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Blockchain in the New Era of Accounting: A PRISMA-Guided Review on Trends and Future Prospects

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Abstract

This review synthesizes recent scholarships at the intersection of digital accounting and blockchain, examining how their integration reshapes financial reporting, auditing, and organizational performance. Following PRISMA 2020, we screen and analyze peer-reviewed studies published from 2023 through July 2025 across leading databases. Evidence indicates that digital accounting—driven by blockchain, artificial intelligence, cloud platforms, and robotic process automation—improves data accuracy, process efficiency, transparency, and fraud deterrence, enabling timelier, decision-useful information. At the same time, adoption is constrained by cybersecurity exposure, high implementation and maintenance costs, talent shortages, and change resistance. The literature also documents role reconfiguration: accountants are shifting from transactional data entry toward analytical, assurance, and advisory functions. Outcomes, however, are heterogeneous across regions and industries, reflecting differences in regulation, digital infrastructure, and organizational readiness. We conclude by outlining a research agenda on ethical governance and accountability, policy and standard-setting implications, curriculum and workforce development, and cross-cultural adoption dynamics to support sustainable, trustworthy digital transformation in accounting and auditing.

Keywords: Accounting; Blockchain Technology; Artificial Intelligence; Cloud Computing; Robotic Process Automation; Auditing**.**

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1. Introduction

Organizations have accelerated their adoption of digital technologies including blockchain and artificial intelligence and data analytics and cloud computing to transform the accounting and auditing field. Organizations achieve better operational performance and enhanced accuracy and transparency and improved decision-making capabilities through the implementation of modern technologies for financial data processing. Major banks and social enterprises across the world use these technologies to gain competitive advantages and build trust while fulfilling new regulatory requirements. The rapid digital transformation brings multiple promising opportunities but generates various complex challenges which include security threats and deployment costs and talent shortages and complete system changes to traditional accounting systems and work environments [1].

The need to link blockchain research across different organizational domains led researchers to develop this systematic review. The research evaluates current studies to understand how digital platforms impact business results and operational methods and what obstacles organizations face when adopting new systems. The research evaluates all digital transformation benefits and drawbacks and current implementation obstacles through PRISMA to determine their effects on accounting and auditing practices. The review demonstrates current advancements in the field to stakeholders including practitioners and policymakers and educators and researchers while showing directions for future study and best practices for digital system deployment [2-3].

2. Structure of the paper

The paper is structured to provide a comprehensive analysis of how digital accounting and blockchain technologies are transforming the accounting and auditing landscape. It begins by outlining the global context of digital transformation and the growing reliance on blockchain and artificial intelligence to improve efficiency, transparency, and compliance. The section on current trends examines the integration of AI, big data, RPA, and cloud computing, emphasizing automation and the evolving role of accountants. The methodology, grounded in the PRISMA 2020 framework, details a rigorous systematic review process used to identify and analyze relevant studies. The results and discussion present findings organized around two core research questions concerning the impact of digital technologies on performance and the challenges of their implementation. Subsequent sections acknowledge methodological limitations, propose future research directions related to ethics, regulation, and education, and conclude that while digital accounting enhances organizational performance, it also necessitates new skills, investments, and governance for sustainable adoption.

3. Literature review

The integration of blockchain artificial intelligence (AI) with cloud computing and big data analytics and robotic process automation (RPA) leads to major changes in accounting and auditing operational procedures. Financial information processing has undergone a complete transformation because technological progress affects all financial data systems which handle recording and verification and reporting functions. The blockchain system operates as a decentralized immutable ledger which provides financial transaction standards with enhanced transparency and traceability and security features. Organizations use blockchain technology to execute smart contracts which perform immediate audits and prevent fraud and detect fraud so accountants can concentrate on creating business strategies for their organization [7].

Cloud computing technology enables organizations to minimize human reconciliation work while building trust with their stakeholders. AI technology enables businesses to perform automated work and develop predictive models which provide instant access to accounting data from anywhere thus supporting teamwork and business expansion and maintaining essential operational capabilities that supported remote work during the pandemic [8].

Organizations that enhance their decision-making abilities will achieve better operational results and improved forecasting accuracy. The analysis of big data by accounting professionals enables them to handle large amounts of structured and unstructured information which leads to enhanced financial guidance and market traditions in contemporary business operations. Modern business operations depend on big data analytics together with RPA as their core tools to enhance identification processes [9].

Organizations that implement these technologies help their accounting staff develop digital skills which enable them to move from basic bookkeeping tasks to advisory and analytical roles. Organizations need to handle security threats and system integration problems and maintain regulatory compliance and employee training programs to achieve operational advantages from these trends. Digital technology has established sophisticated performance standards for accounting operations which help businesses control their complex financial management systems effectively [10].

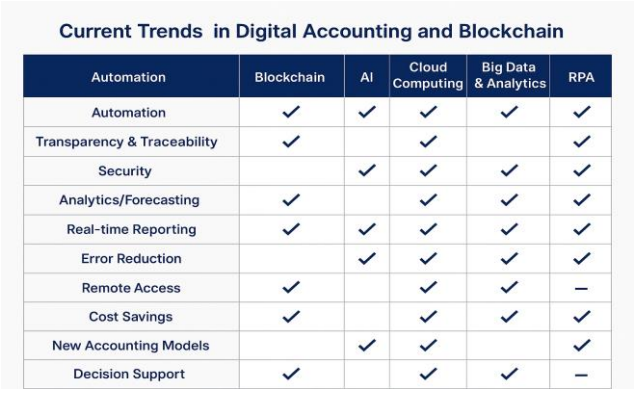

Fig. 1. Current Trends in Digital Accounting and Blockchain

4. The identification of previously unresolved issues and the formulation of research hypotheses

Although digital accounting and blockchain research has grown rapidly, this review reveals several significant gaps that limit a comprehensive understanding of their impact on accounting and auditing practices. First, existing studies are largely confined to specific geographical or industrial contexts such as banking in Nigeria, listed companies in Vietnam, or social enterprises in Kazakhstan which restricts the generalizability of findings across different economic and cultural settings. Cross-country and cross-sector comparisons are scarce, leaving unanswered questions about how institutional environments, regulatory frameworks, and economic development levels influence technology adoption outcomes [4]. Secondly, most prior research has prioritized the technical performance and financial benefits of digital technologies, overlooking the human and organizational dimensions that shape digital transformation. Issues such as organizational readiness, employee training, management change, and resistance to new systems remain underexplored. Moreover, while blockchain and AI promise enhanced data transparency and trust, their ethical, legal, and social implications, including data privacy, cybersecurity, and algorithmic accountability have not been adequately investigated in the accounting domain [5].

Another major gap lies in the educational and professional development sphere. Few studies have examined how accounting education and professional certification programs can adapt to equip practitioners with the digital competencies required to manage blockchain, AI, and cloud-based systems effectively. Additionally, methodological diversity remains limited: most studies employ quantitative or bibliometric approaches, with minimal use of longitudinal, qualitative, or mixed methods designs capable of capturing evolving technological and behavioral changes over time. Overall, the current literature provides valuable insights into digital accounting's potential but requires broader, interdisciplinary, and context-sensitive research to fully understand its long-term impact on financial reporting, auditing, and the accounting profession as a whole [6].

5. Research Questions

Prior to commencing the core phase of the study, the authors formulated the central research questions (table 1), focusing on Blockchain in Digital Accounting.

Table 1
Systematic Literature Review under the PRISMA approach

№	Topic definition	Journal articles on Digital Accounting, Blockchain
1	Define research questions	**RQ1**: How do digital accounting technologies, such as blockchain and artificial intelligence, affect the financial performance and efficiency of organizations? **RQ2**: What are the main challenges and barriers that organizations face when implementing digital technologies in accounting and auditing?
2	Determine search «keywords»	Digital Accounting, Blockchain
3	Identify databases and Proceed with search	IBIMA, Taylor & Francis, Emerald, FrancoAngeli
4	Article selection	Articles published in English, in reputed journals, and in the context of Blockchain, Digital Accounting
5	Article synthesis	Critical assessment of included studies
6	Publicize SLR findings	The findings are derived from an analysis of data collected and current evidence reported in multiple individual studies published in reputable academic journals

6. Methodology

This study adopts a Systematic Literature Review (SLR) methodology guided by the PRISMA 2020 (Preferred Reporting Items for Systematic Reviews and Meta- Analyses) framework to ensure transparency, rigor, and replicability throughout the research process. The PRISMA framework was selected due to its structured approach to identifying, screening, evaluating,

and synthesizing peer-reviewed scholarly literature. It enables a comprehensive analysis of research trends, theoretical contributions, and empirical findings related to the integration of Blockchain in Digital Accounting [11].

Fig. 2. Steps of Systematic Literature Review Process

The review followed a five-phase process:
(1) topic formulation and research question development,
(2) definition of search terms and selection criteria,
(3) systematic database searches,
(4) screening and eligibility assessment, and
(5) data extraction and synthesis.
The corresponding PRISMA flowchart illustrating this process is presented in the Results section.

This study's methodological approach was organized around three core elements: the selection of keywords, the screening process, and the definition of eligibility criteria. Due to the focused nature of the topic exploring the role of Blockchain in Digital Accounting, it was essential to identify a precise and relevant set of search terms. To this end, the keywords chosen for the literature search included: «Digital Accounting», «Blockchain». These terms were instrumental in guiding the database queries and ensuring alignment with the research objectives. A comprehensive search was conducted across several academic databases, including Scopus, to identify relevant peer-reviewed articles published between 2023 and July 2025.

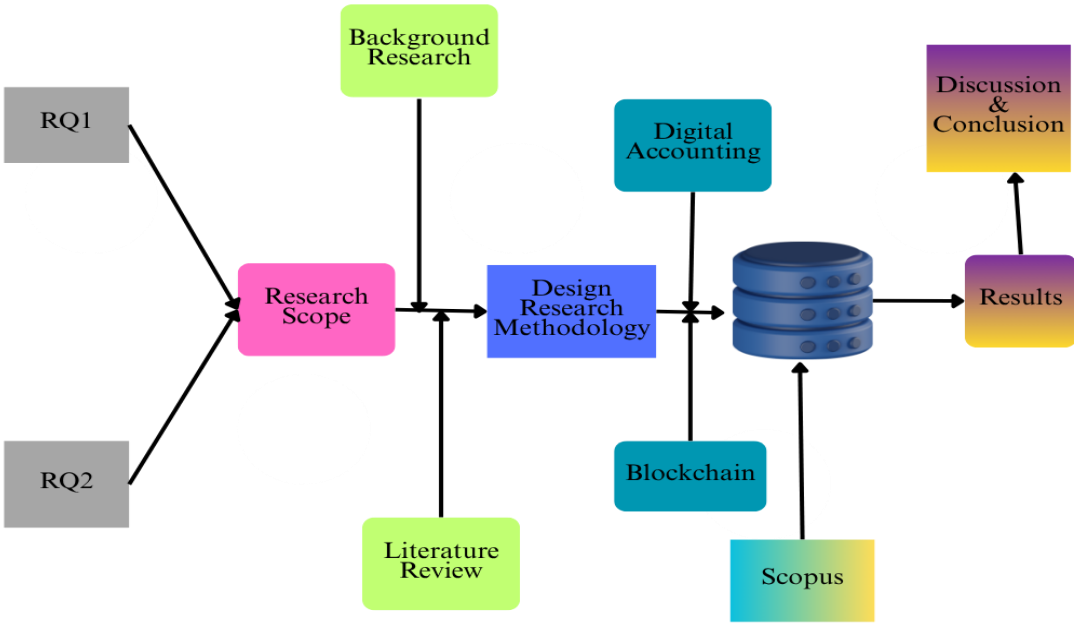

Fig. 3. Methodology Flowchart

Boolean operators and database-specific filters were applied to refine results.

TITLE-ABS-KEY («Blockchain» AND «Digital Accounting») AND PUBYEAR > 2022 AND PUBYEAR < 2026 AND (LIMIT-TO (SUBJAREA , «BUSI»)) AND (LIMIT-TO (DOCTYPE ,«ar»)) AND (LIMIT-TO (EXACTKEYWORD, «Blockchain») OR LIMIT-TO (EXACTKEYWORD , «Digital Accounting»)).

To ensure relevance and quality, studies were selected based on the following criteria:

INCLUSION CRITERIA (IC) for this study are as follows:

- IC-1: articles that talk about Blockchain or Digital Accounting
- IC-2: articles published between 2023 to 2025(July)
- IC-3: articles published in English.
- IC-4: articles published in peer-reviewed journals.
- IC-5: articles that included two or more of our specified keywords in the abstract, title, or keywords.

An initial pool of 5 studies was identified. After duplicates were removed, titles and abstracts were screened for relevance. The remaining full-text articles were assessed against the eligibility criteria, resulting in 4 studies included for final analysis. A structured data extraction table was developed to capture key information from each study, including authors, publication year, study type/design, sample size, techniques used, limitations and key findings. The summary of these selected studies, outlining their methodological approaches and primary outcomes, is presented in Table 2.

Table 2
Main Papers identified and used under the PRISMA approach

Authors	Year	Study type	Sample Size	Techniques Used	Limitations	Key Findings
Ajape and Adelowotan	2025	The study is quantitative research using a survey design	396 employees from seven internationally authorized deposit money banks in Nigeria	Data were collected using a self-administered questionnaire and analyzed using descriptive statistics and multiple linear regression with SPSS	The study mainly reflects the views of younger, highly educated bank employees, which may limit the generalizability of the results	Digital accounting practices, including data analytics, automated bookkeeping, machine learning, cloud-based accounting systems, and blockchain technology, have a positive and significant impact on the financial performance (ROA) of Nigerian banks
Indrayani et al.	2024	This study is a bibliometric analysis of research articles	The sample consists of 324 articles on emerging technologies in accounting published between 1982 and 202	The study uses bibliometric methods with data collected from the Scopus database and analyzed using tools like VOS viewer and Bibliophagy via RStudio	The study only uses articles from the Scopus database, so relevant works from other sources may be excluded	The research identifies four main research clusters and five key technologies in digital accounting, highlighting the evolution, gaps, and future research priorities in the field
Afifa et al.	2022	The study is a quantitative research paper using an extended UTAUT model to examine accountants' intention to adopt blockchain technology	The sample includes 317 accountants working in listed enterprises in Vietnam	Data were collected via an online questionnaire and analyzed with SmartPLS structural equation modeling (PLS-SEM)	The use of non-probability sampling and focusing only on accountants from listed enterprises in Vietnam may limit the generalizability of the results	Performance and effort expectancy, trust, and accounting information quality positively influence accountants' intention to use blockchain, while compatibility does not have a direct effect on intention
Amanova et al.	2023	The study is a qualitative analysis based on a review of literature, reports, and a survey of Kazakh enterprises	The study draws on secondary data and a survey of 1,666 professionals but does not use a traditional sample size for primary empirical research	The research uses general scientific methods such as analysis, synthesis, comparison, induction, deduction, abstraction, and generalization	The main limitations include partial usage of digital technologies across industries and reliance on secondary sources rather than broad primary data collection	Kazakh enterprises have begun implementing digital technologies like blockchain, cloud computing, and AI in accounting and auditing, but face significant barriers such as cost, legislative issues, and a lack of skilled specialists

7. Results

Organizations show improved financial performance along with operational efficiency due to digital accounting technologies including blockchain and artificial intelligence according to numerous studies and practical analyses across various contexts. Digital accounting systems with data analytics and automated bookkeeping and machine learning and cloud-based accounting systems and blockchain technology led to improved return on assets (ROA) and higher accuracy rates while streamlining routine tasks and reducing errors to enable employees to work on strategic matters at Nigerian deposit money banks. The combination of automated accounting systems with AI-powered technology enhances financial record accuracy and financial reporting transparency and enables organizations to make decisions in real-time while optimally allocating resources. The implementation of cloud computing technology provides financial data access that supports cost efficiency and data integrity while blockchain technology makes records immutable and trustworthy thus making it hard for fraud and data manipulation to occur [12].

The bibliometric research demonstrates how accounting professionals now perform different tasks because artificial intelligence combines with blockchain and big data and cloud computing systems. The systems improve operational performance through automated operations which generate fast and precise financial data processing results. AI systems enhance work accuracy so accountants can dedicate their time to complex analysis and interpretation instead of doing repetitive data entry work. The decentralized ledgers and smart contracts of blockchain technology provide exceptional data quality improvement through transparent data traceability and reliability. Organizations that adopt these technologies achieve improved market responsiveness and enhanced stakeholder information delivery and fast data-driven decision-making for competitive advantage [13].

The research conducted in Vietnam demonstrates blockchain technology improves accounting operations through its ability to reduce errors and stop fraud while creating unalterable financial records that verify transactions instantly. Organizations can use triple-entry accounting through this technology to verify transactions quickly while producing automated financial reports with enhanced protection against fraudulent activities. The new technology enables accountants to redirect their work from basic record management to financial analysis and decision support activities. The advancement of departmental efficiency and organizational performance becomes more critical because financial statement quality and trust remain essential issues in this environment. Organizations in Kazakhstan can access information quickly through digital technologies which combine blockchain with cloud solutions AI software robotics and Internet of Things to stop financial and management report generation errors. The tools boost operational performance while reducing expenses and strengthening the dependability of accounting and auditing systems. Organizations need to overcome three major barriers which include implementation costs and workforce shortages and employee resistance to change to achieve complete digital transformation benefits. The research demonstrates digital accounting technologies create successful business environments through performance enhancement and operational efficiency improvement in different market environments [14].

Table 3
Impact of Digital Accounting Technologies (Blockchain & AI) on Financial Performance and Efficiency

Source	Context / Methodology	Key Technologies Examined	Main Findings on Financial Performance & Efficiency	Additional Notes / Implications
Ajape & Adelowotan (2025)	Quantitative study of 396 employees from 7 Nigerian banks using regression analysis	Data analytics, automated bookkeeping, machine learning, cloud accounting, blockchain	All technologies showed a positive and statistically significant impact on Return on Assets (ROA). Automation reduced errors and enabled better resource allocation. Machine learning and analytics improved decision-making accuracy and reporting transparency	Digital accounting promotes cost efficiency, real-time financial visibility, and employee productivity by automating routine tasks
Indrayani et al. (2024)	Bibliometric analysis of 324 Scopus-indexed papers (1982–2024)	Artificial intelligence (AI), blockchain, robotic process automation (RPA), big data, cloud computing	Digital technologies fundamentally enhance operational efficiency and accuracy in accounting through automation and intelligent systems. Blockchain improves transparency; AI and big data facilitate faster, more reliable decision-making	Accountants' roles shift from data entry to strategic data analysis; accounting education must adapt to include AI and blockchain competencies
Abu Afifa et al. (2023)	Empirical survey with 317 accountants analyzed via PLS-SEM (Structural Equation Modeling)	Blockchain (ledger systems, triple-entry accounting, smart contracts)	Blockchain adoption reduces fraud, ensures data immutability, and improves financial reporting quality. Enhances trust and accuracy of accounting information, indirectly improving performance	Accountants perceive blockchain as a tool that strengthens transparency and auditability, leading to better decision-making and efficiency
Amanova et al. (2023)	Qualitative study analyzing Kazakhstan's digital transformation in accounting and auditing	Blockchain, cloud computing, big data, AI, software robotics, Internet of Things (IoT)	Adoption of digital tools reduces reporting errors, improves data access, and lowers operational costs. Integration of AI and IoT strengthens reliability and efficiency of auditing systems	Identified barriers: high implementation costs, lack of skilled workforce, and resistance to change. Recommends policy and training support for full digital transformation

Research studies conducted in various business environments demonstrate that multiple obstacles stop organizations from implementing digital solutions for their accounting and auditing work. Organizations face two persistent challenges which involve protecting data privacy and defending against cyber threats. The implementation of digital accounting systems through cloud computing with blockchain and artificial intelligence technology creates major security threats because it exposes data to unauthorized access and cyberattacks which lead to sensitive information theft. The main security concerns for Nigerian banks operating with digital accounting methods include cybersecurity threats and data privacy risks which need both technological protection systems and ongoing security monitoring and funding [15].

Organizations experience increased vulnerability because their digital system adoption faces challenges from varying regional regulatory frameworks and insufficient enforcement practices and developing regulatory environments. The main challenge organizations face stems from the high costs needed to implement these solutions. Organizations need to spend large amounts of money at the beginning to acquire hardware and software for AI blockchain and cloud systems and then pay ongoing expenses for system upkeep and updates. The high expenses of contemporary digital solutions prevent organizations in developing markets and those with restricted budgets from adopting them according to Kazakh business operations. Organizations struggle to find enough qualified staff who can handle the deployment and maintenance and optimization of digital technologies. The fast pace of accounting technology advancement demands organizations to constantly update their training programs, for employees while organizations worldwide including those in Kazakhstan and Nigeria face substantial deficits of staff with suitable technical abilities. Educational and professional development programs struggle to keep pace with modern technology which results in accountants and auditors remaining unprepared for digital transformation [16].

The resistance to implementing new methods exists as a major challenge which affects both individual professionals and organizational systems. The resistance to adopting digital tools increases when staff members and leadership teams perceive these systems as difficult to use and worry about their potential breakdowns. Research shows that digital solution adoption success depends on how users perceive the solutions' value and operational simplicity. The adoption of digital solutions faces difficulties when users find these solutions hard to understand and when they do not show immediate advantages. Organizations must establish supportive environments which foster innovation through adequate training programs and reward systems to achieve success. Digital systems fail to achieve their intended goals because organizations lack proper cultural and structural backing. Organizations encounter ongoing technical problems and operational barriers when they attempt to merge new systems with their current legacy infrastructure. Organizations that maintain extensive historical records and complex organizational structures encounter difficulties when implementing new digital solutions because their current accounting systems present integration challenges. The process of digital transformation demands major system rearrangements and data migration work which creates brief interruptions to business operations. The implementation of digital systems encounters various integration problems which require substantial resources and result in extended adoption timelines. Organizations encounter multiple challenges when they try to implement digital accounting and auditing systems despite the clear benefits these systems offer. Organizations need to invest in technology while implementing complete change management strategies and obtaining policy support and ongoing education and workforce development initiatives to achieve digital transformation success [17].

Table 4
Challenges and Barriers in Implementing Digital Technologies in Accounting and Auditing

Source	Context / Methodology	Identified Challenges & Barriers	Implications / Recommendations
Ajape & Adelowotan (2025)	Quantitative study of 7 international banks in Nigeria analyzing digital accounting tools (SPSS regression)	• Cybersecurity threats and data privacy risks linked to cloud-based accounting and blockchain use. • Skill gaps among accounting personnel in digital technologies. • High infrastructure and maintenance costs for digital transformation	Nigerian banks need to strengthen cybersecurity frameworks, invest in employee digital literacy, and enhance data protection policies to reduce exposure to cyber risks
Indrayani et al. (2024)	Global bibliometric analysis (1982–2024) of 324 publications on emerging accounting technologies	• Knowledge gaps in implementing advanced technologies (AI, blockchain). • Limited empirical studies addressing barriers in education and practice. • Need for integration between technology and accounting curricula	Recommends creating academic–industry collaboration to build training programs and align accounting education with emerging digital skills
Abu Afifa et al. (2023)	Empirical PLS-SEM study on 317 accountants	• User resistance due to perceived complexity of blockchain. • Compatibility issues with existing systems. • Low organizational readiness and limited understanding of blockchain's benefits	Demonstrates that trust, ease of use, and perceived usefulness determine adoption success. Suggests training and awareness programs to reduce perceived difficulty and resistance
Amanova et al. (2023)	Qualitative study on digitalization of Kazakh social enterprises	• High implementation and maintenance costs of digital technologies (AI, blockchain, IoT). • Lack of skilled workforce and digital competencies. • Resistance to change within organizations. • Integration difficulties with legacy systems. • Regulatory and infrastructural limitations in developing countries	Recommends governmental support, digital education initiatives, and gradual implementation strategies. Emphasizes the need for policy frameworks and financial incentives to foster adoption

Multiple factors affecting the interpretation and generalization of findings emerge from this systematic literature review because of its structured approach. The study faced inherent restrictions because it used specified databases and search methods. The study only included articles written in English that appeared in the academic databases IBIMA, Taylor & Francis, Emerald, FrancoAngeli and Scopus. The research selection method excluded studies from non-English publications and less prominent academic journals that examined regional experiences or new economies with quick digital accounting technology development. The study's dataset became more focused, but it missed important research about related themes because of its use of specific keywords «Blockchain» and «Digital Accounting». The specific keywords used in this study for database searches produced a focused relevant dataset but excluded research with related themes that used different terminology or interdisciplinary approaches [18].

The screening process used specific inclusion criteria which presented a major constraint during study selection. The review included only peer-reviewed journal articles from 2023 to July 2025 which specifically addressed the intersection of blockchain and digital accounting in their final synthesis. The removal of duplicates and relevance assessment reduced the initial number of studies to produce a limited number of articles suitable for thorough evaluation. The small number of studies included in the analysis restricts the variety of research contexts and theoretical models present in the study. The study excluded practitioner insights as well as technical white papers and newly published industry findings because they lacked peer review. The fast technological development in digital accounting makes it possible that important breakthroughs and practical obstacles exist outside the examined academic literature [19].

All the studies included in this review display methodological differences which need to be considered. The articles selected for the review exhibited wide differences in their research designs along with varying sample sizes and analytical techniques and geographical or organizational orientations. Some research employed quantitative survey techniques to study homogeneous groups like young professionals in banking and accounting sectors, yet other studies conducted qualitative reviews or bibliometric analyses or secondary data collection. The numerous research approaches create challenges when attempting to synthesize or directly compare study findings. The overall applicability of conclusions faces additional constraints because individual articles presented context-specific limitations related to non-probability sampling and limited generalizability to broader populations and partial digital technology adoption within organizations. The systematic review provides important insights about blockchain and digital accounting, yet the results need cautious interpretation because they might not apply to different regions or industries or evolving technological environments [20].

Table 5
Study Limitations Across the Reviewed Literature

Source	Scope / Methodology	Identified Limitations	Implications for Future Research
1	*2*	*3*	*4*
Ajape & Adelowotan (2025)	Quantitative survey design using linear regression (SPSS) on 396 employees from 7 Nigerian international banks	• Geographical limitation – Focused solely on Nigerian deposit money banks, limiting cross-country generalization.• Cross-sectional design – Cannot assess long-term effects of digital technologies on financial performance.• Self-reported data – Possible response bias from participants.• Limited variables – Concentrated on specific digital tools (AI, blockchain, automation, cloud)	Recommends future longitudinal studies across multiple countries and inclusion of more performance indicators (e.g., ROE, NPM) for broader insight
Indrayani et al. (2024)	Bibliometric analysis of 324 Scopus-indexed papers (1982–2024) using VOSviewer and Biblioshiny (RStudio)	• Database limitation – Restricted to Scopus, excluding non-indexed and regional studies.• Language bias – Only English-language publications analyzed.• Keyword limitation – Focused on «Accounting» AND «Technology», potentially omitting related interdisciplinary studies.• Quantitative focus – Lack of qualitative depth in understanding contextual adoption barriers	Suggests using multiple databases (Web of Science, Google Scholar) and adding qualitative meta-analysis to capture regional or non-English research
Abu Afifa et al. (2023)	Empirical study with 317 accountants using SmartPLS-SEM	• Context-specific sample – Only includes Vietnamese accountants, limiting cross-cultural generalization.• Perceptual measurement bias – Relies on self-assessed attitudes rather than behavioral data.• Limited model scope – Extended UTAUT focuses on blockchain but omits other digital technologies (AI, IoT, Big Data).• Cross-sectional data – Cannot capture technology adoption over time	Future research should apply mixed-methods or longitudinal UTAUT extensions and include other digital technologies and industry sectors
Amanova et al. (2023)	Qualitative exploratory study using literature reviews, interviews, and national data sources	• Geographical and institutional limitation – Focused solely on Kazakh social enterprises, limiting transferability to private or multinational firms.• Lack of quantitative validation – Findings are descriptive without statistical testing.• Data access constraints – Dependent on national reports and secondary sources.• Rapid technological change – Conclusions risk obsolescence due to fast-paced digital innovation	Calls for comparative cross-country analyses, inclusion of quantitative verification, and real-time tracking of emerging technologies (e.g., AI–IoT convergence)

Research has proven digital accounting delivers better financial results and operational performance yet additional studies are needed to understand its effects on different business sectors and public organizations and small- and medium-sized enterprises. Research about digital accounting technology adoption patterns across different countries based on their economic development levels and cultural values and regulatory systems would generate important findings. The research would identify effective methods and common obstacles that affect digital transformation success rates in particular to specific contexts [21].

Research opportunities exist to study how people and organizational systems influence the success of digital accounting system deployments. The field requires research beyond technical aspects because scientists need to evaluate organizational readiness and user training and change management and digital accounting skill requirements for accounting professionals. Research needs to study how accountants and auditors perceive blockchain and AI and robotic process automation because their perceptions determine both system usage and organizational roles and resistance to change. Research needs to investigate digital accounting tool ethics and laws and social implications by studying data protection and system security and finding proper human-machine financial process oversight [22].

Table 6
Future Research Directions on Digital Accounting Technologies

Source	Proposed Research Areas	Rationale / Justification	Recommended Methodological or Theoretical Approaches
Ajape & Adelowotan (2025)	• Examine digital accounting's effects across different sectors (manufacturing, SMEs, public institutions). Explore long-term financial impacts of AI, automation, and blockchain on performance indicators beyond ROA (e.g., ROI, ROE).• Investigate organizational readiness and training practices that enhance digital transformation success	Study focused only on Nigerian banks; other industries and regions may show different adoption outcomes. Understanding sectoral and organizational readiness would improve generalizability and application of findings	• Use longitudinal and comparative cross-industry studies. Combine TAM and DOI models with change management theories to explore behavioral and structural readiness for digital transformation
Indrayani et al. (2024)	• Conduct regional bibliometric comparisons (developed vs. emerging economies). Explore cross-cultural adoption factors and institutional differences influencing digital technology uptake. Extend mapping to include ethical, legal, and sustainability aspects of digital accounting	Bibliometric mapping revealed concentration of research in high-income nations and limited discussion of ethics, regulation, and human factors	• Integrate bibliometric + qualitative meta-synthesis methods. Apply institutional theory and cross-cultural frameworks to understand national variations
Abu Afifa et al. (2023)	• Expand UTAUT-based studies to include AI and RPA technologies alongside blockchain. Investigate behavioral determinants (trust, risk perception, ease of use) among accountants in other cultural contexts. Examine education and skill development frameworks that influence blockchain and AI adoption	The study confirmed strong user intention to adopt blockchain but focused only on Vietnam. Broader validation across countries and technologies is needed	• Use mixed-method cross-cultural UTAUT extensions. Combine behavioral modeling with educational readiness assessments and structural equation modeling (SEM)
Amanova et al. (2023)	• Study digital adoption in SMEs and social enterprises under resource constraints. Assess government policy effectiveness and training interventions for digital literacy. Explore ethical and regulatory frameworks for AI, blockchain, and IoT in aliteracy and auditing	Highlighted high implementation costs and workforce shortages; further policy-oriented research is required to support sustainable digitalization in developing countries	• Employ policy evaluation models and comparative case studies. Use multi-stakeholder approaches involving regulators, universities, and enterprises

8. Conclusion

The systematic review demonstrates that digital accounting technologies which include blockchain and artificial intelligence and data analytics and cloud-based systems enhance organizational financial performance and operational efficiency. Organizations achieve operational optimization through these technologies which produce precise financial reports and transparent data access for enhanced decision-making capabilities. Blockchain technology enables organizations to establish trust-based systems which reduce fraud risks and enable organizations to adopt innovative accounting approaches such as triple-entry accounting. The review shows that accounting professionals must learn new skills because their profession continues to transform at a fast pace.

Organizations encounter multiple ongoing challenges when they attempt to achieve complete digital transformation in their accounting and auditing operations. Organizations encounter multiple digital transformation challenges because they must spend large amounts on implementation and deal with cybersecurity threats and data privacy issues and face employee resistance and regulatory unclearness and insufficient staff numbers. The path to digital transformation proves most challenging for developing economies and organizations that use outdated systems and have limited financial resources. The solution to these barriers needs policymakers to work with educators and industry leaders to create supportive regulatory frameworks that promote ongoing professional development and best practice implementation. Organizations that successfully deploy digital accounting technologies will achieve better financial results and operational excellence while building digital resilience and market leadership position.

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