%	1068	1,80%
Average number of staff	4404	1,36%	4662	1,42%	4435	1,32%	4340	1,37%	4483	1,42%
Sales revenue, million lei	9318,00	6,78%	9986,84	6,93%	4082,69	2,60%	4234,18	2,82%	4788,81	2,61%
The financial outcome before taxation, million lei	1101,82	10,43%	1219,19	10,89%	1551,40	12,53%	877,93	9,70%	1501,70	7,42%

Source: developed based on data from the National Bureau of Statistics, 2017-2021

The negative trend is punctuated by the multiple difficulties faced by SMEs in this field, being dependent on capital investments, on the financial means allocated to insurance.

Although the number of SMEs in the “Financial activities and insurance” sector is decreasing, in the period 2017-2021, we must note a slight increase in the number of employees of enterprises in this sector. Thus, if in 2017, 4,404 (1.36%) employees worked in this sector, then by 2021, 4,483 employees (1.42%) would work in this sector. The positive dynamics is explained by the expansion of the activity of existing companies, but also the opening of new branches of companies already existing on the financial and insurance market.

The dynamics of the turnover of SMEs operating in the “Financial and insurance activities” sector registers a downward trend from 9318.00 million lei (6.78%), in 2017, to 4788.81 million lei (2.61%), in 2021. In recent years, 2020-2021, we have witnessed a decrease in turnover which is largely due part, the effects of the pandemic crisis that negatively affected the activity of these businesses through measures to reduce imports/exports of goods/passengers, through travel restrictions that created colossal queues at customs, but also decreased the flows of vehicles/goods that needed to be insured.

Along with the reduction in the turnover of SMEs in the “Financial and insurance activities” sector, there is a reduction in the financial result of these SMEs, in the period 2017-2021, by 3.01%. Therefore, if in 2017, the financial result of SMEs in this sector recorded the value of 1101.82 million lei (10.43%), then by 2021, its value will reach 1501.70 million lei (7.42%).

A key to success applied by companies in the field of “Financial and insurance activities” in the context of the pandemic crisis was the digitization of activities, the application of software and social media platforms in order to widen the market, but also to intensify the practice of online commerce.

From the data in the figure, we can observe the dynamics of companies in the field of “Financial and insurance activities” that have personal computers and web pages, in the period 2017-2021. Thus, we can observe that in this period there is a significant increase of approximately 19% in the number of companies that have personal computers, from 81 companies in 2017 to 100 companies in 2021.

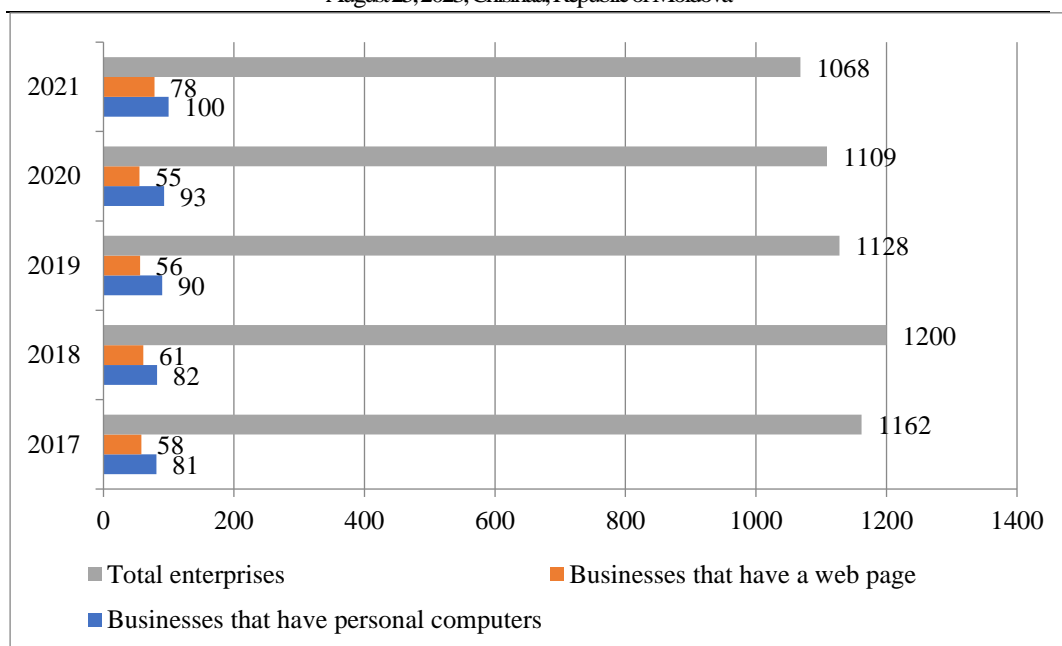


Figure 2. The dynamics of the number of enterprises in the field of “Financial activities and insurance” which have a web page and personal computers, 2017-2021

Source: developed based on data from the National Bureau of Statistics, 2017-2021

At the same time, along with the increase in the use of personal computers by companies in the field of “Financial and insurance activities”, in this period there is also an increase of approximately 25% compared to 2017, of companies that have web pages, from 58 enterprises to 78 enterprises. The growth of companies that own web pages was influenced, in large part, by the need to adapt to the new difficult context, the need to find markets outside the country, but also by the intensive promotion of the companies.

Although the dynamics of the use of personal computers and the creation of websites by companies in the field of “Financial and insurance activities”, in the Republic of Moldova, in the period 2017-2021, is increasing, however, the share of these companies in the total number of companies is low.

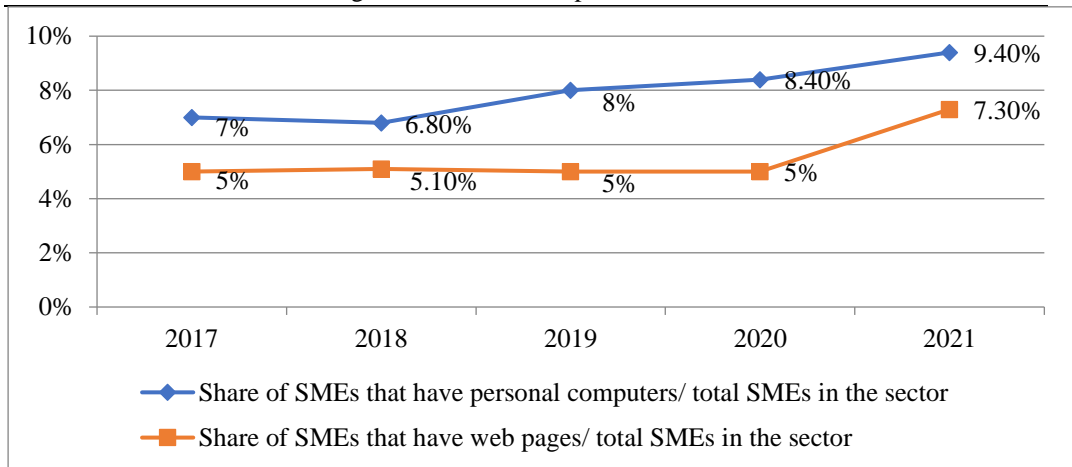


Figure 3. The share of SMEs in the field of “Financial and insurance activities” that have personal websites and web pages in total enterprises in this sector, 2017-2021

Source: developed based on data from the National Bureau of Statistics, 2017-2021

From the data in the figure, we note that, in the period 2017-2021, the share of SMEs in the field of “Financial and insurance activities” that use digital technologies in the total number of enterprises in this sector increased by 2.40%, from 7 % in 2017 to 9.40% in 2021. At the same time, there is also a seven-fold increase in the share of businesses that have web pages, where, in this period, there is an increase of 2.30%, from 5 %, in 2017, to 7.30%, in 2021. We must note, however, that these increases are insignificant for this sector, because, in the 21st century, digitized technologies must be absorbed in all sectors of activity, especially in the field of insurance.

In figure 4, we have shown the dynamics of computers owned by legal entities in the Republic of Modlova active in the field of “Financial and insurance activities”, in the period 2017-2021. From the data in the figure, we observe a positive dynamic recorded in the possession of personal computers by legal entities in the “Financial and insurance activities” sector. Consequently, if in 2017, companies in this sector had 12,847 personal computers, then by 2021, their number will reach 14,332 computers.

The dynamics of the number of computers owned by the companies in this sector per company is rewarding, given the fact that each company, on average, had 13 registered computers. We observe that the companies in this sector have information technologies, which could be used for the implementation of software and advanced information technologies, which would help the companies become leaders in the digitization of SMEs.

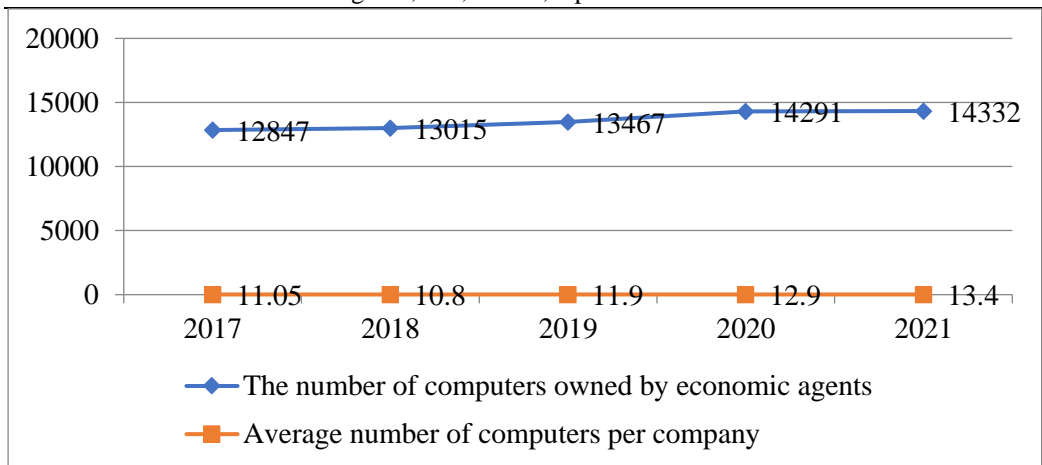


Figure 4. Dynamics of computers owned by legal entities in the field of “Financial activities and insurance” in the Republic of Moldova, 2017-2021
 Source: developed based on data from the National Bureau of Statistics, 2017-2021

In the end, we can note that although in the Republic of Moldova there is a development of the ICT sector in Moldova, the progress of the companies in this sector is still to be expected, the pace of their development being much too slow. It dramatically affects the SME sector in the Republic of Moldova, reducing the possibilities of cost reduction, but also the lengthening of the supply chain, the reduction of development possibilities through the prism of ICT implementation in their activity. The digital transformation of SMEs in the Republic of Moldova could help enterprises in this sector to accelerate their pace of development, increase their productivity, enter new markets, along with reducing costs, thus becoming much more competitive, attractive to foreign investors.

8. Conclusion

Following the research carried out, we can reiterate that SMEs are the catalytic agents, the backbone of the national economy. The research allows us to mention that SMEs have faced drastic problems related to the supply chain, cancellation of contracts with customers, loss of outlets, colossal financial problems. In this sense, although both the EU and the Eastern Partnership countries adopted measures to support SMEs, a good part of them “were thrown off the market”, another part had to resize their activity, to reshape their managerial strategies in order to identify viable solutions in order to overcome the crisis. A successful solution identified by SMEs was digitization, which is not only a competitive advantage, but also a condition for the viability of SMEs, in the new post-pandemic context. Thus, we can mention that both the EU countries and the Eastern Partnership countries quickly adopted measures to stimulate digitization.

At the macroeconomic level, the national strategies for the digital transformation of SMEs were developed/revised, and, at the same time, ambitious strategic objectives were set to be achieved by 2030. Each EU country intensified the allocation of financial support, consulting, trainings for SMEs to help them adapt more easily to the new post-pandemic context.

At the microeconomic level, each country has developed/revised its activity strategies, where digitization is the lever for success in achieving sustainability.

In order to provide the necessary support for SMEs and in order to accelerate the implementation of information technologies, it would be beneficial to create the Association of Digital Entrepreneurs, following the EU model that has already created such an association.

At the same time, it would be beneficial to create a “HUB for the Digital Transformation of SMEs in Moldova” where the government, with the support of ODA and strategic partners, could provide the necessary sustenance in the form of financial resources, materials, knowledge, training, etc. as provision for SMEs from the Republic of Moldova in order to intensify their digitization.

SMEs from the Republic of Moldova need the support of the state and also of strategic development partners, in intensifying the digitization of processes, of resizing activity strategies in order to capitalize on digital technologies in every dimension of their activity. The rapid development and implementation of the National Digital Transformation Strategy 2023-2030 remains an imperative for our country, which, once implemented, will contribute to achieving tangible results for all sectors of the national economy.

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CONDITIONAL GENERAL COMPETENCE – IMPOSITION OF A CONSEQUENCE OR CONDITION OF COMPLIANCE WITH THE PRELIMINARY PROCEDURE IN THE LEGISLATION OF THE REPUBLIC OF MOLDOVA

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Abstract: *In this article, the general conditional jurisdiction is analyzed starting from the legislation of the Republic of Moldova, regarding which there are two opinions in the specialized literature: 1) it imposes a sequence of actions until the address in court; 2) it imposes the condition of complying with the prior procedure. We have argued that this type of general jurisdiction represents a sequence of actions that must be completed before being addressed in court. From this point of view, I argued why in the initial drafting of the Administrative Code of the Republic of Moldova, the preliminary procedure was excluded in most cases of administrative litigation.*

Keywords: competence, jurisdictional body, court, conditional, prior.

JEL: K

1. Introduction. In the specialized literature of the Russian Federation, where pioneering research was done on the subject of conditional general competence, there are two fundamental opinions regarding the definition of this kind of general competence.

According to the first opinion, this presupposes the legal capacity of the court to settle a certain civil case only upon fulfillment of the condition²³ - compliance with the procedure for the preliminary settlement of the case by extrajudicial means. Rightly so, the preliminary procedure obliges the plaintiff by law to address beforehand to the opposing party or to certain authorities, otherwise, the summons request will not be accepted for examination by the competent court. The true example is the provisions of art. 208, para. (1) of the

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²³ ЖУЙКОВ М. В. Судебная защита прав граждан и юридических лиц. Москва: Городец, 1997, 320 с. с. 7.

Administrative Code of the Republic of Moldova²⁴, which stipulates: „Until the submission of the action in administrative litigation, the preliminary procedure shall be followed, with the exceptions provided by law.” If this condition was not respected when the court was notified, the summons request will be returned. The obligation to comply with the procedure for the preliminary settlement of the case by extrajudicial means may result from the law or from the agreement of the parties which stipulates as a clause the prior addressing of a claim to the other party²⁵. This condition does not contravene the principle of free access to justice, because this principle does not necessarily imply the absence of procedures prior to the referral to the court. Therefore, the situations in which the legislator establishes that in order to notify the court it is necessary to go through a preliminary procedure are not contrary to the stated principle²⁶. However, the litigant will not be able to enjoy being referred to the competent court to examine his case, if the mentioned condition is not respected, which defines the specifics of the general conditional jurisdiction.

In another opinion, the conditional general competence is seen as an imperative general competence - which provides for the possibility of the civil cause being examined by several jurisdictional bodies in the consecutiveness provided by the law. The examination of the case by a certain jurisdictional body constitutes a mandatory condition for it to be examined by the following jurisdictional body²⁷. For example²⁸, in the case of appeals in electoral matters, according to art. 71, para. (1) of the Electoral Code²⁹: „The filing of the request in the court must be preceded by the prior appeal in the electoral body hierarchically superior to the body whose act is challenged, with the exception of appeals regarding the actions/inactions of the electoral contestants, filed directly in the court, and of appeals that refer to the exercise of the right to vote or the administration of elections submitted to the electoral office on the day of the elections.” So, in the case of the first opinion, the emphasis in defining this type

²⁴ Codul administrativ al Republicii Moldova: nr. 116 din 19 iulie 2018. În: *Monitorul Oficial al Republicii Moldova*, 2018, nr. 309-320, art. 466. [citat 11.01.2023]. Disponibil: https://www.legis.md/cautare/getResults?doc_id=16072&lang=ro.

²⁵ PRISAC, A., BĂNĂRESCU, A., BĂNĂRESCU, I. *Drept procesual civil. Partea Generală*. Chișinău: S.n., 2021, 392 p. ISBN 978-9975-157-54-4. p. 139.

²⁶ BÎCU, Ig. *Garanțiile constituționale ale realizării dreptului la un proces echitabil*. tz. de doct. în drept. Chișinău, 2020, 184 p. p. 59.

²⁷ ОСИПОВ, Ю. К. *Подведомственность юридических дел*. Учебное Пособие. Свердловск, 1973. 123 с. с. 46-51.

²⁸ PRISAC, A., BĂNĂRESCU, A., BĂNĂRESCU, I. *Drept procesual civil. Partea Generală*. Chișinău: S.n., 2021, 392 p. ISBN 978-9975-157-54-4. p. 139.

²⁹ Codul electoral: nr. 1381 din 21 noiembrie 1997. În: *Monitorul Oficial al Republicii Moldova*, 1997, nr. 81, art. 667. [citat 11.01.2023]. Disponibil: https://www.legis.md/cautare/getResults?doc_id=18271&lang=ro#.

of general competence is placed on compliance with the condition of compliance with the prior procedure, and according to the one of the second opinion highlights the respect for a consecutiveness of the addressing to the competent jurisdictional bodies. In what follows, we will present our own opinion related to these two opinions, especially starting from the legislation of the Republic of Moldova.

2. Regulation of general jurisdiction in the Republic of Moldova

In the local specialized literature, the author Munteanu Alexandru defines the exclusive general competence, especially of the courts, starting from the first opinion of the Russian authors mentioned above. Thus, the author mentions: „According to the rules of conditional general jurisdiction, the courts are competent to examine certain categories of civil cases only on the condition that the plaintiff complies with the prior procedure for resolving them extrajudicially. Such prior procedure is mandatory only in the cases expressly provided by law or contract³⁰.” In the same way, the author Băcu Adelina mentions that general conditional jurisdiction means that, for some categories of reasons, compliance with a prior extrajudicial procedure is mandatory³¹. We believe that such definition of exclusive general competence is insufficient because it does not reflect the obligation to respect the consecutiveness of addressing the jurisdictional bodies and is not specific to this kind of general competence.

This definition of general conditional competences from the domestic specialized literature entails certain negative repercussions in the legislation of the Republic of Moldova and in judicial practice. It is wrong to consider that there is general conditional competence every time the law requires to comply with the prior procedure. We base our opinion on those mentioned by the Russian author Osipov Iu. K. promoter of the second opinion on conditional general competence which defines this kind of general competence as an imperative competence. According to him, the imperative general competence provides for the possibility of the civil cause being examined by several jurisdictional bodies in the consecutiveness expressly regulated by law. In particular, the judicial body, which according to the law is to examine the case first, is the basic and mandatory body, and the one that can examine it after the examination by the basic judicial body, is complimentary and non-binding. For example, the cases concerning the finding of inaccuracy of the entries in the civil status registers are the jurisdiction of the courts only on the condition that there is a refusal by the civil status body to correct or modify the entries and other documents that refer to this issue (art. 332 para. (2) from the Civil Procedure Code of the Republic of Moldova). In the absence of prior examination of the request for correction of the

³⁰ BELEI, E., BORȘ A., FELICIA, C. [et al.]; red. șt.: Alexandru Cojuhari. *Drept procesual civil. Partea generală*. Chișinău: S.n. 2016. 464 p. ISBN 978-9975-4072-9-8. p. 141-142.

³¹ BĂCU, Adelina. *Drept procesual civil. Partea generală*. Chișinău, 2013, 344 p. ISBN 978-9975-56-094-8. p. 99.

inaccuracy of the entries in the civil status registers by the civil status body (which in that case represents the basic and mandatory jurisdictional body) the examination of the civil case by the court (as a complementary jurisdictional body) is impossible. Moreover, the court, in this case, constitutes the non-mandatory body, because the need to address it can fully expire as a result of the preliminary examination and the satisfaction of the request for the correction of the inaccuracy of the entries in the civil status registers³². Thus, the existence of a mandatory body and a complimentary body to achieve the criteria of the imperative general competence is due to the non-moral character of the studied legal institution. This is because, as a rule, the activity and competence of the mandatory body is regulated by one branch of law, and the activity and competence of the complementary body is regulated by the rules of another branch of law. In the example mentioned above, in the cases regarding the finding of the inaccuracy of the entries in the civil status registers, the address according to the competence to the civil status body for correction or modification of the entries is regulated by the rules of family law, and those regarding the address in the court in the special procedure is regulated by the rules of civil procedural law.

Structurally rightly, the general conditional jurisdiction is essentially so, which requires a consecutive address to the jurisdictional bodies and cannot be confused with a simple out-of-court settlement of the claims in order to settle the dispute in the absence of the court. Such a mistake also exists in the local specialized literature, which I highlighted above, when it catalogs the condition of compliance with the prior procedure for resolving the case extrajudicially as an indicator of the existence of general conditional jurisdiction. So, not in every case when the condition of compliance with the procedure for the preliminary settlement of the case by extrajudicial means is imposed, we are in the presence of the general imperative (conditional) jurisdiction.

In support of the opinion that not every time the preliminary procedure is required when addressing the court, we would be in the presence of a general imperative (conditional) competence are those mentioned in point. 84 of the Decision of the Constitutional Court of the Republic of Moldova no. 14 of 15-11-2012 for the control of the constitutionality of some provisions of the Code of Civil Procedure of the Republic of Moldova no. 225-XV of May 30, 2003 (Report no. 21a/20120)³³ in which the following were ruled: „The Court notes that the preliminary complaint procedure cannot be considered as a jurisdiction within the

³² ОСИПОВ, Ю. К. *Подведомственность юридических дел*. Учебное Пособие. Свердловск, 1973. 123 с. с. 46.

³³ Hotărîrea Curții Constituționale pentru controlul constituționalității unor prevederi din Codul de procedură civilă al Republicii Moldova nr. 225-XV din 30 mai 2003 (Sesizarea nr. 21a/20120): nr. 14 din 15 noiembrie 2012. În: *Monitorul Oficial al Republicii Moldova*, 2012, nr. 248-251, art. 24.

meaning of the provisions contained in art. 114-116 of Constitution nor in the sense of art. 6 point 1 of the European Convention. However, following the compliance with the preliminary procedure and the failure to resolve the conflict, it can be inferred by the litigant before the court. Also, according to art. 115 paragraph (3) of the Constitution, the establishment of extraordinary courts is prohibited.” Starting from those mentioned by the Constitutional Court, it follows that the preliminary procedure is not based on the rules regarding general competence because the preliminary procedure does not constitute a jurisdiction. However, the rules of general jurisdiction are applied when there is a jurisdiction, which is to be delimited by another jurisdiction.

To identify the imperative general competence, the author Osipov Iu. K. mentions two criteria:

1. The law provides for the consecutive resolution of the case by two or more jurisdictional bodies;
2. This consecutiveness of case resolution is provided by law as mandatory³⁴.

The first criterion allows to delimit the general imperative competence from the cases when the law provides, before addressing to the competent jurisdictional bodies, the advance submission of the claims to the debtor in order to resolve the disputes amicably by the parties to the litigation without the intervention of the bodies empowered to apply the law. In this case, there can be no question of the resolution of a dispute through decision-making power, because the ultima in itself represents an autonomous activity of law enforcement carried out by special jurisdictional bodies. The formulation of claims and their settlement cannot be regarded as law enforcement activity, because this is done by the subjects of the litigious material report themselves, but not by jurisdictional bodies. For this reason, such activity of the parties does not constitute a resolution of the dispute by jurisdictional bodies and we will not be in the presence of the general imperative (conditional) jurisdiction³⁵. Thus, starting from this criterion mentioned by Osipov Iu. K. we add that there are two kinds of preliminary procedures:

- a) preliminary procedures based on the general imperative (conditional) competence carried out in order to have the claim settled by the mandatory jurisdictional body until it is addressed to the complementary jurisdictional body, which in most cases this jurisdictional body is the court, for example , art. 332 para. (2) from the Civil Procedure Code of the Republic of Moldova in the

³⁴ ОСИПОВ, Ю. К. *Подведомственность юридических дел*. Учебное Пособие. Свердловск, 1973. 123 с. с. 49.

³⁵ ОСИПОВ, Ю. К. *Подведомственность юридических дел*. Учебное Пособие. Свердловск, 1973. 123 с. с. 50.

procedure regarding the correction of the inaccuracy of entries in civil status registers;

b) preliminary procedures that are not based on the general imperative (conditional) jurisdiction, being only a formulation of the claims to the adverse party of the contentious material relationship, for example in the administrative litigation procedure, the prior request addressed to the administrative body issuing the illegal administrative act is not based on general imperative (conditional) competence. Although this preliminary procedure is not optional³⁶, it is mandatory. In most cases, in the administrative litigation of the Republic of Moldova, the imposition of the preliminary procedure is not based on the general imperative (conditional) jurisdiction. We present the arguments of this opinion below in the second criterion mentioned by Osipov Iu. K. In art. 7 para. (1) from the Administrative Litigation Law of Romania no. 554 of 02-12-2004³⁷ there are the same regulations that do not substantiate the imposition of the prior procedure on the concept of the imperative (conditional) general competence.

The second quarter mentioned by Osipov Iu. K. that this consecutiveness of resolution of the case should be stipulated by law as mandatory, allows to delimit the general imperative (conditional) jurisdiction from situations when the case can be resolved in advance by a judicial body, but which, does not constitute a prescribed mandatory addressing by law³⁸. For example, according to art. 164 para. (3) of the Administrative Code of the Republic of Moldova, if the prior application is submitted to the hierarchically superior public authority, it shall without delay transmit to the issuing authority the prior application and any application for suspension of the execution of the individual administrative act. So, starting from the aforementioned, the preliminary procedure is more appropriate when the law requires addressing to a mandatory jurisdictional body, which is not part of the material-litigious relations, until the addressing in court.

Given the fact that in the Republic of Moldova the rules of general imperative (conditional) jurisdiction raise many question marks in the administrative litigation procedure, greater attention should be paid to general jurisdiction, when submitting the action in the administrative litigation. In this sense, it is necessary to report what was presented by the author of BELEI Elena on the subject of the admissibility of the action in administrative litigation: „Of course, the judge is obliged to first verify his general, jurisdictional competence

³⁶ ZUBCO, Valeriu. Instituția contenciosului administrativ într-o formă conceptuală nouă – element important pentru Integrarea Europeană a Republicii Moldova. În: *Revista Națională de Drept*. 2014, nr. 2 (160), pp. 44-49. ISSN 1811-0770. p. 48.

³⁷ Legea contenciosului administrativ a României: nr. 554 din 02 decembrie 2004. În: *Monitorul Oficial al României*, 2004, nr. 1154.

³⁸ ОСИПОВ, Ю. К. *Подведомственность юридических дел*. Учебное Пособие. Свердловск, 1973. 123 с. с. 50.

by subject and territory and to undertake the necessary procedural action. [...] the logical order of verifying the correctness of the address in the administrative litigation is: jurisdiction, including the general one, the content elements of the summons request, the limitation period, compliance with the prior procedure³⁹.” Also, the local author IACUB Irina, tangentially related to the same problem, mentions: The new conception of administrative justice has raised a series of questions and problems in the practice of its realization, especially regarding the way of interpretation and application of the provisions of the Administrative Code. The biggest challenge, still felt today, is (as in the period before the adoption of the code) the issue of the preliminary procedure or, in other words, of the administrative appeal. Obviously, compared to the previous legislation, the Administrative Code intervened with important regulations in this chapter, managing to clarify and simplify various relevant aspects. Regrettably, however, the preliminary procedure remains a subject of discussion and an acute problem of the judicial act, seen, interpreted and solved differently by its actors (especially, in terms of its status as a right or obligation)⁴⁰. Because in the local specialized literature the general imperative (conditional) jurisdiction is defined by stating the necessity of the existence of the prior procedure, we will address this topic related to the administrative litigation procedure.

In our view, as we mentioned above, the general imperative (conditional) competence is not found in the imposition of the preliminary procedure in the administrative litigation procedure of the Republic of Moldova and does not refer to the graceful administrative appeal, the hierarchical administrative appeal and the guardianship administrative appeal, because they do not assume the possibility of the civil cause being examined by several jurisdictional bodies in the consecutiveness provided by law. The author ZUBCO Valeriu defines these three legal categories as follows: a) the graceful appeal is exercised by the same authority that issued the administrative act subject to the appeal, and the one who exercises it can request that an administrative act be issued, revised, modified or annulled; b) the hierarchical appeal is exercised by the hierarchical body superior to the body that adopted the illegal administrative act and can only be applied in the case when it concerns administrative acts issued by administrative bodies that have hierarchically superior bodies; c) the administrative appeal of guardianship is in case the issuing authority enjoys autonomy, having no hierarchical

³⁹ BELEI, Elena. Admisibilitatea acțiunii în contenciosul administrativ. În: *Integrare prin cercetare și inovare. Științe juridice și economice*. SJE, 10-11 nov. 2021. Chișinău: Centrul Editorial-Poligrafic al USM, 2021. pp. 331-333. ISBN 978-9975-152-48-8. p. 331-333.

⁴⁰ IACUB, Irina. Cererea prealabilă și procedura prealabilă: aspecte de interpretare normativă. În: *Studii și cercetări juridice. Partea 5, 22 nov. 2021, Chișinău*. Chișinău: Institutul de Cercetări Juridice, Politice și Sociologice, 2023, pp. 98-114. ISBN N 978-9975-3430-3-9. p. 99.

superior⁴¹. From the analysis of these types of administrative appeals, we notice that none of them is exercised by another judicial body than the one that issued the contested administrative act. Therefore, they do not belong to the general imperative (conditional) competence.

Starting from the specificity of the general imperative competence as a possibility to examine the civil cause by several jurisdictional bodies in the consecutiveness provided by law and from the two criteria mentioned by the author Osipov Iu. K., we consider that in most cases in the administrative litigation procedure it is not appropriate to impose the preliminary procedure when addressing the court. However, in most cases of administrative litigation, the law does not require the prior application to be made to a judicial body that is not part of the material-litigious relations, as is the specific nature of the general imperative jurisdiction. It is well known⁴² that the prior request is addressed, in most cases, to the public authority issuing the disputed administrative act, which is the subject of the material-legal relationship and will have the procedural quality of a defendant in the administrative litigation procedure, but not to a judicial body that does not is a party to the material-litigious report. For this reason, we believe that the Administrative Code of the Republic of Moldova, in the initial version, excluded the rule that required in most cases the observance of the preliminary procedure in administrative litigation and it was only stipulated that this is mandatory only in the cases provided by law (art. 208 of the Code administrative office of the Republic of Moldova). Which, in our view, was correct, because only in some cases provided by law, the legislator could impose to respect the prior procedure when for the public authority whose administrative act is the object of judicial control, the legislator promoted a certain specific administrative policy. This policy could consist in raising the quality level of administrative acts in a certain field until they are subject to judicial control. Thus, what was mentioned by the author ORLOV Maria regarding the need to impose in all cases the preliminary procedure in administrative litigation, could only be valid for some cases. The author mentions: „I insisted on maintaining the preliminary procedure for several reasons. We will present only a few of the arguments brought forward: a) the public administration in our country is going through a period of modernization in order to align it with democratic principles,

⁴¹ ZUBCO, Valeriu. Cererea prealabilă – condiție obligatorie de exercitare a dreptului la acțiune în contenciosul administrativ. În: *Teoria și practica administrării publice: Conferință științifico-practică internațională*, 17 mai 2018. Chișinău: Academia de Administrare Publică, 2018, pp. 300-304. ISBN 978-9975-3019-7-8. p. 300-301.

⁴² CRUGLIȚCHI, Tatiana. *Rațiunea noilor reglementări ale procedurii contenciosului administrativ în Republica Moldova*. În: *Știința în Nordul Republicii Moldova: realizări, probleme, perspective*. Ediția 5, Bălți: „Tipografia-Centrală”, 2021. pp. 411-417. ISBN 978-9975-62-432-9. p. 412.

in which mistakes are inevitable; b) the body of civil servants is insufficiently trained from a professional point of view, being completed, for the most part, with graduates of the Soviet school, and a national school of administrative sciences has not yet been formed, in the sense of the modern state; c) civil servants are not motivated either to work or to improve themselves. Not to mention the quality of the legislative acts [...] which even the most efficient officials in the public administration could not execute without mistakes.”⁴³ The feasible request being an institution that offers an amicable solution to administrative disputes⁴⁴, from what was mentioned by the author ORLOV Maria, it follows that the prior procedure is imposed in favor of the public authorities to eliminate unprofessionalism and quickly restore the violations violated by them. This nephroprofessionalism still persists in the activity of public authorities, in judicial practice there have been cases when the response of the public authority did not even specifically mention whether the prior request was rejected or admitted⁴⁵. However, in our view, the preservation of this concept of the preliminary procedure indicates a stagnation in the development of regulations concerning administrative litigation. It is necessary to keep the prior procedure only for some cases provided by law, such as those that constitute a new field for the public administration, for example the documents issued by the National Integrity Authority that constitute a relatively new field for the Republic of Moldova that would impose a certain period for learning certain skills for civil servants within this public authority. Although, we express our regret, that there were also provisions that excluded the preliminary procedure for contesting in court the findings of the National Integrity Authority. By Law no. 244 of 16-12-2020 for the amendment of some normative acts⁴⁶ in art. 36 para. (1) from Law no. 132 of 17-06-2016 regarding the National Integrity Authority⁴⁷, it was stipulated that the finding can be challenged directly in the competent court for the examination of the action in administrative litigation. However, this provision was not in force for long, as it was declared unconstitutional by Constitutional Court Decision no.

⁴³ ORLOV, Maria. *Curs de contencios administrativ*. Chișinău: Elena-VI SRL, 2009. 158 p. ISBN 978-9975-106-32-0. p. 131.

⁴⁴ MACOVEȚCHI, Carolina. Particularitățile respectării procedurii prealabile în acțiunile de contencios administrativ. În: *Modernizarea guvernării din Republica Moldova: aspecte teoretico-aplicative, Conferință, 27 mai 2022*. Chișinău: CEP USM, 2022. pp. 204-213. e-ISBN 978-9975-62-500-5. p. 205.

⁴⁵ Decizia Colegiului civil, comercial și de contencios administrativ al Curții Supreme de Justiție: nr. dosar 3ra-1344/13 din 23 octombrie 2013. [citat 24.04.2023]. Disponibil: http://jurisprudenta.csj.md/search_col_civil.php?id=4437.

⁴⁶ Legea pentru modificarea unor acte normative: nr. 244 din 16 decembrie 2020. În: *Monitorul Oficial al Republicii Moldova*, 2020, nr. 353-357, art. 282.

⁴⁷ Legea cu privire la Autoritatea Națională de Integritate: nr. 132 din 17 iunie 2016. În: *Monitorul Oficial al Republicii Moldova*, 2016, nr. 245-246, art. 511.

29 of 21-09-2021 regarding the control of the constitutionality of Law no. 244 of December 16, 2020 for the amendment of some normative acts (competences of the National Integrity Authority) (referral no. 209a/2020). So, in the end, the Moldovan legislator accepted the necessity of existence when contesting in court the finding of the National Integrity Authority of the preliminary procedure, because it constitutes a relatively new public authority for the Republic of Moldova.

In the Republic of Moldova, the inertia of the imposition of prior procedures is still preserved, for which it is necessary to make some clarifications including through the Constitutional Court, which, for example, very explicitly expressed itself through the Decision of June 15, 2021 on the inadmissibility of notifications no. 137g/2021 and no. 138g/2021 regarding the exception of unconstitutionality of some provisions from articles 72 para. (3), 73 par. (7) and 74 para. (1) of the Electoral Code (prior procedure and appeals in the electoral field)⁴⁸, in which it was stated that compliance with the prior procedure is not necessary when contesting the decisions of the Central Electoral Commission regarding the opening of some polling stations, because they are of a normative nature. We consider it rational, from the point of view of the specifics of the general imperative jurisdiction, that the preliminary procedure for contesting the normative acts of the public authorities in the county court should not be imposed by law, because there cannot even be a jurisdictional body, other than the issuer of the contested normative act to replace the latter body to adopt an administrative act with a normative character. All this because the adoption of normative regulations are essentially the attributions of the body empowered by law to regulate a certain field of social relations. The only legitimate jurisdictional body to cancel the normative administrative act, through the action in normative control, but not to regulate instead of the issuing administrative body, is the court, because it is mandated to fulfill the normative control.

Since the preliminary procedure is vehemently imposed by virtue of a true consecutiveness of the general imperative (conditional) competence, we propose by law *ferenda* to return to the initial version of the regulations art. 208 para. (1) of the Administrative Code, which constituted a modern and well-founded version of the obligation of prior procedure only in the cases provided for by law. Thus, we propose to modify the provisions of art. 208 para. (1) of the Administrative Code and to stipulate the following: „In the cases provided for by law, prior to the submission of the action in administrative litigation, the preliminary procedure shall be followed.”

⁴⁸ Decizia Curții Constituționale de inadmisibilitate a sesizărilor nr. 137g/2021 și nr. 138g/2021 privind excepția de neconstituționalitate a unor prevederi din articolele 72 alin. (3), 73 alin. (7) și 74 alin. (1) din Codul electoral (procedura prealabilă și contestațiile în domeniul electoral): nr. 94 din 15 iunie 2021. În: *Monitorul Oficial al Republicii Moldova*, 2021, nr. 168-174, art. 129.

3. Conclusion. In the administrative procedure of the Republic of Moldova, from the point of view of legal consciences unfavorable for achieving access to justice, compliance with the general imperative (conditional) jurisdiction is more important when addressing the complimentary body, i.e. the court, but not when addressing the mandatory jurisdictional body which is an administrative body. This is because according to art. 73 para. (1) of the Administrative Code of the Republic of Moldova, the public authority does not have the right to refuse to receive petitions just because it does not consider itself competent or because it considers the petition to be inadmissible or unfounded. Also, art. 74 of the Administrative Code of the Republic of Moldova stipulates: „If the petition falls within the competence of another public authority, the original of the petition is sent to the competent public authority within 5 working days from the date of registration of the petition, a fact about which the petitioner is informed.” Therefore, addressing the administrative body in violation of competence does not produce an unfavorable consequence for the realization of the principle of free access to justice, since the public authority itself is to correct this error ex officio by sending the request to the competent public authority.

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THE DEVELOPMENT PERSPECTIVES OF THE ENVIRONMENTAL TAX SYSTEM IN THE REPUBLIC OF MOLDOVA IN ORDER TO ENSURE THE DEVELOPMENT OF A SUSTAINABLE ECONOMY

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Abstract: *Encouraging environmentally friendly practices or products and discouraging harmful ones is the main aim of the environmental tax system. However, the Republic of Moldova's current environmental tax system has some drawbacks. This article analyzes the current state of environmental taxes in the country and looks at potential solutions to ensure the sustainable development of Moldova's economy.*

Keywords: *sustainable development, green economy, environmental taxes*

JEL: Q01, H23

2. Introduction

The negative impact of economic development on the environment has been recognized fact for a long time. Against the backdrop of the multiple challenges generated by the need to protect the environment, governments are facing increasing pressure to identify new ways of reducing the impact of human activities on the environment, without affecting economic growth.

To address this, global mechanisms are being implemented to prevent polluting activities and to provide compensatory measures. The most effective of these are the economic mechanisms that drive industries with high environmental impact to implement energy-efficient, zero-waste, or low-waste technologies.

Environmental taxation is a tool specifically designed to address the effects of climate change and global warming, as well as to promote the efficiency of resource allocation. Each country creates its own environmental tax system, adapted to the particularities of its own economic processes. Environmental taxation is an essential tool for ensuring the country's environmental security.

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Thus, the research on the ecological taxation system, its elements, and its operational efficiency has an important scientific and practical value.

The aim of this research is to determine the perspectives and role of environmental taxation, in order to ensure the development of the environmental taxation system, based on the analysis of the current ecological taxation. This research aims to analyze the characteristics of environmental taxation in the Republic of Moldova and the EU and to suggest ways to enhance the environmental tax system in the Republic of Moldova.

3. Methods

In the research, various methods of reasoning were employed, including historical analysis, logical analysis for synthesizing scholars' opinions, comparative analysis for studying different specialists' positions and national/foreign legislative acts, and synthesis to generalize analyzed aspects and provide the author's recommendations. Statistical data were gathered from the Ministry of Finance's Reports on the Execution of the State Budget and the State Fiscal Service's Information on Revenues categorized under the national public budget classification

The following reasoning methods were used in the research: the historical analysis method; the method of logical analysis, used to synthesize the opinions of different scholars in the field; the method of comparative analysis, necessary for the comparative study between the positions of different specialists in the field, but also between different national and foreign normative acts; the synthesis method, used to generalize the aspects under analysis and to establish the author's recommendations and proposals.

The statistical data were collected from the Reports on the execution of the state budget, developed by the Ministry of Finance, and from the Information on the receipts to the national public budget corresponding to the classification of budget revenues, developed by the State Fiscal Service, but also from the EUROSTAT platform.

4. Results

Environmental taxation is one of the most important incentives for the sustainable management of nature. The main idea behind the introduction of environmental taxes (also called ecological taxes or "green" taxes) is to establish a direct correlation between the amount of tax and the negative impact on the environment caused by economic activity. The action mechanism of "green" taxes encourages polluting industries to find innovative solutions to reduce harmful emissions, adopt innovative solutions for environmental protection, and implement ecological technologies. As a result, environmental taxes have

significant support at a global level, being more and more widespread throughout the world.

The concept of environmental taxation was first introduced by Arthur Pigou (Pigou, 1985). He found that producers are polluting the environment as a result of their efforts to maximize their profits. While these activities may not directly affect producers, the costs of pollution are transferred to other economic agents and society as a whole, leading to a decline in living conditions, increased health risks, reduced productivity, and more (Pigou, 1985, p. 26). Pigou considered taxes as a tool to influence the behavior of polluters and as an incentive for environmental preservation.

Modern environmental taxes were first implemented in the 1970s by many countries as an environmental protection tool and as a legal principle that " a person who pollutes the environment - must pay." (Nischymna & Anishchenko, 2017, p.174). During this time, concepts such as "ecological taxation", "environmental fiscal policy" and "green fiscal policy" were introduced, and were used with the same meaning.

There was a growing recognition in the late 1980s of the need to introduce the so-called environmental tax, also known as an ecological tax, based on the principle of "the polluter pays". The European Union implemented environmental taxes based on this principle in 1973(Kalinichenko, 2002), and several European countries included payments for harmful substance emissions into their tax systems in the early 1990s.

This period marked a distinct stage in fiscal policy development called "greening of fiscal policy", characterized by technological advancements and a shifting focus towards environmental protection. Environmental fiscal policy is now an integral part of any country's economy.

In the early 21st century, reforming the environmental tax became a priority in economic policy in connection with the updating of the anti-carbon policy. Taxing natural resource outcomes serves as an incentive to ensure their rational use and reduce polluting emissions.

Various challenges such as economic slowdowns, the global debt crisis, the COVID-19 pandemic, the war in Ukraine, and the energy crisis have complicated the functioning of the global economic system, affecting low-income countries and underdeveloped industrial production. These negative trends led to a change in the development of the global economic system. The digital sector of the economy is experiencing rapid growth. The IT sector, the market of financial instruments, and the service sector are actively developing. This has led to the requalification and transfer of skilled personnel to other economic activities due to reduced production, military-political conflicts, and environmental circumstances. To address these negative trends, authorities must develop and implement effective measures, including supporting the development of high-tech

industries that reduce energy consumption and harmful emissions. Taxes and fees represent the most comprehensive tool through which the authorities can influence the behavior of economic agents and the population toward the environment.

The tax base has a crucial role in defining environmental taxes, which are also known as green taxes. The concept of environmental taxes originated from the practices followed in the European Union. The European Commission (EC) operates with a concept that derives from international practice and is based on international guidelines on environmental tax statistics. Thus, the EC considers *an environmental tax a tax that has as its fiscal base a physical unit or a proxy for a physical unit, which refers to "something" with a negative effect on the environment* (Eurostat, 2013). According to the Organization for Economic Cooperation and Development (OECD), *green taxes are pricing mechanisms that explicitly reflect the costs and benefits of environmental protection for goods and services, related to pollution taxes, resource taxes, transport taxes, or other fiscal instruments*. Likewise, the United Nations Environment Program (UNEP) defines green taxes as fiscal measures designed to promote sustainable environmental activities and protect the environment by internalizing the costs of environmental damage associated with economic activities.

These definitions emphasize that the recognition of an environmental tax depends on its impact on the expenses and prices incurred by polluters, rather than its purpose, whether fiscal or environmental. Environmental taxes encourage the more efficient use of natural resources, help reduce pollution, can lead to reductions in taxes in other areas like labor, and can also be an incentive for technological innovation. Often, when the objective is not to prohibit a product but only to limit its usage, additional taxes that raise its cost can achieve this goal.

According to Duțu (Duțu, 2007, p.439), taxes can be classified into the following forms based on their purpose:

- taxes imposed on the quantity or quality of pollutants released into the environment;
- taxes imposed on products that are polluting during their manufacturing or use, or that have become obsolete and are in the process of disposal;
- tax imposed on outdated and phased-out products, differentiation of taxes to promote cleaner products;
- royalties used for community expenses like waste treatment;
- administrative fees paid for various administrative services.

The combination of these taxes varies from one country to another and aims to achieve two main functions:

1. supplementing the state treasury for financing environmental programs and

2. promoting environmentally friendly behavior to environmental protection issues.

In the Republic of Moldova, the legal framework for environmental regulation includes the use of fiscal-budgetary instruments. For instance, *Law No. 1515/1993 on the protection of the environment* establishes the collection of taxes and fines for non-compliance with environmental legislation, which is used to combat pollution, depletion of natural resources, hazardous geological processes, and environmental restoration. *Law No. 1102/1997 regarding natural resources* regulates payments for the use of natural resources and environmental pollution. *Law No. 239/2007* and *Law No. 439/1995* provide an economic mechanism for the rational use of plant and animal resources, including payments for acquisition and export. Law no. 1041/2000 addresses the financing of afforestation and rehabilitation works on degraded lands. The amount and details of tax usage are also specified in the Fiscal Code and *Law No. 1540/1998 on payment for environmental pollution*.

In the Republic of Moldova, the term "environmental taxes" is not explicitly defined in legislation. However, based on EUROSTAT methodology, these taxes can be categorized into four groups, as identified by the UNDP (UNDP, 2018, p. 10-11):

I. Energy taxes represent payments made on energy products used both in transportation and for the operation of special equipment. This includes taxes on gasoline, diesel, natural gas, coal, and electricity. The source of formation of the fiscal-budgetary funds is excise duties on liquefied gases and excise duties on petroleum products, as specified in the Tax Code of the Republic of Moldova in Title IV Excise Duties.

II. Transport taxes refer to taxes related to vehicle ownership and those related to the use of motor vehicles. Special payments on other transport equipment or transport-related services are included in this category when they are in line with the general approach to environmental taxes, which include car excise, road use charges, and vignette. The formation of funds for this category comes from excise duty on imported cars, road usage fees, and the vignette, as detailed in the Tax Code in Title IV Excise Duties and Title IX Road Taxes.

III. Pollution taxes consist of payments for environmental pollution and a tax on goods that contribute to pollution during their use. The formation of funds for this category includes payments for five types of pollutants: emissions into the atmosphere from stationary sources, discharge into water bodies and sewage systems, disposal of production waste, packaging materials (such as plastic bags and packaging), and specific goods that cause environmental pollution (such as batteries, hazardous chemicals, pesticides, and tires). The amount of these taxes is outlined in Law No. 1540/2008 on payment for environmental pollution.

IV. Natural resource taxes are payments imposed on the exploitation of natural resources that are not utilized as energy sources, such as wood, construction materials, and aggregates. It also includes fees for water extraction from various sources and payments for valuable minerals, standing timber, prospecting, and geological exploration. The amount of these payments is determined by the Tax Code in Title VIII Natural Resource Taxes.

In addition to these taxes, there are various payments that are imposed as a result of activities that have an impact on the environment. These payments include fees for issuing environmental permits, fines for violating environmental laws, prohibited actions like poaching and illegal logging, as well as compensation for pollution damages. They are part of the damage recovery mechanism. The methods for calculating environmental damages are specified in laws and regulations such as the Law of the Animal Kingdom, the Law of the Plant Kingdom, and the Law on Environmental Pollution Payment. These payments are not classified as environmental taxes but rather parafiscal taxes, which are deposited into the accounts of public institutions and/or organizations of public interest (EaP Green, 2016, p.17). Thus, fiscal and parafiscal payments have a central role among the economic instruments applied for the implementation of environmental policies.

In the Republic of Moldova, the revenues from environmental taxes as a percentage of GDP are comparable to those in the European Union. In 2021, environmental tax revenues accounted for 2,43% of Moldova’s GDP, while in the EU this indicator was 2.24% (Figure 1).

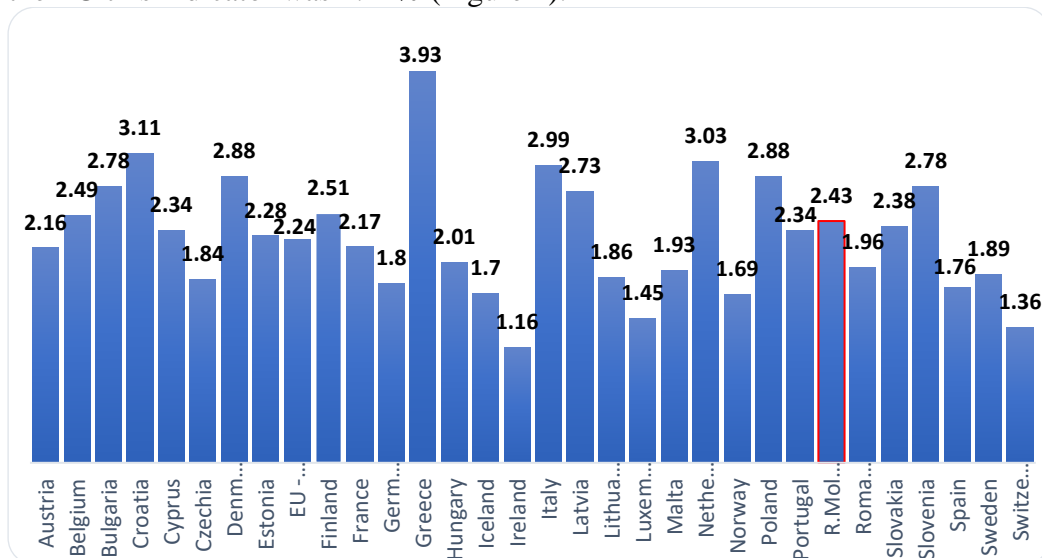


Figure 1. The share of environmental taxes in GDP (%), in 2021

Source: Elaborated by the author based on EUROSTAT and the Ministry of Finance of the Republic of Moldova data.

During the years 2018-2022, environmental taxes have shown a steady increase, generating revenues to the state budget from 4.28 million lei at the beginning of the analyzed period to over 6.9 million lei at the end of this period.

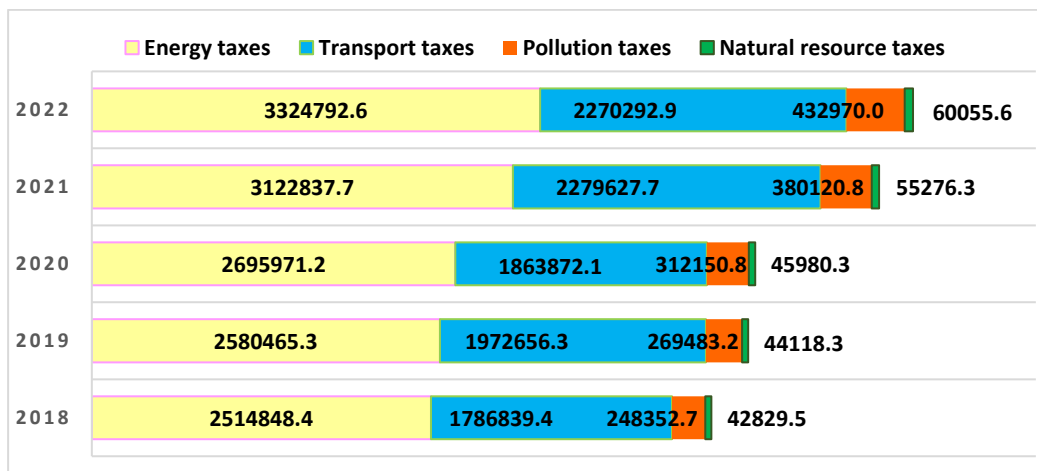


Figure 2. Dynamic evolution of environmental taxes applied in the Republic of Moldova, thousand lei

Source: Elaborated by the author based on Reports on the execution of the state budget and Information on revenues to the national public budget corresponding to the classification of budgetary revenues from the years 2018-2022.

During the analyzed period, the revenues from ecological taxes in 2020 were the lowest due to the COVID-19 crisis. The revenues from energy taxes consistently increased, while transportation taxes had fluctuating trends. Pollution taxes and natural resources taxes have a smaller share in total environmental taxes. Pollution taxes showed an upward trend over time, whereas taxes on natural resources had inconsistent patterns.

Compared to other countries, the Republic of Moldova had higher environmental taxes based on international benchmarks (OECD and EU), applied in the Republic of Moldova exceed the average of other states. These taxes contributed more than 10% to total fiscal revenues (Figure 3), and their share in overall tax collection and budget decreased from 12.2% in 2018 to 10.6% in 2022. This was due to a greater increase in tax and duty collections for goods and services, driven by import growth, compared to the growth of environmental taxes.

Similarly, the share of environmental taxes in GDP exhibited a declining trend from 2.42% in 2018 to 2.32% in 2019 and 2.38% in 2020, reflecting the reduced economic activity during the pandemic. Subsequently, there was a slight

increase to 2.41% in 2022 and a decrease to 2.23% in the same year, mainly driven by a significant increase in GDP. (Figure 3)

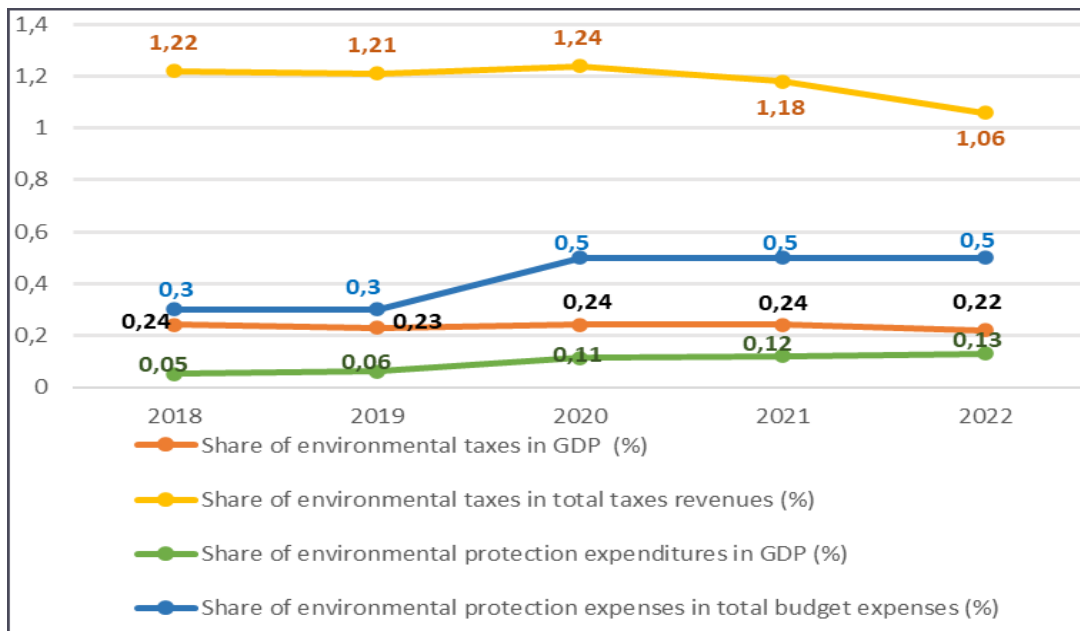


Figure 3. The share of environmental taxes in GDP and in total taxes, the share of environmental protection expenses in GDP and in total budget expenses

Source: Compiled by the author, according to the Reports on the execution of the state budget from 2018-2022

The expenses related to environmental protection suggest that environmental protection priorities in the Republic of Moldova are underfunded. The data only includes government expenditures, as expenses made by economic agents or households in this area are not tracked. Figure 3 reveals that the share of expenses for environmental protection in the total budget expenses is minimal, but there is a slight upward trend from 0.3% in 2018 to 0.5% in 2022. In terms of the economy, government spending on environmental protection accounted for 0.05% of GDP in 2018, which increased to 0.13% of GDP in 2022. This reflects a lack of emphasis on preventing, reducing, or eliminating environmental pollution or degradation in the Republic of Moldova.

5. Discussions

While there is no clear definition of environmental taxes in the legislation, the country has developed a system of taxes and payments related to the environment. These include taxes on mineral extraction, water taxes, fees for

subsoil usage, road usage taxes, excise taxes on petroleum products, payments for environmental pollution, taxes on environmentally harmful goods, etc. However, the way these taxes and payments function in Moldova differs from other European countries where environmental tax reforms are much better thought out and much more effective.

In European Union countries, environmental taxation is based on the "double dividend" principle, which aims to achieve both environmental improvements and economic competitiveness through tax system enhancements. In Moldova, many environmental taxes primarily serve the purpose of generating revenue for the state budget rather than effectively protecting the environment.

For instance, transport taxes do not effectively fulfill their ecological function. A significant share in the total of these taxes is the excise duty on imported vehicles, which is calculated based on engine power and age rather than the amount of pollutants emitted. Furthermore, statistics reveal that over 82% of cars in Moldova are over 10 years old. An increase in transport taxes will incentivize citizens to purchase more environmentally friendly cars, but this would not be feasible for low-income individuals who will continue to drive environmentally dangerous cars but pay a charge for it.

On the other hand, energy taxes in Moldova do aim to protect the environment, as fuel excise duties can be seen as environmental payments. They are set at different rates according to tax legislation.

However, the concept of pollution taxation in Moldova has remained largely unchanged since 1998, despite the adoption of several laws in recent years like Law No. 209/2016 related to waste and Law No. 227/2022 on industrial emissions. There are still inconsistencies that do not align with international practices. An issue is the lack of availability of comparable data that would allow comparative analysis with other countries. For example, waste is expressed in units of mass internationally, while Moldova uses both tonnage and volume, making it difficult to determine waste quantities per capita.

The system for taxing discharges and emissions is complex, involving multiple formulas with different coefficients and standards depending on the area and specific limits. To ensure a stronger connection between taxation and pollution, there should be a closer link between the quantity of pollutants emitted and the tax amount. This could be achieved through a fixed tax based on the quantity of pollutants, discharges, emissions, and waste.

There are also discrepancies in waste classification. Law No.1540/1998 specifies waste taxation based on five toxicity groups, while Law No. 209/2016 related to waste categorizes waste into hazardous, non-hazardous, and inert. It would be simpler to tax polluters according to these three risk groups of the waste, as the tax increases as the degree of toxicity increases.

Unlike other countries that periodically adjust environmental taxes for inflation, Moldova does not index its environmental taxes. The exception is fuel excise duties, which are adjusted annually to account for inflation, and taxes on polluting goods, which are based on the products' value and price dynamics.

Regarding packaging, a differentiation should be made between recyclable and non-recyclable packaging, and taxation should reflect this distinction.

Taxes on natural resources consist of fixed rates determined by the polluter and paid into the local budget where the resource extraction occurs. However, these tax values have not been adjusted for price changes for a long time.

To improve the implementation of environmental policies in Moldova, the "Environmental Strategy for the years 2014-2023" has been developed, outlining tools for policy implementation. Objective No. 4 specifically focuses on reducing the negative impact of economic activities on the environment and enhancing measures to prevent pollution through the optimization of fiscal and economic instruments. The "Environmental Strategy until 2033" is being developed to update legislation and align it with recent environmental protection laws.

6. Conclusions

An environmental tax system plays a crucial role in promoting the sustainable use of resources and protecting the environment, as well as in addressing environmental damage. However, evaluating the extent of environmental damage is challenging. Determining the parameters of environmental taxes is problematic due to the need to assess and measure the damage caused to the environment in various aspects such as emissions into the air and water bodies. Additionally, the allocation of taxes from producers to consumers poses difficulties. Therefore, the purpose of environmental taxes is to encourage economic agents to adopt environmentally friendly practices.

Regular evaluation, updating, and proper application of environmental taxes are essential. However, there are some shortcomings in the functioning of environmental fiscal instruments. If taxes are undervalued or overvalued, it becomes challenging or even impossible to achieve the goal of internalizing externalities.

If environmental taxes are set at a low level, polluting companies may not face financial difficulties and may not prioritize adopting environmentally friendly technologies, especially in cases where the volume of production is high, the demand is stable and it responds poorly to a small increase in prices,

The government has a crucial role in addressing market imbalances and creating favorable conditions for businesses and society to transition towards a greener economy. The legal framework in the Republic of Moldova in this area is

well-structured but requires periodic revision and alignment with the European normative framework.

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RELATION BETWEEN MORAL AND LEGAL NORMATIVITY IN WORKERS FROM LEGAL FIELD

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Abstract: *Law enforcement specialists have an important role in society considering that their activity is based on ensuring compliance with legislation, legal norms by citizens, the defense of fundamental human rights and freedoms. Specialists in this field have a special legal consciousness – it is part of their professional training, that is, their attitude towards the law is more special than that of people who do not work in the legal field. In this respect, we have carried out a research on the attitude towards the rule of law among lawyers (specialists in the field of protection of the rules of law) in relation to the manifestation of moral normativity. In the given research, 417 participants from the legal field were involved who expressed their attitude towards the legal norm determined by legal tolerance or intolerance, as well as their opinion regarding different situations related to moral norms. Thus, we assume that moral normativity correlates positively with legal tolerance (legal realism) among specialists in the field of law enforcement.*

Key words: *moral normativity, law enforcement specialists, legal tolerance, legal intolerance.*

JEL: K00, K40, Z13

1. Introduction

The legal field is a complex and specific domain of activity taking into consideration that it is based on the interaction “human-human” and on the activity of ensuring the respect of law, legislation, legal norms and freedoms. This requires many physical and psycho-emotional forces in specialists that are working within legal field. The most frequent difficulties or factors that could negatively influence or mark the professional activity of the lawyers are the following: intensive and exhausting schedule of activity and the availability 24 hours a day of workers from legal field (refers mainly to workers from internal affairs institutions, as well to all those who guard the public order and security), communication, interaction with criminal elements, and other people involved in criminal process as victims (who very often are traumatized), competitive environment and pressure in legal activities, permanent interaction with conflict

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situations, etc. (Gaivoronskaya, 2014; Rusnac, 2021). This peculiarity of the professional activity of lawyers that includes negative elements with direct influence on their personality, can lead to the development of professional deformation with direct impact both on individual and socio-professional levels in specialists of legal field (Baciu, 2014).

According to authors, the legal professional deformation, frequently, lead the legal workers to take an attitude of legal idealization (legal norm is supreme and could solve any problem and situation) and an attitude of legal nihilism (neglect of law and its value within society) – two extremes, but as well it could develop in lawyers legal infantilism (minor knowledge on legislation, with confidence that he/she knows everything about it), legal subjectivism (use of legal norms in own profit and ideas, ignoring the real meaning and essence of legal concepts), etc. (Gaivoronskaya, 2014). As we can see the professional deformation is related mainly to the way of thinking, perception, adopting attitudes, develop behavioral patterns regarding the professional activity, integrating them in everyday life. In our context of research, we would like to mention the legal thinking, which according to specialized literature, is determined by professional legal knowledge as well as the attitude towards legal norms, law involving thoughts and perceptions related to the role of legislation, law in life and society. The legal thinking is based on specialized education got frequently in institutions of higher education and during practicing the professional activity within the legal field (Gaivoronskaya, 2014). The legal thinking is an essential factor in the way of activity of lawyers, so that in the given study we focus on the researching the attitude to legal norms, using a questionnaire that involve different affirmations regarding the law role in the individual and social life of the people within a community, a state. The peculiarities of manifestation of different attitude to legal norms were measured through the filter of moral normativity – the specificity of establishing relations, socialization of lawyers.

2. Methodology and methods of research

In order to measure the *moral normativity*, we used the personality questionnaire “Adaptability” by A. Maklacov and S. Cermeanin that includes three scales: *adaptability*, *neuro-psychic stability* and *moral normativity*. Accordingly, we applied only the items related to the scale of moral normativity (24 items). The participants got as instructions to the questionnaire to answer “Yes” or “No” to the proposed affirmations, subsequently the score is calculated according to a key and transformed in stens score ranging from 1-10 stens (were 1-3 stens means low level of manifestation and 7-10 stens is high manifestation of moral normativity) (Calancea, 2012).

Legal normativity was measured by a questionnaire “Attitudes towards legal norms (law)” (D. Beznosov) which includes scales determined by different attitudes to law as manifestations of legal consciousness (Почебут, 2012). Thus, the questionnaire indicates to *legal tolerance*, i.e., positive, normal attitude towards law and *legal intolerance* – distorted attitude towards law. The first category includes the scale *legal realism*, the second category comprises more scales as *legal scepticism*, *legal conformity*, *legal cynicism*, *legal fetishism*, *legal infantilism*, *legal idealism* and *legal nihilism*. The questionnaire has 48 items that represents affirmations related to law, to its functionality and features. Respondents should evaluate each item on 5-point Likert scale ranged from “absolutely agree” to “total disagreement” (the score 0-4 p.). For statistical analysis of data, we used statistic methods (SPSS program) such as *t-Student* and the coefficient of correlation *r-Pearson* in order to determine the ratio between the researched variables.

The sample of the research is represented by 417 respondents, specialists of the legal field, officers of law enforcement, attorneys, and lawyers. For statistical comparative analyses we divided the sample in two categories: gender and professional experience. Thus, for the first category we have two groups: the first one count 279 of respondents that are men, that is 67% of entire sample, and the second group include 138 respondents, women – 33%. According to the category of professional experience we have distributed the sample in three groups: 200 of respondents have 0-5 years of work experience (48%), 89 respondents have 6-10 years of professional experience (21%), and 128 – have 11 years and more of working experience in the legal field (31%).

3. Results and interpretation

The results regarding the moral normativity among the respondents of our sample of research are as follow.

According to the data, the majority of participants have the medium level of manifestation of moral normativity – 79% (328 participants), 15% of respondents have a high level of manifestation (64 participants), and only 6 % of respondents have low level of manifestation (25 participants).

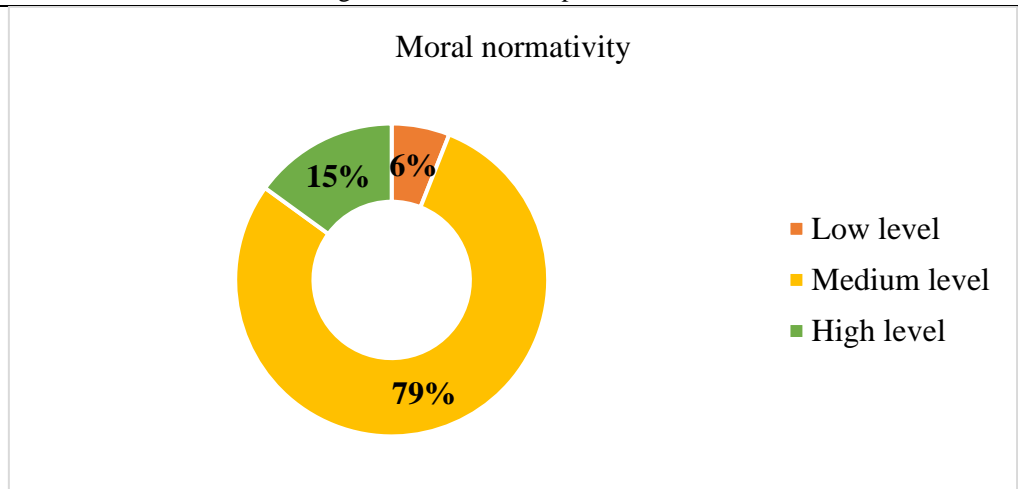


Figure 1. Level of manifestation of moral normativity (entire sample)

The average value of the entire sample constitutes 5.4 – that corresponds to medium level of manifestation. The comparative analysis of data regarding the moral normativity depending on gender, doesn't reveal visible differences between men and women that have average values 5,4 and 5,5 respectively, the women having the a little more emphasized tendency to follow general rules and norms of behavior in groups, society. The statistical comparison of data regarding the manifestation of moral normativity in men and women doesn't show any significant statistical difference.

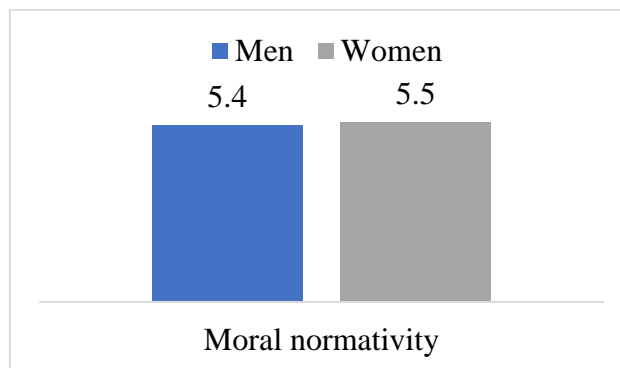


Figure 2. Average values of moral normativity scale depending on gender

We also compared the manifestation of moral normativity in the participants according to the category of professional experience. For specialists with professional experience of up to five years we have a lower average (5.3), compared to participants with experience of 6-10 years and 11 years and more, both subgroups having an average equal to 5.5.

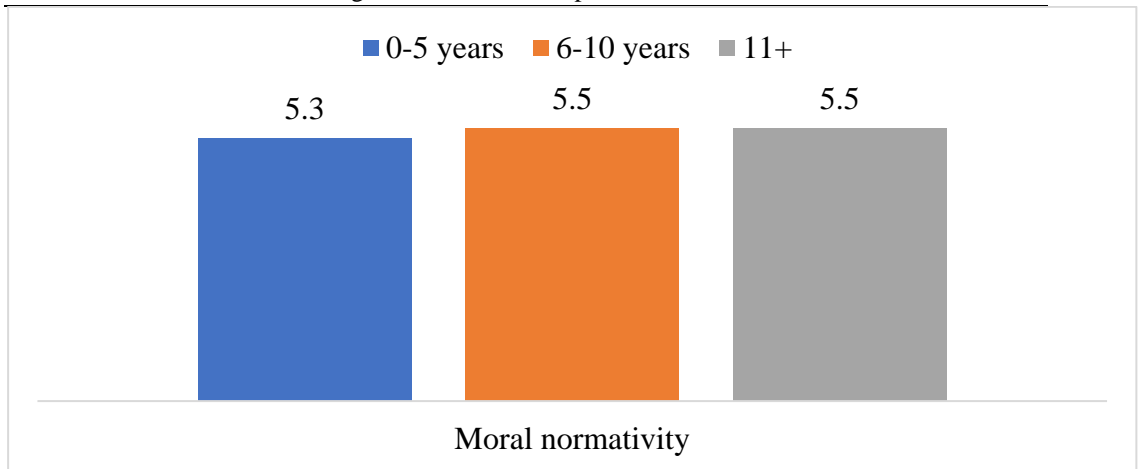


Figure 3. Average values of moral normativity depending on professional experience

At the statistical level, no statistically significant differences were attested, so we conclude that moral normativity is not influenced by the professional experience of the participants in the given sample.

The legal normativity, as we mentioned, was measured by means of the questionnaire “Attitudes towards the rule of law”, which allows us to obtain a more global picture regarding the perception of the functionality and status of the legal rules in our country among lawyers.

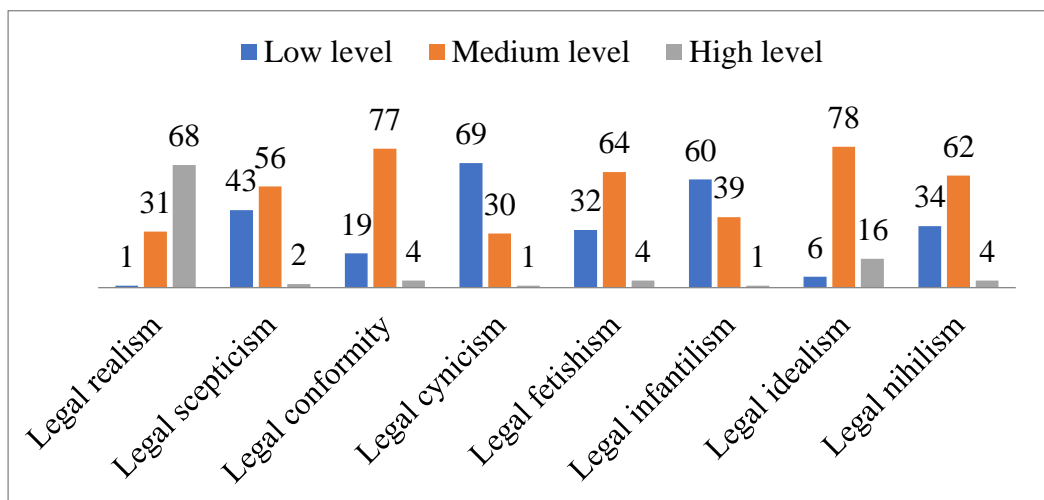


Figure 4. The level of manifestation of the attitudes towards law

According to the data obtained, we observe that the scale of positive attitude towards the rule of law – “legal realism” – is determined by a high level

of manifestation in 68% of participants, 31% of participants have an average level of manifestation, and only 1% - a low level of manifestation of legal realism. Regarding the distortions of the legal consciousness in the participants, we can mention that few participants have a high level of manifestation (up to 5% of the participants) except for the scale of legal idealism which accumulated 16% of the participants.

Practically, most of the participants have an average level of manifestation of “legal conformity” and “legal idealism” – 77% and 78% of participants, respectively. Also, more than half of the participants have an average level of “legal fetishism” (64%), “legal nihilism” (62%) and “legal scepticism” (56%). The scales of “legal cynicism” (69%) and “legal infantilism” (60%) are characterized mainly by low level of manifestation.

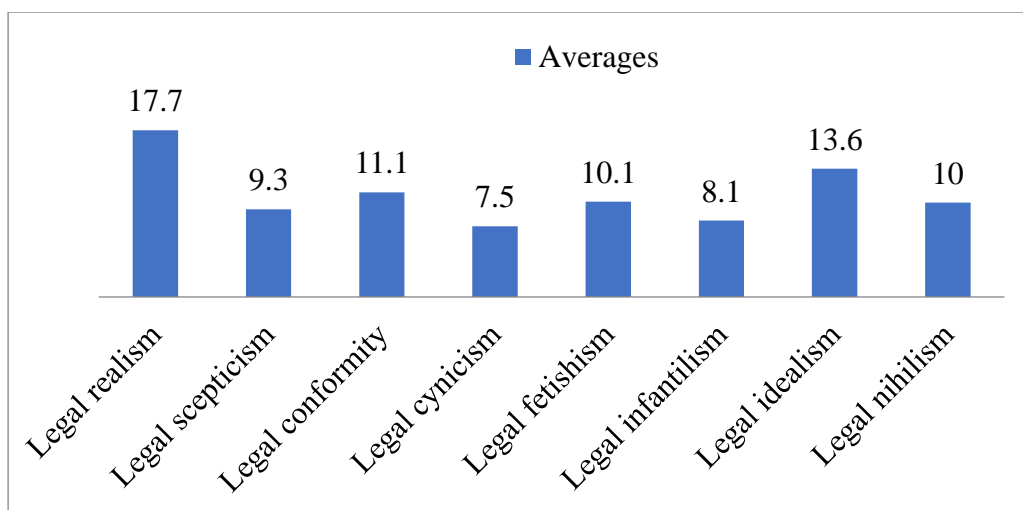


Figure 5. Average values regarding the scales of attitude towards law (entire sample)

Analyzing the average values of the scales of the attitude towards the rule of law, we notice that the participants have a high level of manifestation of “legal realism” ($M=17.7$), and medium level for the scales of “legal idealism” ($M=13.6$), “legal conformity” ($M=11.1$), “legal fetishism” ($M=10.1$), “legal nihilism” ($M=10$) and “legal scepticism” ($M=9.3$). The average values of the attitudinal scales “legal cynicism” and “legal infantilism” fall within the low level of their manifestation among the participants – $M=7.5$ and $M=8.1$.

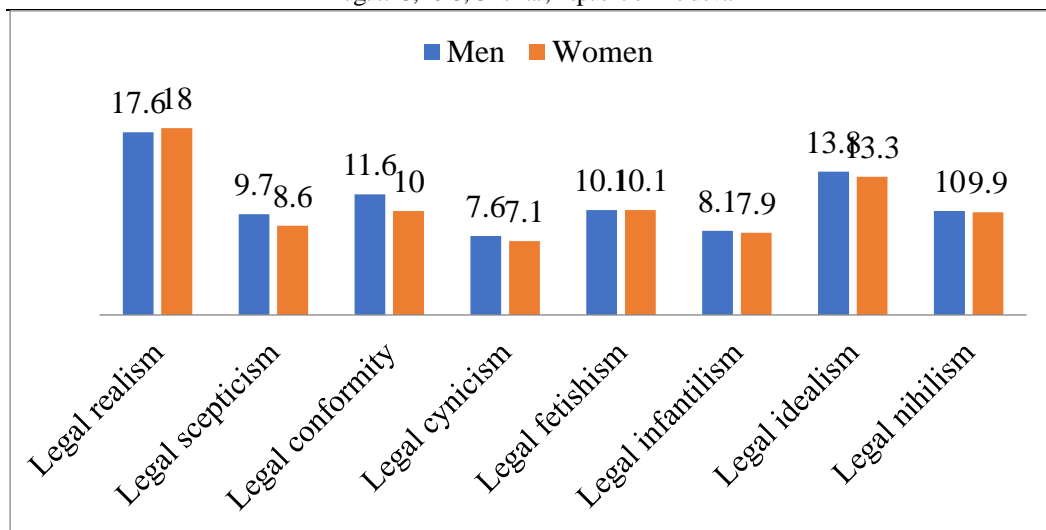


Figure 6. Average values regarding the attitudes towards law depending on gender

The comparative analysis of the attitudes towards the rule of law in men and women reveals the following data: women have slightly higher values for “legal realism” with an average value of 18 compared to men of 17.6. But for other scales, women have lower average values than men. More obvious differences are for the scales of “legal scepticism” (men M=9.7, women M=8.6), “legal conformity” (men M=11.6, women M=10), “legal cynicism” (men M=7.6, women M=7.1), “legal infantilism” (men M=8.1, women M=7.9), “legal idealism” (men M=13.8, women M=13.3). We also have similarities regarding “legal fetishism” and “legal nihilism” with average values of 10/9.9 respectively for the other scale.

Table 1. Comparison of data regarding the attitude towards law depending on gender

		t-test for Equality of Means						
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
Legal scepticism	Equal variances assumed	3.111	415	.002	1.10488	.35518	.40670	1.80306
	Equal variances not assumed	3.070	263.883	.002	1.10488	.35987	.39629	1.81346

Legal conformity	Equal variances assumed	4.787	415	.000	1.64898	.34445	.97190	2.32606
	Equal variances not assumed	5.078	319.437	.000	1.64898	.32473	1.01009	2.28786

The comparative statistical processing of the data reveals that there are statistically significant differences between men and women regarding the “legal scepticism” scale ($p=0.002$) and the “legal conformity” scale ($p=0.000$). Thus, men are more skeptical and indifferent, passive towards the rule of law, using it more as a working tool.

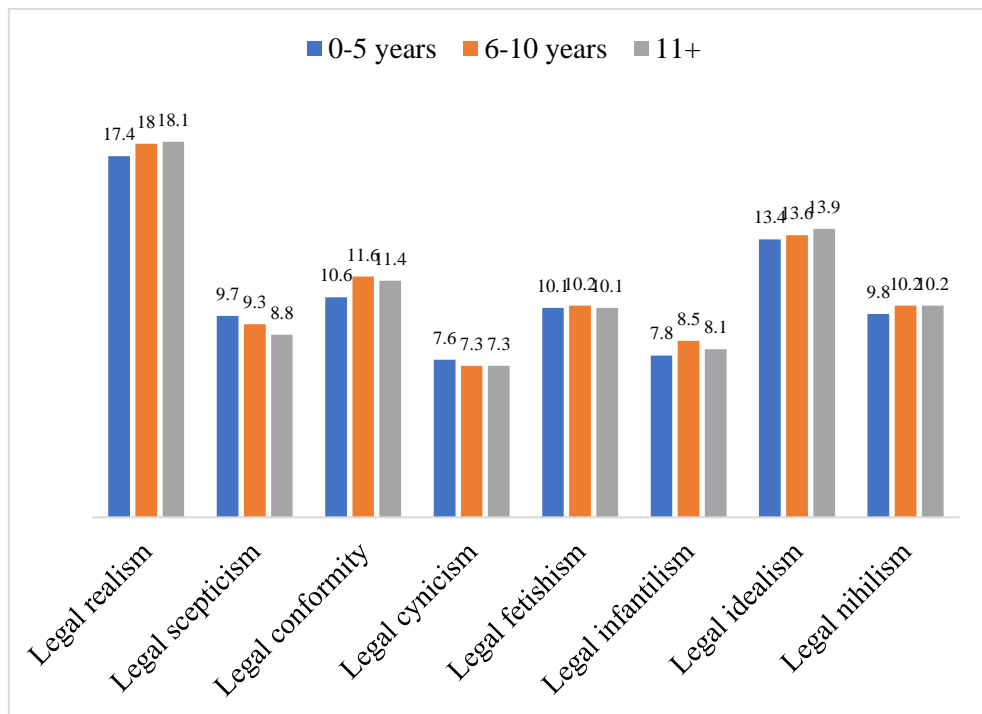


Figure 7. Average values regarding the attitudes towards law depending on professional experience

The comparative analysis of the average values of the scales of attitudes towards the rule of law depending on professional experience shows the following picture: for the scale of “legal realism” participants with 0-5 years of working experience have a lower value than those with 6-10 years of experience and those with more than 11 years of experience. For the “legal scepticism” scale – the most skeptical are participants with little work experience in the legal field, followed by participants with experience between 6-10 years and those with more than 11

years in the field have the lowest value in what concerns the skeptical attitude towards the rule of law. On the scale of “legal conformity” – lower average value is observed in participants with 0-5 years, compared to those working for more than 5 years – both subgroups of 6-10 years and 11+ have higher average values. For the “legal cynicism” scale, participants with 0-5 years of work experience have a slightly higher mean value than other participants with more than 5 years of professional experience. For the scale “legal fetishism” we have similarity in all three subgroups, practically with the same average value. The “legal infantilism” scale is determined by higher mean values in participants with 6-10 years of experience, followed by those with 11 and more years of experience, and lower mean values in participants with 0-5 years of experience. Average values on the “legal idealism” scale increase with experience by 0.2 and 0.3 points. And regarding “legal nihilism” – participants with 0-5 years of experience in the legal system have a lower mean value than participants with more than 5 years of experience which remains constant.

Table 2. Comparison of data regarding the attitude towards the law depending on professional experience: participants with 0-5 and 6-10 years of experience

		t-test for Equality of Means						
		t	df	Sig. (2- tailed)	Mean Differenc e	Std. Error Differenc e	95% Confidence Interval of the Difference	
							Lower	Upper
Legal conformity	Equal variances assumed	-2.171	287	.031	-.98298	.45275	-1.87410	-.09185
	Equal variances not assumed	-1.853	122.211	.046	-.98298	.53036	-2.03286	.06690

The comparative statistical processing of the data regarding the attitudes towards the rule of law in participants with 0-5 years of professional experience and participants with 6-10 years of experience showed statistically significant differences only for the attitudinal scale of “legal conformity”. Thus, participants with professional experience between 6-10 years comply with the legal norms more willingly: it’s an automated process, reflecting the hierarchic focus within the legal system of the country.

Table 3. Comparison of data regarding the attitude towards the law depending on professional experience: participants with 0-5 and more than 11 years of experience

		t-test for Equality of Means						
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
Legal realism	Equal variances assumed	-2.307	326	.022	-.77781	.33717	-1.44111	-.11451
	Equal variances not assumed	-2.353	288.061	.019	-.77781	.33062	-1.42856	-.12707
Legal scepticism	Equal variances assumed	2.329	326	.020	.86875	.37307	.13482	1.60268
	Equal variances not assumed	2.289	255.436	.023	.86875	.37947	.12146	1.61604
Legal conformity	Equal variances assumed	-2.299	326	.022	-.77125	.33546	-1.43118	-.11132
	Equal variances not assumed	-2.307	273.789	.022	-.77125	.33434	-1.42945	-.11305

Processing the data between participants with 6-10 years of professional experience and those with 11 and more years of experience, we can mention that no statistically significant differences were attested between participants with 6-10 years of professional experience and those with equal and more experience higher than 11 years ($p > 0.05$).

Comparative statistical processing between the subgroups of participants with 0-5 years of experience and those with 11 and more years of experience highlights some statistically significant differences: participants with 0-5 years of experience are more driven by “legal scepticism” than participants with greater experience. Participants with experience of 11 and more years are characterized by “legal realism” and “legal conformity” compared to those who have only embraced legal specialization and are still at the stage of integration, adaptation, assimilation of the practical aspects of the field of protection of legal norms.

In addition to the comparative analyzes of the obtained data, we performed the statistical correlation analysis to establish the particularities of the mutual influence between “moral normativity” and the legal one among specialists in the

field of legal norms protection. Thus, we can mention that the “legal fetishism” and the “legal idealism” do not depend on moral normativity.

Table 4. Relation between attitude toward the law and moral normativity

<i>Correlations</i>		Moral normativity
Legal realism	Pearson Correlation	.103*
	Sig. (2-tailed)	.036
	N	417
Legal scepticism	Pearson Correlation	-.312**
	Sig. (2-tailed)	.000
	N	417
Legal conformity	Pearson Correlation	-.141**
	Sig. (2-tailed)	.004
	N	417
Legal cynicism	Pearson Correlation	-.324**
	Sig. (2-tailed)	.000
	N	417
Legal infantilism	Pearson Correlation	-.201**
	Sig. (2-tailed)	.000
	N	417
Legal nihilism	Pearson Correlation	-.294**
	Sig. (2-tailed)	.000
	N	417
**.		Correlation is significant at the 0.01 level (2-tailed).
*.		Correlation is significant at the 0.05 level (2-tailed).

We have a positive correlation between “moral normativity” and “legal realism”, which means that with the manifestation of moral normativity in the participants, the level of manifestation of legal realism, of the positive attitude towards the rule of law also increases ($r=0.103$ and $p=0.036$). A negative correlation between “moral normativity” and “legal scepticism” was attested ($r=-0.312$ and $p=0.000$), so the higher the moral normativity, the lower the legal skepticism. A negative correlation was attested between “moral normativity” and “legal conformity” ($r=-0.141$ and $p=0.004$) – the more manifest the moral normativity is, the less often legal conformity is manifested in the participants. As well, between “moral normativity” and “legal cynicism” there is a negative correlation ($r=-0.324$ and $p=0.000$): the more frequently and more intensely the cynical attitude towards the rule of law is manifested, the lower is the moral normativity at participants and vice versa. The statistical analysis has showed a negative correlation between “moral normativity” and “legal infantilism” ($r=-$

0.201 and $p=0.000$), thus high values of moral normativity minimize the manifestation of the infantile attitude of the rule of law. And, finally, we got a negative correlation between “moral normativity” and “legal nihilism” was attested ($r=-0.294$ and $p=0.000$) – the participants’ high moral normativity ensures the decrease or exclusion of the nihilistic attitude towards legal norms.

4. Conclusion

Regarding the moral normativity and the results obtained for it, among lawyers, we can conclude that the respect of the general norms of behavior in society depend on the situations, circumstances, perceptions and attitudes of the social contexts of the participants, they being a little disoriented in terms of their role in these contexts, probably because they are not satisfied with their activity, with some circumstances in life, which sometimes unbalance and keep the person in tension and anxiety. But still, it should be noted that the participants respect the moral, general norms of behavior that persist in groups of friends, relatives, colleagues, because these norms are an indispensable part of the socialization of the person, without respecting them, the person risks being excluded, marginalized. Within the researched sample, moral normativity does not depend on the gender category or the length of work experience in the legal field of the participants.

Regarding the legal normativity (measured through the attitude towards law), we identified that on the one hand the participants of the sample are characterized by a positive attitude towards the rule of law determined by legal realism, i.e. normal legal awareness that includes knowledge of the legislation and a positive appreciation of the legal norms – which is presented as basic regulators of behavior in society. On the other hand, taking into consideration the professional training in the legal field of the participants, we have noticed an obvious high level of legal conformity and idealism, which indicate to an irrational attitude towards legal norms (based on their ignorance or their idolization), in some cases exaggerating the role legal norms in society. Tendencies of skeptical and nihilistic attitude towards legal norms were also detected, thus highlighting the possible professional deformation of the participants. Other forms of intolerance of legal norms such as cynicism and legal infantilism are less specific and manifest for the participants of the given sample.

The comparative analysis by gender category revealed that men and women in the legal field differ in terms of the skeptical and conformist attitude towards legal norms, being more appropriate for men. The professional experience in the legal field develops the conformist attitude towards legal norms determined by the recognition of the legal system in society with irrational compliance with the legislation (possible due to gaps in the knowledge base, lack of interest in the legal system). The manifestation of conformist attitudes towards

legal norms in participants can be determined by the specifics of the legal system in the Republic of Moldova, which is very rigid and still “influenced” by old, Soviet principles that only create impediments in the normal activity of the legal system in the country.

Considering the basic goal regarding the interrelation between moral and legal normativity for specialists in the field of protection of legal norms, we can conclude that there is a very close connection between them: the positive attitude towards the legal norm depends on the inclusion of social norms - being directly related. The manifestation of forms of intolerance towards legal norms such as scepticism, conformity, cynicism, infantilism and legal nihilism are generated by reduced moral normativity, neglect of social norms, of the group of friends and colleagues, non-identification within the primary and reference social group, which can lead to the development of deviant, antisocial behavior.

The present research showed us the importance of the socialization of people, especially those working in the legal field. Considering that lawyers work with people permanently – this can lead to the development of legal professional deformation determined by negative expression at the attitudinal and behavioral level, as well as to the intensification of professional burnout. In this context, we recommend psychologists within legal institutions to keep up-to-date the psychological and moral state of legal workers in the institution (individual and group counseling, personal development training), especially emphasizing interpersonal, intragroup and intergroup relations, norms and social values, professional norms and values, etc.

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COMMUNAL INFRASTRUCTURE AS A NECESSARY CONDITION FOR THE SUSTAINABLE DEVELOPMENT OF THE REGION (case ATU Gagauzia)

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Abstract: *The article is devoted to determining the role and place of communal infrastructure in the process of formation of economic factors necessary to ensure sustainable development of enterprises and improve the quality of life of inhabitants of settlements in the region. The article analyzes in dynamics the level of provision of the region's households with appropriate public utilities, SWOT-analysis of the communal sector development. At the end of the authors make conclusions and findings.*

Key words: *communal infrastructure, sustainable economic development, investments, ATU Gagauzia*

JEL: L95, O18, R11

Introduction

The dynamics of economic development, both at the national and local levels, largely depends on the economic activity of enterprises. The priority direction in the activities of the state is the creation of favorable conditions for sustainable economic growth.

Modern market relations prescribe to consider the enterprise as an economic entity functioning in the conditions of a complex system.

Enterprises are in constant interaction and interrelation with the external environment. Experiencing the impact of the external environment, and at the same time, influencing the environment, is one of the properties characteristic of the system [6].

The sustainable development of the enterprise in this article is assumed to be the functioning of enterprises within a three-dimensional system: economic -

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social - environmental, in order to ensure a harmonious balance between them. Considering the factors affecting the functioning and sustainable development of enterprises operating on the territory of the autonomous territorial unit of Gagauzia, the impact of the communal infrastructure was analyzed.

The importance of the condition of the communal infrastructure in the context of the development of enterprises was considered using different research methods, including: empirical, analytical, comparative method and questionnaire (a questionnaire was conducted among managers of 60 enterprises operating on the territory of ATU Gagauzia) in 2021, where the list included questions about the factors that influence the development of enterprises at the present time.

Results obtained and discussions

Sustainable development and municipal infrastructure are relevant topics in many strategic development documents, including the National Development Strategy «European Moldova 2030» [Error! Reference source not found.].

The legislation of Republic of Moldova (RM) stipulates that the responsibility for organizing the activity of public services of public utilities is assigned to local public authorities [Error! Reference source not found.], [Error! Reference source not found.].

The Organic Law of RM "On Public Utility Services" No. 1402 of 24.10.2002 establishes the unified legal framework for the establishing and organization of the activity of public utility services of administrative-territorial units [Error! Reference source not found.].

Public services supplied (provided) by the public utility may be realized by specialized suppliers, which may be:

- (a) specialized departments of local public administration authorities;
- b) economic entities, regardless of their organizational and legal form;
- c) individuals and/or their associations [Error! Reference source not found.].

During the last 10 years in ATU Gagauzia there is a tendency to create specialized departments at the mayoralities for water supply and sewerage services. During interviewing process 5 mayors of rural settlements, who decided to organize the provision of public utilities services under the mayor's office and to leave municipal enterprises, the following reasons were noted:

- financial instability of municipal enterprises;
- high share of administrative costs;
- insufficiently efficient management of services;
- lack of human resources;
- complex mechanism for providing budgetary and financial support to municipal enterprises.

Ensuring sustainable development of the enterprise is the result of optimally balanced actions between socio-economic interests and the use of natural resource potential, aimed at achieving organizational goals. Sustainable development of the enterprise is determined by the external dynamics and current situation of three components: economic development, social development and environmental conditions.

Communal infrastructure is the facilities designed to meet the needs of the population and the economy in public services supplied (provided) by public utilities. Communal infrastructure is a prerequisite for the sustainable development of the enterprise, because ensuring its functioning without access to public resources and services is simply impossible. The level of communal infrastructure development has a direct impact on investment attractiveness.

According to the survey, regarding the challenges of enterprises in the implementation of investment projects, 61.0% of respondents believe that the development of communal infrastructure is «great importance» and «very great importance» (Fig.1).

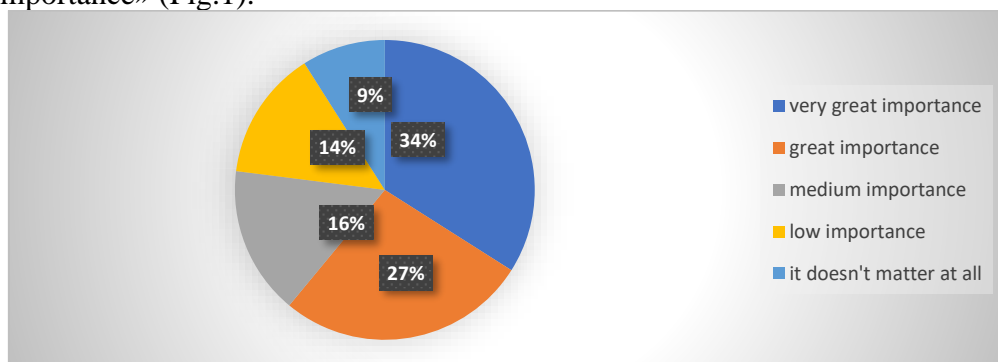


Figure 1. Results of the survey on the importance of communal infrastructure development in the settlements of Gagauzia for the realization of investment projects

Source: Developed based on the results of questionnaire survey of economic agents operating on the territory of ATU Gagauzia

Communal infrastructure plays a determining role not only in the sustainable economic development of enterprises, but also reflects the level of improvement of settlements and the quality of life of residents. It is the main integral element of the environment of settlements and has a significant impact on the living conditions of the population and business development. The quality of public utilities directly affects the level of comfort, health and safety of citizens, as well as the investment climate and sustainable development of enterprises.

Based on the results of interviews with managers of enterprises from ATU Gagauzia, the three most important components of public services supplied

(provided) by public utilities were identified: water supply, wastewater disposal and sewerage, and solid waste management.

Access to uninterrupted water supply is an important condition for enterprises, particularly in the production sector to ensure production cycles.

It should be noted that according to the data from the mayoralties of Gagauzia, in 17 localities there are municipal enterprises, and in 9 localities (villages) the provision of communal services is carried out through the communal economy department of the mayoralties, with payment to a special account of the mayoralties.

According to the latest official data, as of 2022, almost 85,0% of the population of ATO Gagauzia have access to centralized water supply services, including 90% in urban areas and 79% in rural areas. According to this indicator, ATO Gagauzia ranks first (after Chisinau) among other regions of the Republic of Moldova, the average level in the country is about 60% (Table 1). All settlements in the region (100%) have a centralized water supply system [7].

Table 1. Information on the availability of water supply, sewerage and natural gas to households in Gagauzia for the period 2018-2022

Indicators	2018	2019	2020	2021	2022
Total number of households (houses and apartments) in ATU Gagauzia, units	50632	51101	51320	51450	51420
Total number of households connected to a centralized water supply system, units	40417	41697	42118	42962	43597
share of of households connected to a centralized water supply system, %	79,83	81,6	82,06	83,5	84,78
Total number of households connected to a centralized sewerage system, units	9510	10020	10020	10435	11168
share of of households connected to a centralized sewerage system, %	18,78	19,6	19,52	20,28	21,72
Total number of households connected to a centralized natural gas system, units	44463	45066	43833	44991	45862
share of of households connected to a centralized natural gas system, %	87,82	88,19	85,41	87,45	89,19

Source: Developed on the basis of data from the mayor offices from ATU Gagauzia

Data on the volume of extracted and used water by development regions of RM in 2022 are presented in Table 2.

Table 2. Data on the volume of extracted and used water by regions of RM development in 2022. (mln. cubic meters)

Type	Volume of extracted water, 2022	Volume of water used, 2022
Total countrywide	160,0	120,6
Region North	36,1	23,5

Region Center	35,4	33,2
Region South	15,8	13,6
Region Gagauzia	4,1	2,9

Source: Developed on the basis of data from the National Bureau of Statistics of RM [1].

Despite the fact that the population of ATU Gagauzia is relatively well provided with water supply services, the quality of water supplied to the system is one of the lowest in the country and does not meet the minimum normative requirements. In particular, groundwater - the only source of supply for centralized systems in the region - contains significant excesses of maximum permissible concentrations of fluorine, boron, sodium, hydrogen sulfide and iron.

Poor water quality has a direct negative impact not only on the health of the population, but also on the economy.

Water supply is essential for the construction and maintenance of residential and commercial facilities, public infrastructure and roads. This, in turn, contributes to the creation of jobs, stimulates economic growth and increases investment attractiveness.

An important economic sector for ATU Gagauzia is agriculture, and more than 60% of the population lives in rural areas. The water supply system is necessary for rural and urban agriculture, as well as for the food industry, which in turn has a huge impact on the economy. Without free access to water, agriculture cannot produce efficiently, which can lead to shortages, higher prices for products and reduced competitiveness.

Overall, access to clean water is a key element of economic development and sustainability. Poor water infrastructure, water scarcity or water pollution can lead to serious economic and social problems, including poor public health, reduced productivity and increased costs for treatment and ecosystem restoration.

ATU Gagauzia significantly lags behind all other regions of the country in terms of provision of sewerage services: only 17% of the population is covered, compared to the average indicator for the Republic of Moldova of 40%. Only 7 out of 26 settlements in the region (3 urban and 4 rural) have centralized sewerage systems. Sewerage is almost non-existent in rural areas (about 2% coverage) and fragmented in the region's cities (less than 40% of the urban population).

The quality of wastewater treatment is very low: the treatment plants in Comrat are practically inoperative, in Ceadir-Lunga - partially functioning, and in Vulcanesti only 5% of the project capacity is used. It should be emphasized that due to the high degree of physical and moral deterioration, the treatment plants in Comrat and Ceadir-Lunga cannot be reconstructed any more - completely new plants need to be built [7].

Sewerage systems play an important role in the economy, having a significant impact at both macro and micro levels. In the social aspect, sewerage

systems reduce the risk of spreading infectious diseases and improve public health. Poor sewerage provision has a negative impact on the health of residents. According to the National Bureau of Statistics of Moldova, average consumer spending on health care in 2022 amounted to 5.3% of total consumer spending and increased by 0.4 percentage points compared to 2020 (4.9%). A similar trend is observed in the number of registered patients, which in 2022 amounted to 3,024.6 thousand cases, 305.6 thousand more than in 2020 [4]. The above statistics indicate an increase in consumer spending on health care, a decrease in the working capacity of the population, a decrease in labor productivity, and as a consequence, a deterioration in the state of human capital.

Some aspects of sewerage systems, such as drainage and water management, can help reduce damage from floods and other natural disasters, which helps to maintain economic stability.

Thus, a sewerage system has a broad impact on the economy by improving sanitation, promoting environmental sustainability, infrastructure development and attracting investment.

The sanitation and solid waste management system plays a significant role in the economy and society at large. An effective municipal solid waste management system allows the recovery and recycling of materials such as paper, plastic, glass and metal, which helps to save natural resources and reduce the cost of raw material production. The dynamics of municipal waste volumes by RM development regions for 2019-2021 are presented in Table 3. The data presented in the table show that in ATU Gagauzia, which is much smaller in terms of territory and population than the South region, practically the same amount of municipal waste is collected from the population and economic agents. This indicates that the solid waste collection system in Gagauzia is of higher quality than in the South region.

The system of sanitation and solid waste management is an integral part of the infrastructure of settlements, and its effective functioning contributes to sustainable development, employment growth and reduction of negative impact on the environment.

Table 3. Dynamics of municipal waste volumes by RM development regions for 2019-2021.

Type	Number of vehicles used for sanitation works, units			Volume of municipal waste collected from the population and economic entities, thousand cubic meters			Volume of municipal waste collected from the population, thousand cubic meters		
	2019	2020	2021	2019	2020	2021	2019	2020	2021

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Total countrywide	866	885	975	3 204,0	3 336,3	3 311,4	2 102,9	2 217,5	2 188,7
Region North	223	228	249	465,7	502,4	491,5	319,9	352,5	335,0
Region Center	193	208	232	445,1	491,9	504,7	308,5	325,9	356,2
Region South	109	120	135	183,7	185,7	235,4	121,6	131,3	162,7
Region Gagauzia	63	71	72	215,3	211,0	229,8	123,2	117,9	132,9

Source: Developed on the basis of data from the National Bureau of Statistics of RM [3].

According to the published results of the global study of the countries in the world on the level of environmental efficiency for 2022, the Republic of Moldova was ranked 84th among 180 countries. The study was conducted by the Center for Environmental Policy and Law at Yale University (Yale Center for Environmental Law and Policy) [4].

Based on the information presented above, we will conduct a SWOT analysis of the development of public utilities in ATU Gagauzia (Table 4).

Table 4. SWOT analysis of the development of public utilities in ATU Gagauzia

Strengths	Weaknesses
<ul style="list-style-type: none"> - Presence of a Sectoral Regional Program of Water Supply and Sanitation Development in the Region of ATU Gagauzia (2018-2025); - Inclusion of communal infrastructure development projects in the Gagauzia Regional Development Strategy and strategic plans for the development of localities; - Provision of public utilities in all 26 localities of Gagauzia; - High level of gasification of the population (100% of all localities); - Reduction of losses through the implementation of measures to install resource consumption control and metering devices; - Satisfactory condition of water supply networks 	<ul style="list-style-type: none"> - Absence of municipal enterprises in all localities of Gagauzia; - Insufficient level of investment in fixed assets in the public utilities sector; - Low level of innovation activity; - Insufficiency of material and technical base of municipal enterprises; - Politicization of the process of setting tariffs for public utilities by local authorities which leads to the fact that tariffs do not cover costs; - High dependence on budget financing of the public utilities sector; - Growth of tariffs for public utilities against the background of low purchasing power of the region's population; - Unsatisfactory technical condition of water supply systems (technical water), which leads to losses and theft;

<p>water supply networks in rural areas (19 out of 23 settlements have a renewed network of pipes, which are in good condition;</p> <ul style="list-style-type: none"> - Implementation of new organizational forms of communal services provision through a single model of communal services management based on inter-communitarian cooperation (one of the first enterprises in the Republic of Moldova in the village of Congaz - municipal enterprise "Congaz Sulari"). 	<ul style="list-style-type: none"> - Irrational use of water; - Lack of urban development plans and technical plans for infrastructure development; - Lack of an effective wastewater treatment system; - Lack of systems for sorting municipal solid waste at collection.
Opportunities	Threats
<ul style="list-style-type: none"> - Growing demand for public services, in an effort to improve the quality of life; - Development and implementation of National and Regional programs for the development of centralized water supply, sewerage and wastewater treatment systems and solid waste collection systems; - Introduction of regionalization of public services provision as well as inter-communitarian cooperation through the creation of regional operators-providers of public utilities services; - Improving the competitiveness of enterprises providing public utilities services; - Use of new innovative technologies for water and wastewater treatment and solid waste management; - Attraction of funds from various sources to finance the sphere of public utilities from state, regional and local budgets, funds of international programs and donors, domestic and foreign investors. 	<ul style="list-style-type: none"> - Bankruptcy of municipal enterprises; - Changes in legislation regulating the activities of enterprises in the utilities sector; - Declining solvency of the population; - Changes in utility tariffs under the influence of external factors; - Increasing shortage of workers in the utilities sector; - Inflation processes; - Decrease in investments in fixed assets in the public utilities sector; - Reduction of water resources debit used for delivery to consumers; - Increase in theft and losses in water supply to consumers; - Deterioration of water quality, which is categorized as technical water; - Resistance of local authorities to regionalization of services and inter-municipal cooperation (for political, economic and tariff reasons); - Political disagreements between national and regional authorities that could affect the amount and purpose of external financing; - Cessation of funding for projects in the field of public utilities from international programs and projects, donors;

	<ul style="list-style-type: none">- Emergence of accidents and breakdowns in water supply and sewerage systems;- Environmental catastrophes, natural disasters.
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Source: Developed by the authors

The presented results of the SWOT-analysis in Table 4 determine the current situation of the public utilities sector in the autonomy, potential opportunities for improvement and modernization, as well as the risks that may lead to deterioration of the quality of public utilities.

Conclusion

Despite the processes implemented for the development of the communal infrastructure in the settlements of Gagauzia, its level does not meet the modern requirements of the population and economic agents.

Managers of enterprises operating in Gagauzia note the importance of improving the quality of communal infrastructure for the purposes of socio-economic development, investment attractiveness of both individual enterprises and the region as a whole.

Thus, utility infrastructure is a prerequisite for the sustainable development of the enterprise, as it provides access to necessary resources and services, improves the quality of life of people, creates a favorable environment for business and ensures the competitiveness of the enterprise.

The mayors of 9 localities in Gagauzia, in the process of creating the system of providing public services, do not comply with the legislation in force in the Republic of Moldova regulating this sector of economy, as they provide these services without establishing a municipal enterprise.

The availability of modern infrastructure, including water supply, sewerage and treatment facilities, can make the region more attractive for investors and enterprises, which will definitely contribute to the sustainable economic growth of the region's economy, as well as to the improvement of the quality of life of the inhabitants of Gagauzia.

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ABORDĂRI CONTEMPORANE AFERENTE CONTROLULUI DE GESTIUNE A VENITURILOR ȘI CHELTUIELILOR ÎN CADRUL INSTITUȚIILOR PROFESIONAL TEHNICE

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Abstract: *În cadrul lucrării vom aborda noțiuni de control de gestiune, venituri și cheltuieli bugetare. Vom face o analiză teoretică a conceptelor privind controlul de gestiune la nivel național cât și internațional în condițiile tendinței integrării în Uniunea Europeană. Scopul lucrării este analiza conceptelor teoretice și importanța implementării lui în cadrul instituțiilor profesionale tehnice. Obiectivele lucrării sunt identificarea instrumentelor de implementare a controlului de gestiune și descrierea acestora pentru gestionarea veniturilor și cheltuielilor acestor instituții.*

Key words: *control de gestiune, audit intern, control managerial intern,*

JEL: M.41

1. Introducere

Abordările contemporane legate de controlul managementului veniturilor și cheltuielilor în cadrul instituțiilor tehnice profesionale includ și noțiuni de control de gestiune, venituri și cheltuieli bugetare. Aceste aspecte sunt esențiale pentru asigurarea unei gestionări eficiente a resurselor financiare și pentru atingerea obiectivelor instituționale. Iată câteva informații suplimentare despre aceste noțiuni:

- controlul de gestiune: acesta se referă la procesul de monitorizare și evaluare a performanței organizației prin intermediul indicilor de performanță și a altor instrumente de control. Instituțiile tehnice profesionale pot utiliza metode precum bugetarea pe baza activităților, analiza cost-volum-profit și analize comparative pentru a evalua și îmbunătăți eficiența și eficacitatea activităților lor.

- venituri bugetare: instituțiile tehnice profesionale depind adesea de veniturile bugetare, care provin din alocațiile publice. Controlul veniturilor bugetare implică planificarea și monitorizarea atentă a acestor resurse, asigurându-se că sunt utilizate în mod corespunzător și în conformitate cu regulile și restricțiile impuse de bugetul instituțional.

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- cheltuieli bugetare: instituțiile tehnice profesionale trebuie să gestioneze cheltuielile în limitele bugetate și să asigure utilizarea eficientă a resurselor financiare. Controlul cheltuielilor bugetare implică monitorizarea și evaluarea cheltuielilor în raport cu bugetul alocat, identificarea și gestionarea eventualelor abateri sau variații, precum și luarea de măsuri corective pentru a asigura respectarea bugetului și utilizarea eficientă a resurselor financiare.

2. Metode de cercetare

Obiectivele lucrării sunt identificarea instrumentelor de implementare a controlului de gestiune și descrierea acestora pentru gestionarea veniturilor și cheltuielilor acestor instituții.

Ca suport metodologic al investigației, se aplică metodele universale de cercetare a materiei, fenomenelor și proceselor, inclusiv metoda dialectică a cunoașterii, care include elemente precum analiza, sinteza, inducția și deducția. De asemenea, se utilizează metode specifice științelor economice, cum ar fi observația, clasificarea, raționamentul, calculația, selectarea, gruparea, modelarea economico-matematică și documentarea operațiunilor financiare. Pentru a obține informații relevante în procesul cercetării, sunt utilizate date din practica activității instituțiilor din Republica Moldova, rapoartele de control managerial, referitoare la rezultatele activității financiare în instituțiile de învățământ.

Studiul se bazează pe analiza investigațiilor, opiniilor altor cercetători, savanți și specialiști, precum și pe generalizarea informațiilor din actele normative naționale și internaționale care se referă la controlul de gestiune. Prin soluțiile proprii propuse în cadrul studiului, se contribuie la perfecționarea aplicării acestor norme în practica instituțiilor de învățământ profesional tehnic secundar și nonterțiar.

Această abordare metodologică și informațională asigură un cadru solid pentru cercetarea și analiza aspectelor legate de contabilitatea veniturilor în instituțiile de învățământ profesional tehnic secundar și nonterțiar, facilitând dezvoltarea de soluții și recomandări relevante pentru îmbunătățirea acestui domeniu.

3. Rezultate și discuții

3.1. Controlul de gestiune a veniturilor și cheltuielilor pe plan național și internațional

Dacă analizăm lucrările și articolele de specialitate despre conceptul de gestiune economică pe plan internațional, putem menționa câteva aspecte a celor mai recunoscuți autori în domeniul managementului și controlului de gestiune și anume Merchant, K. A., și Van der Stede [9, p.15] menționau că "Controlul de gestiune este o funcție esențială într-o organizație, oferind informații și instrumente pentru luarea deciziilor, monitorizarea performanței și gestionarea

riscurilor." În multe lucrări ca a Kaplan, R. S., și Norton, D. P. [8, p.20] este menționat că "Controlul de gestiune nu se limitează doar la aspectele financiare, ci include și măsurarea și gestionarea performanței operaționale, a clientului și a proceselor interne."

Iar Otley, D [11, p.9] consideră că "Controlul de gestiune nu ar trebui să fie perceput doar ca o funcție de supraveghere și sancționare, ci și ca un instrument pentru îmbunătățirea performanței organizaționale și stimularea inovației."

Controlul de gestiune în Republica Moldova (RM) reprezintă un proces esențial pentru monitorizarea și evaluarea performanței organizațiilor din diverse sectoare și domenii de activitate. În RM, controlul de gestiune are ca scop asigurarea utilizării eficiente și eficace a resurselor financiare și a altor resurse disponibile, în vederea atingerii obiectivelor stabilite.

În același context, o atenție deosebită axată pe problemele definirii controlului de gestiune se regăsește în lucrările profesorului moldovean A. Nedeșta [12, p.10] și ale lui S. Caraman [5, p.17], care susțin că „controlul presupune compararea rezultatelor efective cu cele planificate în scopul determinării abaterilor și corectării divergențelor”.

În cadrul controlului de gestiune în RM, se aplică diverse instrumente și tehnici pentru planificarea, monitorizarea și evaluarea performanței organizațiilor. Acestea includ bugetarea, analiza costurilor, raportarea financiară și non-financiară, benchmarking-ul și alte metode specifice de control de gestiune. Prin intermediul acestor instrumente, organizațiile din RM pot evalua și îmbunătăți performanța financiară, operațională și strategică. Principiile bunei guvernări pot fi reprezentate prin următoarea schemă:

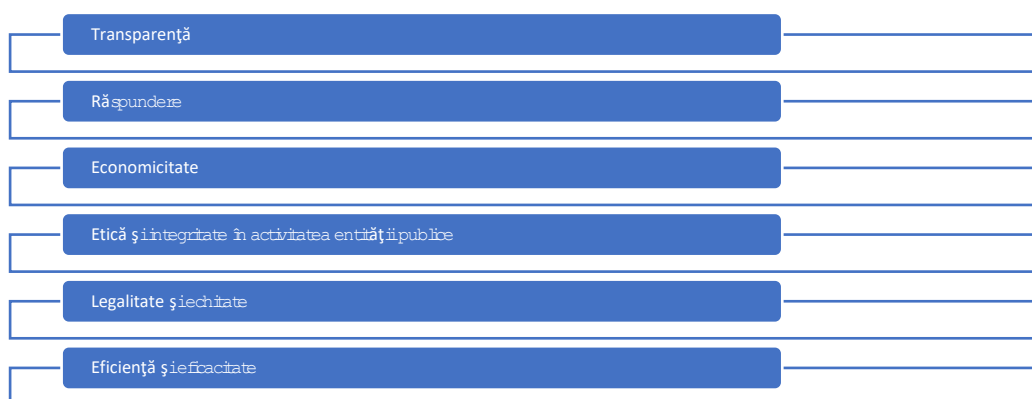


Figura 1. Principiile bunei guvernări

Source: Elaborată de autor

În contextul integrării RM în Uniunea Europeană, controlul de gestiune joacă un rol important în asigurarea alinierii la standardele și cerințele europene. Aceasta implică adoptarea și implementarea standardelor internaționale de raportare financiară (IFRS) și a standardelor internaționale de control intern (COSO), pentru asigurarea transparenței și calității informațiilor financiare și a proceselor de control intern.

De asemenea, în RM există instituții precum Curtea de Conturi, care are un rol crucial în exercitarea controlului financiar și reviziei în cadrul instituțiilor publice și organizațiilor din RM. Aceasta contribuie la asigurarea legalității, regularității și eficienței utilizării resurselor financiare, precum și la identificarea și remedierea deficiențelor și riscurilor în ceea ce privește controlul de gestiune.

Pentru a se asigura o bună practică a controlului de gestiune în RM, este important ca organizațiile să aibă politici și proceduri clare, să promoveze etica și responsabilitatea în gestionarea resurselor, să dezvolte competențele și cunoștințele personalului în domeniul controlului de gestiune și să se adapteze la evoluțiile și cerințele din mediul de afaceri și din cadrul Uniunii Europene.

Astfel, controlul de gestiune în RM are un rol esențial în asigurarea unei gestionări eficiente și transparente a resurselor financiare și a performanței organizațiilor, contribuind la dezvoltarea sustenabilă și la creșterea competitivității în cadrul economiei moldovenești.

Dacă e să comparăm controlul de gestiune național și cel internațional putem menționa următoarele:

1. Controlul de gestiune la nivel național se referă la procesul de monitorizare și evaluare a performanței organizațiilor în vederea atingerii obiectivelor stabilite. Acesta implică utilizarea unor instrumente și tehnici specifice, cum ar fi planificarea și bugetarea, analiza costurilor, raportarea și benchmarking-ul. În contextul integrării în Uniunea Europeană, controlul de gestiune la nivel național trebuie să se alinieze cu standardele și cerințele europene în materie de raportare financiară și performanță.

2. La nivel internațional, există diverse modele și concepte de control de gestiune care sunt utilizate în diferite țări și organizații. Un exemplu important este Balanced Scorecard, care se concentrează pe măsurarea și gestionarea performanței organizaționale într-un mod echilibrat, luând în considerare perspectivele financiare și non-financiare. În contextul integrării în Uniunea Europeană, organizațiile trebuie să se familiarizeze cu modelele și practicile de control de gestiune utilizate în alte state membre și să le adapteze la specificul lor.

3. Integrarea în Uniunea Europeană implică adoptarea și respectarea unor standarde și cerințe specifice în domeniul controlului de gestiune. Acestea includ, de exemplu, adoptarea standardelor internaționale de raportare financiară (IFRS) și a standardelor internaționale de control intern (COSO) pentru asigurarea transparenței și calității informațiilor financiare și a proceselor de control intern.

De asemenea, Uniunea Europeană promovează utilizarea unor instrumente de control de gestiune specifice, cum ar fi benchmarking-ul și raportarea non-financiară.

4. În condițiile integrării în Uniunea Europeană, organizațiile trebuie să își adapteze practicile de control de gestiune la standardele și cerințele europene. Aceasta implică actualizarea politicilor și procedurilor de control, implementarea unor instrumente de raportare și monitorizare specifice și dezvoltarea competențelor și cunoștințelor personalului în domeniul controlului de gestiune.

Prin analiza teoretică a conceptelor privind controlul de gestiune la nivel național și internațional în condițiile tendinței de integrare în Uniunea Europeană, organizațiile pot identifica bune practici și soluții relevante pentru îmbunătățirea proceselor de control și gestionare a performanței. Aceasta contribuie la creșterea eficienței și competitivității organizațiilor în cadrul pieței europene integrate.

3.2. Controlul de gestiune în cadrul instituțiilor profesionale tehnice și metode de implementare a acestuia în cadrul instituțiilor

Controlul de gestiune în instituțiile bugetare reprezintă un proces esențial pentru monitorizarea și evaluarea utilizării resurselor financiare și a altor resurse disponibile în cadrul acestor instituții. Având în vedere specificul instituțiilor bugetare, controlul de gestiune are ca scop asigurarea unei gestionări eficiente, transparente și responsabile a fondurilor publice.

În cadrul controlului de gestiune în instituțiile bugetare, se aplică diverse instrumente și tehnici pentru planificarea, monitorizarea și evaluarea performanței financiare și operaționale. Acestea includ bugetarea și planificarea financiară, analiza costurilor și a eficienței, raportarea și monitorizarea performanței, evaluarea riscurilor și a controalelor interne.

Un aspect important al controlului de gestiune în instituțiile bugetare este respectarea regulilor și procedurilor specifice în ceea ce privește utilizarea fondurilor publice. Acest lucru implică o atenție deosebită la respectarea principiilor de legalitate, regularitate și eficiență în utilizarea resurselor financiare. De asemenea, instituțiile bugetare sunt supuse unui control strict din partea organelor de control financiar și revizie, precum Curtea de Conturi, inspecția financiară, care verifică respectarea regulilor și normelor în ceea ce privește utilizarea fondurilor publice.

În contextul instituțiilor bugetare, controlul de gestiune are și un rol important în asigurarea transparenței și responsabilității în utilizarea fondurilor publice. Aceasta implică raportarea financiară adecvată, informarea și consultarea părților interesate, precum și gestionarea eficientă a riscurilor financiare și operaționale.

Pentru a se asigura un control de gestiune eficient în instituțiile bugetare, este important ca acestea să aibă politici și proceduri clare în ceea ce privește

planificarea, monitorizarea și evaluarea performanței financiare și operaționale. De asemenea, este necesară dezvoltarea competențelor și cunoștințelor personalului în domeniul controlului de gestiune și implementarea unor sisteme și instrumente adecvate de raportare și monitorizare a performanței.

Astfel, controlul de gestiune în instituțiile bugetare are un rol esențial în asigurarea unei gestionări eficiente și transparente a fondurilor publice, contribuind la utilizarea responsabilă a acestor resurse și la atingerea obiectivelor instituționale într-un mod sustenabil.

Noțiuni de control de gestiune, venituri și cheltuieli bugetare sunt esențiale pentru asigurarea unei gestionări financiare eficiente și responsabile în cadrul instituțiilor tehnice profesionale. Prin aplicarea unor metode și instrumente specifice, aceste instituții pot evalua și îmbunătăți performanța lor financiară, asigurându-se că resursele sunt utilizate în mod optim și că obiectivele instituționale sunt atinse

Abordările contemporane legate de controlul managementului veniturilor și cheltuielilor în cadrul instituțiilor tehnice profesionale se concentrează pe eficiența și transparența procesului de gestionare a resurselor financiare. Iată câteva aspecte relevante în acest sens:

1. Implementarea unui sistem de control intern robust: Instituțiile tehnice profesionale ar trebui să aibă în loc un sistem de control intern bine dezvoltat și implementat. Acesta include politici și proceduri clare pentru înregistrarea și monitorizarea veniturilor și cheltuielilor, segregarea responsabilităților și verificarea periodică a tranzacțiilor financiare.

2. Utilizarea tehnologiei și a software-ului specializat: Folosirea unui software de management financiar poate facilita procesul de înregistrare și urmărire a veniturilor și cheltuielilor în cadrul instituțiilor tehnice profesionale. Aceasta poate asigura o mai mare precizie și eficiență în gestionarea resurselor financiare.

3. Monitorizarea și analiza bugetelor: Instituțiile tehnice profesionale ar trebui să aibă în loc un proces de monitorizare și analiză a bugetelor pentru a asigura utilizarea eficientă a resurselor financiare. Aceasta implică compararea regulată a cheltuielilor efective cu bugetul planificat și identificarea oricăror abateri sau variații semnificative.

4. Audituri interne și externe: Instituțiile tehnice profesionale ar trebui să se supună auditurilor interne și externe regulate pentru a verifica și valida procesele de control al veniturilor și cheltuielilor. Aceasta asigură transparența și corectitudinea informațiilor financiare.

5. Educație și formare a personalului: Este important ca personalul responsabil de gestionarea veniturilor și cheltuielilor să fie bine instruit și să aibă cunoștințe solide în domeniul financiar-contabil. Instituțiile tehnice profesionale

ar trebui să ofere oportunități de formare și dezvoltare profesională pentru a asigura competențele necesare în gestionarea eficientă a resurselor financiare.

Prezentăm mai jos condițiile (preliminare) pentru realizarea și aplicarea răspunderii manageriale, cuprind următoarele măsuri și activități:

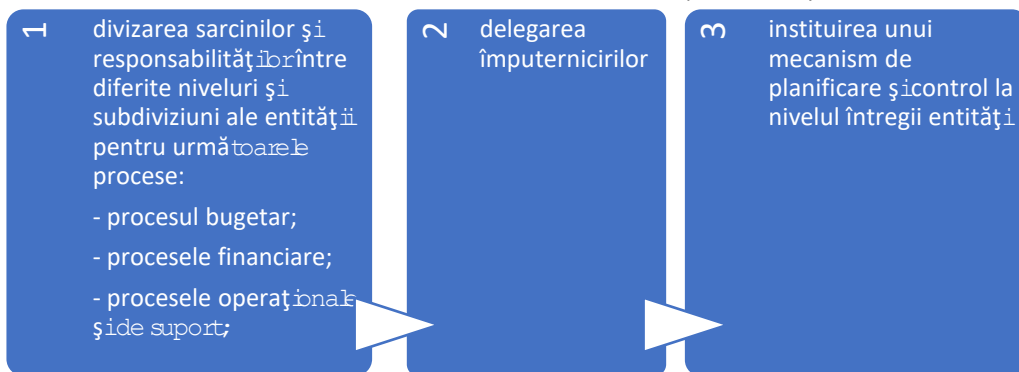


Figura 2. Condițiile (preliminare) pentru realizarea și aplicarea răspunderii manageriale

Source: Elaborată de autor

Aceste abordări contemporane contribuie la o mai bună gestionare a veniturilor și cheltuielilor în cadrul instituțiilor tehnice profesionale, asigurând transparența, eficiența și responsabilitatea financiară.

Există mai multe metode de implementare a controlului de gestiune într-o organizație. Iată câteva dintre cele mai comune:

1. Stabilirea obiectivelor și indicatorilor de performanță: Implementarea controlului de gestiune începe prin stabilirea obiectivelor organizației și a indicatorilor de performanță relevanți. Aceștia pot fi exprimați în termeni financiari (de exemplu, venituri, costuri, profitabilitate) sau non-financiari (de exemplu, satisfacția clienților, timpul de livrare, calitatea produselor). Acești indicatori vor servi ca bază pentru monitorizarea și evaluarea performanței organizației.

2. Planificarea și bugetarea: O altă metodă importantă de implementare a controlului de gestiune este planificarea și bugetarea. Aceasta implică stabilirea unui plan strategic și a unui buget anual, în care sunt detaliate obiectivele, activitățile și resursele necesare pentru atingerea acestora. Planificarea și bugetarea permit o monitorizare mai eficientă a cheltuielilor și veniturilor, precum și o evaluare a devierilor față de planuri și bugete.

3. Monitorizarea și raportarea: Un aspect esențial al controlului de gestiune este monitorizarea și raportarea regulată a performanței organizației. Aceasta implică colectarea datelor relevante, măsurarea indicatorilor de performanță și compararea rezultatelor obținute cu obiectivele și planurile stabilite. Rapoartele periodice și analizele de performanță vor furniza informații

esențiale pentru luarea deciziilor și identificarea eventualelor probleme sau oportunități.

4. Analiza costurilor și eficienței: Controlul de gestiune poate implica și analiza costurilor și eficienței în cadrul organizației. Aceasta presupune identificarea și evaluarea costurilor asociate cu diferitele activități și procese, identificarea surselor de ineficiență și dezvoltarea de strategii pentru reducerea costurilor și îmbunătățirea eficienței operaționale.

5. Sisteme de control intern: Implementarea controlului de gestiune implică, de asemenea, dezvoltarea și implementarea unor sisteme de control intern eficiente. Acestea includ politici și proceduri clare, segregarea responsabilităților, mecanisme de aprobare și monitorizare, precum și evaluarea periodică a eficacității controalelor interne existente.

6. Perfecționarea continuă: Controlul de gestiune trebuie să fie un proces continuu și dinamic, adaptat la schimbările din mediul de afaceri și la noile cerințe și oportunități. Perfecționarea continuă implică revizuirea și actualizarea regulată a obiectivelor, indicatorilor de performanță și a sistemelor și proceselor de control.

Acestea sunt doar câteva dintre metodele de implementare a controlului de gestiune. Fiecare organizație poate adopta și adapta aceste metode în funcție de specificul său și de obiectivele pe care le are.

3.3. Raportul managerial intern

Un raport managerial intern în Republica Moldova (RM) este un document care oferă informații relevante și detaliate despre performanța și activitățile unei organizații în cadrul RM. Acest raport este utilizat de către conducerea organizației pentru a lua decizii informate și pentru a monitoriza și evalua performanța organizației.

Controlul Financiar Public Intern (CFPI) este un sistem care implică o serie de activități și proceduri menite să asigure utilizarea eficientă, legală și transparentă a fondurilor publice în cadrul instituțiilor publice. Acest sistem are ca scop prevenirea și detectarea erorilor, fraudelor, abuzurilor și neregulilor în gestionarea resurselor financiare publice.

Iată câteva aspecte importante ale CFPI:

1. Planificarea și organizarea: CFPI implică planificarea și organizarea activităților de control financiar intern în cadrul instituțiilor publice. Aceasta include stabilirea obiectivelor, a responsabilităților și a procedurilor specifice pentru controlul financiar.

2. Evaluarea și monitorizarea riscurilor: CFPI implică evaluarea și monitorizarea riscurilor asociate cu gestionarea fondurilor publice. Aceasta include identificarea și evaluarea riscurilor financiare, operaționale și de

conformitate, precum și dezvoltarea de strategii și controale interne pentru a le gestiona eficient.

3. Verificarea legalității și regularității: CFPI asigură verificarea legalității și regularității operațiunilor financiare și contabile efectuate în cadrul instituțiilor publice. Acest lucru implică verificarea respectării legilor, regulamentelor și procedurilor aplicabile în gestionarea fondurilor publice.

4. Verificarea eficienței și eficacității: CFPI include și verificarea eficienței și eficacității utilizării fondurilor publice. Aceasta implică evaluarea performanței instituțiilor publice în atingerea obiectivelor stabilite și identificarea eventualelor deficiențe sau ineficiențe în gestionarea resurselor financiare.

5. Raportarea și recomandările: CFPI presupune elaborarea de rapoarte periodice și recomandări privind rezultatele controlului financiar intern. Aceste rapoarte și recomandări sunt adresate conducerii instituțiilor publice și pot include identificarea deficiențelor și neregulilor, precum și propuneri pentru îmbunătățirea proceselor și a controlului financiar intern.

6. Auditul intern: CFPI poate implica și auditul intern, care este o activitate independentă și obiectivă de evaluare a controlului financiar intern și a proceselor de gestionare financiară în cadrul instituțiilor publice. Auditul intern are rolul de a identifica deficiențe și riscuri și de a furniza recomandări pentru îmbunătățirea controlului financiar.

Prin implementarea unui sistem de Control Financiar Public Intern (CFPI), instituțiile publice pot asigura o gestionare eficientă, transparentă și responsabilă a fondurilor publice, contribuind la buna guvernare și la încrederea cetățenilor în administrația publică.

Iată câteva aspecte importante de luat în considerare într-un raport managerial intern:

1. Structura raportului: Raportul managerial intern poate avea o structură variată, dar de obicei include următoarele secțiuni:

a) Sumar executiv: O prezentare concisă a principalelor concluzii și recomandări ale raportului.

b) Contextul organizației: O descriere a organizației, a misiunii, viziunii și valorilor sale, precum și a mediului extern și intern în care operează.

c) Obiectivele și indicatorii de performanță: Prezentarea obiectivelor organizației și a indicatorilor de performanță relevanți, care vor fi utilizați pentru a evalua succesul organizației.

d) Performanța organizației: Detalii despre performanța organizației în raport cu obiectivele și indicatorii de performanță, inclusiv informații financiare, operaționale și non-financiare.

e) Analiza SWOT: O evaluare a punctelor forte, a punctelor slabe, a oportunităților și a amenințărilor organizației, pentru a identifica aspectele care pot influența performanța.

f) Planuri de acțiune: Propuneri de acțiuni și strategii pentru îmbunătățirea performanței organizației și pentru abordarea aspectelor identificate în analiza SWOT.

g) Monitorizare și evaluare: O prezentare a mecanismelor și proceselor utilizate pentru monitorizarea și evaluarea performanței organizației, precum și a rezultatelor obținute în urma acestora.

2. Date financiare și operaționale: Raportul managerial intern ar trebui să includă informații financiare și operaționale relevante. Acestea pot include, de exemplu, rapoarte financiare, analize de costuri, rapoarte de vânzări, rapoarte de producție și alte date specifice domeniului de activitate al organizației.

3. Indicatori de performanță cheie (KPI-uri): Utilizarea indicatorilor de performanță cheie este importantă într-un raport managerial intern. Acești indicatori ar trebui să fie relevanți pentru obiectivele organizației și să ofere informații clare despre performanță. Aceștia pot fi exprimați în termeni financiari (de exemplu, venituri, profitabilitate, costuri) și non-financiari (de exemplu, satisfacția clienților, productivitatea angajaților).

4. Analiza comparației: Raportul managerial intern poate include și analiza comparației cu perioade anterioare, cu bugetele stabilite sau cu concurenții din industrie. Aceasta oferă o perspectivă asupra evoluției performanței organizației și poate evidenția tendințe și aspecte care necesită atenție suplimentară.

5. Recomandări și concluzii: Raportul managerial intern ar trebui să includă recomandări și concluzii clare și relevante pentru conducerea organizației. Acestea pot fi legate de îmbunătățirea performanței, de identificarea oportunității.

4. Concluzii

Evaluarea și raportarea în ceea ce privește Contractul Individual de Management (CIM) și emiterea Declarației de Răspundere Managerială sunt procese importante în cadrul unei entități publice. Acestea asigură transparența și responsabilitatea în gestionarea fondurilor și resurselor publice. Raportul anual privind CIM reprezintă documentul prin care se prezintă rezultatele evaluării și se raportează asupra performanței manageriale în cadrul entității publice.

Iată câteva aspecte importante de luat în considerare în evaluarea și raportarea CIM și emiterea Declarației de Răspundere Managerială:

- Evaluarea performanței manageriale: Procesul de evaluare a performanței manageriale implică analizarea rezultatelor obținute de către managerul entității publice în atingerea obiectivelor și indicatorilor de performanță stabiliți în CIM. Aceasta poate include evaluarea rezultatelor financiare, operaționale și non-financiare, în funcție de specificul activității organizației.

- Monitorizarea și colectarea datelor: Pentru a realiza evaluarea performanței manageriale, este necesară monitorizarea și colectarea datelor relevante. Aceasta poate implica utilizarea indicatorilor de performanță stabiliți în CIM, analiza rapoartelor financiare și operaționale, colectarea feedback-ului de la angajați și clienți, etc.

- Raportul anual privind CIM: Raportul anual privind CIM este documentul prin care se prezintă rezultatele evaluării performanței manageriale și se raportează asupra acestora. Acest raport ar trebui să includă informații privind obiectivele și indicatorii de performanță, rezultatele obținute, analiza performanței, concluzii și recomandări.

- Declarația de Răspundere Managerială: Emiterea Declarației de Răspundere Managerială este un pas important în procesul de evaluare și raportare. Aceasta reprezintă o declarație oficială a managerului entității publice prin care acesta își asumă responsabilitatea pentru rezultatele obținute și pentru gestionarea eficientă și legală a fondurilor și resurselor publice.

- Transparența și comunicarea: Evaluarea și raportarea CIM trebuie să se facă într-un mod transparent și să fie comunicate către toate părțile interesate. Acest lucru poate implica publicarea raportului anual privind CIM pe site-ul entității publice sau prezentarea acestuia în cadrul unor întâlniri publice.

- Îmbunătățirea continuă: Evaluarea și raportarea CIM trebuie să fie un proces continuu și dinamic, care să permită identificarea punctelor forte și a aspectelor care necesită îmbunătățiri. Rezultatele evaluării și raportării ar trebui să fie utilizate pentru a dezvolta planuri de acțiune și strategii pentru îmbunătățirea performanței manageriale și a gestionării fondurilor și resurselor publice.

Prin evaluarea și raportarea adecvată a CIM și emiterea Declarației de Răspundere Managerială, entitățile publice pot asigura o gestionare eficientă și responsabilă a resurselor publice și pot contribui la creșterea transparenței și încrederii în administrația publică.

Iată câteva recomandări pentru îmbunătățirea raportului anual privind CIM și a procesului de evaluare și raportare a performanței manageriale în cadrul entităților publice:

1. Claritate și concizie: Asigurați-vă că raportul anual privind CIM este clar și concis, astfel încât să fie ușor de înțeles pentru toate părțile interesate. Evitați utilizarea unui limbaj tehnic sau jargon specific, și folosiți termeni accesibili și explicativi.

2. Prezentarea obiectivelor și indicatorilor de performanță: Asigurați-vă că raportul anual include o prezentare clară a obiectivelor stabilite în CIM și a indicatorilor de performanță utilizați pentru a măsura succesul. Explicați modul în care acești indicatori sunt calculați și cum sunt utilizate pentru a evalua performanța.

3. Analiza performanței: Realizați o analiză detaliată a performanței manageriale pe baza rezultatelor obținute. Identificați atât punctele forte, cât și cele care necesită îmbunătățiri, și oferiți explicații și context pentru aceste rezultate. Utilizați grafice, tabele și alte forme vizuale pentru a facilita înțelegerea și interpretarea datelor.

4. Relevanța și valoarea adăugată: Asigurați-vă că raportul anual aduce o valoare adăugată și este relevant pentru toate părțile interesate. Includeți informații și analize care sunt de interes pentru angajați, clienți, parteneri și alte entități publice. Personalizați raportul pentru publicul țintă și necesitățile acestuia.

5. Recomandări și planuri de acțiune: În raportul anual, oferiți recomandări specifice și planuri de acțiune pentru îmbunătățirea performanței manageriale și a gestionării fondurilor și resurselor publice. Aceste recomandări ar trebui să fie fezabile, măsurabile și relevante pentru obiectivele stabilite.

6. Transparență și accesibilitate: Asigurați-vă că raportul anual privind CIM este accesibil și transparent pentru toate părțile interesate. Publicați raportul pe site-ul entității publice și asigurați-vă că este ușor de găsit și de citit. Asigurați-vă că raportul este disponibil și în format fizic, dacă este necesar.

7. Îmbunătățirea continuă: Utilizați rezultatele evaluării și raportării pentru a dezvolta planuri de acțiune și strategii de îmbunătățire continuă a performanței manageriale. Reevaluați și revizuiți raportul anual în funcție de feedback-ul primit și de schimbările contextuale.

Prin aplicarea acestor recomandări, entitățile publice pot realiza rapoarte anuale privind CIM mai eficiente și mai valoroase, care să contribuie la o mai bună gestionare a fondurilor și resurselor publice și la creșterea încrederii în administrația publică.

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ENTREPRENEURIAL BEHAVIOR IN THE HEALTH TOURISM MARKET

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Abstract: *The health tourism market includes economic sectors with different objects of activity that aim to obtain profit by increasing the number of visitors, turning them into customers, using modern marketing tools, and being one step ahead of the competition. Thus, we encounter sedentary, adaptable, or in-trend behaviors of entrepreneurs who contribute directly or indirectly through their actions to the development of medical, wellness, and SPA tourism.*

This study is a descriptive analysis of entrepreneurial behaviors, to present the bond between digitalization, researcher activity, sustainability, and the future of the health tourism market. The health tourism market divides players into several segments: those who provide medical services, wellness services, and SPA services, who organize the connection between the customer and the consumption of the tourist product, those who provide related services (accommodation, transport, tourist assistance, health insurance, leisure services). Their presence must be constant, interested in their power and positioning in the chain of producer and consumer.

Tourism is one of the markets with fabulous growth in the last decade, with an impact on modern civilization after the pandemic. The post-pandemic period has generated a new entrepreneurial vision of the tourism product, on the presentation, promotion strategy, and sales policy to the customer, as well as the possibility of transforming the customer into a consumer. The use of modern marketing tools such as artificial intelligence, and virtual reality have created opportunities to bring to the market new tourist destinations, new medical services, and new distribution channels of tourist product, all as a result of marketing research that provides results on the needs and expectations of the final consumer, as well as how important it is to adapt organizations to these needs.

The company's answer to consumer demand depends on external factors: war, pandemics, natural disasters, and legislative changes. These uncontrollable factors determine a new adaptation of companies to the needs that arise among the consumers, which will cost them positioning on the market. Human resources, as an internal factor, are the key to the relationship between the consumer and the producer of the tourist service. The market trends push companies to use digital marketing strategy, direct marketing, and state-of-the-art technologies, hoping to reduce the waiting time for the customer and create the tourist product at an optimal price. New trends determine a blend of creation and imagination with technological and economical possibilities, for new tourist services and products. Such is how new market niches have developed new market niches, such as elderly tourism, thermal tourism, water tourism or wave tourism, tourism for people with disabilities, and nutritional tourism. Unlike leisure tourists, they want to meet their

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specific needs during the holiday. Also, entrepreneurs, depending on their quality in the tourist process, customize their tourist products or services according to customer behaviour. Adapting entrepreneurial behaviour to new trends is necessary to cope with the environment. The reported problems, as well as global warming, water pollution, melting glaciers, increasing the immunity of the human body to antibiotics, and decreasing international safety, determine the adaptation of organizational behaviour towards sustainability, digitization, and empathy, as well as the personalization of the tourism product or service.

Keywords: *health tourism, wellness, welfare, hotel, artificial intelligence*

JEL: I11, I12, I18, L83

1. Introduction

Entrepreneurial behaviour is a form of company presentation for customers. As consumer behaviour, every company decides and actions to identify and exploit business opportunities. It is a way for companies to present themselves to customers. Like consumer behaviour, every company understands to show certain qualities and characteristics to attract and retain customers. The origin of entrepreneurial behaviour discusses risks, innovations, and characteristics to gain market. The researcher's work has found a great diversity of values between entrepreneurs. To describe the entrepreneur profile, researchers explain how it develops over time.

The behavior is determined by internal and external factors, the personal skills of the leader, and by position of the entrepreneur in the industry. Entrepreneurs create management forms and transform cities, regions, or countries in tourism destinations as tourism products in the health field: Turkey, India, Mexico, Thailand, Costa Rica, Singapore, Brazil, Malaysia, Israel, UAE.



Figure 1. Top 10 countries for medical tourism in the world.
 Source: irandecordesign.blogspot.com, 2021

Wellness Economy by Region, 2017, 2019, 2020

	Wellness Economy				Average Annual Growth Rate	
	US\$ billions			Per Capita 2020	2017-2019	2019-2020
	2017*	2019	2020			
Asia-Pacific	\$1,370.5	\$1,602.8	\$1,500.2	\$360	8.1%	-6.4%
North America	\$1,288.1	\$1,514.0	\$1,310.8	\$3,567	8.4%	-13.4%
Europe	\$1,168.3	\$1,288.6	\$1,141.5	\$1,236	5.0%	-11.4%
Latin America-Caribbean	\$311.7	\$302.1	\$235.4	\$360	-1.5%	-22.1%
Middle East-North Africa	\$104.7	\$120.9	\$107.7	\$215	7.4%	-10.9%
Sub-Saharan Africa	\$74.0	\$81.7	\$73.7	\$65	5.1%	-9.8%
WORLD	\$4,317.3	\$4,909.9	\$4,369.3	\$563	6.6%	-11.0%

*2017 figures have been revised since GWI released the previous version of the Wellness Economy Monitor. Note: Figures may not sum to total due to rounding. Source: Global Wellness Institute, based on extensive primary research and secondary data sources for 218 countries.



Figure 2. Wellness Economy by Region 2017, 2019, 2020
 Source: Global Wellness Institute

In Figure 2. We see again how entrepreneurs transform natural factors of the region with highly specialized education, and fully equipped technology, with national support by the government, in health tourism products represented by

regions and destinations, and this economy is growing year by year (leader for wellness services in Asia Pacific region, and at the end Sub-Sahara Africa).

2. Entrepreneurial behaviour. Characteristics and types

The way the entrepreneur behaves or evaluates to seize opportunities, innovate, add value, and address issues is known as entrepreneurial behaviour. According to the entrepreneur's resources, goals, and situation, there are several types of entrepreneurial behavior, such as entrepreneurial strategy and efficient entrepreneurship. Listed below are some elements of entrepreneurial behaviour that are typical:

- * The capacity to come up with original and practical ideas or solutions for current or upcoming issues or needs.

- * Innovation: The capacity to put into practice or carry out original suggestions or solutions realistically and efficiently.

- * Recognition of opportunities: The capacity to spot and assess market gaps or demands that can be filled by a new or improved good or service.

- * Risk-taking: The readiness to accept doubt as well as potential failure in the pursuit of an objective.

- * The capacity for innovation and anticipating change is opposed to reacting to it.

- * The ability to overcome limitations and shortcomings and push on with the task at hand in the face despite hardships or setbacks.

- * Vision: a capacity to imagine and present an attractive prospective state for oneself or one's endeavor.

- * Leadership is the capacity to influence and motivate individuals to succeed in a common objective or vision.

Entrepreneurial behaviour serves as essential for owners of enterprises because it provides them an opportunity to create assets, add value, and encourage the growth of society and the economy. Because it encourages creativity, inclusion, competition, and growth, entrepreneurship is also key to society. It's also critical to remember that not all entrepreneurship is effective. Though it may be simple to assume that an industry by design encourages economic growth, there are many instances to the contrary.

An entrepreneur who succeeds will use his concept to expand the market, yet there are lots of merchants who just move wealth that already exists. That kind of entrepreneurship is also referred to as pointless entrepreneurship and is often seen in the financial and legal sectors.

2.1. Behaviour of medical entrepreneurs for tourists

Some behaviors of entrepreneurs in the health tourism market are:

* they offer medical services for tourists who are interested in dental treatments, surgery procedures, cosmetic surgeries, fertility treatments, cancer therapies, rehabilitation after surgeries, rehabilitation after Covid, well-being procedures, neurological surgeries;

* they are interested in creating partnerships with local and international providers to provide qualified services for tourists from different countries according to their cultures, attendings, and behaviours. They are interested in creating partnerships with research departments to be approached by customers and transform them into their consumer's tourism products.

* they use digital marketing strategies to inform potential customers about their existence and send them the correct and actual information by e-mail, phone, website, and video presentations. Direct marketing is the usual strategy to approach the patient and to gain another one in the future by a "month to month" model. The testimonials on the website and available information in a national tourist language are an opportunity for a provider.

* they arrange some travel packages to offer accommodation possibilities, and flight schedules according to gain time for patients, local transfers from and to the airport, insurance and obtain visas for them.

* they offer true and all-needed information about the diagnosis and possibilities of treatments via online meetings with patients before meeting them physically. Sometimes, they ask for additional analyses or investigations to send them CDs or imagistic digital information.

* they offer tourism products and services for patients and their families to show or present the tourist attractions of the destination, cultural programs, and ethical rules of the destination country.

* they seriously are interested in client feedback and ask for reviews about customer experience. The results are used for statistical analyses to improve the activity and get a high score of reputation in online and social media channels.

* some providers are focused on patient's prior current and post-consumer medical travel experience. International Hospitals offer legal and true information to customers in the promised time by specifically tourism departments who are interested in transforming the visitors of the website into real consumers, not just customers.

* medical tourism entrepreneurs create unique tourism products helped by travel agencies, image providers, and governments as a national strategy sustainable by national programs.

2.2 Behaviour of wellness and SPA entrepreneurs for Tourists

* they offer a global tourism product with a complete program for customers: accommodation, food, local transportation, flight schedule, and touristic assistance.

* they offer safety and legal information about visas, to inform tourists about their rights and requirements before traveling.

* they inform tourists about all services including tourism package offers and what are extra services and payment agreements, information available earlier than tourists are interested in on the website, online travel platform, and travel brochures; information that is analyzed by influencers in social media.

* they are interested in gaining the customer for the second and third time, and every time respond to their needs quickly and before the tourist asks for something.

* This type of entrepreneur is thinking today for one year ahead, and the company's goals are most important based on travel market needs for today and for the future. Travel experience is a strategic priority for entrepreneurs. Customers come to evaluate the travel experience by traveling, accommodation, wellness services, food services, the culture of the destination, human capital, and price paid for all tourism products.

* some entrepreneurs gain the health market by the newest promoting strategies such as virtual reality, artificial intelligence, and metaverse technology.

3. Entrepreneurship and innovation

In current conditions of digitalization, sustainability of the environment, entrepreneurship, and innovation are trends in the health tourism market. The activity of one entrepreneur does not exist individually. The profit of the company is encouraged by entrepreneurship and leadership in innovation and quality of health services. An important trait of an entrepreneur is the ability to obtain new sustainable tourism products available for interested customers who are ready to pay for them. Innovation is a driver of the company's activity. Entrepreneurs are looking to develop an idea in reality and in a real business to gain profit and success in the trade market. Enterprises are working together to provide a tourism package offer, and this type of collaboration is supervised by researchers' reports or analyses, transforming interdependent market actors. The creation of entrepreneurship supplied by innovation is the best way to be in trend with tourists' needs, a phenomenon named entrepreneurial ecosystem interested by academics, policymakers, and business participants.⁵⁵

The entrepreneurial ecosystem created resources for developing a tourism destination as a tourism product, generating factors for innovating new services or products and being competitive with others. The ecological branch of the entrepreneurial ecosystem offers entrepreneurship to approach on local economic strategy of the environment.

⁵⁵IANI OGLO, A. (2022). Innovation and Entrepreneurial Ecosystems, In book: Research and Development Enterprise.

The actors of the entrepreneurial ecosystem are entrepreneurs, service providers, marketing agencies, local authorities, social and governmental organizations, investors, and media agencies. Every contribution starts with goals to respond to consumers' needs, and each ecosystem has its individual structure. Each ecosystem is growing individually and has some steps of maturity. Technology is the main resource of innovation and products of innovation become profit and success on the market.

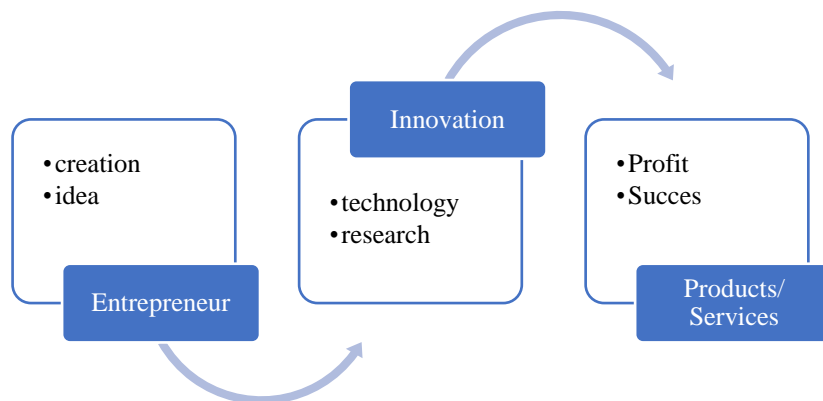


Figure 3. Steps of the innovation ecosystem to market products
Source: own elaboration.

4. Elements of Entrepreneurial Behaviour

Entrepreneurial behaviour has four elements:

* self-evaluation of activity: every entrepreneur analyses his activity to understand and know how competitive he is and what is his position in the market

* principles and values of entrepreneurial culture: each activity starts with a goal established by principles and local values. Sometimes, tourism products and services should respond to principles and international values according to the international tourists, and customers for their activity.

* risk in daily activity: the idea is implemented with innovative technology taking risks of success and gaining the market size.

* technology backup: health tourism products or services are presented in the market for consumers according to trends and innovative technology. Today's tourism destination is the same by name, but its presentation is in the newest form to attract customers and wake up interest for new guests.

Health tourism is a risk-plenty market. Each part of the ecosystem has its own contribution to implementing ideas according to cultural values locally and internationally. The behaviour of an entrepreneur is people's behaviour and human resources, and the manifestation depends on internal and external factors:

social and economic environment, local budget accorded by authorities for the sustainability of investments, buying power of the population, types of products selling on the different international market, using methods for promoting health tourism products, how actual and interest manifestation of the population about the one of newest health tourism product, service, technology appears.

Sometimes a health tourism product or a health tourism destination becomes an international product if it is certified by International Organisations with certificates and graduated specialized human resources. This is an important task for those who are choosing to travel to obtain a better health experience in another country than their home country. This certificate accords guarantees to customers and presents safety and completely open-minded behavior from the entrepreneur.



Figure 4. Why become QSF certified?
Source: <https://www.tecquality.org.uk/case-studies>

Health tourism entrepreneurs create opportunities for innovation and the creation of tourism products. The personalization of products by individuals is expected after pushing on the market a qualified, effective, and strongly verified

product by the business community. Post-consumer performance and management are parts of the success of tourism products in the present and in the future.

5. Gender of health tourism entrepreneurship

Making decisions about what type of products can become leaders in the market, what kind of marketing strategies should be applied in business, and when a problem becomes an opportunity are the same questions for women and men but not with the same answer. In Figure 3. *The countries with the most female inventors*, we can mention that Togo is the leader for female inventors at 57.14%, and the last one is the United Kingdom at 9.44%.

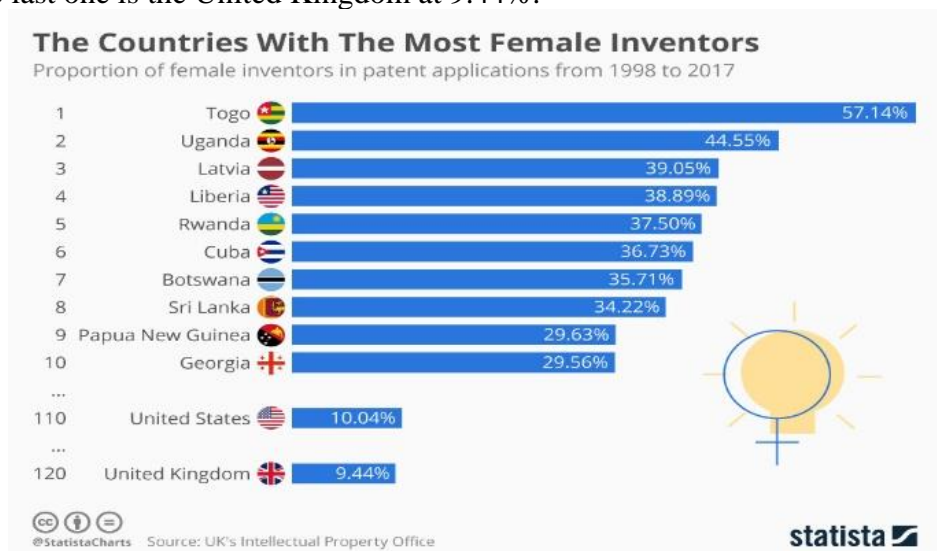


Figure 5. *The countries with the most female Inventors.*

Source: Statista

In the health tourism market, the entrepreneur has a different vision of the tourism product as a generic entrepreneur: providing mostly intangible offers, having a fully specialized service offer, generating a correct price of the product according to seasonality, generating the correct attitude to human resources with a high score of challenging job occupancy, get legal requirements for implementing new tourism products on the international market. The tourism field is a very complex economic field, with women and men entrepreneurs who can make reasonable decisions.

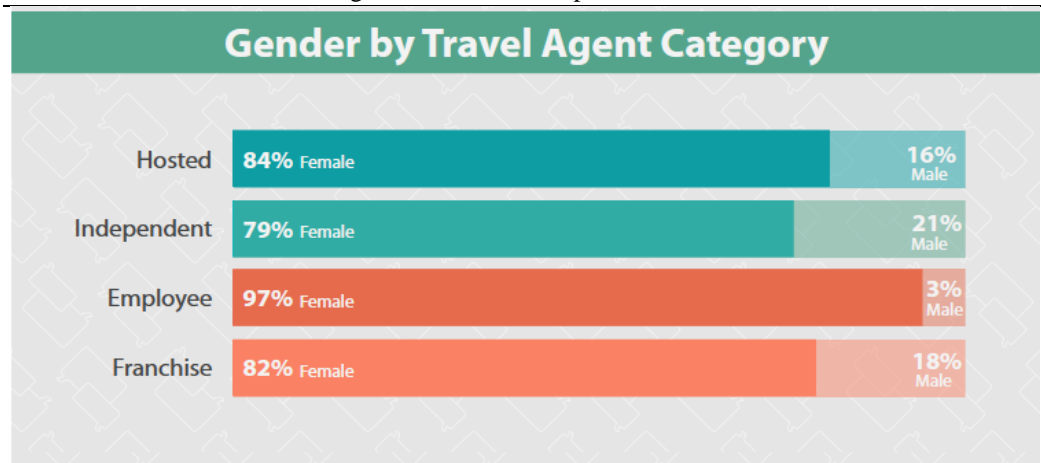


Figure 6. Gender by travel agent category
 Source: 2020 Travel Agent Income Report, Part 3

Figure 6. shows that the high percentage for anyone travel agent category is for women, and hosted travel agents are the highest at 84%.



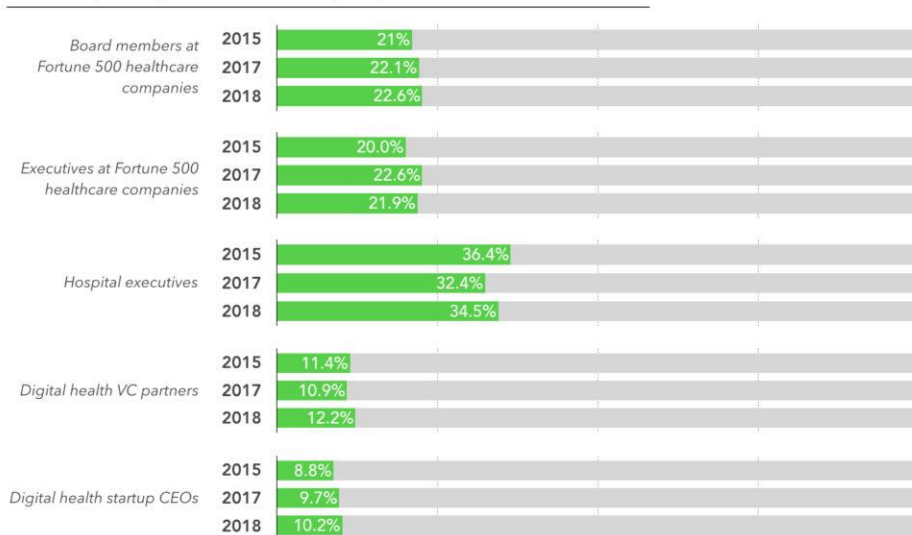
Figure 6. Gender equality in the 2030 agenda for sustainable development

Source: World Economic Forum

Gender equality become an SDG goal for the World Economic Forum by 2030. This is a way to show that women and men have the same potential

resources and skills to become entrepreneurs in the tourism ecosystem. Health tourism is disturbed by this inequality where patients are waiting for empathy, customers for individual or personalized services, and consumers for friendly products with the environment.

THE PERCENT OF WOMEN IN HEALTHCARE LEADERSHIP IS GROWING, ALBEIT SLOWLY
 Women as a percentage of each of the following categories in 2015, 2017, and 2018



Source: Fortune 500 List, Rock Health Funding Database, company websites

Figure 7. The percent of women in healthcare leadership, 2015, 2017, 2018

Source: statnews.com

More women have executive functions, 34.5% in 2018 and less percentage is according to CEOs Digital health startup, about 10.2%. Healthcare leadership announces slowly growing women percentage, year by year.

6. Conclusions

Entrepreneurial behavior is showing the face of a leader influenced by internal and external factors creating tourism products in an innovation ecosystem according to consumer needs. Organizational behavior can be individual or developed in bond with other key players on the market. Tourism products are a complex process developed in the innovation ecosystem. Success and profitability in the health tourism market depend on marketing strategies, marketing instruments, goals intended by entrepreneurs, and the interested market for a new type of product or service.

International Trade asks globally for equality of gender as a sustainable way for a better tomorrow's life. New trends and technology serve as instruments

to approach on needs of consumers and gain new customers, develop new products, and discover new tourism destinations in a short time.

Leadership, open innovation, and open-minded positions can increase entrepreneurial possibilities to educate human resources in organizations and transform visitors into consumers quickly.

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GLOBAL INVESTMENT POLICIES IN THE CONTEXT OF THE COVID-19 PANDEMIC: PROSPECTS AND OBSTACLES

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Abstract: *This paper examines the impact of the COVID-19 pandemic on investment policies in developed countries and the long-term implications of these policies. The pandemic has created both challenges and opportunities for investors in different sectors, with the healthcare and technology sectors being the most attractive for investment in many countries. International cooperation has also been highlighted as a critical factor in economic recovery and growth, with the G20 and APEC playing significant roles. However, in the long term, the pandemic is likely to have lasting effects on consumer behavior and how companies operate, which could impact investment strategies in the years to come. This paper concludes with recommendations for developing countries to attract and benefit from foreign investment in a post-pandemic world.*

Key words: *investment policy, COVID-19, economic recovery, global cooperation*

JEL: G11, G18, F62

1. Introduction

Body Over the past two decades, developed countries have increasingly used free trade agreements (FTAs) and bilateral investment treaties (BITs) to promote investment flows and support economic growth (UNCTAD, 2020c). These policies aim to reduce trade barriers and provide legal protections for foreign investors (UNCTAD, 2020c). Developed countries have also implemented sector-specific policies, such as research and development, renewable energy, and advanced manufacturing (OECD, 2018).

The COVID-19 pandemic has had a significant impact on the global economy and investment policies in developed countries (IMF, 2020b). The pandemic has created opportunities for investment in some sectors, such as technology and healthcare, while posing challenges for others, such as energy and tourism (UNCTAD, 2020c). The pandemic may also have long-term implications for investment strategies, as changes in consumer behavior and business operations could impact the types of investments in demand (Deloitte, 2020).

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In the United States, the pandemic has led to increased government spending on infrastructure and technology, while also highlighting the importance of domestic manufacturing and supply chains (Deng, Xu, & Lee, 2022). The United Kingdom has implemented policies to support the healthcare industry and has emphasized the need for sustainability in investment decisions (EY, 2020b). In Germany, the pandemic has accelerated the transition to renewable energy and highlighted the importance of digitalization (Deloitte, 2020). In Japan, the pandemic has led to increased government spending on healthcare and technology, while also highlighting the need for supply chain diversification (PwC, 2020).

International cooperation among developed countries has played a crucial role in mitigating the impact of the pandemic on the global economy (IMF, 2020b). Examples of such cooperation include joint efforts to develop and distribute vaccines, as well as support for developing countries through the provision of financial assistance and debt relief (IMF, 2020b).

In light of the experiences of developed countries during the pandemic, developing countries may consider implementing policies to attract investment in sectors with growth potential, such as technology and healthcare, while also prioritizing sustainability and diversification of supply chains (UNCTAD, 2020c).

2. Changes in Investment Policy

Many developed countries have adjusted their investment policies in response to the COVID-19 pandemic (IMF, 2020b). Some countries have increased government spending and implemented fiscal stimulus measures to support businesses and individuals impacted by the pandemic, while others have shifted their investment strategies to focus on healthcare, technology, or other sectors that have become more important in the pandemic era (Deloitte, 2020).

In the United States, President Trump signed the Coronavirus Aid, Relief, and Economic Security (CARES) Act into law on March 27, 2020, which was a \$2 trillion economic stimulus package to support individuals and businesses impacted by the pandemic (Congress.gov, 2020). The Act included several key provisions, such as direct payments to individuals, expanded unemployment benefits, forgivable loans to small businesses, and relief for larger businesses (Congress.gov, 2020).

The Federal Reserve also implemented various measures to support the economy during the pandemic, including cutting interest rates to near zero and launching lending programs to support businesses and financial markets (Federal Reserve, 2020a). These programs included the Main Street Lending Program for small and medium-sized businesses and the Municipal Liquidity Facility for state and local governments (Federal Reserve, 2020a).

Overall, the US government and Federal Reserve implemented various measures to support the economy and individuals impacted by the pandemic, including direct payments, expanded unemployment benefits, forgivable loans, and other forms of economic stimulus. The Federal Reserve also implemented measures to support businesses and financial markets, including cutting interest rates and launching lending programs.

In March 2020, the UK government implemented several fiscal stimulus measures to mitigate the COVID-19 pandemic's economic impact (EY, 2020c). These measures included providing grants to small businesses, funding the National Health Service (NHS), and supporting workers impacted by the pandemic.

One of the critical measures implemented by the UK government was the Coronavirus Job Retention Scheme, which allowed employers to furlough their employees and receive government support to cover a portion of their wages (EY, 2020c). The scheme was initially set to run until the end of June 2020 but was later extended several times.

The UK government also implemented several other measures to support businesses, including providing grants of up to £10,000 for small businesses, launching several loan schemes, and providing additional funding to the NHS to help it respond to the pandemic (EY, 2020c). The loan schemes included the Bounce Back Loan Scheme for small businesses and the Coronavirus Business Interruption Loan Scheme for larger businesses (EY, 2020c).

Overall, the UK government implemented various fiscal stimulus measures to support businesses and workers impacted by the COVID-19 pandemic, which were designed to mitigate the economic impact of the pandemic and support the UK's recovery from the crisis.

In March 2020, the German government implemented various measures to support businesses impacted by the COVID-19 pandemic (Deloitte, 2020). These measures included providing loans and grants to small businesses and increasing funding for research and development in healthcare and biotechnology.

The German government also launched a stimulus package aimed at supporting economic growth, which included a reduction of the value-added tax (VAT) rate from 19% to 16% for six months to encourage consumer spending and stimulate the economy (Deloitte, 2020). The package also provided additional funding for infrastructure projects and increased funding for research and development in healthcare and biotechnology to support the development of treatments and vaccines for COVID-19 and other diseases (Deloitte, 2020).

The German government also supported workers impacted by the pandemic by implementing a short-time work program that allowed employers to reduce working hours and receive government support to cover a portion of their employee's wages (Deloitte, 2020).

Overall, the German government implemented various measures to support businesses, workers, and economic growth during the COVID-19 pandemic. These measures included loans and grants for small businesses, research and development investments, and a stimulus package that reduced VAT and provided funding for infrastructure projects.

In April 2020, the Japanese government approved a massive stimulus package worth over \$1 trillion to support the economy during the COVID-19 pandemic (BBC News, 2020b). The package included various measures to support businesses, workers, and healthcare providers.

The package included cash payments to individuals, loans, grants to small and medium-sized businesses, and funding for healthcare and research (BBC News, 2020b). The cash payments to individuals were intended to support consumer spending and provide financial assistance to individuals impacted by the pandemic (BBC News, 2020b).

The government also provided loans and grants to small and medium-sized businesses to help them stay afloat during the pandemic (BBC News, 2020b). The package included funding for the Japan Development Bank to support businesses impacted by the pandemic (BBC News, 2020b).

The package also included funding for the development of treatments and vaccines for COVID-19, as well as support for healthcare providers and hospitals dealing with the pandemic (BBC News, 2020b).

In addition to the stimulus package, the Bank of Japan also implemented measures to support the economy during the pandemic, including increasing purchases of government bonds and launching a lending program to support businesses (BBC News, 2020b).

Overall, the Japanese government implemented various measures to support the economy during the COVID-19 pandemic, including cash payments to individuals, loans and grants to businesses, and funding for healthcare and research. The Bank of Japan also implemented measures to support the economy, including increasing purchases of government bonds and launching a lending program to support businesses.

In March 2020, the Canadian government announced a comprehensive package of measures to support businesses and individuals impacted by the COVID-19 pandemic (Government of Canada, 2020b). The package included a range of measures to support the economy, protect jobs, and provide financial assistance to Canadians.

The government implemented the Canada Emergency Wage Subsidy (CEWS), which provides employers with a subsidy to cover a portion of their employee wages, to help businesses keep their employees on payroll and avoid layoffs during the pandemic (Government of Canada, 2020b). The government also expanded the Canada Emergency Response Benefit (CERB), which provided

financial assistance to individuals who lost their jobs due to the pandemic (Government of Canada, 2020).

The government launched the Canada Emergency Business Account (CEBA), which provides interest-free loans of up to \$60,000 to small businesses impacted by the pandemic, to help businesses cover their operating expenses and avoid bankruptcy (Government of Canada, 2020b). Additionally, the government increased funding for healthcare providers and researchers to help fight the pandemic, support the development of treatments and vaccines for COVID-19, and provide additional resources to hospitals and healthcare workers (Government of Canada, 2020b).

Overall, the Canadian government implemented various measures to support businesses and individuals impacted by the pandemic, including wage subsidies for businesses, expanded unemployment benefits, and a loan program for small businesses. The government also increased funding for healthcare and research related to the pandemic. These measures were designed to help protect jobs, support the economy, and provide financial assistance to Canadians during the COVID-19 pandemic.

3. The Impact of Low-Interest Rates

The shift towards riskier investments in the US due to low interest rates has been documented in several studies (Barclays, 2021; Federal Reserve Bank of St. Louis, 2021). This shift has contributed to a surge in the stock market and real estate prices, as investors seek higher returns (Barclays, 2021). However, this has also increased market volatility and created challenges for investors looking to balance risk and return (Federal Reserve Bank of St. Louis, 2021).

In the EU, the shift towards riskier investments due to low or negative yields on traditional fixed-income investments has also been noted in several studies (European Central Bank, 2021; International Monetary Fund, 2021). This shift has created concerns about the stability of the financial system and made it more difficult for conservative investors to generate the returns they need (International Monetary Fund, 2021). At the same time, low-interest rates have benefited borrowers, while savers and retirees have struggled to generate income (European Central Bank, 2021).

The Bank of Japan's low-interest rate policy has prompted Japanese investors to seek higher returns in overseas markets and riskier assets such as stocks and real estate, contributing to the growth of global stock markets and driving up real estate prices in markets like New York and Los Angeles (BBC News, 2021). Additionally, the policy has led Japanese corporations to take on more debt, raising concerns about corporate debt levels and potential defaults if interest rates rise (Reuters, 2019).

The Bank of Canada's lowering of its key interest rate as part of a package of measures to mitigate the pandemic's economic impacts has led investors to seek higher returns elsewhere, prompting a shift towards riskier assets like equities and high-yield corporate bonds (CBC News). This shift has contributed to a surge in stock prices in Canada and an increase in the issuance of corporate bonds at attractive rates (Bloomberg, 2021).

4. Opportunities and Challenges for Investors

The pandemic has created both opportunities and challenges for investors (World Economic Forum, 2020). For example, while some sectors (such as travel and hospitality) have been hit hard by the pandemic, others (such as e-commerce and healthcare) have thrived (McKinsey & Company, 2020). Additionally, the pandemic has created increased volatility in financial markets, which has upsides and downsides for investors (Kenton, 2021).

The pandemic has significantly impacted different sectors in the US, creating both opportunities and challenges for investors. The lockdowns and social distancing measures have led to a surge in demand for technology companies that facilitate remote work, online shopping, and digital entertainment (Barua, 2020). As a result, investors have been looking for opportunities in the tech sector, which has led to a surge in stock prices for companies like Amazon, Apple, and Microsoft.

On the other hand, the pandemic has hit the travel and hospitality industries hard, and investors in those sectors have had to adjust their strategies (Goffman, 2020). For example, many investors in the airline and hotel industries have faced significant losses as demand for travel has plummeted (Sigala, 2020). As a result, some investors have shifted their focus to companies offering alternative travel forms, such as recreational vehicles or private jets (Kramer, 2020). Given the increased demand for medical supplies and treatments during the pandemic, others have turned to investments in healthcare or pharmaceuticals (Baker, Bloom, Davis, & Terry, 2020).

In the United Kingdom, the healthcare sector, particularly companies working on vaccines and treatments for COVID-19, have presented significant opportunities for investors (Gates, 2020). For example, pharmaceutical company AstraZeneca, which developed a vaccine in partnership with the University of Oxford, saw its stock price surge during the pandemic (Reuters, 2020). Similarly, US-based biotechnology company Moderna developed its own vaccine and has seen its stock price increase dramatically (Herper, 2020).

However, the pandemic has also presented challenges for investors in other sectors, such as retail and real estate. The retail industry has been hit hard by the closure of non-essential businesses and social distancing measures (Donthu & Gustafsson, 2020). For example, high-street retailers such as Debenhams and

Topshop have gone into administration, leading to job losses and uncertainty for investors in these companies (BBC News, 2020a). Similarly, the pandemic has impacted the real estate industry, with demand for office space decreasing as more people work from home (Hinks, 2020). This has led to challenges for commercial real estate investors and opportunities for those investing in the residential real estate market as demand for more significant properties with outdoor space increased (Barkham, 2020).

The COVID-19 pandemic has significantly impacted the German economy and presented both opportunities and challenges for investors (OECD, 2020). The renewable energy sector is one opportunity for investors in Germany. As the government has continued to implement policies to reduce the country's carbon footprint and transition to a low-carbon economy, there has been increased investment in companies that produce wind and solar power (Urpelainen, 2022). For example, the German company Siemens Gamesa Renewable Energy saw its stock price rise during the pandemic as demand for renewable energy grew (MarketWatch, 2020).

However, the pandemic has also presented challenges for investors in other sectors, such as automotive and manufacturing. The pandemic led to supply chain disruptions, which significantly impacted the automotive industry (Cooke, 2020). As a result, the production of vehicles and components was halted, and many companies had to adjust their strategies to cope with reduced demand (KPMG, 2020). This also impacted the manufacturing sector, which saw a decline in output due to reduced demand and supply chain disruptions (UNCTAD, 2020a).

In Japan, the pandemic has created both opportunities and challenges for investors (Aoyama, 2020). One of the opportunities that emerged during the pandemic is the growth of the technology and e-commerce sectors as more people work and shop from home (EY, 2020a). As a result, companies that facilitate remote work and online commerce have seen a surge in demand. For example, Rakuten, one of Japan's largest e-commerce companies, has reported a significant increase in sales during the pandemic (Rakuten, 2020).

Another area that has seen growth is the healthcare sector, particularly companies working on vaccines and treatments for COVID-19 (Nomura Research Institute, 2020). For instance, the Japanese pharmaceutical company Takeda has been working on developing a treatment for COVID-19 and has received funding from the Japanese government for this project (Takeda Pharmaceutical Company Limited, 2020).

However, the pandemic has also created challenges for investors in the tourism and hospitality industries, which have been hit hard by travel restrictions and reduced demand (Statista, 2020). For example, the airline industry in Japan has been heavily impacted, with several major airlines reporting significant losses

due to the pandemic (Hirata, 2020). In addition, the hospitality industry has also been affected, with many hotels reporting reduced occupancy rates and revenue (Japan Hotel REIT Advisors, 2020).

Overall, the pandemic has led to a shift in investment strategies in Japan, with investors seeking out opportunities in industries that have been positively impacted by the pandemic while also being mindful of the challenges and risks presented by the current economic environment (Mitsubishi UFJ Morgan Stanley Securities, 2020).

5. The Role of International Cooperation

The pandemic has highlighted the importance of international cooperation in addressing global challenges (Djankov, 2020). In the context of investment policy, this could mean increased collaboration between countries to support economic recovery and growth (UNCTAD, 2020b). In March 2020, the Federal Reserve established temporary USD swap lines with several central banks worldwide, including the European Central Bank, to stabilize US dollar liquidity and financial markets (Federal Reserve, 2020b). This move was aimed at helping to prevent a global financial crisis and demonstrated the importance of international cooperation in addressing economic challenges (IMF, 2020a).

In addition, the US and EU have worked together through organizations such as the G20 and the International Monetary Fund to support global economic recovery and growth (IMF, 2020a). These organizations have implemented policies to provide emergency financing to impoverished countries, support debt relief, and facilitate trade and investment flows (G20, 2020).

The Group of Twenty (G20) is a forum for international economic cooperation that includes 19 countries and the European Union (G20, 2020). The G20 has played an essential role in coordinating international efforts to support economic recovery and growth in response to the pandemic (IMF, 2020a). One of the key initiatives taken by the G20 in response to the pandemic has been to provide debt relief for developing countries (G20, 2020). In April 2020, the G20 endorsed a Debt Service Suspension Initiative (DSSI), which allows eligible countries to suspend debt payments to official bilateral creditors until the end of 2021 (World Bank, 2020). This has helped to free up resources for these countries to respond to the pandemic and support their economies (World Bank, 2020).

The G20 has also supported the International Monetary Fund (IMF) and the World Bank, crucial in providing financial assistance to needy countries (IMF, 2020a). In April 2020, the G20 agreed to suspend debt payments owed to the World Bank and other international financial institutions by the poorest countries until the end of 2020 (G20, 2020). The initiative was later extended until the end of 2021 (World Bank, 2020). The G20 has also supported efforts by the IMF to increase its lending capacity to help countries respond to the pandemic (IMF,

2020a). In addition to these measures, the G20 has also taken steps to support trade and investment (G20, 2020). For example, in March 2020, G20 trade ministers issued a statement committing to work together to ensure the continued flow of essential goods and services during the pandemic (G20, 2020). The G20 has also emphasized maintaining open, predictable investment regimes to support economic recovery and growth (UNCTAD, 2020b).

The Asia-Pacific Economic Cooperation (APEC) is a regional economic forum promoting free trade and investment among its 21 member economies, including Australia, Canada, China, Japan, South Korea, the United States, and other Asian-Pacific countries region (APEC, 2020). In response to the pandemic, APEC has taken various measures to promote economic recovery and growth in the region (APEC, 2020). For example, APEC has prioritized measures to support small and medium-sized enterprises (SMEs), which are particularly vulnerable to the economic impacts of the pandemic (APEC, 2020). APEC has launched initiatives to promote SMEs' digitalization, facilitate their access to financing, and provide training and support for business continuity planning (APEC, 2020).

APEC has also focused on promoting e-commerce in the region, recognizing that the pandemic has accelerated the shift toward online commerce (APEC, 2020). As a result, APEC has launched initiatives to promote digital infrastructure development and address barriers to cross-border e-commerce, such as differences in regulations and standards (APEC, 2020). In addition to promoting trade and investment, APEC has taken measures to address the health impacts of the pandemic (APEC, 2020). For example, APEC has emphasized the importance of international cooperation in vaccine distribution and has called for increased collaboration in public health research and development (APEC, 2020).

Overall, APEC has played a significant role in promoting economic recovery and growth in the Asia-Pacific region in the context of the pandemic, emphasizing the importance of international cooperation and the digitalization of the economy (APEC, 2020). The Comprehensive Economic and Trade Agreement (CETA) is a free trade agreement between Canada and the European Union that was signed in 2016 and provisionally applied in 2017 (European Commission, 2017). The agreement aims to eliminate tariffs on most traded goods and services between the two regions and create new opportunities for investment and economic growth (European Commission, 2017).

The pandemic has posed challenges for implementing CETA, as restrictions on travel and in-person meetings have made it more challenging to negotiate and finalize some aspects of the agreement (Hildebrand, 2020). However, both sides have continued to work towards fully implementing the agreement and have expressed a commitment to strengthening economic ties (Government of Canada, 2020a). CETA has the potential to benefit investors in both Canada and the European Union by providing increased market access and

opportunities for investment (European Commission, 2017). In addition, the agreement includes provisions on intellectual property, government procurement, and dispute resolution, which could also provide investors with greater legal certainty and predictability (European Commission, 2017). However, as with any free trade agreement, there may also be concerns about the potential impact on specific sectors and industries and the need to ensure that the agreement's benefits are shared fairly among all stakeholders (European Commission, 2017).

6. Long-Term Implications

While the pandemic has immediately impacted investment policies, it may also have long-term implications. For example, the pandemic could lead to permanent shifts in consumer behaviour or changes in companies' operations. These shifts could impact investment strategies in the years to come (OECD, 2020).

The pandemic has accelerated trends in the United States toward e-commerce and remote work, which could have significant long-term implications for investment strategies in several sectors (Brynjolfsson et al., 2020). Here are a few examples:

- *Real Estate*: The shift towards remote work can transform the commercial real estate market. As more people work from home, demand for office space could decline, and there may be an increased demand for residential properties in suburban or rural areas. In contrast, there may be increased demand for warehouse space and logistics infrastructure as e-commerce grows (Redding, Glaeser, & Gorbach, 2020). This shift in demand could have significant implications for real estate investment strategies.
- *Retail*: The pandemic has accelerated the trend toward e-commerce, with online sales reaching record levels in 2020 (U.S. Census Bureau, 2020). This shift could have significant long-term implications for brick-and-mortar retail, which struggled before the pandemic. Retail investors may need to adjust their strategies and focus on businesses with strong e-commerce capabilities or are well-positioned to adapt to a more digital-focused retail environment (Bhattacharya, 2020).
- *Healthcare*: The pandemic has highlighted the importance of healthcare infrastructure and innovation, which could lead to increased investment in the healthcare sector (OECD, 2020). In particular, there may be increased demand for telemedicine and other digital health solutions, as well as for companies working on vaccines and treatments for infectious diseases (Hollander & Carr, 2020).
- *Technology*: The shift towards remote work has also highlighted the importance of technology infrastructure and innovation. This could increase investment in cloud computing, cybersecurity, and remote

collaboration tools (Bughin, 2020). Additionally, there may be increased demand for consumer technology products that enable remote work and communication (Coughlin, 2020).

These are just a few examples of the potential long-term implications of the pandemic on investment strategies in the United States. Of course, it is difficult to predict the exact nature of these shifts or how long they will last, but investors will need to be nimble and adaptive in response to these changes.

The pandemic has had significant long-term implications for the investment landscape in the United Kingdom. One of the critical areas that could see increased investment in the long term is the healthcare sector. The pandemic has highlighted the importance of healthcare infrastructure and research and development, particularly regarding vaccines and treatments for COVID-19 (OECD, 2020). As a result, there could be increased investment in this sector in the years to come, both in the UK and globally.

Another area that could see changes in the long term is the commercial real estate sector. The shift towards remote work during the pandemic has raised questions about the future of the traditional office, and whether companies will require as much office space in the future (Redding et al., 2020). This could lead to changes in the demand for commercial real estate, with a potential shift towards smaller, more flexible office spaces and increased demand for residential properties with home office space. Again, this could affect commercial and residential real estate investment strategies.

The pandemic has had various long-term implications for investment policies in Germany. One of the most significant changes is a renewed focus on transitioning to a low-carbon economy. The pandemic has underscored the importance of environmental sustainability and climate change mitigation (OECD, 2020). In addition, the German government has implemented policies to support the growth of the renewable energy sector, which could lead to increased investment in this space in the long term (BMW, 2020). Companies working on wind and solar power could see significant growth in the coming years due to this policy focus.

In addition, the pandemic has highlighted the importance of resilient and adaptable supply chains. Supply chain disruptions during the pandemic have led to increased interest in re-evaluating supply chain strategies and moving production closer to home (OECD, 2020). This could have long-term implications for investment in the manufacturing sector, as companies may need to adjust their supply chains to minimize disruptions and reduce reliance on overseas suppliers (Evenett, 2020).

Furthermore, the pandemic has accelerated the shift toward digitalization and e-commerce in Germany. This could have long-term implications for investment in the technology sector as more companies seek to develop

innovative digital products and services to meet changing consumer needs (Brynjolfsson et al., 2020). E-commerce platforms and other online businesses are likely to see significant growth in the coming years.

The pandemic has brought about significant changes in consumer behaviour, including accelerating the shift towards online shopping and remote work. As a result, there may be long-term implications for investment in the technology sector in Japan, as companies working in areas such as e-commerce, digital payments, and cloud computing may be poised for growth (METI, 2020).

On the other hand, the pandemic has also created challenges for traditional brick-and-mortar retail and hospitality businesses, which may need to adapt to new trends and consumer preferences to remain competitive. This could result in a shift in investment away from these sectors and towards areas such as logistics and delivery services (OECD, 2020).

The COVID-19 pandemic has significantly impacted Canada's economy and investment landscape. The country has responded with a range of measures to support economic recovery and growth, including stimulus spending, support for small and medium-sized enterprises, and increased investment in critical sectors (Government of Canada, 2020b).

One area that the pandemic has highlighted is the importance of the healthcare sector. The development of vaccines and treatments for COVID-19 has been a significant focus for Canadian investors, with many companies in the biotech and pharmaceutical industries seeing significant increases in demand and funding. This trend is expected to continue in the long term, as the pandemic has underscored the importance of investment in healthcare research and development (OECD, 2020).

Similarly, the pandemic has accelerated the shift towards digital transformation in Canada, with more people working and shopping from home. This has led to increased investment in the technology sector, as companies that provide digital services and e-commerce solutions have seen strong growth (Brynjolfsson et al., 2020). This trend is expected to continue long-term as more companies adopt digital technologies to increase efficiency and productivity.

On the other hand, the pandemic has created challenges for Canada's energy and natural resources sectors, which have been hit hard by reduced demand and low commodity prices. As a result, these sectors may need to adapt to changing market conditions to remain competitive in the long term (OECD, 2020).

Another long-term implication of the pandemic is the impact on public debt levels and fiscal policies. The Canadian government has implemented significant stimulus measures to support economic recovery, but this has led to increased public debt (Government of Canada, 2020b). This could impact long-

term fiscal policies and the government's ability to invest in critical areas such as infrastructure and education.

7. Conclusion

The COVID-19 pandemic has significantly impacted investment policies in developed countries. The pandemic has created opportunities for investors in some sectors, such as technology and healthcare, while also creating challenges in other sectors, such as tourism and energy. International cooperation has played a critical role in supporting economic recovery and growth, and countries have worked together through forums such as the G20 and APEC to promote trade and investment. Moreover, the pandemic could have long-term implications on investment policies, such as shifts towards e-commerce and remote work, increased investment in renewable energy, and changes in supply chain strategies. It is crucial for investors and policymakers to adapt to these changes and to identify new opportunities for growth and investment in the post-pandemic world.

Based on the experience of developed countries, we provide some recommendations for developing countries to consider in light of the discussions on investment policy in the context of the COVID-19 pandemic:

- *Strengthen public health infrastructure:* Developing countries should prioritize investments in public health infrastructure to strengthen their ability to respond to future health crises. This may include investments in healthcare facilities, medical equipment, and training for healthcare workers.
- *Promote digital transformation:* Developing countries should consider investing in digital infrastructure to support shifting towards remote work and e-commerce. This may include investments in broadband internet, digital payment systems, and e-commerce platforms.
- *Foster local entrepreneurship:* Developing countries should prioritize investments supporting local entrepreneurship and small and medium-sized enterprises (SMEs), the backbone of many economies. This may include investments in business incubators, training programs, and access to capital.
- *Promote sustainable development:* Developing countries should prioritize investments in sustainable development, promoting economic growth while protecting the environment. This may include investments in renewable energy, green infrastructure, and sustainable agriculture.
- *Strengthen regional cooperation:* Developing countries should explore opportunities for regional cooperation to support economic recovery and growth. This may include initiatives to promote trade and investment within a region and partnerships to share knowledge and resources.

By considering these recommendations, developing countries can take steps to navigate the challenges posed by the pandemic and build more resilient and sustainable economies for the future.

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DUAL EDUCATION DIGITALIZATION: UNPACKING FINANCIAL STRATEGIES ACROSS EUROPE

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Abstract: *This paper presents a literature review on the financing of digitalisation in dual education across Europe. It examines the funding models utilised, the efficiency of these models, the impact of the COVID-19 pandemic, and offers country-specific analyses of Germany, Romania, and the Republic of Moldova. The review highlights the significance of public-private partnerships, the disparity in the availability of funds and digital readiness across countries, and the intensifying need for digitalisation due to the pandemic. Policy recommendations emphasise fostering cooperation between sectors, leveraging international funding, and investing in digital competencies. The paper concludes by identifying potential areas for further research.*

Key words: *dual education, digitalisation, financing models*

JEL: I25, O33, H52

1. Introduction

The ongoing digital revolution has ushered in a transformational shift in various sectors of society, including education. One educational model that has particularly been influenced by this digitalisation process is dual education—a system that combines classroom-based learning with practical, on-the-job training (Bilynska, Ridei, & Anhelina, 2020).

Dual education has a rich historical origin, dating back to medieval craft guilds (Langthaler, 2015). In the modern context, it is considered a robust model that bridges the gap between theoretical knowledge and practical skills, contributing to the effective preparation of a skilled workforce. The success of dual education, especially in countries such as Germany and Switzerland, is well-documented (Bilynska et al., 2020). Yet, the advent and rapid expansion of digital technologies present both an exciting opportunity and a challenging dilemma for dual education.

Digitalisation refers to the process of converting and integrating digital technologies into everyday practices, operations, and systems (Legner et al.,

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2017). The increased use of digital technologies like AI, big data, and e-learning platforms are fundamentally altering the nature of education. Digitalisation not only promises a greater reach and accessibility but also fosters innovative teaching-learning practices that can enhance the quality of education (Øvrelid, Bygstad, Ludvigsen, & Dæhlen, 2023). In the dual education context, digitalisation can enrich both theoretical and practical aspects of learning, enabling students to acquire digital competencies that are increasingly sought in the modern job market.

However, the digitalisation of dual education is not without its challenges. Access to digital resources, maintaining the quality of online learning, and the need for digital literacy are just a few of the hurdles that need to be addressed (Leitner, Kreimer, Heck, & Vakavlieva, 2023).

This paper seeks to delve into this realm by examining the financing models and efficiency of digitalisation in dual education across Europe. Despite the diverse socio-economic conditions among European nations, the region as a whole has shown significant commitment to the advancement of dual education (Hippach-Schneider & Rieder, 2022). This analysis will provide valuable insights into how different financing models influence the effectiveness of digitalisation efforts in dual education.

The *research objectives* of this paper are as follows:

- To provide an overview of the current state of dual education's digitalisation across Europe.
- To critically analyse the various financing models adopted for digitalisation in dual education in selected European countries.
- To assess the efficiency and effectiveness of these financing models.
- To understand the impact of the COVID-19 pandemic on the financing of digitalisation in dual education.
- To identify the challenges and opportunities in financing the digitalisation of dual education.

The underlying *research questions* include:

- What are the prevailing financing models for the digitalisation of dual education across Europe?
- How efficient are these models in facilitating digitalisation?
- What impact has the COVID-19 pandemic had on the financing of dual education's digitalisation?
- What are the major challenges and opportunities in financing digitalisation in dual education, and how can they be addressed?

By exploring these objectives and questions, the study aims to offer critical insights into advancing dual education through digitalisation in a diverse European context.

2. Methodology

This study follows a systematic approach for the literature review to address the research objectives. A literature review serves as a solid foundation for the examination and interpretation of developments in a specific field of study (Machi & McEvoy, 2021). In this context, it offers the ability to understand, analyze, and compare various financing models for the digitalisation of dual education across Europe.

The literature review was conducted using a two-stage method. The first stage involved the identification and extraction of relevant literature pertaining to the financing of dual education's digitalisation. This process was guided by the principles of systematic reviews, ensuring a rigorous and transparent approach to identifying and assessing literature (Aveyard, 2023).

The second stage involved the analysis and synthesis of the selected literature. This provided insights into the different financing models across Europe, their efficiency, the impact of the COVID-19 pandemic, and the identified challenges and opportunities.

The narrative synthesis approach guided this stage, allowing a descriptive and thematic interpretation of the findings across a broad range of literature (Popay et al., 2006).

The selection of sources followed explicit criteria to ensure the relevance and quality of the literature.

Firstly, the study focused on peer-reviewed journal articles and official reports as they maintain a high standard of academic integrity (Adams, Smart, & Huff, 2017). This includes documents from institutions such as the OECD, the European Commission, and reputable universities.

Secondly, the literature must be relevant to the topic—specifically, it should pertain to dual education, digitalisation, and financing models in the context of Europe. This ensures that the analysis is based on evidence that directly addresses the research objectives.

Thirdly, the recency of the literature was considered, with a preference for works published in the last decade to ensure that the insights reflect recent trends and developments. However, seminal and relevant works beyond this timeframe were also included for a comprehensive understanding.

Finally, the geographic coverage was taken into account, with the study focusing on literature that covers various regions in Europe, reflecting the diverse socio-economic contexts of the countries.

This meticulous source selection process helped ensure that the literature review was comprehensive, relevant, and academically rigorous.

3. Education and Digitalisation: A Theoretical Perspective

Dual education and digitalisation are two critical concepts driving the evolution of today's education sector. An understanding of these concepts and their intertwining role is essential to investigate the financing models and their efficiency in advancing digitalisation of dual education in Europe.

Dual education, sometimes referred to as dual training or cooperative education, is an instructional approach that combines classroom-based education with practical, on-the-job training (Gonon, 2012). This model of education exists in various forms across the world, but it is particularly prominent in Germany, Switzerland, and Austria. It hinges on the principle that theoretical knowledge and practical skills are two sides of the same coin in vocational training (Wolter & Ryan, 2011).

On the other hand, digitalisation represents the integration and use of digital technologies in everyday practices and systems (Hess, Benlian, Matt, & Wiesböck, 2016). In education, digitalisation can take several forms, including the use of e-learning platforms, digital textbooks, virtual classrooms, and data analytics for monitoring and improving student performance (Picciano, 2021).

The role of digitalisation in dual education is multifaceted and profound. It has significant implications for the effectiveness, reach, and accessibility of dual education, thereby contributing to the overall quality of vocational training.

Firstly, digitalisation can enhance the learning process in dual education. Digital learning resources, such as e-learning modules, virtual labs, and interactive simulators, can supplement traditional classroom-based teaching and workplace training. They can provide learners with a dynamic and interactive learning experience that promotes better understanding and retention of knowledge (Searson, 2023).

Secondly, digitalisation can expand the reach and accessibility of dual education. Online learning platforms can provide remote access to course materials and training sessions, enabling individuals from geographically dispersed regions to participate in dual education programs. This can be particularly beneficial in countries with sparse population density or inadequate transport infrastructure (Bilynska et al., 2020).

Lastly, digitalisation can facilitate better tracking and assessment of learner progress in dual education. Digital tools can automate the process of recording and analysing learner data, providing instructors with valuable insights into each learner's performance and progress. This can enable more personalised instruction and support, leading to better learning outcomes (Daniel, 2016).

Despite the immense potential of digitalisation, its integration into dual education is still a work in progress. The level of digitalisation varies greatly across countries, regions, and institutions, reflecting differences in financial resources, infrastructure, policy, and digital literacy among teachers and learners.

In developed countries like Germany, digitalisation in dual education is relatively advanced. The German Federal Ministry of Education and Research has implemented numerous initiatives to promote digitalisation in vocational education and training, such as the "Digital Media in Vocational Education and Training" programme. However, issues such as unequal access to digital technologies and inadequate digital literacy among some groups of learners remain a concern (Euler, 2013).

In many developing and transition countries, the digitalisation of dual education is still in its infancy. These countries often face significant barriers to digitalisation, including limited financial resources, inadequate digital infrastructure, and low levels of digital literacy. Yet, the potential benefits of digitalisation for dual education are recognised, and efforts are being made to overcome these barriers. For instance, the European Training Foundation is supporting several projects aimed at promoting digitalisation in vocational education and training in transition countries (Brolpito, 2018).

The ongoing COVID-19 pandemic has underscored the urgency and importance of digitalisation in dual education. As traditional classroom-based education and workplace training have been disrupted, digital technologies have become a crucial lifeline for continuing vocational education and training. However, the sudden and large-scale shift to online learning has also highlighted the challenges and gaps in the current state of digitalisation, such as unequal access to digital technologies and the need for digital pedagogical skills among teachers (Crawford et al., 2020).

4. Financing Dual Education's Digitalisation: An Overview of Models Across Europe

The financing of dual education's digitalisation represents a complex and diverse landscape across Europe, with different nations adopting different approaches based on their socio-economic context, policy preferences, and educational infrastructure.

A review of the literature reveals at least three prominent models for financing dual education's digitalisation: government-led funding, private sector investment, and public-private partnerships.

Government-Led Funding is the most common model across Europe, particularly in countries with strong state involvement in education and training. The government typically finances the digitalisation of dual education through direct funding, grants, or subsidies. For instance, Germany's "Digital Pact for Schools" has provided billions of Euros to improve digital infrastructure in schools, including vocational schools and training centres (Berger & Wolling, 2019). Similarly, Norway's Directorate for ICT and Joint Services in Higher Education and Research provides funding for digital initiatives in higher

education and training (Norwegian Ministry of Education and Research, Digitalisation strategy for the higher education sector 2017-2021).

While this model can ensure broad and equitable access to digital technologies in dual education, it may not always be the most efficient. Governments can face budget constraints that limit the amount of funding available. Moreover, bureaucratic processes can sometimes lead to delays in funding allocation or inefficiencies in its use (Witte & López-Torres, 2017).

Private Sector Investment: Some countries rely heavily on private sector investment to finance the digitalisation of dual education. This can include direct investment by companies in their training facilities or broader industry investment in education and training infrastructure. In Switzerland, for instance, many companies invest heavily in advanced digital technologies for their apprenticeship programmes (Deissinger & Gonon, 2021).

This model can be efficient in terms of leveraging the resources and expertise of the private sector. Companies can often invest in digital technologies more quickly and effectively than governments. However, private sector investment can also lead to inequalities, as not all companies or sectors have the same resources to invest in digitalisation (Windisch, 2015).

Public-Private Partnerships (PPPs) represent a hybrid model that combines public funding and private investment. They are particularly common in countries with strong partnerships between the state and the private sector in education and training. For example, the UK's Apprenticeship Levy, a tax on large employers that is used to fund apprenticeships, represents a form of PPP. The levy funds can be used to invest in digital technologies for apprenticeship training (Department for Education, 2018).

Public-Private Partnerships can offer an efficient way to leverage both public and private resources for the digitalisation of dual education. They can combine the strengths of both sectors, such as the scale and equity of public funding and the agility and expertise of private investment. However, the efficiency of PPPs can depend on the quality of the partnerships, including the alignment of objectives, the sharing of risks and rewards, and the mechanisms for cooperation and accountability (Cheung, Chan, & Kajewski, 2012).

Efficiency refers to the extent to which a financing model achieves its objectives at the least cost. The efficiency of the financing models varies considerably across countries, reflecting differences in their design, implementation, and context.

In sum, the financing of dual education's digitalisation in Europe involves a diversity of models, each with its strengths and limitations. More research is needed to understand and compare their efficiency in different contexts, and to identify best practices for financing the digitalisation of dual education.

5. Impact of COVID-19 on Dual Education's Digitalization

The COVID-19 pandemic has been a global disruptor, affecting all sectors of society, including education. Its impact on dual education's digitalisation has been substantial, with immediate and long-term implications for the financing models discussed earlier.

The immediate impact of the pandemic on dual education's digitalisation has been profound. Traditional classroom-based instruction and on-the-job training were disrupted as schools, workplaces, and public spaces were shut down to control the virus's spread (Reich et al., 2020). This disruption necessitated a sudden and large-scale shift to online learning, which greatly intensified the demand for digital technologies in dual education (Burgess & Sievertsen, 2020).

However, the resources to finance this digital transformation were strained by the pandemic. Governments faced unprecedented fiscal pressures as they had to finance large-scale health responses, social protection measures, and economic stimulus packages (OECD, 2020). This put a squeeze on education budgets and potentially threatened the sustainability of government-led funding for dual education's digitalisation.

Private sector investment also faced challenges. Many companies suffered losses due to the economic downturn caused by the pandemic, which may have limited their capacity to invest in the digitalisation of dual education. Sectors that were hit hard by the pandemic, such as tourism and hospitality, were particularly affected (Nicola et al., 2020).

Public-private partnerships faced their unique challenges. The alignment of objectives, risk sharing, and cooperation between the public and private sectors, key to the success of PPPs, were tested by the pandemic's upheaval. The strains on both public and private resources may have compromised the effectiveness of these partnerships in financing dual education's digitalisation.

The pandemic's long-term impact on dual education's digitalisation is complex and uncertain, with both challenges and opportunities. The crisis highlighted the critical importance of digital technologies in ensuring the continuity and resilience of dual education. This could potentially lead to a higher prioritisation of digitalisation in education policies and budgets, boosting the resources available for it (Hodges, Moore, Lockee, Trust, & Bond, 2020).

However, the financial implications of this higher prioritisation are uncertain. The public debt incurred by governments to finance their pandemic responses could constrain education budgets in the long term. The recovery of private sector investment will depend on the speed and robustness of economic recovery. PPPs may also need to adapt to the new post-pandemic context, potentially requiring new models of partnership and financing (World Bank, 2020).

On the other hand, the pandemic could accelerate the trend towards more efficient and effective uses of digital technologies in dual education. The forced experiment with online learning during the pandemic has yielded valuable lessons and innovations that could be built upon. These include, for instance, the use of blended learning models that combine face-to-face and online instruction, the integration of digital technologies into workplace training, and the use of data analytics to monitor and support learner progress in dual education (Bao, 2020). The financing of dual education's digitalisation will need to support these innovations and the ongoing experimentation and learning that they entail.

The COVID-19 pandemic has had a substantial impact on dual education's digitalisation, with significant implications for its financing. Understanding and addressing these implications will be critical for the future development and resilience of dual education in Europe.

6. Country-Specific Case Studies

In this chapter, we will explore the financing of dual education's digitalisation in three different European contexts, represented by Germany, Romania, and Ukraine. These case studies provide insights into the dynamics and challenges of financing digitalisation in countries with different levels of economic development, educational systems, and socio-political conditions.

a. Germany

Germany, with its well-established dual education system, is a frontrunner in the digitalisation of dual education. The country's government-led funding model has been instrumental in supporting this digitalisation. The "Digital Pact for Schools", launched in 2019, provided over five billion Euros for digital infrastructure, including dual education establishments (The Federal Government, 2021).

However, the COVID-19 pandemic strained Germany's education budget and tested the government's commitment to digitalisation. Nonetheless, the federal government maintained its financial commitment to the "Digital Pact", recognising the importance of digitalisation for educational continuity and resilience (The Federal Government, 2021).

Private sector investment in dual education's digitalisation is also robust in Germany. Many companies have invested in advanced digital technologies for their apprenticeship programmes, recognising the importance of digital skills for their future workforce (Deissinger & Gonon, 2021). However, the pandemic's economic impact has challenged this investment, particularly in sectors hit hard by the crisis.

In conclusion, Germany's financing model for dual education's digitalisation has shown resilience in the face of the pandemic, but also faces challenges, particularly in terms of sustaining private sector investment.

b. Romania

Romania presents a contrasting case of a country undergoing transition. The digitalisation of dual education is relatively new and not yet fully integrated into the education system (Pleşca, Vass, Nan, Orboi, & Mateoc Sîrb, 2021). The financing model for digitalisation is largely government-led, with support from the European Union funds.

The COVID-19 pandemic has created both challenges and opportunities for Romania's digitalisation efforts. The sudden shift to online learning during the pandemic exposed the weaknesses in Romania's digital infrastructure and the digital skills of teachers and students (Țițan, Manea, Mihai, & Cărămidaru, 2020). However, it also catalysed efforts to address these weaknesses and increased the priority given to digitalisation in education policy and funding (Velicu, 2021).

Private sector investment in digitalisation is less prominent in Romania than in Germany, reflecting the country's lower level of economic development and the private sector's limited resources. However, some multinational companies have invested in digital technologies for their apprenticeship programmes in Romania, seeing this as an investment in their future workforce (Pîrlog, Nuțu, Purcărea, & Vlase, 2017).

Overall, the financing of dual education's digitalisation in Romania faces significant challenges, but also potential opportunities as the country learns from its pandemic experience and seeks to modernize its education system.

c. Republic of Moldova

As a country in Eastern Europe with socio-political and economic challenges, the Republic of Moldova provides a unique context for examining the financing of dual education's digitalisation.

Government funding for digitalisation in Moldova is restricted by the country's financial constraints and the competing demands of various sectors. This is despite the recognition by the Moldovan Ministry of Education, Culture, and Research of the importance of integrating digital technologies into all forms of education, including dual education (Ministerul Educației și Cercetării al Republicii Moldova, 2023).

Private sector investment in dual education's digitalisation in Moldova is relatively limited. However, some multinational companies operating in the country have integrated digital technologies into their vocational training programs, recognising the importance of cultivating a digitally skilled workforce (Sobetzko, 2016).

Like Romania, Moldova has also been a recipient of funding from international entities such as the EU and the World Bank for educational initiatives. In particular, the EU-funded project "Vocational Education and Training Network" (VETnet) has sought to strengthen the digital competence of

vocational education and training teachers and trainers in the country, enhancing the digitalisation of dual education (European Commission, 2015).

The COVID-19 pandemic has underscored the importance of digitalisation in Moldova, as in other countries. It has highlighted the gaps in digital infrastructure and digital skills in the education sector and has intensified the need for funding to support the transition to online learning (Castraveț, 2023; Guțu, 2021; Mancaș, 2022).

In conclusion, while Moldova faces significant challenges in financing the digitalisation of dual education due to economic and socio-political factors, it also has opportunities through international support and the impetus provided by the pandemic.

7. Challenges and Opportunities in Financing Digitalization

The digitalisation of dual education in Europe presents a range of challenges and opportunities. The ability to navigate these intricacies largely depends on a comprehensive understanding of the varying circumstances across nations and the commitment to foster collective growth and innovation.

One major challenge is the *disparity in the availability of funds for digitalisation* across Europe. Wealthier nations, like Germany, can afford to allocate substantial resources towards the digitalisation of dual education, while countries undergoing economic transitions, like Romania and Moldova, grapple with more limited budgets (Mancaș, 2022; Pîrlog et al., 2017; The Federal Government, 2021). This discrepancy not only impacts the pace of digitalisation but also accentuates the digital divide within Europe.

Another critical challenge is *maintaining a consistent flow of private sector investment*. Private entities, especially multinational companies, have been pivotal in the digitalisation of dual education, contributing both financially and technically. However, their contributions vary significantly depending on their financial health and business outlook, which can be affected by economic downturns, such as the one caused by the COVID-19 pandemic (Deissinger & Gonon, 2021).

The third challenge is the *uneven distribution of digital infrastructure and digital skills*. The success of digitalisation efforts hinges not only on sufficient funding but also on the underlying digital infrastructure and the digital competencies of educators and learners (Țițan et al., 2020). In many cases, investments in digitalisation are impeded by weak digital infrastructures and low levels of digital skills, especially in less economically developed regions.

Despite these challenges, several opportunities for financing the digitalisation of dual education present themselves. One significant opportunity is *leveraging international funding*. Countries like Romania and Moldova have benefited from financial support from international entities like the European

Union and the World Bank. Such international partnerships can play a crucial role in bridging the digital divide within Europe and facilitating the digitalisation of dual education in less economically developed regions (European Commission, 2015, 2021).

Another opportunity is to *promote public-private partnerships (PPPs)*. These partnerships can bring together the resources and expertise of the public and private sectors to advance the digitalisation of dual education. PPPs can be particularly useful in mobilising private sector investment in digitalisation, even in economically challenging times (European Cluster Collaboration Platform, 2023).

Finally, a major opportunity lies in *building digital competencies*. Investing in the development of digital skills among educators and learners can enhance the effectiveness of digitalisation efforts and generate better educational outcomes. This can be achieved through targeted training programmes and continuous professional development initiatives (Ministerul Educației și Cercetării al Republicii Moldova, 2023; Stroe, 2022).

In conclusion, while significant challenges exist in financing the digitalisation of dual education in Europe, there are also ample opportunities to overcome these challenges and advance digitalisation. This requires collective efforts, innovative partnerships, and a shared commitment to enhancing the quality and relevance of dual education in the digital age.

8. Conclusion

This paper has provided an extensive review of the literature on the financing of digitalisation in dual education in Europe, shedding light on the models used, their efficiency, the impacts of COVID-19, and the specific situations in Germany, Romania, and the Republic of Moldova.

The review found that the *financing of digitalisation in dual education varies significantly across Europe*, largely due to economic disparities and differences in digital readiness. Wealthy nations such as Germany are better equipped to fund digitalisation, while countries such as Romania and Moldova face economic constraints but are finding ways to navigate them.

The study also revealed that *public-private partnerships play a pivotal role* in financing digitalisation, combining the resources and expertise of both sectors. The private sector's involvement, however, is susceptible to fluctuations due to economic conditions, as highlighted by the impact of COVID-19.

The *COVID-19 pandemic has intensified the need for digitalisation* across Europe, necessitating further investments in digital infrastructure and competencies and prompting international support.

Based on these findings, several policy recommendations emerge. First, it is recommended to *encourage and facilitate public-private partnerships*,

particularly in nations struggling with economic constraints, to foster cooperation and resource pooling for digitalisation efforts.

Second, countries should *seek to leverage international funding opportunities* from entities like the European Commission and the World Bank. Additionally, these international entities should continue and expand their support for digitalisation efforts in less economically developed regions.

Third, it is crucial to *invest in developing digital skills* among teachers and learners to enhance the effectiveness of digitalisation efforts.

While this review provides an essential understanding of the financing of digitalisation in dual education, it also reveals several avenues for further research. For example, more in-depth, country-specific dynamic studies could shed light on the unique challenges and opportunities in different socio-economic contexts. Furthermore, research could also explore the role of non-traditional financing methods, such as crowdfunding or impact investing, in supporting digitalisation efforts.

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