Georgios Kampiotis, PhD(c), Department of Management Science and Technology

Georgios L. Thanasas, Associate Professor, Department of Management Science and Technology

University of Patras, Greece

DIGITAL ACCOUNTING AND BLOCKCHAIN: CURRENT TRENDS, CHALLENGES, AND FUTURE PROSPECTS

This paper presents a concise synthesis of recent research on the integration of digital accounting and blockchain technologies, as well as their transformative effects on accounting and auditing. Based on a systematic literature review conducted according to the PRISMA 2020 framework, this study analyzes peer-reviewed papers published between 2023 and 2025 to identify the benefits, limitations, and future directions. The results reveal that blockchain, artificial intelligence (AI), cloud computing, and robotic process automation (RPA) enhance financial transparency, efficiency, and fraud prevention but pose challenges related to cybersecurity, cost, and workforce readiness. The study emphasizes the crucial need for ethical governance, regulatory harmonization, and educational reform to ensure a sustainable digital transformation.

Digital accounting supported by blockchain and AI technologies is reshaping the structure and function of accounting systems. Organizations are increasingly employing cloud-based platforms and automated systems to enhance financial accuracy, traceability, and informed decision-making. Blockchain provides immutable transaction records and fosters trust among stakeholders, while AI and RPA streamline data processing. Despite these benefits, many organizations face implementation challenges, including high costs, a lack of skilled professionals, cybersecurity threats, and employee resistance. This study summarizes current global trends and the barriers that affect the successful adoption of digital accounting systems.

The research follows a Systematic Literature Review (SLR) approach using the PRISMA 2020 protocol. Searches were conducted in Scopus, IBIMA, Taylor & Francis, and Emerald databases for peer-reviewed English-language studies published between 2023 and mid-2025. After screening and eligibility assessment, four studies were included for analysis [2, 5, 1, 3]. The review focused on two key research questions: RQ1: How do digital accounting technologies influence financial performance and efficiency? RQ2: What are the main challenges organizations face in implementing digital accounting and blockchain solutions?

Empirical evidence suggests that integrating blockchain and AI significantly enhances financial performance and reporting quality. Quantitative studies in the banking sector [2] reveal positive correlations between digital accounting practices and return on assets (ROA), highlighting the benefits of enhanced transparency and automation efficiency. Bibliometric analyses [5] reveal the emergence of growing research clusters around AI, RPA, and blockchain, indicating a global shift toward digitalization. Similarly, studies in Vietnam [1] confirm blockchain's ability to strengthen trust and reduce fraud, while research in Kazakhstan [3] highlights the early-stage adoption of digital tools, which is limited by infrastructure and cost.

Nevertheless, several barriers persist. Cybersecurity risks and data privacy threats remain primary concerns due to the increasing use of cloud-based and blockchain applications. High implementation and maintenance costs restrict adoption in developing economies. Organizations also face shortages of digitally skilled professionals and cultural resistance to change. Moreover, regulatory inconsistencies across regions hinder global standardization of digital accounting practices. These findings suggest that while technology enhances efficiency and transparency, sustainable transformation necessitates organizational readiness, robust governance, and ongoing upskilling of accountants.

Further investigation should explore cross-country comparisons and longitudinal studies to assess the real-world impact of digital accounting over time. Research should also focus on ethics, data governance, and the integration of AI-driven decision support in accounting education. Developing specialized digital accounting curricula and establishing policy frameworks for data protection and cybersecurity will be essential for future resilience.

Digital accounting and blockchain technologies are revolutionizing accounting and auditing by enhancing operational efficiency, preventing fraud, and promoting financial transparency. However, the success of digital transformation depends on overcoming technological, organizational, and educational barriers. Future progress will require a balanced approach that combines technological innovation with effective ethical and regulatory oversight. Accountants must evolve from data processors to digital analysts and advisors, ensuring that human expertise complements technological precision.

Keywords: Digital Accounting, Blockchain, Artificial Intelligence, Robotic Process Automation, Financial Reporting, Auditing

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