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ANALYSIS OF THE EFFECTS OF DIGITAL TRANSFORMATION ON ACCOUNTING OPERATIONS

Abstract: *This paper examines the effects of digital transformation on accounting operations, with a focus on digitalization in the field of accounting, modern digital technologies, and the key factors and benefits arising from their implementation. Particular attention is given to technologies such as artificial intelligence, machine learning, and blockchain, and their impact on improving the efficiency, transparency, and reliability of accounting processes. The research is supported by an empirical study conducted through a structured questionnaire consisting of ten questions distributed among accounting professionals. The findings indicate a predominantly positive perception of digital transformation, especially in terms of enhanced data integration, improved quality and timeliness of financial reporting, and increased security and integrity of financial information. The results also reveal a gradual shift in the professional role of accountants from traditional administrative tasks toward more analytical and advisory functions, strengthening their involvement in strategic decision-making. At the same time, certain organizational and technological challenges are identified, including technological dependency, resistance to change, and the need for continuous professional training.*

Keywords: digital transformation, accounting operations, artificial intelligence, financial reporting

JEL Classification: M40, M41

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Introduction

The rapid advancement of digital technologies has fundamentally transformed contemporary business environments, reshaping traditional organizational processes and professional roles. Accounting operations are increasingly influenced by digital transformation, with technologies such as artificial intelligence, machine learning, and blockchain changing how financial data are

collected, processed, analyzed, and reported. These developments raise important questions regarding efficiency, transparency, reliability, and the strategic value of accounting information. Previous studies emphasize that digitalization enhances the accuracy and timeliness of financial reporting, strengthens internal control mechanisms, and improves data security, while also highlighting challenges such as technological dependency, resistance to organizational change, and the ongoing need for professional training. Despite growing research in this area, there is still a need for comprehensive analysis that combines theoretical perspectives with empirical evidence on the practical effects of digital transformation on accounting operations and the evolving profile of accounting professionals. This study addresses this gap by examining the impact of modern digital technologies on accounting practices, supported by empirical research using a structured questionnaire among accounting professionals. The contribution of this paper lies in its integrated approach, linking technological innovation with practical implications, identifying both benefits and challenges, and offering insights into the transition from traditional administrative roles to more analytical and strategic functions in accounting, as well as as recommendations for effective adaptation in the digital era.

Research objectives. Empirical research will provide a comprehensive insight into the impact of digital transformation on accounting activities and processes. The results of the study indicate that the use of digital tools and technologies significantly improves and facilitates accounting by enhancing data security and transparency, automating routine tasks, and placing greater emphasis on the strategic role of accountants. However, to achieve maximum effect, it is essential for institutions to invest in new infrastructure as well as in staff training. The purpose of the research in this paper is:

- To examine the theoretical foundations of digitalization;
- To analyze the impact of the usage of digital technologies on accounting operations;
- To identify the main factors and benefits of digital transformation in the accounting industry;

- To conduct an empirical analysis of accounting professionals' experiences regarding the effects of digital transformation on accounting practices.

1. THEORETICAL BASES OF DIGITALISATION IN THE FIELD OF ACCOUNTING

1.1. Theoretical foundations of digitalization

Digitalization represents the integration of digital technologies into business processes, leading to significant changes in the way organizations create value and manage information. Unlike simple automation, digital transformation implies a broader organizational shift that encompasses changes in business models, organizational culture, and decision-making processes.¹ In this context, digital transformation is not only a technological phenomenon but also a strategic and structural change that affects all organizational functions, including accounting.

From a theoretical perspective, the adoption of digital technologies can be explained through several established models. The Technology Acceptance Model (TAM) suggests that the use of digital systems depends primarily on their perceived usefulness and ease of use, which directly influences the willingness of professionals to adopt new technologies.² This is particularly relevant in accounting, where professionals must continuously adapt to new digital tools and systems. Additionally, the Diffusion of Innovations Theory explains how technological innovations are gradually adopted within organizations depending on factors such as compatibility, complexity, and perceived benefits.³

These theoretical frameworks provide a structured basis for understanding the implementation of digital technologies in accounting. They also help explain the transformation of accounting practices and the evolving role of accountants in a digital environment, shifting from routine data processing toward analytical and decision-support functions.

¹ Vial, G.: Understanding digital transformation: A review and a research agenda, *The Journal of Strategic Information Systems*, Vol.28, No.2, Elsevier, Amsterdam, 2019, p.121

² Davis, F. P. : Perceived usefulness, Perceived ease of use, and User Acceptance of Informational Technology, *MIS Quarterly*, Vol.13, No.3, University of Minnesota, Minnesota, 1989, p.323

³ Rogers, E. M. : Diffusion of Innovations, Vol.5, Free Press, New York, 2003, p.246

1.2. Digitalization in accounting

Digitalization and the implementation of digital tools represent an inevitable and essential process in contemporary social and economic functioning, encompassing all activities, including accounting. In line with global trends, their adoption is no longer optional but constitutes a necessary developmental direction across all segments of economic activity. In this context, digitalization in accounting should not be understood merely as the replacement of paper-based documentation with digital data or computer systems. Rather, it reflects a fundamental transformation of the role of the accountant within organizations.

Traditionally, accountants were perceived primarily as administrative processors of financial information. However, with the advancement of digital technologies, their role is increasingly shifting toward analytical, interpretative, and advisory functions. This transformation is closely linked to the broader impact of digitalization on accounting processes, which significantly enhances operational efficiency and reduces the likelihood of errors. At the same time, digital systems enable rapid access to relevant information, thereby supporting more integrated and timely management decision-making.⁴

Empirical evidence supports these developments. According to Warren, digital transformation in accounting enables real-time reporting and improves decision-making capabilities.⁵ Similarly, Kokina and Davenport highlight the role of robotic process automation (RPA) in reducing manual workload and increasing process efficiency.⁶ Furthermore, Sutton argue that digitalization contributes to the transformation of accounting from a purely transactional function into a strategic business partner.

1.3. Modern digital technologies in accounting

The rapid development of digital technologies has significantly transformed accounting systems and practices. These technologies not only auto-

⁴ Gnativk, T., Shkromyda, V., Shkromyda, N.: Digitalization of accounting: Implementation features and efficiency assessment, *Journal of Vasyl Stefanyk Precarpathian National University* Vol.10, No.2, Ivano-Fransiosk, 2023, p.6

⁵ Warren, J. D., Moffitt, K. C., Byrnes, P. :How Big Data will change accounting, *Accounting Horizons*, Vol.29, No.2, American Accounting Association, Florida, 2015, p.401

⁶ Kokina, J., Davenport, T. H. :The emergence of artificial intelligence: How automation is changing auditing, *Journal of Emerging Technologies in Accounting*, Vol.14, No.1, American Accounting Association, Florida, 2017, p.117

mate routine processes but also enhance analytical capabilities and strategic decision-making.

The introduction of artificial intelligence (AI), machine learning, robotic process automation (RPA), and blockchain technology enables greater efficiency, accuracy, and transparency in accounting processes.⁷

Artificial intelligence: Smart technologies such as artificial intelligence and machine learning actively provide businesses with information in near real time.⁸

With the help of intelligent algorithms, complex processes such as verification of financial transactions, cash flow forecasting, and risk analysis can be automated, which increases the strategic value of accounting functions. The process of identifying anomalies and inconsistencies in large datasets is facilitated, thereby reducing the likelihood of fraud.

Machine learning: ML is only a part of AI that uses learning algorithms to absorb and process data from the environment in order to create systems that can mimic the human intelligence and inference ability.⁹

Machine learning, as a subset of artificial intelligence, is used to automate routine tasks such as forecasting future cash flows and classifying expenses, and it also contributes to faster and more accurate analyses.

Block chain is “a digital mechanism to create a distributed digital ledger on which 2 or more participants in a peer-to-peer network can exchange information and assets directly without the need for a trusted intermediary”.¹⁰

Its application within the accounting field provides a transparent and secure record of executed financial transactions (a copy of which is available to all involved parties), thereby further facilitating the auditing process.

⁷ Koleva, B., Mitreva, M., Dimitrova, J.: Accounting profession in a dynamic business environment: Challenges and opportunities for adaptation, Year Book of Faculty of Economics No.27, Goce Delchev University, Shtip, 2025, p.18

⁸ Gulin, D., Valenta, I.: Digitalization and the challenges for the accounting, Journal Entrenova Vol.5, Renet-Society for advancing innovation and research in economy, Zagreb, 2019, p.432

⁹ Vlad, M., Vlad S.: The use of machine learning techniques in accounting, Journal of Social Sciences Fascicle Vol.4, No.3, Stefan cel Mare University, Suceava, 2021, p.140

¹⁰ Pugna, I. B., Dutescu A.: Blockchain-the accounting perspective, Bucharest University of Economics Studies, Bucharest, 2019, p.3

1.4. Key factors and benefits from the digitalization in the field of accounting

The success of implementing digital tools and technologies within the accounting profession depends on several key factors, including the level of technological infrastructure, the competencies of personnel, and the quality of available data. These elements collectively ensure the effective functioning and sustainability of digital systems. In addition, strategic commitment and a supportive organizational culture from management significantly increase the likelihood of successful and long-term integration of digitalization within accounting processes.

The extent to which companies benefit from digitalization largely depends on how effectively it is implemented. Among the most notable advantages are improved quality of accounting operations, increased accuracy, and faster processing of transactions. Furthermore, through automation and advanced data analytics, organizations are enabled to engage in proactive financial planning and more informed strategic decision-making, supported by timely and transparent financial information.

Despite these benefits, the adoption of advanced digital tools, particularly those based on artificial intelligence (AI), remains limited due to their high cost and inaccessibility for many companies. Nevertheless, future trends indicate a growing and continuous application of such technologies in data processing and analysis. This development raises concerns regarding the potential displacement of certain job roles, especially those involving routine and repetitive tasks. However, while digital tools can significantly support and enhance decision-making processes, they are unlikely to fully replace the human factor, particularly in the context of complex business and strategic decisions that require professional judgment and experience.

At the same time, digitalization introduces a range of challenges that must not be overlooked. Some authors emphasize risks such as over-reliance on technology, increased exposure to cybersecurity threats, and the potential erosion of professional judgment⁷. Therefore, achieving successful digital transformation in accounting requires a balanced approach that integrates technological advancement with continuous professional development, critical thinking, and strong organizational support.

2. EMPIRICAL ANALYSIS OF THE EFFECTS OF DIGITAL TRANSFORMATION ON ACCOUNTING OPERATIONS

2.1. Research methodology

The sample consists of 50 respondents, including accountants, financial managers, financial directors, and financial advisors, employed in various types of enterprises. The respondents are drawn from small, medium, and large companies, which enables a broader insight into the application and effects of digital transformation across different organizational settings.

In terms of structure, the sample includes professionals with direct involvement in accounting and financial decision-making processes, which ensures the relevance of the collected data. However, it should be emphasized that the sample is based on convenience sampling and is limited in size, which affects its statistical representativeness.

Consequently, the findings of this study primarily reflect the perceptions and experiences of the surveyed group and cannot be fully generalized to all accounting professionals or all types of enterprises. The conclusions are therefore more applicable to organizations with similar characteristics, particularly those that have already initiated or are in the process of digital transformation, as well as to enterprises in which accounting functions are actively integrated with financial management.

The aim of the survey was to obtain statistical data on the effects of digitalization, specifically digital tools and technologies, on the accounting practices within their respective organizations. The survey consisted of a total of 10 questions, designed to examine the impact and effectiveness of digitalization in accounting processes.

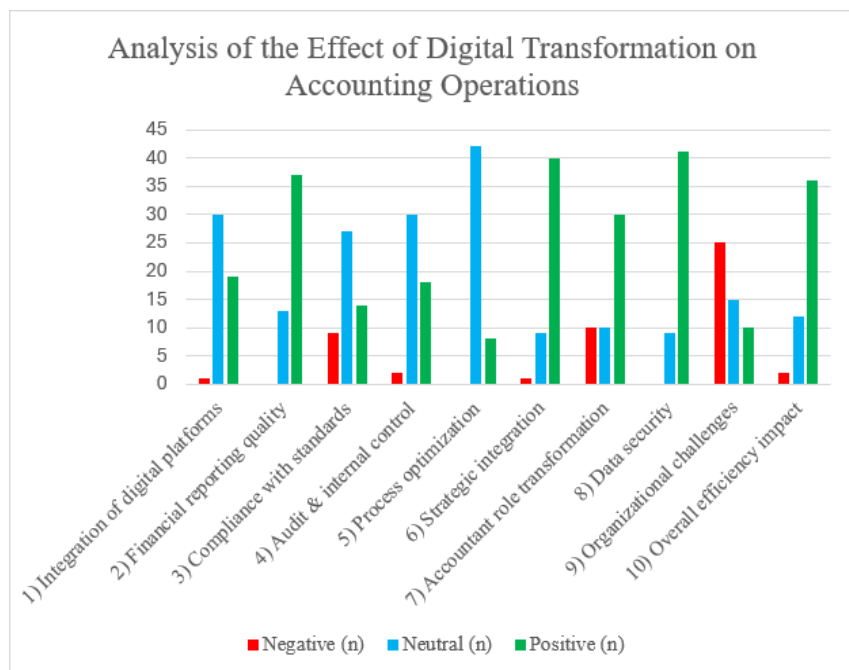
2.2. Survey results

Table 1. Questionnaire and results: Analysis of the effect of digital transformation on accounting operations

Question	Negative (n)	Neutral (n)	Positive (n)
To what extent have automated digital platforms (ERP, cloud accounting, AI tools) contributed to greater integration and alignment of accounting data within your organization?	1	30	19
What impact have digital systems had on the quality and timeliness of financial reporting, especially regarding analytical and predictive reports?	0	13	37
Has digital transformation enabled better compliance with legal regulations, IFRS standards, and transparency requirements?	9	27	14
What impact has digitalization had on audit and internal control processes, particularly in terms of accessibility and verifiability of electronic data?	2	30	18
What effect has digitalization had on the redesign and optimization of accounting processes (workflows, supervision, communication)?	0	42	8
To what extent has digital transformation contributed to better integration of accounting functions with strategic financial management (budgeting, cost analysis, forecasting)?	1	9	40
How has digitalization changed the role of accountants — from administrative to analytical and advisory functions?	10	10	30
How much have digital solutions improved the security, protection, and integrity of accounting data compared to previous traditional systems?	0	9	41
What impact has the introduction of digital technologies had on organizational and technological challenges (technical barriers, technological dependency, resistance to change)?	25	15	10
How would you rate the overall impact of digital transformation on the efficiency and competitiveness of the accounting function within your organization?	2	12	36

Source: authors' own calculations

Chart 1. Analysis of the effect of digital transformation on accounting operations



Source: authors' own calculations

The empirical research data reveal the presence of a certain expressed tendency to view the role of digital transformation in modern accounting processes in a positive light. Indeed, the majority of the research participants perceive significant benefits in the following areas: accounting data integration, the quality and timeliness of financial reporting, and the security and integrity of electronic information. Such perceptions are in line with the global trend to view digital platforms as the key infrastructure in the processes of analytical and predictive decision-making.

The research data also reveal the presence of a certain trend to view digital transformation as a factor in the gradual change of the professional profile of accountants. Indeed, the research participants perceive digital transformation as a factor in the transition from administrative to analytical functions. Although certain research participants express certain negative perceptions in this regard, the majority view digital transformation as a source of new opportunities to integrate accounting processes with other financial management processes in a strategic manner.

However, at the same time, it has become evident through the analysis that there are certain organizational and technical challenges, especially in terms of dependency on technology, resistance to change, and the need to provide continuous training to employees. While it is true that these challenges will influence the speed at which adaptation occurs in the digital era, it is also true that they in no way diminish the necessity of adaptation.

Conclusion

Digitalization is increasingly central to organizational operations, including accounting, as it enables competitiveness and alignment with global trends. While it offers significant benefits—such as enhanced financial reporting, improved data integration, stronger cybersecurity, and a more strategic accounting role—it also introduces organizational, technological, and human challenges that must be carefully managed. Digital transformation fosters more accurate, transparent, and accessible financial information, supporting timely and informed decision-making. Successful adoption, however, requires substantial infrastructure investment, continuous employee learning, flexibility, and strong leadership. The study's findings are based on a sample of 50 respondents, including accountants, financial managers, directors, and advisors, and are therefore context-specific. Caution is needed when generalizing results, which mainly apply to enterprises with similar characteristics or those undergoing digital transformation. Overall, integrating digital technologies can enhance the efficiency, effectiveness, and long-term competitiveness of accounting functions, provided organizations proactively address the accompanying challenges through technology investment, workforce development, and strategic management.

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