

DIGITIZATION: A CORNERSTONE OF THE CONCEPTUAL RELATIONSHIP BETWEEN ACCOUNTING AND MARKETING IN PUBLIC ADMINISTRATION

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Abstract

The accelerated digital transformation of contemporary societies and organizations has been precipitated by the rapid development of information and communication technologies. Digitalization is defined as the integration of digital technologies into economic, organizational, and social activities with the objective of enhancing processes, generating value, and facilitating innovation. The present study aims to evaluate the impact of digitalization on public administration from theoretical and empirical viewpoints. This evaluation will be conducted through the lens of two essential components: accounting (traditional) and marketing (modern). The present study commences with a theoretical framework, subsequently integrating the insights of employees to elucidate the prevailing and prospective challenges. The extant research findings indicate that there is still some resistance to the adoption and implementation of digitalization, despite the well-documented benefits of such practices.

Keywords: digitalization, accounting, marketing, public administration

JEL classification: M40, M41

1.Introduction

Digitalization has emerged as one of the most transformational phenomena of the twenty-first century. It has reshaped business operations, public administration, education, healthcare, or social interactions. It has also transformed the relationship between accounting and marketing, allowing organizations to integrate financial information, customer analytics, and strategic decision-making processes through advanced digital technologies. Accounting and marketing, conventionally viewed as separate organizational functions, are becoming more and more interconnected due to the adoption of big data analytics, artificial intelligence (AI), customer relationship management (CRM) systems, enterprise resource planning (ERP), and digital performance measurement tools.

The contemporary context is marked by accelerated economic, social, and technological transformations that exert a profound influence on the manner in which public administration is structured and functions. The advent of globalization, digitalization, and the evolution of the information society have precipitated an augmentation in citizens' access to information, thereby concomitantly elevating their expectations of state institutions. Citizens are ever more demanding transparency in the decision-making process, justification for the use of public resources, competent public services, and the opportunity to actively participate in public life. In this context, public administration is forced to adopt new forms of governance grounded on openness, dialogue, and accountability.

The evolution of public administration, in conjunction with the integration of artificial intelligence, is profoundly impacting the manner in which institutional processes are structured,

encompassing governance procedures. The European Commission [4] has observed that the digitization trends in Europe have undergone a marked acceleration in the wake of the global pandemic. This acceleration has been driven not only by the need to ensure stability but also by the imperative to enhance the quality of services in a rapidly evolving environment.

The extant literature identifies digitization as a socio-technical phenomenon. The digitization should not be regarded exclusively as a technological advancement; rather, it should be conceptualized as a process that profoundly impacts social interactions, institutional frameworks, and economic systems [7]. Consequently, researchers are increasingly analyzing digitization from interdisciplinary perspectives.

The public sector is behaving like an entrepreneurial entity in which budgetary resources are becoming limited, and an entrepreneurial spirit is emerging as the solution. Our study analyzes the impact of digitization in a public environment where the use and efficiency of public funds intersect with the communication of actions to citizens, a prerequisite for public trust in public institutions.

Consequently, the objective of our research is twofold. First, the objective of this study is to develop a hybrid approach that combines a novel perspective on accounting and marketing in public administration, with digitalization serving as the connecting thread. Secondly, with a focus on the human factor, it is interesting to explore how employees in accounting and marketing departments perceive the impact and outcomes of these changes. Any plans for change remain in an early stage without their acceptance and effective implementation by people.

The findings of this study have broad applicability, given that the field under consideration—public administration—constitutes the framework for interaction between the state and the citizen, encompassing the management of public funds and their proper and transparent use. The novelty of this study lies in its integration of two distinct components: accounting and marketing. The former pertains to a conventional approach, specifically the field of accounting. In contrast, the latter, marketing, is more closely associated with the private sector. However, given the entrepreneurial nature of the private sector, marketing has become a fundamental component of it.

The present study is structured around two hypotheses. The first hypothesis is based on a content analysis of the specialized literature. In this analysis, the correlation between digitization, public administration, accounting, and marketing is identified.

H1. The extant literature on the subject supports the correlation and interdependence between digitization, public administration, accounting, and marketing.

The second hypothesis is based on a case study applied to the human capital directly employed in the accounting and marketing departments, which are undergoing transformative changes due to the impact of digitization.

H2. Digitalization has been shown to have a positive effect on the quality and efficiency of the accounting and marketing departments in public administration.

The findings' extensive applicability is attributable to the comprehensive coverage of the field of public administration, which serves as the overarching framework for the interaction between the state and the citizen, the accounting of public funds, their judicious utilization, and their transparency. The novelty of the study lies in its integration of two distinct yet interconnected components: accounting and marketing. The former pertains to a conventional approach, specifically the field of accounting. In contrast, the latter, marketing, is predominantly associated with the private sector. However, given the entrepreneurial nature of the private sector, marketing has evolved into a pivotal component of it.

The primary conclusions of our research pertain to the assessment of the manner in which the issue of digitalization is addressed in the public sphere from two distinct perspectives: theoretical, by elucidating the evolution of the concept in literature related to accounting and

marketing; and empirical, by examining the impact of digitalization on direct human capital in the public sector.

The research methodology combines content analysis with the comparative and interpretive method, that come to bring added value to the public sector literature.

The present study has been designed to address a broad range of users. On the one hand, theoreticians will be able to understand the evolution of the concept of public sector digitalization. On the other hand, practitioners will have the opportunity to familiarize themselves with the implications of the notion analyzed through the eyes of specialists in accounting and marketing. Finally, professional bodies and legislators will have a concrete and precise basis for analyzing what the acceptance and inclusion of digitalization in the public sector rules would mean.

The remainder of the paper is structured as follows: after introduction, the second section employs a theoretical approach to the issue of the conceptual relationship between accounting and marketing under the umbrella of digitalization in the public sector. This is followed by an empirical deepening of the correlations analyzed between the conceptual relationship between accounting and marketing and digitalization in different approaches associated with human capital behaviour (section 3). This part also presents the results of the conducted analysis, followed by the final interpretation, which is synthesized in the debate and conclusion part.

2.Theoretical framework

2. 1 Digital Infrastructure Indicators in Romania

Concomitantly, several scholars emphasize that conceptual ambiguity remains one of the main challenges in digitalization research. Some authors [7]) posit that digital transformation entails substantial organizational modifications precipitated by digital technologies, exerting an influence on business models, customer relationships, and organizational structures. In a similar vein, literature offers a definition of digital transformation as a process that aims to enhance an entity through the integration of information, computing, communication, and connectivity technologies [9]- [3].

Digitalization in Romania is continuously altering the manner in which individuals live, work, and interact, exerting an influence on public services, business, and education, and contributing to the development of a more connected, efficient, and innovative society. However, from this perspective, the country does not meet the standard benchmarks for this era of constant transformation.

The following chart, retrieved from the European Commission's website, offers a comparative analysis of Romania's indicators against the European average. This analysis aims to elucidate the country's current standing and identify the indicators that require enhancement to attain a standard level.

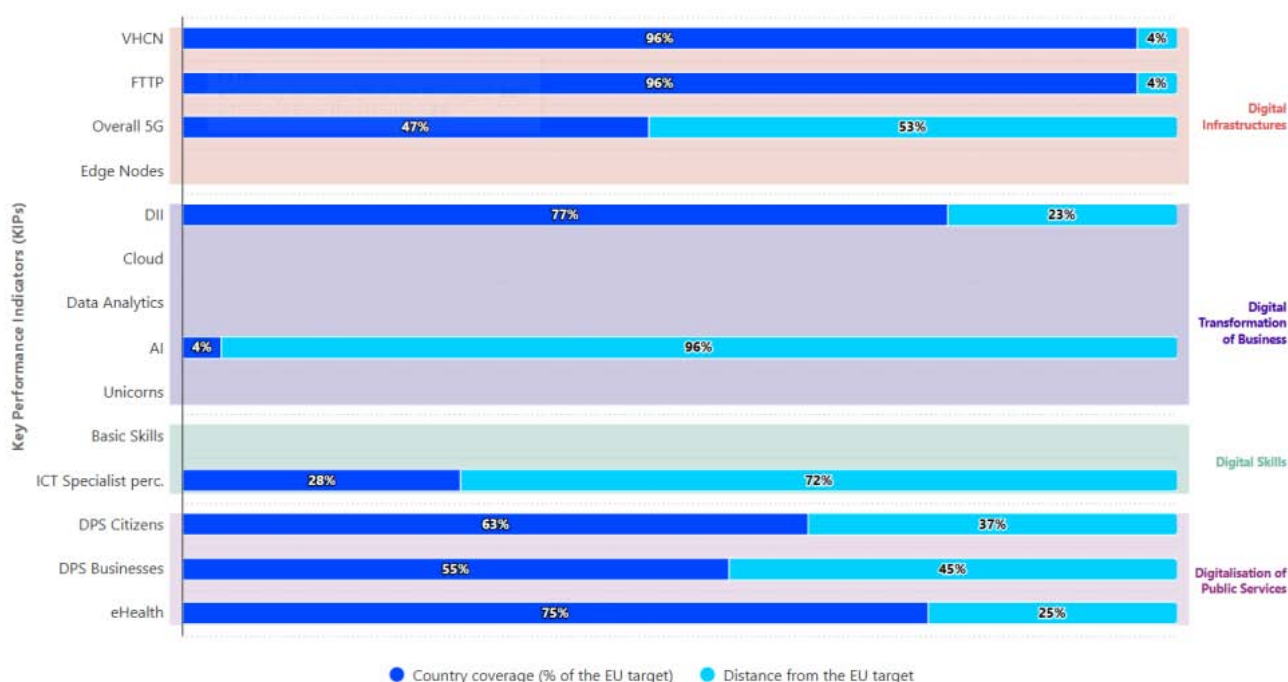


Figure 1 – Key performance indicators as a percentage of the EU's 2030 targets

The chart displays Romania's performance metrics, which are derived from several key digital performance indicators (KPIs). These indicators are then contextualized in relation to the EU's 2030 targets. The indicators are organized into four categories: The following subjects are of particular relevance in the context of digital infrastructure, digital business transformation, digital skills, and the digitalization of public services:

With regard to digital infrastructure, Romania exhibits comprehensive coverage for very high-capacity networks (VHCN) and fiber-to-the-premises (FTTP), attaining 96% of the EU target. This suggests a notable advancement in broadband connectivity. However, the implementation of 5G networks has been sluggish, with only 47% of the EU target being achieved. This suggests that the deployment of next-generation mobile networks is a crucial area that requires attention and enhancement. The absence of documented edge nodes suggests a paucity of development or a dearth of data in this domain.

With regard to digital skills, Romania boasts a robust ICT workforce, meeting 72% of the EU target. However, there is a conspicuous disparity in the realm of fundamental digital competencies, indicating a potential skills mismatch among the general population.

Finally, with regard to the subject under discussion, the Digitalization of Public Services, it must be noted that progress is uneven. The e-Health and Digital Public Services (DPS) for citizens and businesses have reached 75% and 63%, respectively, of the EU targets. This finding suggests that there has been some degree of advancement in the digitization of public services; however, it also underscores the presence of persistent gaps, particularly in the context of business-focused digital services.

A comprehensive analysis of the available data indicates that Romania has made significant progress in the adoption of artificial intelligence (AI) and the development of its ICT (information and communication technology) workforce. However, the country is lagging behind in terms of 5G implementation, broad digital literacy, and the provision of comprehensive digital public services. To address these discrepancies and achieve full alignment with the EU's 2030 digital objectives, specific policy interventions and investments are imperative.

2.2 The Use of Artificial Intelligence Technologies

The chart below provides a comprehensive overview of the adoption of generative artificial intelligence in Europe in 2025, revealing a marked regional disparity in digital engagement among the population aged 16 to 74. The data reveals a conspicuous divide between Northern/Western Europe and the southeastern member states, with an average adoption rate across the EU of 32.7%.

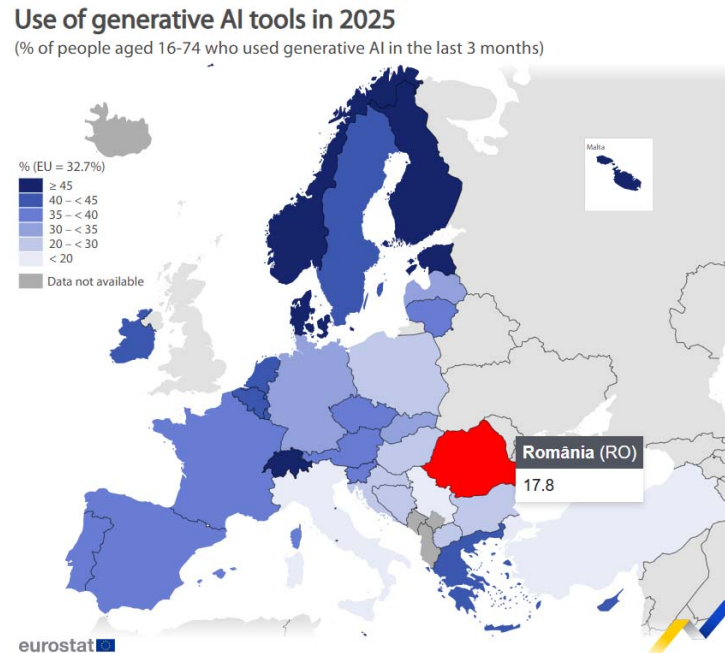


Figure 2 – Use of generative artificial intelligence tools in Europe in 2025

Romania's ranking is suboptimal, as it falls within the lowest tier of the dataset, with less than 20% of the population having used generative artificial intelligence tools in the three months prior to the study. This places Romania below the European Union average, indicating a significant "digital divide" compared to leading countries such as Finland, Denmark, and the Netherlands, where adoption rates exceed 45%.

While Western and Nordic nations have rapidly integrated these technologies into daily life or professional workflows, Romania, along with its neighbours such as Bulgaria, remains in the early stages of adoption. This finding indicates that, despite the ongoing, continent-wide efforts to transform digitally, Romania faces distinctive challenges related to digital literacy, infrastructure, and accessibility. These challenges persist in impeding the widespread adoption of emerging artificial intelligence technologies in comparison to other EU countries.

2.3 Conceptual Relationship Between Accounting and Marketing

Historically, the fields of accounting and marketing have traditionally been regarded as discrete organizational disciplines, characterized by distinct objectives and operational approaches. Conventionally, the field of accounting has centered on financial measurement, reporting, and control, while marketing has concentrated on customer satisfaction, communication, and market positioning [6].

However, recent research highlights that both functions make a contribution to organizational value creation and planned decision-making. Accounting provides financial information necessary for evaluating marketing investments, pricing strategies, and profitability analysis, while marketing creates customer insights that influence financial development and revenue forecasting [1]. The accelerated evolution of digital technologies has profoundly impacted organizational structures and management processes, even within the public sector. Digitalization

has transformed the manner in which companies collect, process, and use information, thereby creating closer links between business functions that were traditionally separate, such as accounting and marketing [9].

The integration of digital technologies, including artificial intelligence (AI), cloud computing, big data analytics, blockchain technology, and enterprise information systems, has given rise to novel opportunities for collaboration between the accounting and marketing departments [2].

The field of accounting has evolved to provide a wealth of information that is instrumental in the decision-making process within the marketing sector. The financial analytics, performance measurements, profitability analysis, and budgeting information that accounting provides have become essential tools in the marketing decision-making process. Concurrently, marketing generates customer and market data that influence organizational financial planning and strategic investments.

Researchers posit that digitalization has transformed organizations into data-driven environments where accounting and marketing functions share integrated information systems and analytical tools [8]. Consequently, the understanding of the relationship between accounting and marketing has become increasingly important within digital business environments.

3. Empirical design and results interpretation

Integrating accounting and marketing through digital technology is a key part of a modern organization's strategy and competitive advantage. Digital marketing has made accounting information more important for evaluating marketing effectiveness. Accounting and marketing professionals need to be good at analyzing, using technology, and managing data to do their jobs well in digital environments [5].

In this context, a survey was distributed to staff in the accounting and marketing public administration departments to analyze their attitudes toward the digitization of public institutions, the software they use, and whether they view technological advancements as an obstacle or a positive development.

The questionnaire consists of 14 questions and was completed by 72 respondents employed by local public administrations (in the accounting and marketing/communications departments) in six major cities in Transylvania (with a population over 100,000): Timisoara, Cluj-Napoca, Braşov, Oradea, Arad, Sibiu, and Targu Mures [10]. The initial set of inquiries focuses on the individual's own digital competencies, which are imperative for the adoption and familiarization with the digitization of public administration. The concept of digitization is influenced by a variety of factors, including generational differences, the environment in which individuals are raised, and personal abilities. The second part of the questionnaire focuses on the digital implications of the accounting and marketing departments.

A significant factor to consider is the age and gender of the respondents. The survey's results indicate a predominance of respondents between the ages of 25 and 35, constituting 39.1% of the total. This is followed by the 18–25 age category, which accounts for 32.6% of the respondents. The 35–45 age group ranks second to last, with 23.9% of the respondents, while the 45+ age group accounts for 4.3% of the total. A total of 46 respondents participated in this survey, of whom 21.7% were male and 78.3% were female.

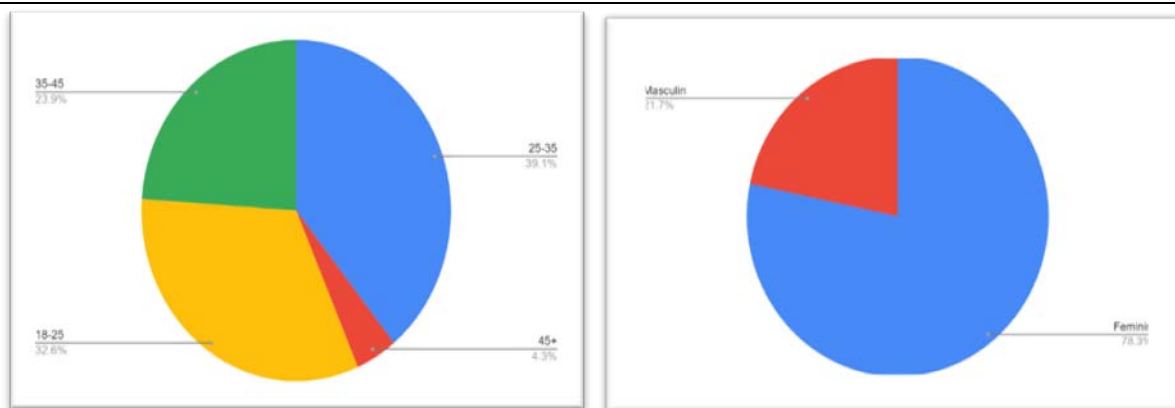


Figure1. Age and gender of respondents

With regard to the respondents' educational background, the majority (80.4%) have a college degree, followed by those with a graduate degree (10.9%), high school graduates (6.5%), and those with post-high school education (2.2%).

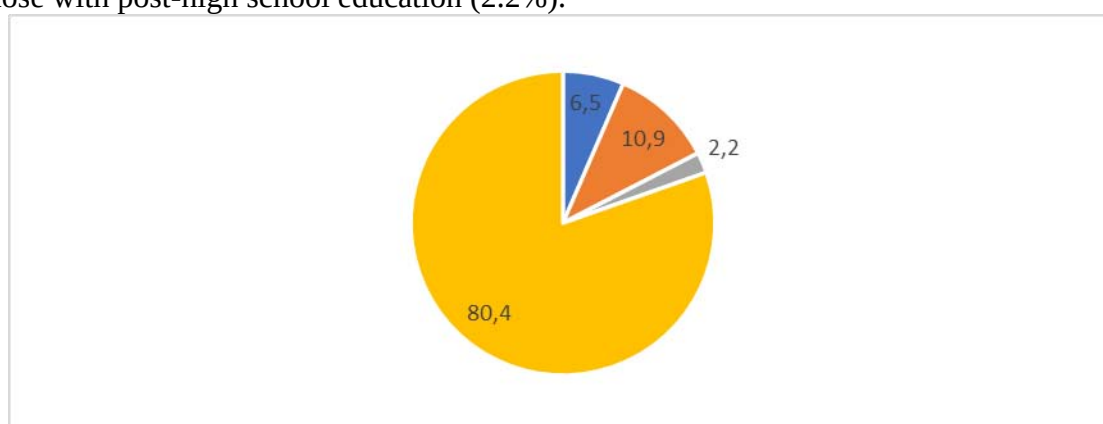


Figure 2. Level of education

The respondents' level of digital skills is indicative of the staff's ability to correctly use, apply, and interpret the benefits of digitization. The intermediate level is the most prevalent at 52.2%, followed by the beginner level at 10.8%. Among the respondents, 37% are at an advanced level.

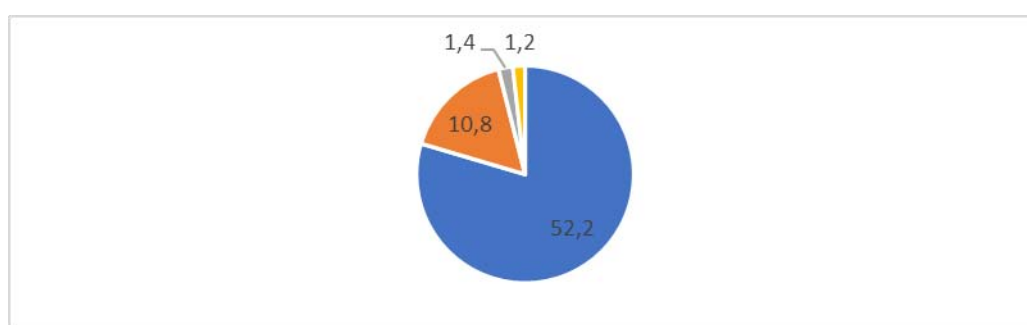


Figure 3. Level of knowledge regarding digital skills

This phenomenon can be attributed to the following finding: there is a dearth of practical training and an absence of encouragement from the public institution to assist staff in becoming acquainted with the technology. The majority of respondents received informal training (71.7%) or received no training at all, while only 28.3% received formal training.

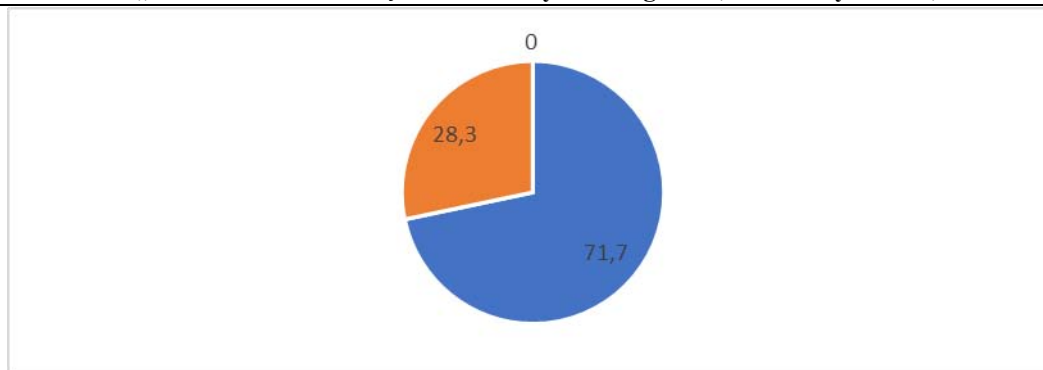


Figure 4. What kind of training have you received in using digital tools?

The software utilized by the public entity is characterized by its relative ease of use and intuitive nature. The extent to which this is the case is contingent upon the degree of knowledge and training possessed by the individual. The respondents evaluated the software as follows: 57.8% found it easy to use, 31.1% found it neutral, 8.9% found it very easy, and 2.2% found it difficult.

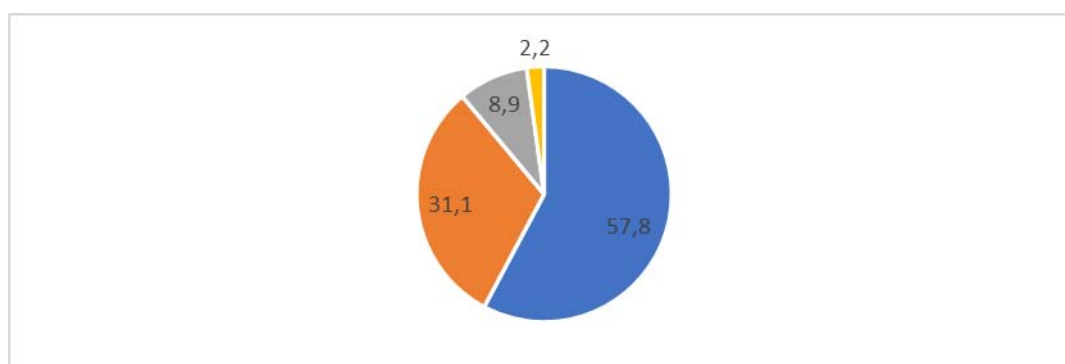


Figure 5. How user-friendly is the software?

Technical issues with software use have been documented with high frequency (58.7%), and the resolution of these issues can have a direct impact on work quality. The respondents encountered challenges due to a lack of technical support, with 10.9% of respondents reporting this issue. In such cases, an external firm was often involved in troubleshooting. Additionally, the integration of the software into a cohesive digital system is challenging, with the software's intricate interface occasionally impeding the process (13.1%).

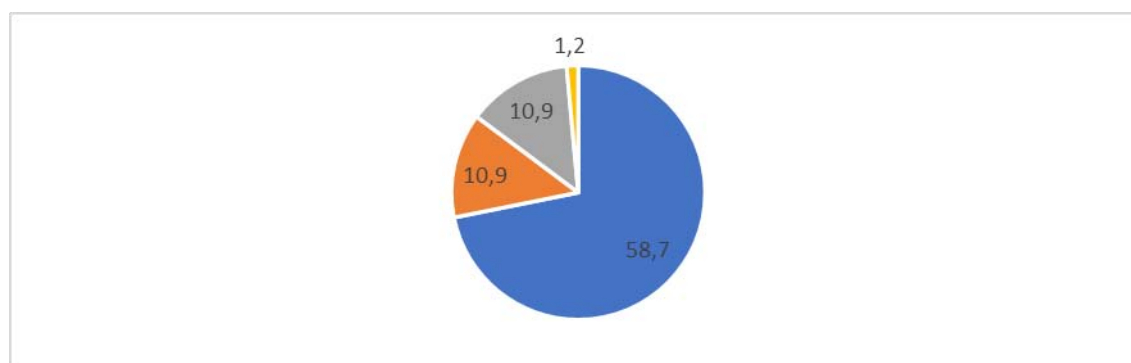


Figure 6. What challenges have you encountered when using software in general?

In response to this inquiry, it is evident that the respondents exhibit a favourable disposition. A significant proportion of respondents, 51.1%, expressed a positive outlook on the impact of digitalization, citing enhanced collaboration and communication across departments, as well as a

notable increase in efficiency in the utilization of work time. According to the findings of the study, 35.6% of respondents believe that collaboration between departments has improved as a result of digitalization. 6.7% of respondents believe that it complicates collaboration, while an additional 6.7% assert that it has no discernible effect.

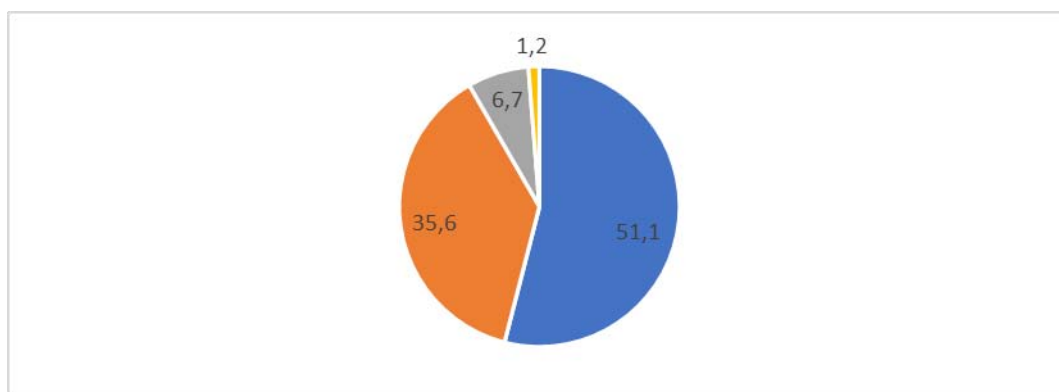


Figure 7. What impact has digitization had on collaboration between departments within your organization?

Despite the ongoing challenges, public services have a considerable opportunity to enhance their digital services. A positive attitude among respondents is encouraging. The public's evaluation of the services provided by public institutions reveals a diverse range of responses, with 37% considering them to be satisfactory, 10.9% finding them very satisfactory, 23.9% categorizing them as unsatisfactory, 26.1% expressing a neutral stance, and 2.2% labelling them as very unsatisfactory.

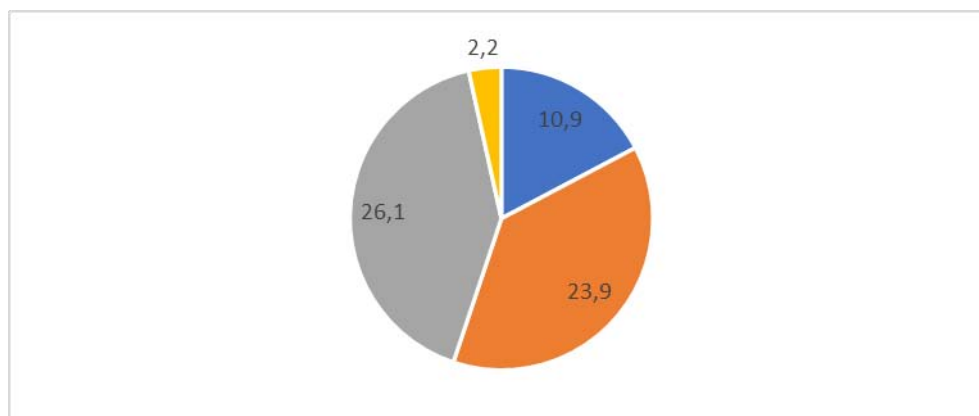


Figure 8. How satisfied are you with the digital services provided by public institutions?

The digital services provided by public institutions are often characterized by a lack of user-friendliness. The enhancement of these services would be facilitated by a contemporary approach that places greater emphasis on this aspect. A thorough examination of the chart reveals a division of opinion: The data indicates that 8.7% of respondents perceive digital services as highly user-friendly, while 8.7% encounter challenges in their use. A significant proportion, amounting to 37%, finds them straightforward. Notably, 45.7% of respondents regard the digital services provided by public institutions as impartial.

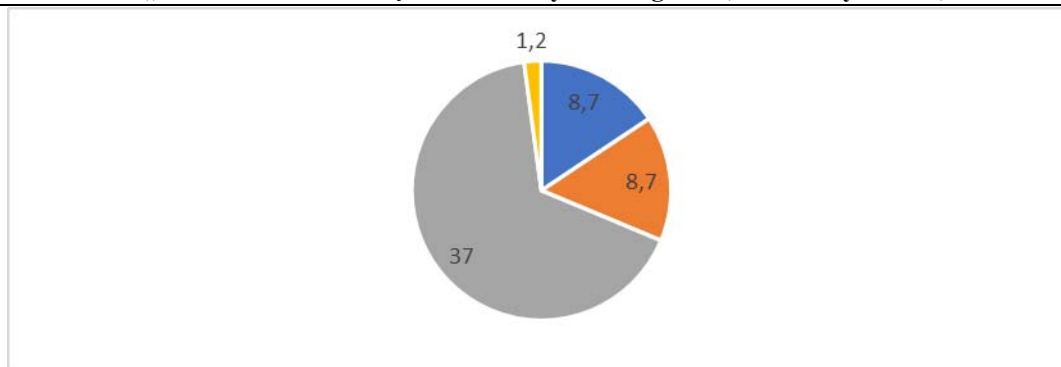


Figure 9. How easy to use are the digital services offered by public institutions?

The information disseminated by public institutions through digital platforms should be readily accessible. Digital platforms frequently provide an insufficient amount of information, necessitating users to expend additional effort to locate the desired data. The results obtained from this question are as follows: very little transparency and accessibility (2.2%), very transparent and accessible (10.9%), little transparency and accessibility (17.4%), transparent and accessible (26.1%), and neutral (43.5%).

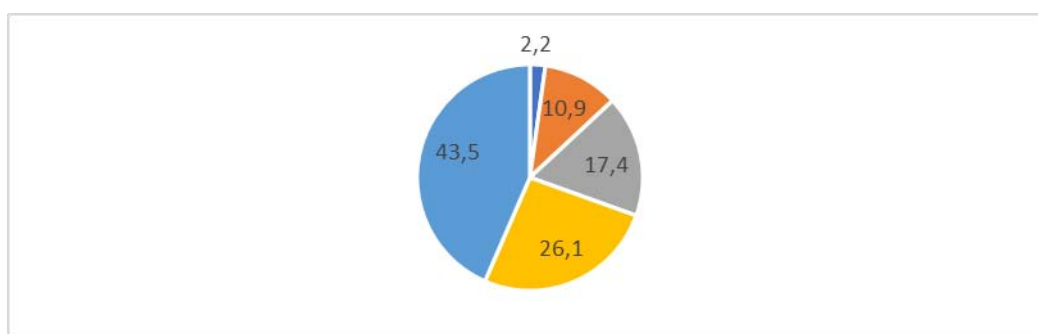


Figure 10. How would you rate the transparency and accessibility of the information provided by public institutions through digital platforms?

This is an interesting topic. The level of training among employees in public institutions is unsatisfactory, and based on the responses received, we can conclude that most employees share this view: 4.3% rated it as very satisfactory, 26.1% as satisfactory, 8.7% as very unsatisfactory, 37% as unsatisfactory, and 23.9% had a neutral opinion. They lack the necessary training, or some simply prefer to work using the “file and clipboard” method and refuse to use a computer or learn how to use software. This is largely the case with older employees, who tend to be more resistant to change.

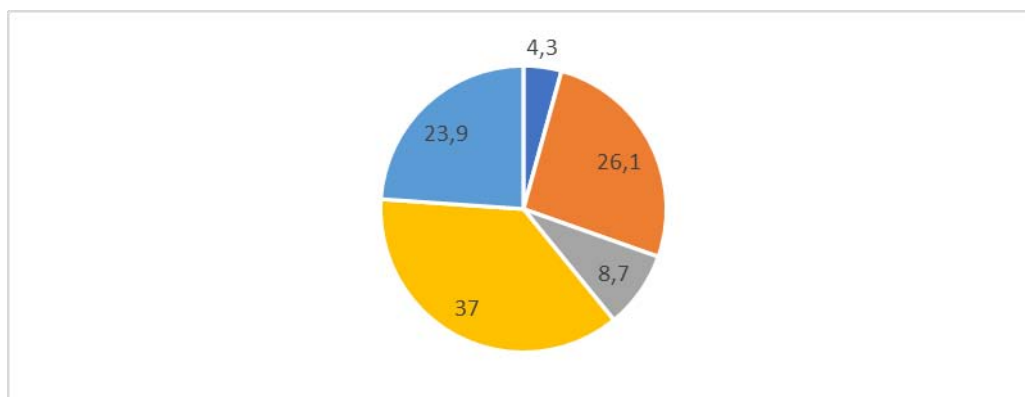


Figure11. In the context of digitalization, what do you think is the level of preparedness among public sector employees?

Digitization is a positive and necessary development in today's world. Obviously, like any change, it has both advantages and drawbacks. This is also evident from the chart above: 89.1% believe that the digitization of accounting is a positive development, while 10.9% view it as a drawback.

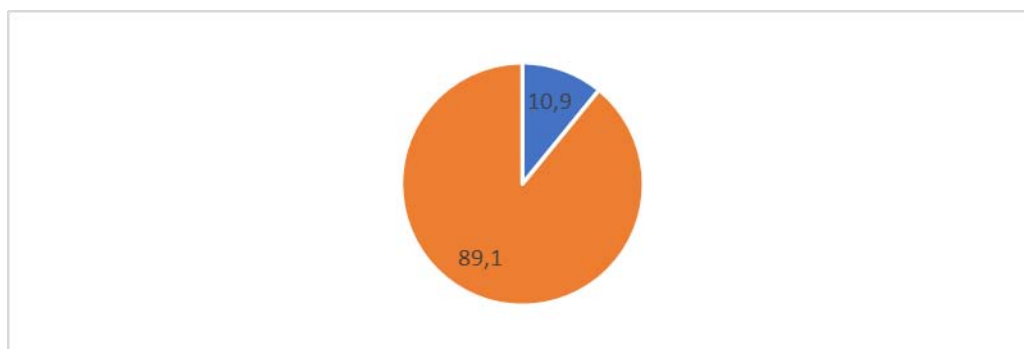


Figure 12. Do you consider digitization to be an obstacle or a positive development?

It is our stance that the rapid evolution of technology is to be regarded in a positive and balanced manner. This phenomenon signifies not only a potential avenue for expansion but also a substantial challenge that must be addressed. Conversely, the advent of information technology has also yielded positive opportunities, such as enhanced accessibility to information and augmented efficiency. A substantial challenge that will emerge in the future is the impact on employment opportunities. It is evident that employers have commenced the implementation of automation with considerable emphasis, a phenomenon that is already manifesting in specific sectors. The survey revealed that 65.2% of respondents held a favourable attitude toward the initiative, with 19.6% expressing a very positive stance and 15.2% maintaining a neutral perspective.

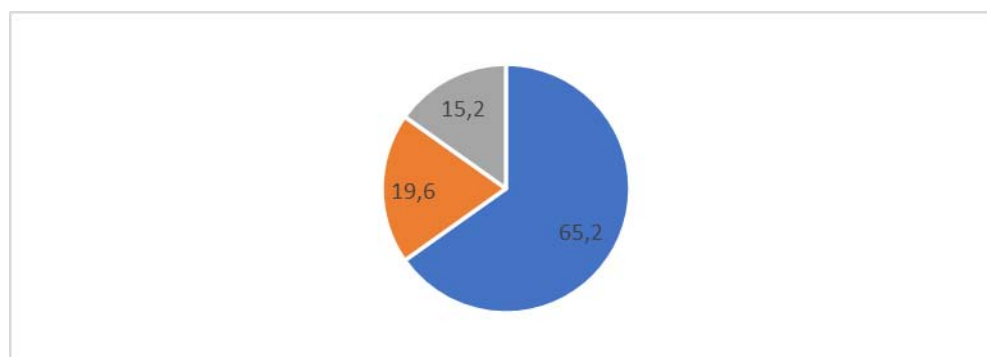


Figure 13. What is your attitude toward the rapid advancement of technology?

4. Conclusions

A comprehensive review of the extant literature reveals a strong correlation between the advent of digital technologies and the enhancement of the symbiotic relationship between the fields of accounting and marketing. This enhancement is primarily facilitated by the implementation of integrated information systems, the capacity for real-time analytics, and the adoption of data-driven strategic decision-making methodologies. The field of accounting has evolved to support marketing initiatives through financial analysis, budgeting, and performance measurement. In turn, marketing has contributed customer insights and market intelligence, which are essential for organizational planning. All of these aspects are the basis for H1 validation.

The analysis underscores the pivotal role of digital technologies in enabling cross-functional collaboration, enhancing data-driven decision-making processes, and fortifying organizational competitiveness.

Romania presents a profound paradox, in which high-capacity physical infrastructure coexists with minimal practical application in the public education sector. Despite having achieved 96% of the European Union's target for fiber-optic connectivity, the systemic integration of digital tools remains stagnant, as evidenced by an internet usage rate in education of just 9.5%, compared to the EU average of 29%. This “digital divide” is further exacerbated by the lack of specialized academic infrastructure.

Organizations often encounter challenges in integrating accounting and marketing information systems. These challenges are often attributed to technological incompatibilities and organizational resistance to change. The empirical approach reveals that successful digital transformation requires strong leadership support, employee training, and organizational adaptability. The connection and interdependence between departments are effectively coordinated through digitization (H2 validation). The transformation of public institutions into entrepreneurial entities must install in employees a desire for performance and competitiveness, as well as the efficient use of work time, through digitalization.

5. Bibliography

- [1] Appelbaum, D., Kogan, A., & Vasarhelyi, M. A. (2017). *Big data and analytics in the modern audit engagement: Research needs*. Auditing: A Journal of Practice & Theory, 36(4), 1-27.
- [2] Bhardwaj, A., and Kumar, V. (2022). *Web and social media approach to marketing of engineering courses in India*. International Journal of Business Innovation and Research, 27(4), 541-555.
- [3] Christofi, M. (2024). *The role of chief digital officer: Critical insights into an emerging field and road map for future research*. Journal of Business Research, 172, 114390.
- [4] European Commission (2020), *Shaping Europe's digital future*, available online at: https://commission.europa.eu/system/files/2020-02/communication-shaping-europes-digital-future-feb2020_en_4.pdf
- [5] Izzo, M. F., Fasan, M., & Tiscini, R. (2022). *The role of digital transformation in enabling continuous accounting and the effects on intellectual capital: the case of Oracle*. Meditari Accountancy Research, 30(4), 1007-1026.
- [6] Kotler, P., and Keller, K. L. (2016). *A framework for marketing management*. Prentice Hall.
- [7] Kreiss, D., Brennen, J. S. (2016). *Normative models of digital journalism*. The Sage handbook of digital journalism, 299-314.
- [8] Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., Haenlein, M. (2021). *Digital transformation: A multidisciplinary reflection and research agenda*. Journal of business research, 122, 889-901.
- [9] Vial, G. (2021). *Understanding digital transformation: A review and a research agenda*. Managing digital transformation, 13-66.
- [10] Worldmeter (2025), *Cele mai mari orașe după populație din România [The largest cities in Romania by population]*, available online at <https://www.worldometers.info/ro/populatie/cele-mai-mari-orase-din-romania/>