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From Bookkeeping to Brainpower: A Systematic Literature Review on Artificial Intelligence in Accounting Organizations

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A B S T R A C T

The ongoing shift toward digitalization has paved the way for AI to become embedded in the evolution of modern accounting functions. AI is no longer merely a technical tool, but has become an institutional agent that transforms work structures, professional roles, and decision- making processes within accounting organizations. This study aims to systematically examine the impact of AI on operational efficiency, the shifting roles of accountants, accompanying ethical challenges, and the emergence of new strategic opportunities in the context of accounting organizations. Using the PRISMA-based Systematic Literature Review (SLR) approach, this study analyzes 44 international scientific articles published between 2015 and 2025. The findings are categorized into four main themes: (1) AI and the redefinition of efficiency; (2) the transformation of the accountant's role: from compliance to cognition; (3) ethical dilemmas and strategic risks; and (4) new opportunities and value creation arising from AI adoption. This study also identifies limitations in the literature, including the lack of longitudinal studies, dominance of developed country perspectives, and limited interdisciplinary exploration. This study contributes to expanding the understanding that AI is not merely an efficiency instrument, but a social force that reconstructs the accounting profession and opens up a new landscape of value creation. Practical implications include the need for accountant retraining, strengthening ethical governance, and proactive utilization of AI for financial service innovation. Long-term research directions include integrating AI with complementary technologies like Blockchain, IoT, and ESG principles to design accounting systems that are intelligent, flexible, and environmentally responsible.

1. Introduction

The development of digital technology over the past decade has brought Artificial Intelligence (AI) to the forefront of organizational transformation. AI is no longer merely an administrative tool or a means of process automation, but has evolved into a disruptive actor that radically changes how organizations operate, make decisions, and define efficiency. In the context of accounting organizations, units or entities that perform accounting functions across various organizational forms, there is growing pressure to adapt. The accounting profession is facing unprecedented challenges and opportunities. Conventional functions that once dominated accounting practices such as bookkeeping, data reconciliation, and manual reporting are increasingly being replaced by automated systems, machine learning, Natural Language Processing (NLP), and Robotic Process Automation (RPA).

This shift reflects a transition from technical efficiency to strategic efficiency, where speed, accuracy, and analytical capability become the core of organizational competitive advantage. However, the integration of AI into accounting practices does not only yield functional benefits, but also presents complex social, ethical, and institutional consequences. AI is beginning to take over decision-making roles that were traditionally in the domain of humans, raising critical questions around accountability, transparency, and integrity in digitized organizational contexts. Beyond that, fundamental questions emerge regarding how AI can open up a new value landscape for accounting organizations opportunities such as the creation of prospective services, the strengthening of the accountant's strategic role, and the development of new business models integrated with advanced technologies.

As explained by Pontoh [1], in facing the era of Society 5.0, an era that places humans and technology in intelligent symbiosis, the accounting profession is expected not only to master technology but also to develop career adaptability as a core competency. In their study, Pontoh identifies that accountants' career adaptability is influenced not only by technical factors such as technological mastery, but also by psychological and social factors, such as self-esteem, confidence, and proactive personality traits. The accounting profession will not be replaced by machines if accountants are able to navigate technological disruption in reflective, strategic, and ethical ways.

These findings underscore the importance of viewing AI not merely as a technology, but as an institutional force that reshapes organizational structures. From the perspective of structuration theory as developed by Lehner et al. [2], accounting organizations are understood as social systems in which agents (both human and AI), structures, and practices co-construct one another in dynamic interaction. In this context, AI is not a passive entity, but an agent with the capacity to change norms, the distribution of power, and professional practices within accounting organizations.

Previous studies have highlighted AI's contributions to operational efficiency [3], audit cost savings [4], and improved financial reporting accuracy through the application of machine learning [5]. However, this body of literature has not fully addressed fundamental questions about how AI changes the social structure within organizations, disrupts the identity and professional roles of accountants, and creates innovative opportunities that could redefine the value proposition in accounting practices.

Based on this background, a more comprehensive inquiry is needed to understand AI's transformative role in accounting organizations, not only from a technological and efficiency standpoint, but also through a social and institutional lens that explores new strategic value. By adopting a PRISMA-based Systematic Literature Review (SLR) approach, this study aims to synthesize recent scientific findings to build a holistic understanding of AI's impact on practice dynamics, organizational structures, and the potential for new value creation within the accounting profession. This study aims to connect technological and social perspectives, offering strategic guidance to scholars, professionals, and policymakers in addressing both the opportunities and challenges posed by AI in an Era of accelerating digital disruption.

2. Literature Review

2.1. Structuration Theory

This study adopts Giddens' Structuration Theory [6] as the main lens to understand how technology and organizational structures in accounting shape and reshape each other. The theory posits that social structures and human actions are interdependent, structures provide the rules and resources for action, while actions reproduce or modify those structures.

In the technological context, Orlikowski's *technology-in-practice* perspective [7] reframes technology as a social agent that influences, and is influenced by, organizational practices, decision-making, and power distribution. Applied to accounting, Lehner et al. [2] highlight that accounting organizations are shaped by the interaction between human agents (accountants, managers), technological agents (AI, ERP systems), and governing structures. Within this view, AI adoption is a structurational practice that not only transforms roles and decision-making processes but also enables more adaptive and value-driven organizational models.

2.2. Organizational Efficiency

Efficiency in accounting organizations not only involves cost reduction and acceleration of

work processes, but also encompasses strategic efficiency, that is the organization's ability to use resources adaptively to achieve competitive advantage [8,9]. Within this framework, AI serves as a catalyst by automating repetitive processes and supporting data analysis for more accurate and faster decision-making.

AI enables value creation through prediction, risk visualization, and the provision of real- time information for cross-functional decision-making. This approach positions accounting as the organizational intelligence hub, which not only supports reporting but also contributes to strategic innovation and long-term value creation. This efficiency theory, therefore, encompasses a combination of technical efficiency (e.g., automated reporting) and cognitive efficiency (e.g., the ability to make strategic decisions based on data insights), which is highly relevant in the context of digitalization and value transformation in accounting.

2.3. Professional Role Theory

This theory explains how expectations toward a profession are shaped and reshaped by changes in the environment and technology [10]. In the field of accounting, the professional role has undergone a transformation with the advent of digital technology. Originally focused on regulatory compliance and reporting, accountants are now expected to become data-driven decision-makers who understand both strategic and technological contexts.

Contemporary literature supports the view that AI has driven a shift in the accountant’s role from compliance-oriented to cognition-oriented [11]. This means that accountants are no longer merely responsible for recording transactions but are also expected to evaluate, interpret, and recommend financial decisions with the aid of intelligent systems. This change also creates new career opportunities and roles, such as AI-based financial strategist, digital ethics advisor, and data-driven decision enabler, representing a shift from transactional tasks toward value- creating roles.

2.4. Technology Ethics and Algorithmic Decision-Making

As a counterbalance to the functional aspects of AI, this study is also grounded in the framework of technology ethics. Decisions made by AI systems, particularly in accounting, carry the risk of black-box decision-making, namely the lack of transparency in the logic behind system outputs [12]. The concept of algorithmic accountability emphasizes that decision-making systems must be auditable, explainable, and ethically accountable [13].

This framework is essential not only for managing ethical dilemmas but also for building trust in AI-driven innovations. Sustainable value creation through AI can only occur if systems are designed to be transparent, ethical, and inclusive. Therefore, technology ethics must be an integral part of institutional design and innovation strategy within accounting organizations.

3. Methodology

A systematic Literature Review (SLR) was adopted as the methodological framework for this study, which aims to identify, review, and thoroughly evaluate all relevant studies to gain an in-depth understanding and to compile a comprehensive synthesis of information. To ensure a structured and transparent review process, the research applies the PRISMA 2020 guidelines in literature identification, selection, and synthesis [14].

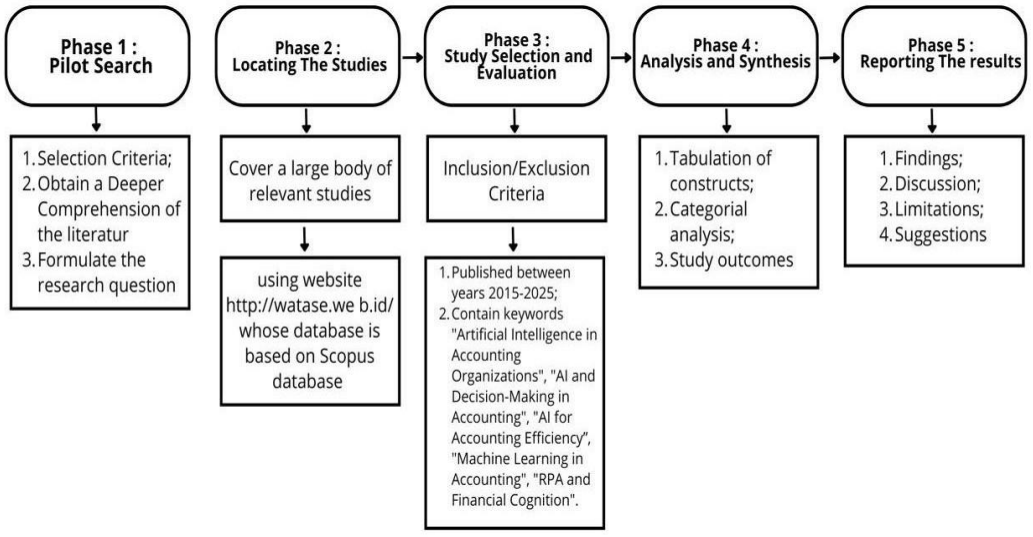


Figure 1 Systematic Literature Review Process

3.1. Phase 1: Pilot Search and Formulating Research Question

The initial stage of this study involved conducting a pilot search to perform a preliminary exploration, identify relevant literature, and gather information sources related to the research topic. The author determined keywords relevant to the research focus. Based on initial findings and gaps in the literature [1,2,15], the author formulated four main research questions:

RQ 1: *To what extent is artificial intelligence dismantling traditional accounting processes and redefining operational efficiency in accounting organizations?*

RQ 2: How is artificial intelligence transforming accountants from compliance-driven bookkeepers into cognitive partners in strategic organizational decision-making?

RQ 3: What ethical dilemmas and strategic risks arise when artificial intelligence begins to replace human judgment in accounting decisions?

RQ 4: What novel opportunities and value creation models are emerging in accounting organizations as a result of artificial intelligence adoption?

3.2. Phase 2: Locating the Studies

The next step is to design a systematic literature search strategy using a combination of keywords such as "Artificial Intelligence in Accounting Organizations", "AI and Decision-Making in Accounting", "AI for Accounting Efficiency", "Machine Learning in Accounting", and "RPA and Financial Cognition". Relevant literature searches will be conducted with the help of Watase Uake Tools, utilizing Scopus as the primary database due to its globally recognized reputation. Additional sources such as IEEE Xplore, Elsevier, Emerald, Taylor & Francis, Sage Journal, ScienceDirect, Google Scholar, and institutional academic repositories will also be included as supplementary relevant literature. The review will focus solely on journal articles published between 2015 and 2025, with selection criteria limited to reputable journals ranked in quartiles Q1-Q4.

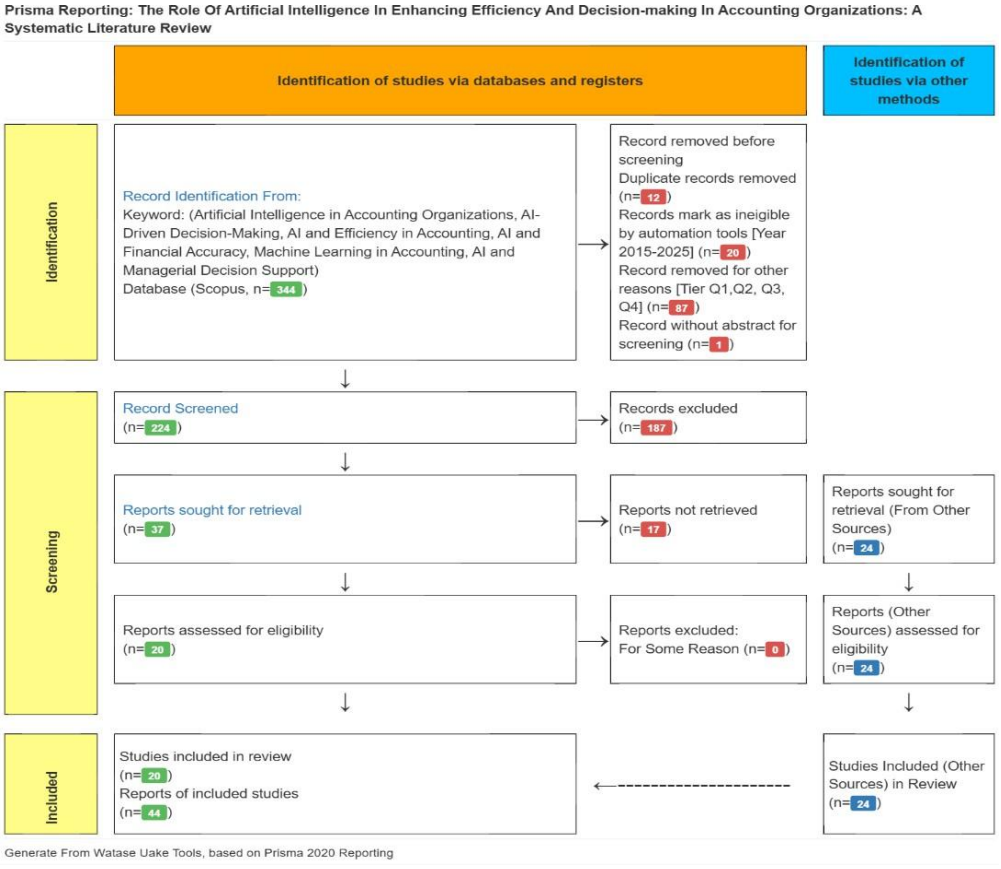
3.3. Phase 3: Study Selection and Evaluation

The literature identified through the previous phase is selected using several inclusion and exclusion criteria. Inclusion criteria include articles that discuss AI in the context of accounting organizations, articles that address the role of professional accountants, ethics, efficiency, or decision-making, articles published between 2015-2025, publications in the form of journal articles and international proceedings, written in English, and available in full-text with open access. Exclusion criteria include technical articles unrelated to accounting organizations or professions, publications other than journal articles and proceedings such as theses, duplicate

articles, and those without abstracts or full-text availability.

After the initial selection based on abstracts and titles, a thorough evaluation of the full text of the documents is conducted. This process involves recording key information such as: methodology, main findings, theoretical contributions, and relevance to the research question (RQ).

Figure 2 PRISMA Report



The initial search resulted in 344 relevant articles based on the keywords, which were then filtered by removing 12 duplicate articles, 20 articles outside the 2015-2025 timeframe, 87 articles from non-indexed journals (outside Q1-Q4), and 1 article without an abstract, leaving 224 articles for the next stage. Filtering based on titles and abstracts excluded 187 articles that did not align with the research focus, specifically those that only discussed technical aspects of AI without connection to accounting organizations, efficiency, decision-making, or professional ethics. A total of 37 articles passed to the full-text search stage, but only 20 were fully accessible and suitable for analysis. To enrich the database, additional searches were conducted through Google Scholar, IEEE Xplore, and institutional repositories, yielding 24 additional articles, all of which met the eligibility criteria. Therefore, a total of 44 articles were used in this systematic review for thematic analysis related to the transformative role of AI in accounting organizations, including aspects of efficiency, decision-making, and associated ethical and professional challenges.

3.4. Phase 4: Analysis and Synthesis

By analyzing 44 selected articles and systematically extracting the data, the findings were categorized into several key themes aligned with the research questions. Each theme was narratively analyzed to evaluate consistency, differences in approaches, and the overall trajectory of the literature. This process involved a thorough examination of the discussion topics, methodologies employed, and the conceptual contributions of each study, which were then mapped into four main themes: (1) AI and the redefinition of efficiency; (2) the transformation of

the accountant's role: from compliance to cognition; (3) ethical dilemmas and strategic risks; and (4) new opportunities and value creation arising from AI adoption. This analysis also revealed several gaps in the literature, including the limited exploration of how AI is used to create long- term value within accounting organizations, a lack of interdisciplinary approaches, and insufficient representation of studies from developing countries, which face unique structural and regulatory challenges in adopting technology. This synthetic approach serves as a basis for comprehending both technological transformation and the evolving institutional dynamics and strategic prospects within modern accounting practices in the digital age.

3.5. Phase 5: Reporting the Results

The results of the analysis are presented systematically in narrative form, accompanied by supporting tables that summarize the key findings. Each research question (RQ) is answered based on the synthesis of the collected literature, along with a critical reflection on the conceptual and practical contributions of the studies.

4. Results and Discussion

4.1. Bibliometric Analysis

A total of 44 relevant scholarly articles have been systematically selected to serve as the primary sources in the development of the literature review for this research. These articles were chosen based on their topic relevance, publication quality, and their contribution to the understanding of issues related to AI in enhancing efficiency and decision-making in accounting organizations.

Table 1. Literature Data as Study Material

No	Authors	Year	Title	Journal	Journal Rank*
1	Pérez-Calderón, Esteban; Alrahamneh, Samer Azeez; Milanés Montero, Patricia	2025	Impact of Artificial Intelligence on Auditing: An Evaluation from the Profession in Jordan	Discover Sustainability	Q1
2	Kokina, Julia; Blanchette, Shay; Davenport, Thomas H.; Pachamanova, Dessislava	2025	Challenges and Opportunities for Artificial Intelligence in Auditing Evidence from the Field	International Journal of Accounting Information Systems	Q1
3	Abbas, Khalid	2025	Management Accounting and Artificial Intelligence A Comprehensive Literature Review and Recommendations for Future Research	The British Accounting Review	Q1
4	Li, BaQun	2025	The Impact and Role Analysis of Artificial Intelligence Technology on the Development of the Accounting Industry	International Journal of Knowledge Management	Q2
5	Murphy, Brid; Feeney, Orla; Rosati, Pierangelo; Lynn, Theo	2024	Exploring Accounting and AI using Topic Modelling	International Journal of Accounting Information Systems	Q1
6	Abdullah, Abdulwahid Ahmad Hashed; Almaqtari, Faozi A.				
7	Afiqah Zamain, Nur Syahmina; Subramanian, Ulaganathan	2024	The Impact of Artificial Intelligence in the Accounting Profession	Procedia Computer Science	Q2
8	Murikah, Wilberforce; Nthenge, Jeff Kimanga; Musyoka, Faith Mueni	2024	Bias and Ethics of AI Systems Applied in Auditing - A Systematic Review	Scientific African	Q1

9	Wassie, Fekadu Agmas; Lakatos, László Péter	2024	Artificial Intelligence and the Future of the Internal Audit Function	Humanities and Social Sciences Communications	Q2
10	Leocádio, Diogo; Malheiro, Luís; Reis, João	2024	Artificial Intelligence in Auditing A Conceptual Framework for Auditing Practices	Administrative Sciences	Q2
11	Almaqtari, Faozi A.	2024	The Role of IT Governance in the Integration of AI in Accounting and Auditing Operations	Economies	Q2
12	Artene, Alin Emanuel; Domil, Aura Emanuela; Ivascu, Larisa	2024	Unlocking Business Value Integrating AI-Driven Decision-Making in Financial Reporting Systems	Electronics	Q2
13	Pantea, Mioara Florina; Cilan, Teodor Florin; Cuc, Lavinia Denisia; Rad, Dana; Bâtca-Dumitru, Graziella Corina; Sendroiu, Cleopatra; Almasi, Robert Cristian; Feher, Andrea; Gomoi, Bogdan Cosmin	2024	Optimizing Romanian Managerial Accounting Practices through Digital Technologies A Resource-Based and Technology-Deterministic Approach to Sustainable Accounting	Electronics	Q2
14	Deliu, Delia; Olariu, Andrei	2024	The Role of Artificial Intelligence and Big Data Analytics in Shaping the Future of Professions in Industry 6.0 Perspectives from an Emerging Market	Electronics	Q2
15	Ahmad, Ahmad Y. A. Bani	2024	Ethical Implications of Artificial Intelligence in Accounting A Framework for Responsible AI Adoption in Multinational Corporations in Jordan	International Journal of Data and Network Science	Q2
16	Mökander, Jakob	2023	Auditing of AI Legal, Ethical and Technical Approaches	Digital Society	Q3
17	Han, Hongdan; Shiwakoti, Radha K.; Jarvis, Robin; Mordi, Chima; Botchie, David	2023	Accounting and Auditing with Blockchain Technology and Artificial Intelligence: A Literature Review	International Journal of Accounting Information Systems	Q1
18	Monteiro, Albertina; Cepêda, Catarina; Da Silva, Amélia Cristina Ferreira; Vale, Joana	2023	The Relationship between AI Adoption Intensity and Internal Control System and Accounting Information Quality	Systems	Q2
19	Fülöp, Melinda Timea; Topor, Dan Ioan; Ionescu, Constantin Aurelian; Cifuentes-Faura, Javier; Magdas, Nicolae	2023	Ethical Concerns Associated with Artificial Intelligence in the Accounting Profession: A Curse or A Blessing	Journal of Business Economics and Management	Q2
20	Yang, Yu; Yin, Zecheng	2023	Resilient Supply Chains to Improve the Integrity of Accounting Data in Financial Institutions Worldwide Using Blockchain Technology	International Journal of Data Warehousing and Mining	Q4
21	Moron, Camille E.; Diokno, Chester Owen B.	2023	Level of Readiness and Adoption on the Use of Artificial Intelligence Technologies in the Accounting Profession	Open Journal of Accounting	Q4
22	Wang, Junwei; Zhao, Yan; Balamurugan, P.; Selvaraj, P.	2022	Managerial Decision Support System Using An Integrated Model of AI and Big Data Analytics	Annals of Operations Research	Q1
23	Kumar, Satish; Lim, Weng Marc; Sivarajah, Uthayasankar; Kaur, Jaspreet	2022	Artificial Intelligence and Blockchain Integration in Business: Trends from a Bibliometric-Content Analysis	Information Systems Frontiers	Q1
24	Fedyk, Anastassia; Hodson, James;	2022	Is Artificial Intelligence Improving the	Review of Accounting	Q1

	Khimich, Natalya; Fedyk, Tatiana		Audit Process	Studies	
25	Lehner, Othmar Manfred; Ittonen, Kim; Silvola, Hanna; Ström, Eva; Wührleitner, Alena	2022	Artificial Intelligence Based Decision-Making in Accounting and Auditing Ethical Challenges and Normative Thinking	Accounting, Auditing & Accountability Journal	Q1
26	Jia, Tiejun; Wang, Cheng; Tian, Zhiqiang; Wang, Bingyin; Tian, Feng	2022	Design of Digital and Intelligent Financial Decision Support System Based on Artificial Intelligence	Computational Intelligence and Neuroscience	Q2
27	Varzaru, Anca Antoaneta	2022	Assessing Artificial Intelligence Technology Acceptance in Managerial Accounting	Electronics	Q2
28	Gonçalves, Maria José Angélico; da Silva, Amélia Cristina Ferreira; Ferreira, Carina Gonçalves	2022	The Future of Accounting How Will Digital Transformation Impact the Sector	Informatics	Q1
29	Banta, Viorel-Costin; Rîndasu, Sînziana-Maria; Tanasie, Anca; Cojocaru, Dorian	2022	Artificial Intelligence in the Accounting of International Businesses A Perception-Based Approach	Sustainability	Q1
30	Borges, Aline F.S.; Laurindo, Fernando J.B.; Spínola, Mauro M.; Gonçalves, Rodrigo F.; Mattos, Claudia A.	2021	The Strategic Use of Artificial Intelligence in the Digital Era: Systematic Literature Review and Future Research Directions	International Journal of Information Management	Q1
31	Chen, Yaping	2021	Framework of the Smart Finance and Accounting Management Model under the Artificial Intelligence Perspective	Mobile Information Systems	Q2
32	Stancu, Mirela Simina; Dutescu, Adriana	2021	The Impact of the Artificial Intelligence on The Accounting Profession, A Literature Assessment	Proceedings of the International Conference on Business Excellence	Q3
33	Tiwari, Kamlesh; Khan, Mohammad Shadab	2020	Sustainability Accounting and Reporting in The Industry 4.0	Journal of Cleaner Production	Q1
34	Wamba-Taguimdje, Serge-Lopez; Fosso Wamba, Samuel; Kala Kamdjoug, Jean Robert; Tchatchouang Wanko, Chris Emmanuel	2020	Influence of Artificial Intelligence (AI) on Firm Performance the Business Value of AI-Based Transformation Projects	Business Process Management Journal	Q1
35	Bao, Yang; Ke, Bin; Li, Bin; Yu Y. Julia; Zhang, Jie	2020	Detecting Accounting Fraud in Publicly Traded U.S. Firms Using a Machine Learning Approach	Journal of Accounting Research	Q1
36	Essien, Iniabasi Thomas; Udoh, Imeofon Idongesit; Ukpong, Eno Gregory	2019	Artificial Intelligence Opportunities, Issues and Applications in Banking, Accounting, and Auditing in Nigeria	Asian Journal of Economics, Business and Accounting	Q3
37	Luo, Jiaxin; Meng, Qingjun; Cai, Yan	2018	Analysis of the Impact of Artificial Intelligence Application on the Development of Accounting Industry	Open Journal of Business and Management	Q4
38	Chukwudi, Odoh; Echefu, Silas; Boniface, Ugwuanyi; Victoria, Chukwuani	2018	Effect of Artificial Intelligence on the Performance of Accounting Operations among Accounting Firms in South East Nigeria	Asian Journal of Economics, Business and Accounting	Q3
39	Appelbaum, Deniz; Kogan, Alexander; Vasarhelyi, Miklos; Yan, Zhaokai	2017	Impact of Business Analytics and Enterprise Systems on Managerial Accounting	International Journal of Accounting Information Systems	Q1
40	Makridakis, Spyros	2017	The Forthcoming Artificial Intelligence (AI) Revolution Its Impact on Society	Futures	Q1

			and Firms		
41	Issa, Hussein; Sun, Ting; Vasarhelyi, Miklos A.	2017	Research Ideas for Artificial Intelligence in Auditing The Formalization of Audit and Workforce Supplementation	Journal of Emerging Technologies in Accounting	Q2
42	Fisher, Ingrid E.; Garnsey, Margaret R.; Hughes, Mark E.	2016	Natural Language Processing in Accounting, Auditing and Finance A Synthesis of the Literature with a Roadmap for Future Research	Intelligent Systems in Accounting, Finance and Management	Q2
43	Sutton, Steve G.; Holt, Matthew; Arnold, Vicky	2016	The Reports of My Death are Greatly Exaggerated--Artificial Intelligence Research in Accounting	International Journal of Accounting Information Systems	Q1
44	Dilek, Selma; Cakir, Hüseyin; Aydin, Mustafa	2015	Applications of Artificial Intelligence Techniques to Combating Cyber Crimes A Review	International Journal of Artificial Intelligence & Applications	Q3

Source: Compiled by Author, 2025

Table 1 presents a comprehensive list of the 44 scholarly articles used as the basis for analysis in this systematic literature review. These articles were published in high-ranking international journals, the majority of which fall within Q1 and Q2 categories, such as *The British Accounting Review*, *Journal of Accounting Research*, *International Journal of Accounting Information Systems*, and *Information Systems Frontiers*. Article selection was based on thematic relevance to the research focus, particularly studies addressing the application of Artificial Intelligence (AI) in accounting and auditing practices, whether in professional, organizational, or policy contexts. The selection process also considered the geographical diversity and methodological approaches employed in the studies.

The range of topics covered in this literature reflects the breadth and dynamic development of AI-related research in the field of accounting. The review focuses on key issues such as the transformation of audit functions through automation, the shifting role of accountants in data-informed decisions, fraud detection via machine learning, and the ethical and social implications of adopting intelligent systems in organizations. Additionally, several articles highlight organizational readiness for digital technology integration, AI's influence on financial data quality, and frameworks for responsible technology governance. This composition of literature provides a robust foundation for conducting thematic analysis and systematically addressing the research questions formulated in this study.

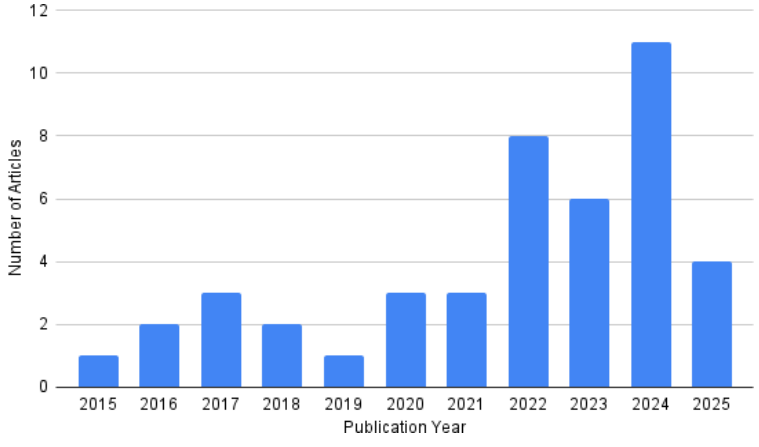


Figure 3 Distribution of Articles Based on Publication Year

The distribution of articles by year of publication indicates a growing research interest in the topic of artificial intelligence within the context of accounting over the past decade. During the

initial period from 2015 to 2017, the number of publications remained relatively low, with only six articles in total, one in 2015, two in 2016, and three in 2017. This period reflects an early stage of exploration, with AI in accounting not yet emerging as a central focus in academic studies. From 2018 to 2021, a steady yet fluctuating increase was observed, with two articles published in 2018, one in 2019, and three each in 2020 and 2021. Although the numbers were not yet significant, this phase marked a consistent upward trend in scholarly interest. A sharp increase began in 2022, when the number of publications rose to eight. This upward trajectory continued with six articles in 2023 and peaked in 2024 with eleven articles, making it the year with the highest contribution. This surge in publications highlights the growing relevance of the topic and its increasing attention from the academic community. As of early 2025, four articles have already been identified, and this number is likely to grow as the year progresses.

This distribution reflects the increasing relevance of AI adoption and research in accounting and auditing practices, in line with the broader digital transformation in the business and financial professions. The surge in the number of articles over the past two to three years indicates a rising global academic interest in exploring the impact of intelligent technologies, whether in terms of operational efficiency, the evolving role of professionals, or ethical and institutional implications. This underscores the urgency and relevance of this study in mapping and understanding the dynamics of AI within contemporary accounting organizations.

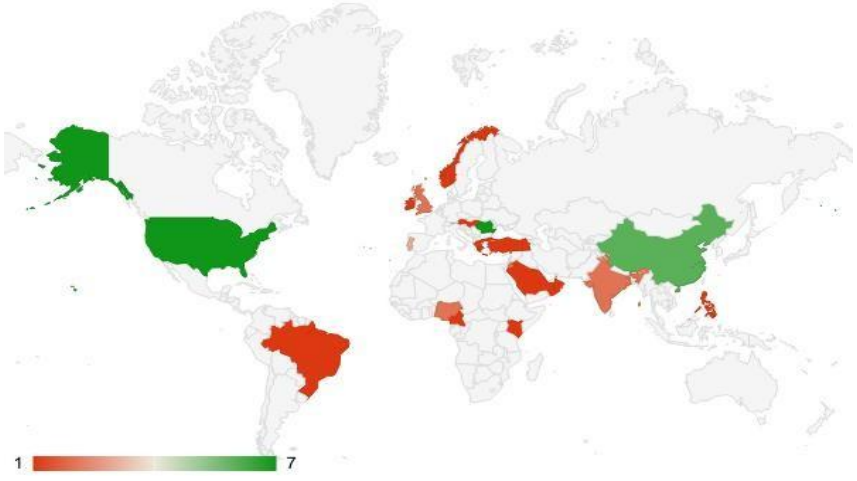


Figure 4 Distribution of Articles by Country

The distribution of articles analyzed in this study demonstrates considerable geographical diversity, reflecting a global interest in the topic of accounting information systems. Based on the data summary, the countries with the highest number of contributions are Romania and the United States, each accounting for seven articles. The prominence of the United States is understandable, as it is a global hub for technological innovation, including the development and adoption of AI in business and accounting practices. Conversely, Romania's strong representation highlights the growing attention from Eastern Europe toward technological integration in accounting information systems, particularly in the context of efficiency and governance.

China ranks third with six articles. The high level of research interest from China aligns with the country's national policy direction, which aggressively promotes AI adoption, including within the auditing and accounting sectors. Studies from China tend to emphasize applied approaches and the transformational impact of AI on efficiency and internal control.

Countries such as Portugal (three articles), and Jordan, Nigeria, India, and the United Kingdom (two articles each), illustrate the global dispersion of academic interest in this topic. Although these countries vary in terms of technological maturity, their engagement suggests that AI in accounting has become a subject of cross-border concern. Additionally, single contributions from various countries including Hungary, Norway, Ireland, Saudi Arabia, Brunei Darussalam,

Kenya, Cameroon, Oman, Austria, Brazil, Greece, the Philippines, and Turkey, demonstrate that this topic is not exclusive to the Global North. Rather, it is increasingly being explored by academic communities in the Global South as well.

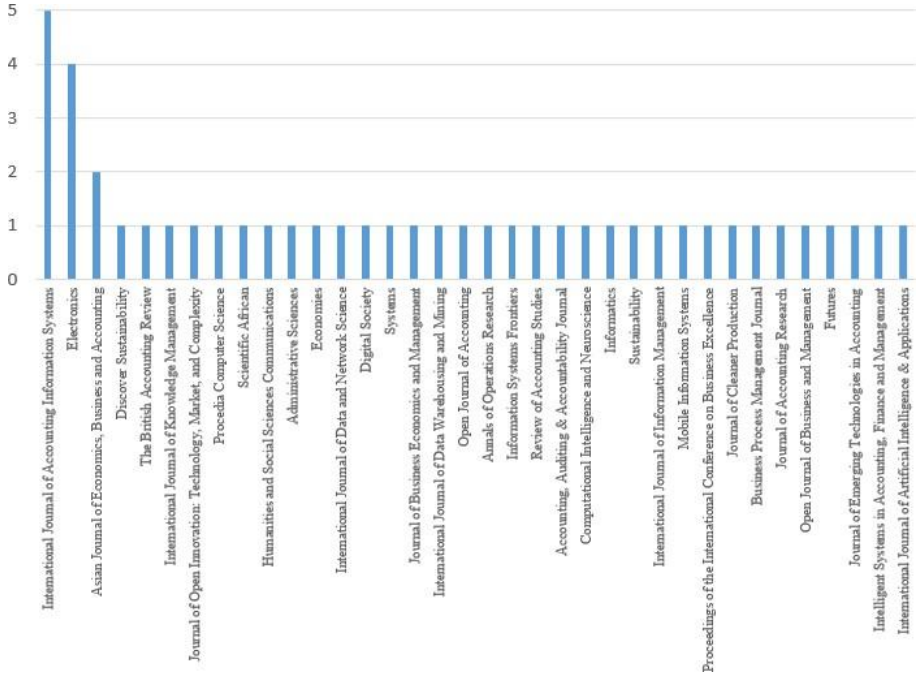


Figure 5 Distribution of Journal Name

Based on the recapitulation of 44 selected articles, a total of 36 distinct journals were identified as sources of relevant research, reflecting the diversity and broad disciplinary scope intersecting with this topic. Three journals stand out as primary sources: the *International Journal of Accounting Information Systems* ranks first with five publications, followed by *Electronics* with four articles, and the *Asian Journal of Economics, Business and Accounting* with two articles. These journals consistently contribute to academic discourse on digitalization and artificial intelligence in the accounting domain. They are considered key references in this study due to their international reputation and their focus on topics such as efficiency, information technology, and the transformation of the accounting profession.

The remaining 33 journals each contributed a single article. These journals reflect a multidisciplinary approach to the topic of AI, covering fields such as accounting, information technology, management, ethics, and business systems. Notable examples include the *Journal of Business Economics and Management*, *Review of Accounting Studies*, *Accounting, Auditing & Accountability Journal*, and the *Journal of Emerging Technologies in Accounting*. This variety indicates that studies on AI in accounting are not confined to specialized accounting journals but are also published in outlets that bridge technology and business more broadly.

These findings demonstrate that the issue of AI in accounting has attracted widespread attention from the broader academic community across disciplines. The distribution of knowledge is not concentrated in just one or two publication outlets. This diversity in sources underscores the importance of a systematic review that compiles various perspectives, enabling a broader and transdisciplinary comprehension of how AI influences, benefits and challenges in in accounting organizations.

4.2. Thematic Analysis

4.2.1. AI and Redefinition of Efficiency

The implementation of AI has brought fundamental changes to the traditional accounting structures and procedures within accounting organizations. Recent studies consistently indicate

that AI no longer functions merely as a support tool, but has directly replaced several manual activities in the accounting cycle, such as data entry, transaction recording, reconciliation, and reporting. Research by Pérez-Calderón et al [16] emphasizes that "AI technology is gradually replacing manual processes in accounting through intelligent automation that enhances accuracy and reduces the time required." This finding is supported by Abbas [15] and Luo et al. [17], who state that comprehensive integration of AI enables accounting processes to become more responsive, faster, and less error-prone.

This development is driven by technological advancements such as machine learning, natural language processing (NLP), robotic process automation (RPA), and predictive analytics, which expand the capacity of accounting information systems. Kokina et al. [18] state that "AI- driven automation has become the core of accounting information systems transformation, accelerating reporting time and enhancing accuracy." In the context of organizational structure, this shift transfers decision-making authority from accountants to systems, impacting power dynamics, inter-unit coordination, and risk management.

AI not only simplifies processes but also redefines the meaning of efficiency within the context of accounting organizations. In classical approaches, efficiency is understood as resource savings [8]. However, with the advent of AI, the concept of efficiency has expanded to include responsiveness to data, precision in decision-making, and contributions to business innovation [19]. Borges et al. [20] emphasize that AI efficiency is not solely about faster output but also the quality of insights generated, which ultimately drives the creation of data-driven value. As a concrete example, Appelbaum et al. [21] reveal that AI-based enterprise systems enable accountants to deliver integrated real-time information, thereby accelerating responses to market dynamics. Chukwudi et al. [22] even found that the use of AI in accounting firms in Nigeria had a significant impact on improving operational performance and the quality of services provided to clients.

This transformation shifts the role of accounting from an administrative function to a strategic intelligence hub within organizations. Fisher et al.[23] emphasize that "accountants are evolving from data entry clerks to strategic advisors who leverage AI-based analytics to drive business value." This new role requires deeper mastery of data analytics and interpretation. However, the transformation also introduces new dilemmas, such as the reduction of professional judgment, reliance on algorithmic outputs, and accountability uncertainties in the event of system errors [24,25]. These challenges become even more complex in international organizations with diverse control structures [26].

The adoption of AI is not without obstacles, especially in developing countries. Murikah et al. [27] highlight limitations in digital infrastructure, lack of workforce skills, and organizational cultural resistance as major barriers. Furthermore, Stancu & Duţescu [28] warn that "as AI systems gain greater autonomy in financial decision-making, concerns over algorithmic bias, transparency, and ethical governance must be taken seriously." Bao et al. [29] demonstrate that even in fraud detection contexts, AI must be carefully monitored to avoid misleading results caused by flawed data processing. Therefore, the success of AI implementation in accounting relies not only on technological readiness but also on the integrity of accompanying governance and ethical frameworks.

The synergy between AI and blockchain technology is also gaining increasing research attention. Leocádio et al. [30] reveal that "the synergy between AI and blockchain reinforces the principles of efficiency and trust by creating audit and reporting systems that are real-time, immutable, and transparent." As a result, efficiency is no longer merely about cost savings but rather structural efficiency that is accountable and sustainable.

Referring to structuration theory [6], this change represents AI as an institutional agent that actively interacts with both organizational structures and human actors in accounting environments. The presence of AI reshapes work norms, task distribution patterns, and expectations toward the professional output of accountants.

4.2.2. Transformation of the Accountant's Role: from Compliance to Cognition

The transformation of the accountant's role due to AI adoption represents a fundamental shift in accounting practices. In traditional accounting information systems, accountants were positioned as executors of administrative functions, primarily focusing on regulatory compliance and the preparation of financial reports based on historical data. However, with the increasing implementation of AI, this role has shifted toward a cognition-based function, where accountants act as decision-makers who rely on data analytics and predictive modeling to contribute to strategic policy directions [31,32]. This trend has become more pronounced in the post-pandemic era, as the digitalization of accounting processes accelerated in response to demands for efficiency and timeliness in financial reporting.

AI has revolutionized organizational decision-making approaches by enabling real-time data analytics. This technology raises expectations for accountants' cognitive and analytical capabilities to generate value-added information by leveraging predictive modeling and recognizing complex patterns in accounting data. In this context, the accountant's role has significantly shifted from merely recording financial information to becoming a strategic partner who actively employs AI to identify potential risks, optimize budgeting plans, and design various business scenarios [31,33,34]. This role transformation is further reinforced by advancements in AI-based financial reporting and control systems, which now not only provide historical information but also automatically generate projections and comprehensive analyses. Such information can be directly utilized by management to formulate and evaluate organizational strategies [35–37]. Within this framework, accountants serve as mediators between technology and management by interpreting AI-based analytics into relevant business narratives that decision-makers can act upon.

AI also enhances internal control functions and improves the quality of accounting information. Monteiro et al. [24] demonstrate that the more intensively AI is adopted within organizations, the more positively it impacts the effectiveness of internal control systems and the accuracy of financial information. AI's capability to continuously monitor data enables accountants to detect anomalies and potential errors early, thereby expanding their role from mere reporters to guardians of strategic organizational information integrity. Gonçalves et al. [38] emphasize that AI-driven digital transformation requires accountants to master technology, think systemically, and be solution-oriented. In their new roles, accountants must understand algorithmic logic, interact with automated systems, and interpret AI outputs for translation into business decisions. Accordingly, human-machine collaboration becomes a key factor in this transformation. Accountants are expected not only to possess technical and analytical skills but also to communicate AI-derived insights in strategic language that is accessible to top management. This combination of competencies necessitates a deep understanding of organizational context to ensure that insights generated by intelligent systems are actionable and effective [24,39].

This role transformation is already observable, despite challenges related to technological readiness and workforce competence, especially in developing countries. Moron & Diokno [40] note that AI adoption in the accounting profession is influenced by organizational readiness, digital infrastructure, and professionals' technological literacy. Nevertheless, the potential for AI to empower accountants as strategic partners remains significant, provided there is sufficient investment in training and cultural change within organizations.

This shift in the accountant's role aligns with the concepts of Professional Role Theory [10], which asserts that professional roles are inherently dynamic, shaped by technological change, social structures, and institutional pressures. In the age of AI, accountants are no longer solely focused on reporting and compliance but instead play a strategic role in cross-functional decision-making. They are required to understand algorithmic logic, evaluate system reliability, and even critique biases or assumptions used by AI in analytical processes. This transformation not only enhances efficiency and operational speed but also reinforces the accountant's position as a driver of added value in a technology-driven business ecosystem [31,32,34,38,40].

4.2.3. Ethical Dilemmas and Strategic Risks

The adoption of AI offers remarkable efficiency, precision, and speed in analyzing large- scale data. However, it also brings with it a range of complex ethical dilemmas and strategic risks. As AI begins to replace human judgment in accounting practices, fundamental questions arise regarding the limits of technological authority in decision-making processes that involve fairness, accountability, and moral values. This challenges the foundations of accounting professionalism, which have traditionally relied on normative considerations, social context, and ethical codes.

One of the central dilemmas is algorithmic transparency, commonly referred to as the "black-box problem." AI systems often operate using complex machine learning models that are difficult for end users including accountants or auditors to understand or explain. When critical decisions such as revenue recognition or fraud detection are made by automated systems, accountability becomes obscured [41,42]. Pantea et al. [43] emphasize that technical complexity creates an understanding gap between technology developers and professional users, which may increase the risk of systemic failure. Moreover, algorithmic bias poses a serious ethical risk, as AI is highly dependent on historical data that may reflect past inequalities or discrimination. Afiqah Zamain & Subramanian [44] demonstrate that bias in training data can result in decisions that deviate from the principles of objectivity in accounting. Murikah et al. [27] further argue that without ethical oversight, AI in auditing could exacerbate structural injustice. In international contexts, Abdullah & Almaqtari [45] warn that AI systems deployed without human control may fail to grasp the complexity of global organizations.

Strategic risks also emerge from excessive reliance on AI. When organizations become overly dependent on automated systems, human adaptive and evaluative capacities may deteriorate. Li [46] notes that technological dominance can hinder the development of internal competencies, while Kokina et al. [18] caution that extreme automation renders organizations vulnerable to systemic breakdowns. In developing countries, Ukpong et al. [47] highlight that weak governance infrastructure further increases the risk of system failures, potentially undermining public trust in financial information.

Another crucial concern is data security and privacy. Dilek et al. [48] show that unaudited AI systems can become entry points for cybercrime and data manipulation. In accounting practice, data integrity and confidentiality are foundational pillars. Chen [49] warns that intelligent financial systems adopted without governance oversight may replace human roles not only in technical tasks but also in ethical and contextual judgment. Hence, ethical and transparent human–machine collaboration becomes imperative.

When errors occur in AI-generated outputs, questions of responsibility often lack clear answers. Monteiro et al. [24] highlight this ambiguity in the context of forensic accounting and audit. The absence of clearly defined accountability may undermine the legitimacy of financial decisions and stakeholders' trust in the organization, which in the long term could weaken institutional credibility and prompt calls for stricter regulation. Addressing this complexity requires a robust framework of AI governance and ethics. Almaqtari [50] underscores the importance of oversight in ensuring data accuracy, algorithmic fairness, and human involvement in result validation. Artene et al. [37] add that the legitimacy of AI decisions depends on their alignment with professional values and sustainability. In the global context, Bani Ahmad [51] advocates for responsible AI adoption by emphasizing the importance of accountability, auditability, and human intervention in decision-making systems. Therefore, AI is not a full substitute for humans but a cognitive partner that must be deployed within a framework of transparent, fair, and ethical governance [52–54].

4.2.4. New Opportunities and Value Creation Arising from AI Adoption

AI implementation in accounting organizations enhances operational efficiency while also opening up novel opportunities and reshapes the value creation model within the accounting

profession. The shift from conventional compliance tasks to strategic and predictive functions has created space for the emergence of new roles that previously did not exist in traditional accounting practices.

One of the most significant opportunities lies in the development of prospective reporting and analysis approaches, reporting that goes beyond historical performance to include forecasting and forward-looking projections. Technologies such as machine learning and predictive analytics enable organizations to identify future patterns and trends from historical data, thereby enhancing accountants' capacity to conduct real-time risk assessments and scenario-based forecasting [16,36,37,55]. As a result, the role of accounting has evolved from merely historical reporting to becoming a strategic instrument that supports organizational policy-making and managerial control.

AI has facilitated the emergence of new professional roles in accounting organizations, such as AI-enabled business advisor, intelligent risk evaluator, and data-driven strategist. Owing to the continuous progress in Natural Language Processing (NLP) and expert systems, accountants can now handle highly complex tasks, including legal contract analysis, tax strategy formulation, and algorithm-based financial planning [19,51]. Tasks that previously relied on years of human experience can now be enhanced by intelligent systems that accelerate analysis and improve accuracy.

At the organizational level, accounting is undergoing a transformation from an administrative function to a center of strategic excellence. The implementation of AI-based decision support systems (DSS) enables policy simulation and dynamic risk data visualization, positioning the accounting function as a source of competitive advantage [24,38,56]. This reflects that AI is not merely accelerating existing processes but is revolutionizing the strategic position of accounting within the organizational value chain.

The deployment of technologies such as Robotic Process Automation (RPA) plays a significant role in automating administrative tasks such as data entry, account reconciliation, and transaction verification. Its implementation opens up opportunities for cost savings and reallocating time toward higher-value activities like analysis and strategic planning [32,34]. However, for AI to truly become a value-creating engine, organizations must move beyond automation and begin building systems that continuously drive strategic innovation.

The integration of AI with technologies such as blockchain presents opportunities for developing new business models grounded in transparency, accountability, and digital trust through systems like continuous auditing and immutable records [28,31]. These opportunities are particularly relevant in both public and private sector governance, where real-time reporting and accountability are essential. Nonetheless, realizing these opportunities depends on an organization's readiness to respond to change. Moron & Diokno [40] assert that adopting technology without work restructuring and human resource development will only produce illusory efficiency, not strategic value. In line with this, Monteiro et al. [24]and Almaqtari [50] emphasize that much of today’s AI adoption remains superficial and has yet to reach the structural transformation of the accounting profession. Therefore, genuine transformation requires a holistic approach that combines technology, competencies, and ethical governance [54].

AI has opened a new landscape of value creation in accounting organizations. Value is no longer defined by processing speed or administrative efficiency, but by an organization’s ability to understand, manage, and leverage information as a strategic asset. Organizations that successfully integrate AI strategically will not only achieve technical efficiency but also strengthen their resilience and competitive edge in a data-driven and uncertain business ecosystem.

5. Discussion

AI has emerged as an institutional agent reshaping the technical, functional, strategic, and professional identity dimensions of accounting organizations. According to Structuration Theory [6], accounting organizations operate as social systems in which human actors and technological structures continuously influence one another. In this context, AI functions as a transformative

agent that redefines efficiency from a purely technical metric to a strategic capability, enabling value creation through automation, predictive analytics, and data-driven innovation [2].

Findings show that machine learning and RPA-based automation have replaced routine tasks such as data entry and reconciliation, resulting in systems that are faster, more accurate, and adaptive [15,16]. This shift moves efficiency from a speed-oriented focus toward strategic contributions to decision-making [18]. Furthermore, AI has transformed the accountant's role into that of a strategic partner and data analyst, aligning with Murphy et al [32], who argue that "accounting has evolved into a cognitive partner in strategic planning and decision-making." This shift expands accountants' responsibilities from historical reporting to forward-looking projections through predictive analytics and AI-enabled scenario modeling [33,37]. AI-based prospective reporting strengthens accounting's position as an intelligent hub within the organization, offering insights that support cross-functional planning.

At the organizational level, AI integration supports the development of new value creation models. AI-driven Decision Support Systems (DSS) enable real-time policy simulations and dynamic risk visualization, positioning accounting as a driver of strategic advantage [24,56]. Synergies with blockchain enhance transparency and trust through immutable, real-time reporting systems [28,30]. Digital transformation also challenges the profession's identity and values. Pontoh et al. [1] emphasize that the accounting profession's successful adaptation in the era of Society 5.0 depends greatly on individual psychological readiness, such as self-reflection, professional confidence, and resilience in the face of changing roles. Digital transformation is reshaping accountants' self-concept, previously grounded in administrative compliance, now challenged to critically and collaboratively bridge technology and organizational strategy.

Current literature presents significant limitations. The absence of longitudinal studies limits understanding of the long-term impacts of AI implementation, and geographical bias results in the dominance of perspectives from developed countries, overlooking adoption challenges in developing economies [40,47]. Furthermore, ethical issues such as algorithmic transparency, black-box decision-making, and accountability ambiguity remain under-theorized [42,50]. The strategic potential of AI, including ESG integration, sustainability, and long-term governance, remains largely untapped, with most organizations still treating AI as an administrative tool [51,54]. Unlocking this potential requires an interdisciplinary approach that combines technology, organizational psychology, business innovation, and professional ethics to create reflective, transparent, and adaptive governance frameworks [52,53].

Overall, the role of AI in accounting organizations extends beyond efficiency gains. Human technology collaboration can shape a visionary, value-driven, and sustainable future for the profession. Achieving this potential requires a shift from isolated automation toward integrated strategies that align technological capabilities with ethical governance and organizational resilience.

6. Conclusion

Based on a systematic review of 44 scholarly articles, this study concludes that AI is fundamentally transforming accounting organizations by reshaping professional roles, work structures, and value creation models beyond mere process efficiency. Acting as both a social and strategic agent, AI drives automation, predictive analytics, and data-driven decision-making, enabling prospective reporting, strategic advisory functions, and cross-technology innovations in governance and reporting. This transformation requires accountants to develop not only technological proficiency but also reflective awareness, ethical responsibility, and adaptive capacity, while addressing persistent challenges such as ethical risks, algorithmic bias, and uneven adoption across contexts. Unlocking AI's full potential demands a multidisciplinary approach that aligns technological, organizational, ethical, and institutional perspectives to ensure its role as a driver of adaptability, transparency, collaboration, and long-term sustainability in the profession.

7. Recommendation

Accounting organizations should adopt targeted reskilling strategies that go beyond software proficiency, focusing on data interpretation, strategic communication, and effective human machine collaboration in insight driven decision-making. The role of accountants needs to be repositioned as value creators capable of translating complex data into actionable, competitive strategies. Governments and professional associations are encouraged to establish clear ethical and governance frameworks for AI, incorporating oversight mechanisms, auditability, and accountability standards to safeguard public trust and address risks such as algorithmic opacity, bias, and reduced accountability in digital accounting systems. From a research standpoint, future studies should explore how AI-driven value creation can be optimized in diverse contexts, particularly in developing countries and the public sector. Longitudinal and interdisciplinary research will be essential for shaping adaptive, inclusive, and forward-looking practices that guide the sustainable integration of AI into accounting organizations.

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