Int. J. Sci. Soc, Vol 1, No 1, June 2025
e-ISSN: 3109-242X

Transforming the Ledger through the Evolving Role of Artificial Intelligence in the Accounting Profession

Iyere Samuel Iheonkhan[1*], Sulaiman Taiwo Hassan[2]
[1]Nasarawa State University, Faculty of Administration, Department of Accounting, Nigeria, iyere@nsuk.edu.ng
[2]ANAN University Kwall, Nigeria, staiwohassan99@yahoo.com
[*]Corresponding author, e-mail: iyere@nsuk.edu.ng

Abstract— This concept paper explores how artificial intelligence (AI) is transforming the accounting profession. By conducting a thorough review of relevant literature, the study analyzes the multifaceted effects of AI technologies, particularly how they are reshaping the traditional functions and expectations of accountants. The findings identify three core areas of impact: One, the automation of repetitive tasks, such as data entry, validation, and transaction processing; Two, the advancement of analytical capabilities through tools like predictive analytics and decision-making support systems; and Three, the evolution of professional roles, emphasizing increased efficiency, scalability, and a shift toward more strategic, value-driven activities. These developments suggest a profession in transition—one where embracing AI is essential for staying relevant and leveraging its full potential to enhance productivity and insight.

Keywords: Artificial intelligence, automation, accounting transformation, data analytics, scalability, fraud detection.

1. Introduction

The rapid integration of technology is profoundly reshaping the accounting profession, fundamentally altering traditional routines and responsibilities historically undertaken by accountants [1]. With accelerating digital innovations, their impact is increasingly visible across both personal and professional domains [2]. Among these innovations, artificial intelligence (AI) has emerged as a pivotal technology capable of transforming decision-making and information processing by emulating human cognitive functions [3]–[5]. In accounting, AI is particularly effective in automating repetitive and administrative tasks that were once exclusively performed manually by professionals [6], [1].

Despite concerns over potential job displacement due to automation, especially among aspiring accountants wary of diminishing career prospects [7], [8], the demand for skilled accounting professionals remains strong. The profession continues to depend on human expertise for interpreting complex financial data, generating strategic insights, and providing advisory services [5], [9]. Contemporary accountants are increasingly involved in activities beyond mere data verification and recordkeeping; their roles now encompass advising organizations on resource optimization and strategic decision-making [10], [11]. As AI assumes responsibility for routine tasks, accounting professionals are expected to focus on value creation by utilizing emotional intelligence and critical thinking to derive meaningful insights from data [8]. This indispensable human element reinforces the evolving importance

Received: 04 May 2025, Revised: 20 May 2025 , Accepted: 27 May 2025
https://doi.org/10.64123/ijss.v1.i1.3

of accountants within technology-driven environments.

Artificial intelligence in accounting encompasses the deployment of intelligent systems such as machine learning algorithms, natural language processing, and robotic process automation to enhance and streamline traditional accounting operations [16]. These technologies mimic human intelligence to perform tasks including financial data analysis, anomaly detection, and automation of manual entries [5]. By reducing operational errors and saving time, AI enables accountants to engage in more strategic roles, supporting faster decision-making and optimized resource allocation [17], [18].

In financial accounting, AI automates routine processes such as data classification, transaction matching, and report generation with greater accuracy and efficiency than manual efforts [19], [20]. Algorithms process large volumes of transactional data, reduce human intervention, and minimize errors and fraud risk, thereby allowing professionals to focus on higher-level analytical tasks [5]. Similarly, management accounting benefits from AI-driven analytics that facilitate comprehensive cost analysis, budgeting, performance measurement, and strategic planning by efficiently interpreting vast datasets [21], [22]. These capabilities enable management accountants to shift from routine data processing to advising leadership and supporting organizational strategy, although human judgment remains essential to critically interpret AI outputs and mitigate risks of bias [23].

In auditing, AI applications span numerical analysis, document processing, task automation, and facilitation of physical activities, improving the speed and accuracy of anomaly detection, fraud identification, and compliance checks [24], [25]. Despite the advanced learning and contextual awareness of current AI technologies, human auditors remain crucial in interpreting results, validating findings, and ensuring ethical standards [26]. The collaboration between AI tools and professional judgment is necessary to maintain audit rigor and reliability.

The Malaysian Institute of Accountants (MIA) exemplifies institutional efforts to embrace digital transformation by aligning with global standards and promoting digital strategies through its Digital Technology Blueprint. Surveys indicate increasing adoption of data analytics and AI among accounting firms, as well as strong recognition of technology's importance and interest in related learning opportunities [12].

Nevertheless, challenges persist, including reduced entry-level opportunities, cybersecurity risks, and heightened demand for highly skilled practitioners [15]. Understanding AI's multifaceted impact is therefore vital for accounting professionals aiming to remain relevant and competitive in an evolving landscape [8]. This study investigates how AI technology is influencing the accounting profession, seeking to answer the question: How is AI impacting the roles and functions of accounting professionals?

2. Method

This chapter describes the research procedure employed to identify and select scholarly articles relevant to the intersection of artificial intelligence (AI) and the accounting profession. A structured literature review approach was utilized to ensure that only the most pertinent and high-quality sources were incorporated into the analysis. The primary objective was to evaluate the influence of AI on the accounting industry by systematically examining peer-reviewed academic publications. For this purpose, the Scopus database was chosen due to its extensive collection of credible, peer-reviewed journals and its widespread acceptance in academic research.

The literature selection process was conducted in December 2022 and consisted of a systematic four-stage procedure. Initially, relevant keywords were carefully formulated to guide the search strategy, focusing on the core themes of artificial intelligence and the accounting profession. The search terms included combinations of "artificial intelligence" and "accounting profession," applied with Boolean

operators to refine results. To maximize relevance, the search was limited to the title, abstract, and keyword fields, which resulted in an initial retrieval of 60 academic articles.
In the second stage, a screening phase was implemented to narrow down the initial search results based on predefined inclusion and exclusion criteria. The screening criteria were: (1) document type restricted to journal articles, (2) language limited to English, (3) publication in peer-reviewed journals, (4) final publication stage, and (5) availability as open access. Furthermore, only articles published between 2019 and 2023 were considered to ensure the literature review reflected the most recent developments in the field. After applying these filters, the pool of eligible publications was reduced to 12.

The third phase involved a detailed eligibility assessment through manual review of titles and abstracts to verify alignment with the research objectives. Articles addressing unrelated topics such as drone technology or accounting education were excluded. This assessment resulted in the removal of three articles, leaving a final selection of nine publications for comprehensive review. The inclusion and exclusion criteria applied during the screening process are summarized in Table 1.

Table 1. The inclusion and exclusion criteria

Criterion	Eligibility	Exclusion
Document Type	Article	Review
Language	English	Non-English
Source Type	Journal	Book, Book Series, Conference Proceeding
Publication Stage	Final	Article in Press
Open Access	Open Access	Non-Open Access

3. Result and Discussion

The influence of artificial intelligence (AI) on the accounting field has become increasingly prominent, fundamentally reshaping traditional practices. Over recent decades, the accounting profession has witnessed significant automation of repetitive functions, with major industry players—particularly the "Big Four" accounting firms—leading the integration of AI into auditing and financial reporting processes [27], [28]. Historically, accountants manually handled time-consuming tasks such as journal entries, voucher creation, and financial statement preparation, which were not only labor-intensive but also susceptible to errors and required extensive oversight [29]. The shift from paper-based accounting systems to digital platforms has considerably enhanced efficiency by enabling faster and more accurate data entry, thereby reducing manual workloads and improving reliability [30]. AI-driven tools now automate many routine functions, including invoice processing and bank reconciliations, allowing these tasks to be completed promptly and enabling accountants to allocate more time to value-added activities. Modern accounting software can integrate data from various modules such as ledgers and receivables to automatically generate comprehensive financial reports, further streamlining workflows [31].

Beyond operational efficiencies, AI has greatly improved analytical capabilities within accounting. By leveraging AI technologies, accountants can extract meaningful insights from large and complex datasets to inform strategic decision-making. Unlike traditional methods that may overlook subtle patterns, AI excels at identifying trends, correlations, and anomalies in historical and market data with high precision [32]. These enhanced insights contribute to better performance evaluations, goal monitoring, and early detection of potential risks or growth opportunities, thus improving the overall effectiveness of accounting functions [33]. AI systems also facilitate consistent and expedited report generation and data consolidation, enabling the execution of complex analyses in substantially less time than manual approaches [34]. Empirical evidence suggests that the implementation of data-driven strategies supported by AI can increase productivity by up to 6%, depending on the industry context [35]. Furthermore, AI-based forecasting models utilize historical and external data—such as seasonal trends and economic indicators—to predict key financial metrics including revenue and cash flow with greater

accuracy. This enhanced forecasting capability supports critical business activities such as budgeting, investment decisions, and risk management [36]. The growing adoption of AI in business environments highlights its superior predictive performance relative to human analysts, delivering comprehensive financial insights with minimal manual intervention [37], [38]. Consequently, AI integration significantly bolsters strategic planning, forecasting accuracy, and overall business outcomes within the accounting domain [36].

AI also plays an essential role in supporting faster and more objective decision-making processes by providing timely, data-backed insights [39]–[41]. By minimizing personal biases and basing conclusions strictly on empirical data, AI tools empower accountants to make more informed and reliable decisions. The automation of routine functions allows professionals to redirect their efforts towards strategic responsibilities, thereby enhancing organizational performance [27].

Moreover, AI has elevated the role of accounting professionals by increasing operational efficiency and reducing costs. Automation facilitates scalability—the capacity to manage growing workloads without sacrificing quality—and enables firms to optimize expenses [42]. Quantitative studies reveal that AI adoption leads to faster task execution, fewer errors, and overall improvements in productivity [30], [43]. This has allowed accountants to tackle complex analytical assignments previously constrained by the sheer volume of data [44]. The widespread implementation of AI not only improves scalability but also contributes to substantial operational savings. Many accounting firms report reduced overhead costs while servicing more clients without proportional increases in staffing, primarily due to AI's ability to automate labor-intensive tasks [45]. These systems mitigate mistakes, lower labor expenses, and reduce costs associated with error correction [46]. Additionally, AI can identify inefficiencies within processes and suggest cost-saving measures, such as supply chain optimizations or improved vendor negotiations, thereby boosting overall productivity while minimizing operational costs.

The rise of AI has fundamentally transformed the accounting profession, supporting more informed decision-making through enhanced data interpretation capabilities [42], [28]. AI excels in converting both external and historical data into actionable intelligence, improving data accuracy and the reliability of insights [47], [36]. As automation takes over routine processes, accountants are increasingly shifting their focus towards client engagement and consultancy roles. They provide strategic guidance on operations, taxation, and planning, expanding their responsibilities beyond conventional financial reporting [29]. AI supports real-time data analysis and predictive insights, enabling accountants to proactively advise clients [48]. These expanded duties allow professionals to strengthen client relationships, offer comprehensive financial advice, and identify new growth opportunities [34]. By handling data-intensive tasks, AI frees accountants to concentrate on decision-making and problem-solving, positioning them as strategic advisors within an increasingly complex financial environment [27], [36], [45]. Figure 1 presents a conceptual model summarizing the multifaceted impact of AI on the accounting profession.

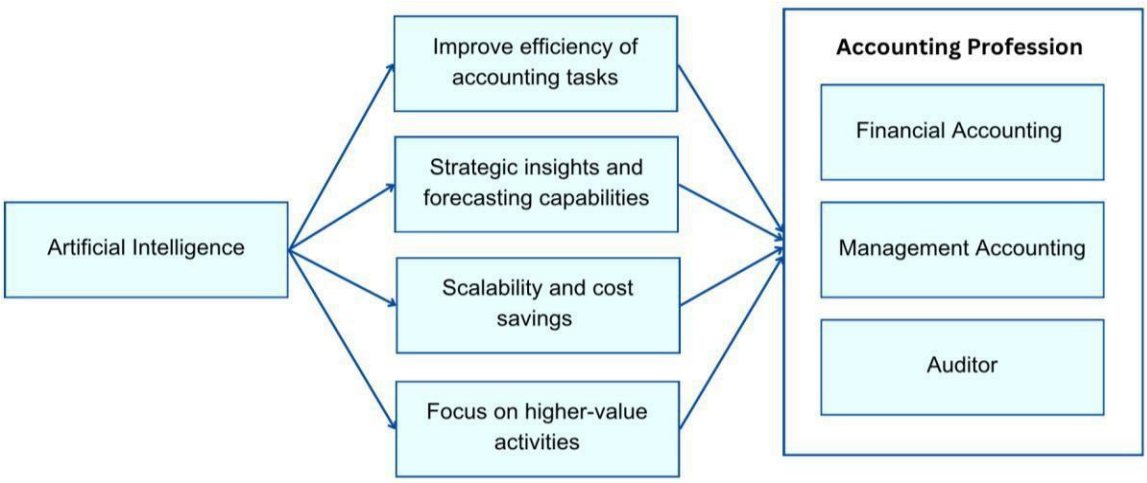

Figure 1. The Conceptual Framework of the Study

4. Conclusion

The integration of artificial intelligence (AI) in the accounting sector has become increasingly essential. AI-enabled accounting software automates repetitive tasks such as data entry and reconciliation, leading to improvements in processing speed and accuracy. Furthermore, AI provides accountants with powerful tools to analyze large financial datasets quickly, generating insights that support strategic decision-making. These capabilities enable organizations to identify patterns, forecast outcomes, and optimize resource allocation more effectively.

Adopting AI technology is critical for businesses seeking sustainable long-term success, as it enhances productivity and operational efficiency. The advancement of AI also reshapes the accounting profession by automating routine functions, which allows accountants to focus more on complex, value-added activities such as strategic analysis and advisory roles. Despite concerns about job displacement, human judgment remains indispensable for interpreting AI-generated insights and performing tasks that require critical thinking and professional expertise.

This study acknowledges limitations, including the exclusive use of the Scopus database and reliance on published academic articles, which may affect the comprehensiveness of the findings. Future research is recommended to incorporate multiple databases and sources to provide a broader and more robust understanding of AI's impact on accounting practices.

References

[1] A. Aitkazinov, "The role of artificial intelligence in auditing: opportunities and challenges," *Int. J. Res. Eng. Sci. Manag.*, vol. 6, no. 6, pp. 117–119, 2023.

[2] A. Aldoseri, K. N. Al-Khalifa, and A. M. Hamouda, "Re-thinking data strategy and integration for artificial intelligence: concepts, opportunities, and challenges," *Appl. Sci.*, vol. 13, no. 12, p. 7082, 2023.

[3] H. Allioui and Y. Mourdi, "Exploring the full potentials of IoT for better financial growth and stability: a comprehensive survey," *Sensors*, vol. 23, no. 19, p. 8015, 2023.

[4] D. Appelbaum, A. Kogan, M. Vasarhelyi, and Z. Yan, "Impact of business analytics and enterprise systems on managerial accounting," *Int. J. Account. Inf. Syst.*, vol. 25, pp. 29–44, 2017.

[5] D. S. Battina, "The future of artificial intelligence at work: A review on effects of decision automation and augmentation on workers targeted by algorithms and third-party observers," *Int. J. Innov. Eng. Res. Technol.*, vol. 5, no. 7, 2018.

[6] J. P. Bharadiya, "Machine learning and AI in business intelligence: Trends and opportunities," *Int. J. Comput. (IJC)*, vol. 48, no. 1, pp. 123–134, 2023.

[7] M. R. Belgaum, Z. Alansari, S. Musa, M. M. Alam, and M. S. Mazliham, "Role of artificial intelligence in cloud computing, IoT and SDN: Reliability and scalability issues," *Int. J. Electr. Comput. Eng.*, vol. 11, no. 5, pp. 4458–4470, 2021.

[8] J. E. Boritz and T. C. Stratopoulos, "AI and the accounting profession: views from industry and academia," *J. Inf. Syst.*, pp. 1–9, 2023.

[9] S. Bose, S. K. Dey, and S. Bhattacharjee, "Big data, data analytics, and artificial intelligence in accounting: An overview," in *Handbook of Big Data Research Methods*, 2023, p. 32.

[10] C. Cai, "Training mode of innovative accounting talents in colleges using artificial intelligence," *Mobile Inf. Syst.*, 2022.

[11] F. Chua, "Technology trends: Their impact on the global accountancy profession," *Assoc. of Chartered Certified Accountants*, 2013.

[12] Y. K. Dwivedi et al., "Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice, and policy," *Int. J. Inf. Manag.*, vol. 57, p. 101994, 2021.

[13] V. Grosu, C. G. Cosmulese, M. Socoliuc, M. S. Ciubotariu, and S. Mihaila, "Testing accountants' perceptions of the digitization of the profession and profiling the future professional," *Technol. Forecast. Soc. Change*, vol. 193, p. 122630, 2023.

[14] H. Han, R. K. Shiwakoti, R. Jarvis, C. Mordi, and D. Botchie, "Accounting and auditing with blockchain technology and Artificial Intelligence: A literature review," *Int. J. Account. Inf. Syst.*, vol. 48, p. 100598, 2023.

[15] B. L. Handoko, A. N. Mulyawan, J. Samuel, K. K. Rianty, and S. Gunawa, "Facing industry revolution 4.0 for millennial accountants," *Int. J. Innov. Technol. Explor. Eng. (IJITEE)*, vol. 9, no. 1, pp. 1037–1041, 2019.

[16] A. R. Hasan, "Artificial intelligence (AI) in accounting & auditing: a literature review," *Open J. Bus. Manag.*, vol. 10, no. 1, pp. 440–465, 2021.

[17] A. Igou, D. J. Power, S. Brosnan, and C. Heavin, "Digital futures for accountants," *J. Emerg. Technol. Account.*, vol. 20, no. 1, pp. 39–57, 2023.

[18] D. Jackson and C. Allen, "Technology adoption in accounting: The role of staff perceptions and organisational context," *J. Account. Organ. Change*, 2023.

[19] D. Jackson, G. Michelson, and R. Munir, "Developing accountants for the future: New technology, skills, and the role of stakeholders," *Account. Educ.*, vol. 32, no. 2, pp. 150–177, 2023.

[20] J. Jalonen, "Artificial intelligence as a part of financial management development: automation of accounts payable processes," 2023.

[21] S. D. Jankovic and D. M. Curovic, "Strategic integration of artificial intelligence for sustainable businesses: Implications for data management and human user engagement in the digital era," *Sustainability*, vol. 15, no. 21, p. 15208, 2023.

[22] C. G. Kamau and S. L. Ilamoya, "Accounting profession: African perspective review of steps into the future," *Multidiscip. J. TUM*, vol. 2, no. 1, pp. 19–26, 2023.

[23] N. Khawaja and A. Hamdan, "The moderation effect of digital leadership on the relationship between artificial intelligence and accounting profession: a review," in *Emerg. Trends Innov. Bus. Finance*, pp. 803–818, 2023.

[24] N. Kroon and M. do Céu Alves, "Examining the fit between supply and demand of the accounting professional's competencies: A systematic literature review," *Int. J. Manag. Educ.*, vol. 21, no. 3, p. 100872, 2023.

[25] M. Kureljusic and E. Karger, "Forecasting in financial accounting with artificial intelligence–A systematic literature review and future research agenda," *J. Appl. Account. Res.*, 2023.

[26] R. N. Landers and T. S. Behrend, "Auditing the AI auditors: A framework for evaluating fairness and bias in high stakes AI predictive models," *Am. Psychol.*, vol. 78, no. 1, p. 36, 2023.

[27] A. Larioui and M. Himran, "Impact of artificial intelligence on operational management and accounting," *La Revue des Sciences Commerciales*, vol. 22, no. 1, pp. 22–44, 2023.

[28] C. Li, S. Haohao, and F. Ming, "Research on the impact of artificial intelligence technology on accounting," *J. Phys. Conf. Ser.*, vol. 1486, p. 032042, 2020.

[29] A. Manap, R. Y. Sasmiyati, N. Edy, L. S. A. Buana, and Y. E. Rachmad, "The role of auditor ethics as moderating variable in relationship between auditor accountability and quality of the audit," *J. EMT KITA*, vol. 7, no. 2, pp. 382–388, 2023.

[30] S. Marques, R. Gonçalves, R. L. da Costa, L. F. Pereira, and A. L. Dias, "The impact of intelligent systems on management accounting," *Int. J. Intell. Inf. Technol. (IJIIT)*, vol. 19, no. 1, pp. 1–32, 2023.

[31] J. Moll and O. Yigitbasioglu, "The role of internet-related technologies in shaping the work of accountants: New directions for accounting research," *Br. Account. Rev.*, vol. 51, no. 6, p. 100833, 2019.

[32] A. M. Pauceanu, N. Rabie, and A. Moustafa, "Employability under the fourth industrial revolution," *Econ. Sociol.*, vol. 13, no. 3, p. 269, 2020.

[33] T. Payton and T. Claypoole, *Privacy in the age of big data: Recognizing threats, defending your rights, and protecting your family*. Rowman & Littlefield, 2023.

[34] Y. Peng et al., "Riding the waves of artificial intelligence in advancing accounting and its implications for sustainable development goals," *Sustainability*, vol. 15, no. 19, p. 14165, 2023.

[35] A. Rawashdeh, "The consequences of artificial intelligence: An investigation into the impact of AI on job displacement in accounting," *J. Sci. Technol. Policy Manag.*, 2023.

[36] W. Rodgers, J. M. Murray, A. Stefanidis, W. Y. Degbey, and S. Y. Tarba, "An artificial intelligence algorithmic approach to ethical decision-making in human resource management processes," *Hum. Resour. Manag. Rev.*, vol. 33, no. 1, p. 100925, 2023.

[37] C. L. Schaudt, "Combining robotic process automation with artificial intelligence: Applications, terminology, benefits, and challenges," in *Proc. 38th Eurasia Bus. Econ. Soc. Conf.*, vol. 25, p. 83, 2023.

[38] K. Sherif and H. Mohsin, "The effect of emergent technologies on accountants' ethical blindness," 2021.

[39] S. G. Sutton, M. Holt, and V. Arnold, "'"The reports of my death are greatly exaggerated"'—Artificial intelligence research in accounting," *Int. J. Account. Inf. Syst.*, vol. 22, pp. 60–73, 2016.

[40] P. Thakker and G. Japee, "Emerging technologies in accountancy and finance: a comprehensive review," *Eur. Econ. Lett.*, vol. 13, no. 3, pp. 993–1011, 2023.

[41] A. A. Vărzaru, "Assessing artificial intelligence technology acceptance in managerial accounting," *Electronics*, vol. 11, no. 14, p. 2256, 2022.

[42] M. Vasuki, T. A. Victoire, A. Karunamurthy, and B. Priyadharshini, "Harnessing the power of artificial intelligence in stock market trading," *Int. J. Res. Eng. Sci. Manag.*, vol. 6, no. 6, pp. 167–182, 2023.

[43] Y. Zhang, F. Xiong, Y. Xie, X. Fan, and H. Gu, "The impact of artificial intelligence and blockchain on the accounting profession," *IEEE Access*, vol. 8, pp. 110461–110477, 2020.

[44] C. Zhang, W. Zhu, J. Dai, Y. Wu, and X. Chen, "Ethical impact of artificial intelligence in managerial accounting," *Int. J. Account. Inf. Syst.*, vol. 49, p. 100619, 2023.

[45] Davenport, T. H., & Ronanki, R. (2018). Artificial intelligence for the real world. *Harvard Business Review*, 96(1), 108-116.

[46] Liu, B., Wang, Y., & Yang, J. (2022). The impact of artificial intelligence on auditing quality: Evidence from firms adopting AI tools. *Journal of Accounting and Public Policy*, 41(3), 106865.

[47] Nguyen, T. H., & Nguyen, T. P. (2023). Ethical challenges of AI integration in financial accounting: A systematic review. *Journal of Business Ethics*, 178(4), 879-895.

[48] Wang, L., & Siau, K. (2019). Artificial intelligence, machine learning, automation, robotics, future of work and future of humanity: A review and research agenda. *Journal of Database Management*, 30(1), 61-79.