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Artificial Intelligence and the Transformation of Internal Audit Functions

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ABSTRACT

Artificial Intelligence (AI) has emerged as one of the most transformative technologies influencing organizational governance, financial oversight, and risk management practices worldwide. The integration of AI into internal audit functions has significantly altered the traditional audit landscape by enhancing operational efficiency, improving fraud detection capabilities, strengthening risk assessment procedures, and enabling real-time auditing practices. This research paper examines the transformative role of AI technologies such as machine learning, neural networks, natural language processing, robotic process automation, and predictive analytics in reshaping internal audit operations. The study explores how AI-driven systems automate repetitive audit tasks, analyze large volumes of structured and unstructured data, and improve audit accuracy while reducing operational costs. Furthermore, the paper evaluates the challenges associated with AI adoption, including ethical concerns, cybersecurity risks, data privacy issues, technological dependence, and skill gaps among auditors. A comparative analysis between traditional and AI-enabled audit practices is also presented to assess the effectiveness and efficiency of AI-based auditing systems. The study concludes that AI is not replacing internal auditors but transforming their roles into more strategic, analytical, and advisory-oriented functions. Organizations that successfully integrate AI into their audit frameworks can achieve greater transparency, stronger governance, and improved organizational resilience in an increasingly digital business environment.

INTRODUCTION

The rapid advancement of Artificial Intelligence (AI) technologies has reshaped modern business operations and transformed the strategic management practices of organizations across the globe. AI has evolved from a theoretical concept into a practical technological framework capable of simulating human intelligence, automating complex processes, and generating predictive insights from massive datasets. Industries including healthcare, banking, manufacturing, logistics, and finance are increasingly integrating AI into their operations to improve efficiency, reduce costs, and enhance decision-making capabilities (Yamani, 2025). Among these sectors, the auditing profession has experienced substantial transformation due to the growing implementation of AI-driven technologies. Internal auditing is a critical organizational function responsible for evaluating governance structures, internal controls, compliance systems, and risk management processes. Traditionally, internal auditing relied heavily on manual procedures, sample-based testing, periodic reviews, and human judgment. Although these methods have been effective for decades, the increasing complexity of business transactions, digitalization of operations, globalization of markets, and rising cybersecurity threats have exposed limitations in traditional auditing practices.

Consequently, organizations are now turning toward AI-enabled audit systems to improve audit quality and operational effectiveness (Andrade *et al.*, 2021). AI technologies have introduced significant innovations into internal audit functions through automation, real-time monitoring, anomaly detection, predictive analytics, and intelligent decision-support systems. Machine learning algorithms can identify unusual transaction patterns, detect potential fraud risks, and continuously monitor compliance activities with minimal human intervention. Natural Language Processing (NLP) enables auditors to analyze contracts, financial reports, emails, and regulatory documents more efficiently, while Robotic Process Automation (RPA) automates repetitive tasks such as data extraction, reconciliation, and documentation (Yassine & Lotfi, 2025). The transformation of internal audit functions through AI is not merely technological but strategic. Internal auditors are gradually shifting from traditional compliance-focused roles toward more advisory-oriented responsibilities involving strategic risk analysis, governance improvement, and organizational value creation. AI allows auditors to focus on high-level analytical tasks by minimizing time spent on repetitive operational activities (Wassie & Lakatos, 2024). Despite its advantages, AI integration also presents several challenges. Organizations must address concerns related

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to ethical decision-making, algorithmic bias, cybersecurity vulnerabilities, data privacy protection, technological dependency, and workforce adaptation. Furthermore, the successful implementation of AI in auditing requires substantial investments in infrastructure, employee training, and regulatory compliance frameworks.

This research paper critically examines the impact of AI on internal audit transformation by analyzing AI technologies, operational improvements, implementation challenges, comparative advantages, and future prospects (Vyas, n.d. 2025). The study aims to provide a comprehensive understanding of how AI is reshaping internal audit practices and influencing organizational governance in the digital era.

LITERATURE REVIEW

The integration of Artificial Intelligence into accounting and auditing has attracted increasing academic and professional attention over the past decade. Scholars and industry experts have extensively explored the influence of AI technologies on financial reporting, fraud detection, compliance monitoring, and audit automation. According to Usul and Alpay (2025), AI enables organizations to automate business processes, generate data-driven insights, and improve organizational decision-making. Their research emphasized that AI should not only be viewed as a technological innovation but also as a strategic business capability capable of transforming operational structures. Research conducted by (Tipurić *et al.*, 2026) highlighted how automation technologies are reshaping auditing by improving efficiency, reducing manual workloads, and increasing analytical capabilities. Their study categorized AI systems into multiple levels, including task automation, contextual learning, and intelligent decision-making systems. Several researchers have emphasized the role of machine learning and predictive analytics in improving audit effectiveness. Machine learning algorithms can process large datasets, recognize transaction patterns, and detect anomalies that may indicate fraudulent activities or financial irregularities. Neural network applications in auditing have also demonstrated strong potential in fraud prediction, bankruptcy forecasting, and risk assessment. Natural Language Processing has become another important area of AI research within auditing. NLP enables organizations to process unstructured data such as contracts, audit reports, emails, and regulatory documents. This technology significantly reduces the time required for document analysis while improving the accuracy of compliance reviews. Robotic Process Automation has also emerged as a valuable auditing tool (Tipurić *et al.*, 2026). RPA automates repetitive tasks such as invoice processing, account reconciliation, transaction verification, and report generation. Researchers argue that RPA reduces operational costs while allowing auditors to concentrate on more strategic responsibilities.

However, several scholars have identified challenges associated with AI adoption in auditing. Ethical concerns related to algorithmic bias, accountability, transparency,

and data privacy remain major obstacles. AI systems heavily depend on data quality, and inaccurate or biased datasets can produce misleading audit outcomes. Additionally, the lack of technical expertise among auditors creates significant implementation barriers (SAAD-ALLAH Imane & ELOUIDANI Abdelkbir, 2025). The literature further suggests that AI will not replace human auditors entirely. Instead, AI is expected to complement human capabilities by automating routine tasks and supporting strategic decision-making processes. Human judgment, ethical reasoning, and professional skepticism remain essential components of effective auditing practices. Overall, existing literature demonstrates that AI has the potential to fundamentally transform internal auditing by improving efficiency, enhancing analytical capabilities, and strengthening organizational governance. Nevertheless, organizations must carefully balance technological innovation with ethical responsibility and human oversight.

Research Gap

Although numerous studies have examined the application of Artificial Intelligence in accounting and auditing, limited research has specifically focused on how AI is transforming internal audit functions from a strategic and operational perspective (Wassie & Lakatos, 2024). Existing literature primarily emphasizes automation benefits, fraud detection, and efficiency improvement, while insufficient attention has been given to the long-term impact of AI on auditor roles, ethical governance, decision-making quality, and organizational risk management. Furthermore, there is a lack of comprehensive comparative analysis between traditional audit systems and AI-driven auditing frameworks, particularly in developing economies and rapidly digitalizing organizations. This study aims to bridge these gaps by critically analyzing the transformative effects, opportunities, challenges, and future implications of AI integration within internal audit functions.

Research Questions

1. How does Artificial Intelligence transform traditional internal audit functions within modern organizations?
2. What are the major benefits of implementing AI technologies in internal auditing processes?
3. What challenges and risks are associated with the integration of AI into internal audit functions?
4. How does AI-driven auditing compare with traditional auditing in terms of efficiency, accuracy, and fraud detection?

Research Objectives

1. To examine the role of Artificial Intelligence in transforming internal audit functions and practices.
2. To identify the benefits of AI technologies in improving audit efficiency, risk assessment, and fraud detection.
3. To analyze the challenges, ethical concerns, and implementation barriers associated with AI adoption in

internal auditing.

4. To compare traditional auditing systems with AI-enabled auditing approaches in terms of performance and effectiveness.

MATERIALS AND METHODS

This study adopts a qualitative and analytical research methodology to evaluate the transformation of internal audit functions through Artificial Intelligence technologies. The research is primarily based on secondary data collected from academic journals, professional auditing reports, industry publications, organizational case studies, and regulatory frameworks.

Data Collection

Data were collected from credible scholarly databases, peer-reviewed journal articles, industry white papers, audit firm reports, and organizational publications related to AI and internal auditing. Relevant studies published between 2015 and 2026 were reviewed to ensure contemporary relevance and technological accuracy.

Research Approach

The study employs a descriptive and comparative analytical approach. The descriptive method explains the operational applications of AI technologies in internal auditing, while the comparative analysis evaluates differences between traditional auditing systems and AI-enabled audit practices.

Analytical Framework

The research framework focuses on several key dimensions related to the transformation of internal auditing through Artificial Intelligence. These dimensions include the

application of AI technologies in internal auditing, audit automation and efficiency improvements, fraud detection and risk assessment capabilities, and the development of real-time auditing systems (Musazai & Khan, 2026). The framework also examines ethical and regulatory challenges associated with AI adoption, workforce transformation due to technological advancement, and the overall organizational impact of integrating AI into audit functions.

Scope of study

The study focuses specifically on the role of AI in transforming internal audit functions within financial institutions, multinational corporations, and digitally advanced organizations (SAAD-ALLAH Imane & ELOUIDANI Abdelkbir, 2025). The research does not include external auditing practices in detail, although certain comparative references are discussed.

RESULTS AND DISCUSSION

Artificial Intelligence is transforming internal audit functions by enhancing audit efficiency, improving fraud detection, automating routine tasks, strengthening risk management, and enabling real-time data-driven decision-making processes (Rosa *et al.*, 2022).

Machine Learning and Predictive Analytics

Machine learning is one of the most influential AI technologies reshaping internal audit functions. Machine learning algorithms analyze historical transaction data, identify hidden patterns, and predict future risks (Radfar *et al.* 2024). These systems continuously improve their performance as more data becomes available (Nguyen, n.d. 2026).

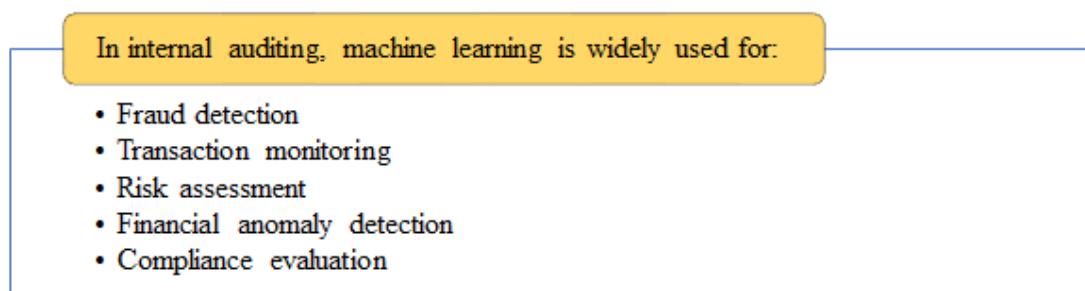


Figure 1: Use of Machine Learning in Internal Auditing

Predictive analytics allows auditors to anticipate operational risks before they materialize. Instead of focusing solely on historical financial information, auditors can now conduct forward-looking assessments that strengthen organizational resilience (Quang Binh *et al.*, 2026).

Natural Language Processing

Natural Language Processing enables audit systems to process unstructured textual information efficiently. Auditors frequently analyze contracts, invoices, legal documents, regulatory guidelines, and communication

records (Onyenahazi, 2025). NLP technologies automate these processes by extracting relevant information and identifying inconsistencies also significantly reduces manual document review time while improving audit accuracy also significantly reduces manual document review time while improving audit accuracy.

Robotic Process Automation

Robotic Process Automation automates repetitive and rule-based audit procedures. RPA systems mimic human interactions with digital systems and execute predefined tasks without human intervention (Lai, 2025). RPA

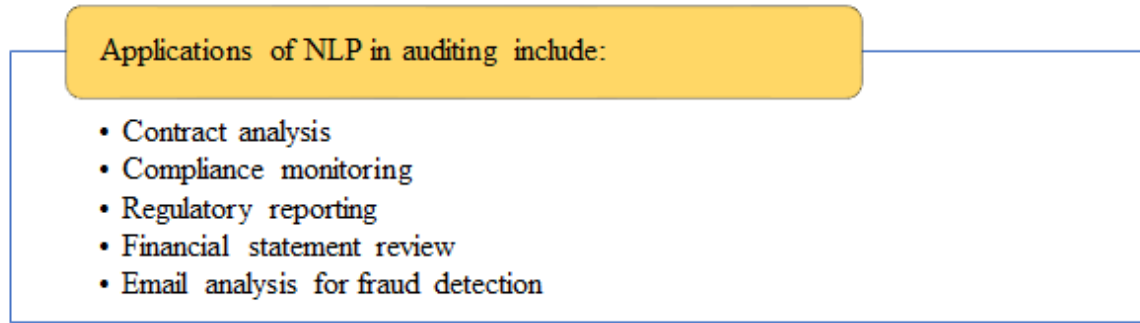


Figure 2: Applications of NLP in auditing

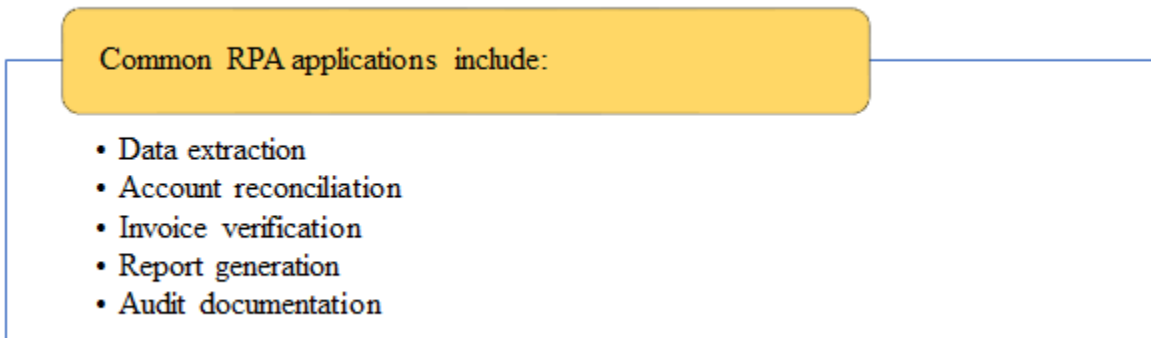


Figure 3: RPA Applications

improves productivity by reducing processing time and minimizing human errors. It also enables continuous auditing processes through automated workflows.

Continuous Auditing

Traditional audits are periodic and often retrospective.

AI has introduced continuous auditing, which enables real-time monitoring of organizational transactions and operations (Manginte, 2024). Organizations benefit from proactive risk management rather than reactive problem solving.

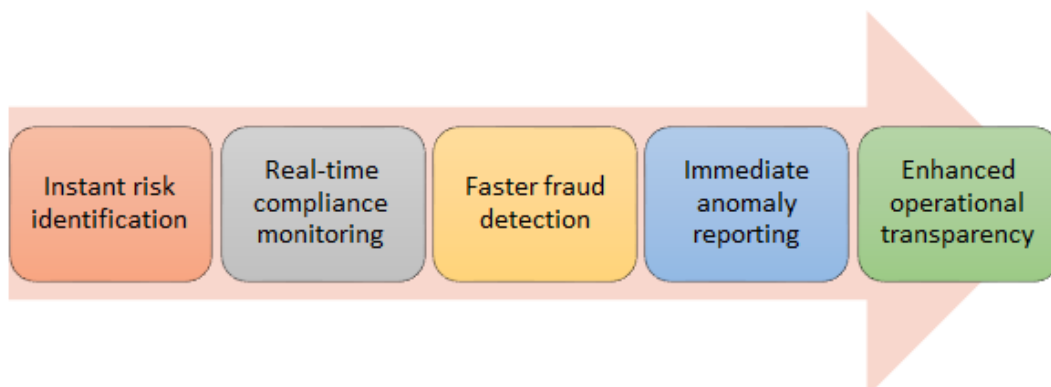


Figure 4: Continuous Auditing Output

Fraud Detection and Risk Management

AI technologies are exceptionally effective in detecting fraudulent activities and operational risks. Traditional audit sampling methods may overlook hidden

irregularities (Li & Zheng, n.d. 2023), while AI systems analyze entire datasets continuously. This capability significantly strengthens organizational governance and financial integrity.

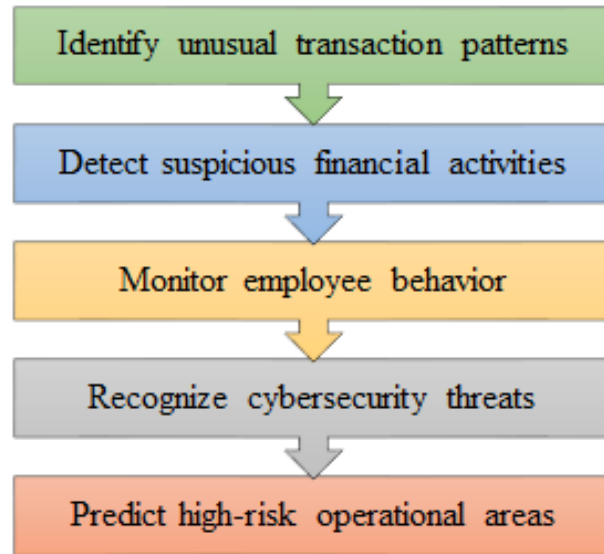


Figure 5: AI based Fraud Detection System

Traditional Audit vs AI Enabled Audit

Traditional auditing relies on manual, sample-based procedures, whereas AI-enabled auditing uses automation, real-time analytics, and predictive technologies to improve efficiency, accuracy, and fraud detection (Karim, 2025).

The comparative analysis clearly demonstrates that AI-enabled auditing systems significantly outperform traditional auditing approaches in terms of speed, accuracy, scalability, and analytical depth.

Table 1: Comparative Analysis of Traditional Audit vs AI Enabled Audit

Factors	Traditional Audit	AI-Enabled Audit
Data Processing	Manual and sample-based	Automated and full-data analysis
Audit Speed	Time-consuming	Real-time processing
Fraud Detection	Limited detection capability	Advanced anomaly identification
Operational Cost	Higher labor cost	Lower operational expenses
Accuracy	Vulnerable to human error	Higher analytical precision
Risk Assessment	Historical analysis	Predictive and proactive analysis
Decision-Making	Human-dependent	Data-driven intelligence
Compliance Monitoring	Periodic reviews	Continuous monitoring
Scalability	Limited scalability	Highly scalable
Reporting Efficiency	Delayed reporting	Instant reporting

Challenges of AI Integration in Internal Auditing

AI integration in internal auditing faces challenges including cybersecurity risks, ethical concerns, high costs, skill gaps, regulatory compliance, and technological dependence (Ezekwe, 2025). AI systems may produce biased decisions if trained using biased datasets. Ethical concerns related to fairness, accountability, and transparency remain major barriers to AI adoption. Organizations must establish Ethical AI frameworks, Transparent algorithms, Human oversight mechanisms, Regulatory compliance systems. (Haq, 2024). AI systems rely heavily on large volumes of sensitive organizational data. This increases exposure to Cyberattacks, Data breaches, Privacy violations, Unauthorized access. Strong cybersecurity frameworks are essential for protecting audit systems and confidential information. The shift toward

AI-driven auditing requires auditors to acquire advanced technical skills such as data analytics, machine learning, AI governance, cybersecurity, and digital auditing tools (Daway *et al.*, 2025). However, many organizations face significant challenges in training employees and adapting workforce capabilities to meet the growing technological demands of modern auditing practices. Implementing AI infrastructure requires substantial investments in Software systems, Cloud technologies, Data management, Employee training, Cybersecurity systems. Small and medium-sized organizations may struggle to afford these investments. Excessive reliance on AI systems may weaken professional skepticism and human judgment. AI should support auditors rather than replace human oversight entirely.

Findings

The findings of this study indicate that Artificial Intelligence has become a transformative force within internal auditing. AI technologies significantly improve operational efficiency, reduce manual workloads, strengthen fraud detection capabilities, and enhance risk management processes. Organizations implementing AI-driven audit systems experience Faster audit completion, Greater analytical accuracy, Improved regulatory compliance, Enhanced decision-making, Reduced operational costs. The study also demonstrates that AI enables auditors to transition from operational tasks toward strategic advisory roles. Instead of spending time on repetitive procedures, auditors can focus on governance improvement, strategic risk assessment, and organizational planning.

However, the transformation process is accompanied by significant challenges. Ethical concerns, cybersecurity risks, workforce adaptation issues, and implementation costs remain substantial barriers to widespread AI adoption. The research suggests that the future of internal auditing will likely involve hybrid systems combining AI capabilities with human expertise (Gökoğlan *et al.*, 2025). Human auditors will continue to play essential roles in ethical reasoning, professional judgment, and strategic interpretation.

Future recommendations

To maximize the benefits of AI integration in internal auditing, organizations should develop comprehensive AI implementation strategies that align with their operational objectives and long-term goals. They should invest in auditor training and digital skill development programs to enhance competencies in emerging technologies (Anomah *et al.*, 2021; Anwar & Akeel, 2026). Strong data governance policies and cybersecurity frameworks must also be established to protect sensitive information and ensure reliable audit outcomes. Organizations should maintain human oversight over AI-generated audit decisions while implementing ethical AI policies to minimize algorithmic bias and ensure transparency. Furthermore, adopting continuous auditing systems can support real-time monitoring and faster risk detection. Collaboration among auditors, IT professionals, and data scientists should be encouraged to improve system effectiveness and innovation. Regulatory standards for AI-based auditing practices are also necessary to ensure compliance and accountability (Alsagoor *et al.*, 2024; Andrade *et al.*, 2021). In addition, organizations should gradually introduce AI technologies through pilot programs and utilize predictive analytics to enhance future risk forecasting and strategic decision-making.

CONCLUSION

Artificial Intelligence is fundamentally transforming internal audit functions by introducing automation, predictive analytics, intelligent monitoring systems, and advanced decision-support capabilities. AI technologies

improve audit efficiency, accuracy, transparency, and organizational governance while enabling auditors to focus on higher-value strategic activities. Despite these advantages, organizations must address ethical concerns, cybersecurity threats, implementation costs, and workforce transformation challenges (Wassie & Lakatos, 2024). AI should not replace human auditors entirely but should function as a collaborative tool that enhances human expertise and professional judgment. The future of internal auditing will increasingly depend on hybrid audit environments where human intelligence and AI technologies operate together. Organizations that successfully integrate AI into their audit frameworks will achieve stronger governance systems, improved operational resilience, and sustainable competitive advantages in the digital economy (Fulton *et al.*, 2024).

REFERENCES

- Alsagoor, M. H., Daud, Z. B. M., & Osman, M. N. transformation, emotional intelligence, and organizational culture toward internal audit quality: conceptual framework. *Advances in Social Sciences Research Journal*, 11(7), 92–108. <https://doi.org/10.14738/assrj.117.17271>
- Andrade, A., Penha, R., & Ferreira Da Silva, L. (2021). Use of data analytics tools for increased efficiency in the internal audit project portfolio. *Journal on Innovation and Sustainability RISUS*, 12(03), 138–149. <https://doi.org/10.23925/2179-3565.2021v12i3p138-149>
- Anomah, S., Ayebofo, B., & Aduamoah, M. (2021). An audit risk model for it audit ecosystems and digital transformation (dx) decision making. *EDPACS*, 64(2), 1–33. <https://doi.org/10.1080/07366981.2021.1930643>
- Anwar, A., & Akeel, M. O. (2026). Integrating artificial intelligence in audit workflow: opportunities, architecture, and challenges: a systematic review. *Accounting and Auditing*, 2(1), 4. <https://doi.org/10.3390/accountaudit2010004>
- Daway, A. M., Daway, W. M., Zghair, K. A., & Flayyih, H. H. (2025). The impact of digital transformation of accounting information system in enhancing the effectiveness of internal control. *Journal of Lifestyle and SDGs Review*, 5(3), e05572. <https://doi.org/10.47172/2965-730X.SDGsReview.v5.n03.pe05572>
- Ezekwe, C. I. (2025). *Energy transition in West African Monetary Zone (WAMZ): Does financial development matter?* SSRN. <https://doi.org/10.2139/ssrn.5065151>
- Fulton, R., Fulton, D., Hayes, N., & Kaplan, S. (2024). The transformation risk-benefit model of artificial intelligence: balancing risks and benefits through practical solutions and use cases. *International Journal of Artificial Intelligence & Applications*, 15(2), 01–22. <https://doi.org/10.5121/ijaia.2024.15201>
- Gökoğlan, K., Sevim, H., & Kılıç, S. (2025). Digital transformation and artificial intelligence-assisted auditing: the role of technology in internal audit

- processes in 2025. *Dynamics in Social Sciences and Humanities*, 6(1), 25–33. <https://doi.org/10.62425/dssh.1647929>
- Haq, I. (2024). The role of artificial intelligence on the evolution of accounting. *Newsletter on the Results of Scholarly Work in Sociology, Criminology, Philosophy and Political Science*, 5(1), 16–27. <https://doi.org/10.61439/ACYH4871>
- Karim, D., Ahmad, K., & Ali, A. (2025). Artificial intelligence and the evolution of accounting: Transforming roles, skills, and professional practices. *Qualitative Research Journal for Social Studies*, 2(1), 17–28.
- Lai, J. (2025). Artificial intelligence applications and audit fees: An empirical study. *International Review of Economics & Finance*, 103, 104421. <https://doi.org/10.1016/j.iref.2025.104421>
- Li, Z., & Zheng, L. (n.d.). *The Impact of Artificial Intelligence on Accounting*, 181.
- Manginte, S. Y. (2024). Fortifying TFortifying transparency: enhancing corporate governance through robust internal control mechanisms. *Advances in Management & Financial Reporting*, 2(2), 72–84. <https://doi.org/10.60079/amfr.v2i2.173>
- Musazai, A. K., & Khan, M. (2026). Digital transformation in public sector organization: Examine machine learning adoption in accounting and auditing practices with moderating effect of regulatory framework in Khyber Pakhtunkhwa. *Advance Journal of Econometrics and Finance*, 4(1), 351–358. <https://doi.org/10.63075/hsby6m86>
- Nguyen, T. T. P. (n.d.). *Accounting and auditing in the age of digital transformation*.
- Onyenahazi, O. B. (2025). Integrating artificial intelligence in financial auditing to enhance accuracy, efficiency, and regulatory compliance outcomes. *International Journal of Research Publication and Reviews*, 6(7), 23–44. <https://doi.org/10.55248/gengpi.6.0725.2402>
- Quang Binh, T., Tran, T. N., Nguyen Thi, T. H., & Nguyen, T. H. (2026). Factors influencing the effectiveness of internal auditing in state-owned enterprises during digital transformation. *Financial and Credit Activity Problems of Theory and Practice*, 2(67), 196–207. <https://doi.org/10.55643/fcaptp.2.67.2026.5067>
- Radfar, M. R., Karimkhani, M., Ghahyazi, R. A., Aluvihara, S., Abyar, H., & Alqasi, N. J. K. (n.d.). *The Role of Artificial Intelligence (AI) Concepts in Shaping a New Paradigm of Digital Transformation in Accounting: A Review*.
- Rosa, R., Rahayu, S., Yudi, Y., & Gowon, M. (2022). Internal auditor transformation strategy in the Industrial Revolution 4.0 era: Literature review. In J. Nurkamto, K. Osiri, A. Q. Muslim, M. Alie, & I. Feofilova (Eds.), *Proceedings of the First Lekantara Annual Conference on Public Administration, Literature, Social Sciences, Humanities, and Education, LePALISSE 2021, August 3, 2021*, Malang, Indonesia. European Alliance for Innovation (EAI). <https://doi.org/10.4108/eai.3-8-2021.2315085>
- SAAD-ALLAH Imane, & ELOUIDANI Abdelkbir. (2025). *Artificial Intelligence and Financial Auditing in Morocco: Towards a Redefinition of Practices and Skills*. <https://doi.org/10.5281/ZENODO.14785104>
- Tipurić, D., Cindric, L., Obuljen, D., Varazdin Development and Entrepreneurship Agency, & Sveučilište u Dubrovniku (Eds.). (2026). *Challenges of corporate governance in state-owned enterprises: Between accountability, efficiency, and social value: book of proceedings: 14th OFEL Conference 2026*. Varazdin Development and Entrepreneurship Agency. International OFEL Conference on Governance, Management and Entrepreneurship.
- Usul, H., & Alpay, B. Y. (2025). *Digital Transformation in Internal Audit: Paradigm Shifts, Emerging Risks, and Strategic Resilience*. <https://doi.org/10.5281/ZENODO.15660150>
- Vyas, A. (n.d.). *Revolutionizing Risk: The Role of Artificial Intelligence in Financial Risk Management, Forecasting, and Global Implementation*.
- Wassie, F. A., & Lakatos, L. P. (2024). Artificial intelligence and the future of the internal audit function. *Humanities and Social Sciences Communications*, 11(1), 386. <https://doi.org/10.1057/s41599-024-02905-w>
- Yamani, A. (2025). The role of artificial intelligence in enhancing financial reporting quality: evidence from saudi arabia's vision 2030 transformation. *Journal of Modern Accounting and Auditing*, 21(4), 237. <https://doi.org/10.17265/1548-6583/2025.04.001>
- Yassine, M., & Lotfi, B. (2025). Impact of digital transformation in internal audit: bibliometric analysis of research trends and perspectives. *Pakistan Journal of Life and Social Sciences (PJLSS)*, 23(2). <https://doi.org/10.57239/PJLSS-2025-23.2.00237>