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Collaboration Between Auditors and Artificial Intelligence in Fraud Prevention: Literature Review

Kolaborasi Auditor dan Artificial Intelligence *dalam Pencegahan* Fraud*: Kajian Literatur*

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Abstract - The increasing complexity of modern business has increased the risk of fraud in financial reports. This study aims to analyze the role of auditors, the contribution of artificial intelligence (AI), and the collaboration between the two in fraud prevention. The method used was a systematic literature review (SLR) with a publication period of 2019-2024. The study population included all articles discussing auditors, fraud, and AI, while the sample consisted of articles that met the inclusion and exclusion criteria. The final number of observations was 40 articles. The results of the study indicate that auditors play a role through integrity, independence, professional skepticism, and analytical skills. Meanwhile, AI contributes through its ability to process big data, detect anomalous patterns, and provide early warnings. The novelty of this study lies in its comprehensive mapping of the synergy between auditors and AI as a more effective fraud prevention strategy in the digital era. In conclusion, collaboration between auditors and AI improves the efficiency and accuracy of fraud detection. The implications of this study are for auditors, companies, and regulators in strengthening technology-based governance.

Keywords: Artificial Intelligence (AI), Auditors, Collaboration, Fraud Prevention.

Abstrak *- Meningkatnya kompleksitas bisnis modern menyebabkan risiko kecurangan (*fraud*) dalam laporan keuangan semakin tinggi. Penelitian ini bertujuan menganalisis peran auditor, kontribusi* artificial intelligence *(AI), serta bentuk kolaborasi keduanya dalam pencegahan* fraud*. Metode yang digunakan adalah* systematic literature review *(SLR) dengan rentang publikasi 2019-2024. Populasi penelitian mencakup seluruh artikel yang membahas auditor,* fraud*, dan AI, sedangkan sampel terdiri dari artikel yang memenuhi kriteria inklusi-eksklusi. Jumlah observasi akhir adalah 40 artikel. Hasil kajian menunjukkan bahwa auditor berperan melalui integritas, independensi, skeptisisme profesional, dan kemampuan analisis. Sementara itu, AI berkontribusi melalui kemampuan memproses* big data*, mendeteksi pola anomali, dan memberikan peringatan dini. Novelty penelitian ini terletak pada pemetaan komprehensif mengenai sinergi auditor dengan AI sebagai strategi pencegahan* fraud *yang lebih efektif di era digital. Kesimpulannya, kolaborasi auditor dengan AI meningkatkan efisiensi dan ketepatan deteksi* fraud*. Implikasi penelitian ditujukan bagi auditor, perusahaan, dan regulator dalam memperkuat tata kelola berbasis teknologi.*

Kata Kunci*:* Artificial Intelligence (AI)*, Auditor, Kolaborasi, Pencegahan* Fraud*.*

INTRODUCTION

The increasingly rapid dynamics of global business have increased the complexity of accounting practices and the risk of fraud in financial reporting. Fraudulent acts not only result in financial losses but also negatively impact a company's reputation and undermine public trust (Karyono, 2021; Sihombing & Rahmatika, 2022). The 2019 financial report manipulation case of PT. Garuda Indonesia Tbk provides a concrete example of how erroneous accounting information can mislead stakeholders and undermine corporate governance (Ariesta & Haryanto, 2021; Gusti & Budianto, 2020).

In this context, auditors play a crucial role as independent parties ensuring the fairness of financial reporting. Integrity, independence, professional skepticism, and analytical skills are key competencies required by auditors to support fraud prevention (Pramono & Kurniawati, 2021; Rahmawati, 2022; Hidayat & Nugroho, 2023; Putri & Santoso, 2024). This finding is also in line with the JRAA study which shows that auditor independence together with corporate governance structure has a significant influence on audit quality and the integrity of financial reports (Reschiwati & Aryanty, 2024). This

finding is also in line with the JRAA study which shows that auditor independence together with corporate governance structure has a significant influence on audit quality and the integrity of financial reports (Reschiwati & Aryanty, 2024). However, conventional audit practices still have limitations, such as the use of sample-based testing and the potential for human error, making it difficult for auditors to detect increasingly complex transactions in the digital age (Al-Ajmi & Al-Omari, 2022).

As technology advances, artificial intelligence (AI) offers new opportunities to support audit effectiveness. This technology can process big data, recognize anomalous patterns, and provide early warnings of fraud in real time (Russell & Norvig, 2021; Setiawan & Lestari, 2021; Wibowo, 2022; Amalia & Pratama, 2023). However, AI cannot completely replace auditors, as professional judgment and ethical considerations still require human input (Sholiqah, Widyastuti, & Ratnawati, 2023). Therefore, collaboration between auditors and AI is the most relevant strategy for addressing modern audit challenges. Auditors remain responsible for providing professional judgment, while AI enhances technical analysis through fast and accurate data processing (Suyono et al., 2023; Gu et al., 2024; McClung, 2024). This collaboration not only increases the effectiveness of fraud prevention but also strengthens the transparency and accountability of financial reporting.

Considering the increasing complexity of fraud in the digital era and the need for collaboration between auditors and technology, this research explicitly aims to answer three main questions. The first question is how auditors play a role in fraud prevention based on recent research findings. The second question is how artificial intelligence (AI) contributes to supportin the audit process, particularly in detecting anomalies and providing early warnings. The third question is how the collaboration between auditors and AI can improve the effectiveness of fraud prevention. These three research questions are the primary focus because previous studies have shown limitations in comprehensively integrating the roles of auditors and technology.

This research also provides both theoretical and practical benefits. Theoretically, it enriches the literature on technology integration in auditing and provides a clearer map of auditor-AI synergy as a fraud prevention strategy. Practically, this research is beneficial for auditors improving digital literacy, for companies strengthening technology-based internal controls, and for regulators developing guidelines for implementing AI that maintains accountability and transparency in the audit process. Therefore, the research problem formulation and benefits emphasize the urgency of collaboration between auditors and AI in addressing increasingly complex fraud risks.

The purpose of this research is to present a systematic literature review on the role of auditors, the contribution of AI, and the synergy between the two in preventing fraud. The research scope focuses on literature published between 2019 and 2024 relevant to the topics of auditing, fraud prevention, and the application of AI in accounting and corporate governance. The article focuses on analyzing the advantages and limitations of both auditors and AI, and how their collaboration can be an effective strategy for strengthening fraud prevention systems in the digital era.

LITERATURE REVIEW

Agency Theory

Agency theory is a relevant theory for explaining fraud in modern organizations. Shailer (2018), in an updated version of agency theory published by Springer, explains that an agency relationship arises when a company owner (principal) grants management (agent) authority to manage company resources. Divergent interests and information asymmetry between the principal and agent create opportunities for agents to engage in opportunistic behavior, including manipulating financial reports for personal gain. This situation can develop into fraudulent financial reporting if adequate oversight mechanisms are not in place.

Recent research also strengthens the relevance of this theory in the audit context. Velte (2022) emphasized that external audit quality is one of the main mechanisms capable of mitigating agency conflicts, as auditors verify information provided by management, thereby reducing information asymmetry and increasing transparency. Research by Ben Ali (2020) adds that fraud often occurs when agents have ample opportunity to conceal information, making the presence of auditors a crucial element in eliminating these opportunities.

In the context of the development of digital auditing, agency theory is also relevant when linked to the use of artificial intelligence (AI). AI plays a role in supporting auditors by detecting anomalies and unusual patterns more quickly, thereby reducing the opportunity for agents to manipulate. Therefore, collaboration between auditors and AI can strengthen monitoring mechanisms within agency relationships and help reduce the potential for fraud by increasing the accuracy, precision, and speed of audit procedures.

The conceptual framework in this study is based on the relationship between the role of auditors, the use of artificial intelligence (AI), and the effectiveness of fraud prevention. Auditors contribute through integrity, independence, professional skepticism, and analytical skills, which form the basis for assessing the fairness of financial statements. Meanwhile, AI provides technological support through big data processing, anomaly detection, and early warning. These two components complement each other, with auditors retaining their professional judgment, while AI enhances the accuracy and scope of analysis. This research's conceptual framework posits that fraud prevention will be more effective if the audit process combines auditor expertise with AI's analytical capabilities, resulting in a more accurate, efficient, and responsive oversight system to address fraud risks in the digital age.

Fraud Prevention

The institute of internal auditors (IIA) (2020) defines fraud in the accounting context as an illegal act committed intentionally to obtain illegitimate benefits, for example by manipulating financial statements or misappropriating assets. This suggests that financial statements can be a tool for perpetrators to conceal their true financial condition. According to the association of certified fraud examiners (ACFE, 2020), fraudulent financial reporting is a form of accounting fraud committed by falsifying accounting records, materially misrepresenting, or presenting misleading financial information. This fraud is typically perpetrated by management to achieve profit targets, maintain the company's reputation, or increase performance-based compensation. Karyono (2021) further emphasized that in accounting, fraud occurs when financial statements are no longer prepared based on the principles of reliability and honesty but are instead distorted to misrepresent an entity's economic condition. This practice not only violates accounting standards but can also mislead users of financial statements in decision-making. Furthermore, Sihombing, F., & Rahmatika (2022) state that fraud in financial statements is often perpetrated through transaction manipulation, fictitious revenue recognition, or expense manipulation. From an accounting perspective, such actions result in financial statements losing their relevance and reliability as a source of information. According to Fitriana, N., & Wulandari (2023), accounting fraud is the presentation of financial statements that do not reflect the actual situation, either by concealing material information or by inflating assets or revenue. This is dangerous because it can lead stakeholders such as investors, creditors, and regulators to make incorrect decisions.

Auditor

Auditors are a profession with a significant responsibility in supporting fraud prevention and maintaining the credibility of financial reports. External auditors are responsible for providing an opinion on the fairness of financial reports in accordance with applicable accounting standards, while internal auditors are tasked with assessing the effectiveness of a company's internal controls. Pramono, D., & Kurniawati (2021) state that independence is a key characteristic of auditors, ensuring that audit results are not influenced by the interests of certain parties. Rahmawati (2022) adds that auditors are also required to possess technical competencies, such as an understanding of accounting and audit standards, and adequate analytical skills. Hidayat, A., & Nugroho (2023) emphasize the importance of professional skepticism, which is a critical and alert attitude toward potential misstatements or fraud in financial reports. Meanwhile, Putri, L., & Santoso (2024) highlight integrity as the basis for public trust in audit results, which directly impacts public trust. From these opinions, it can be concluded that auditors are independent professionals who possess integrity, competence, and professional skepticism to ensure the fairness of financial reports and support fraud prevention.

Pramono, D., & Kurniawati (2021) stated that one of the fundamental characteristics of an auditor is independence, namely the ability to think and act objectively without being influenced by others.

Similarly, Rahmawati (2022) emphasized the importance of technical competencies that auditors must possess, including mastery of accounting, understanding of auditing standards, and analytical skills in assessing the fairness of financial statements. Hidayat, A., & Nugroho (2023) added that professional skepticism is also a crucial aspect, requiring auditors to be critical and alert to potential misstatements and indications of fraud. Meanwhile, Putri, L., & Santoso (2024) emphasized that integrity is a key principle that auditors must uphold to ensure public trust in audit results. Based on the characteristics of these experts, it can be concluded that auditor characteristics play a role not only in providing opinions but also in detecting indications of fraud, strengthening governance, and increasing the transparency of financial information. However, traditional audit practices, which still rely on sample testing, have limitations in dealing with increasingly complex and technology-based fraud.

Artificial Intelligence (AI)

Technological advances, particularly artificial intelligence (AI), present new opportunities in audit practice. According to Russell, S., & Norvig (2021), AI is a computer system capable of mimicking human intelligence in recognizing patterns, processing data, and making decisions. In the audit context, AI can be used to analyze large amounts of data, detect anomalies, and expedite the verification process. Setiawan, A., & Lestari (2021) explain that AI enables auditors to perform real-time data analysis, thus enabling the immediate detection of potential fraud. Wibowo (2022) emphasizes that machine learning algorithms can identify abnormal transaction patterns that might otherwise be missed by manual testing. Amalia, R., & Pratama (2023) add that AI helps auditors focus attention on high-risk areas and narrows the scope for report manipulation. From these experts, it can be concluded that artificial intelligence (AI) is a technology that mimics human intelligence to process data and supports auditors in detecting risks and improving audit quality (Russell, S., & Norvig (2021); Setiawan, A., & Lestari (2021); Wibowo (2022); and Amalia, R., & Pratama (2023). Thus, AI can be understood as intelligent technology designed to mimic human thinking, and in audit practice, it functions to accelerate data analysis, increase the effectiveness of fraud detection, and support auditor decision-making.

Russell, S., & Norvig (2021) explain that one of the main characteristics of artificial intelligence (AI) is its ability to process large amounts of data quickly and accurately. PwC & Deloitte (2025) add that AI is capable of identifying and analyzing complex and multidimensional patterns, making it useful in finding anomalies that are difficult to detect manually. Meanwhile, Binus University (2025) emphasizes the advantages of AI in continuous monitoring, which allows the system to detect changes and potential problems in real time. Overall, These three perspectives emphasize that AI functions not only as a data processor but also as an adaptive and sustainable analytical technology to support decisions. Therefore, based on the opinions above, the characteristics of AI include the ability to process large amounts of data, analyze multidimensional patterns, and conduct continuous monitoring (Russell, S., & Norvig (2021); PwC & Deloitte (2025); and Binus University (2025).

Auditor Collaboration with AI

Auditor collaboration with AI is a strategic solution to address the challenges of fraud prevention in the digital age. The human-in-the-loop model demonstrates that AI performs initial screening of a comprehensive data population, detects suspicious transactions, and assigns a risk score, while auditors evaluate these signals with professional skepticism and determine next steps. This collaboration enables auditors to expand audit coverage, not just based on samples but also across the entire transaction population. ISACA (2023) emphasizes that the use of AI in audits can improve the quality of risk assessments, accelerate detection, and strengthen corporate governance. Furthermore, technology-based audit results are believed to be more accurate and relevant, thereby enhancing stakeholder trust. However, this collaboration also faces challenges, such as the need for auditor training to ensure technological literacy, the risk of bias in AI models, and the need for clear regulations and guidelines (IAASB, 2021). Thus, collaboration between auditors and AI not only increases the effectiveness of fraud prevention but also creates added value in the form of transparency, efficiency, and greater confidence in financial reporting.

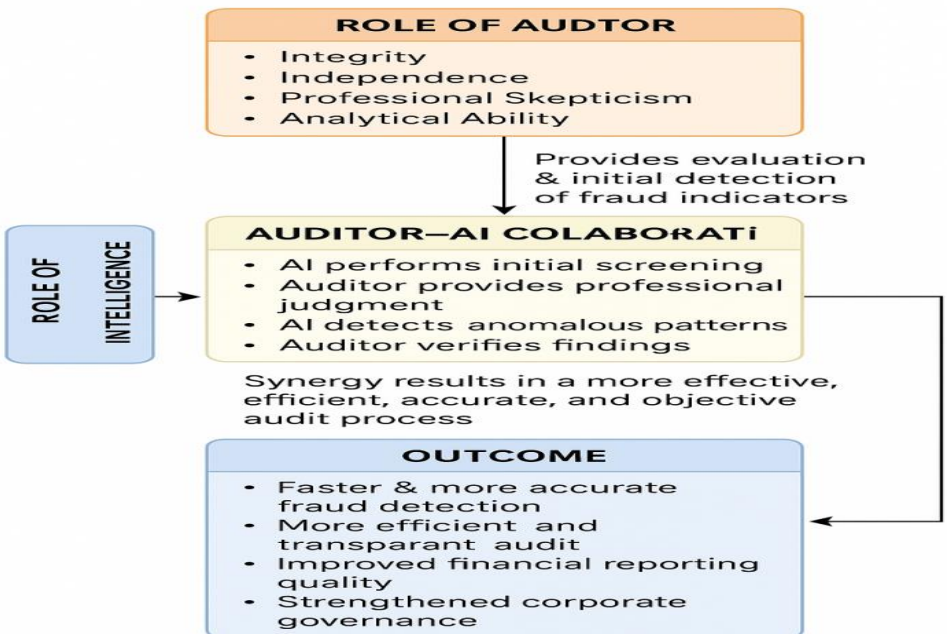

Figure 1 Framework of Thinking

RESEARCH METHOD

This research was conducted using a qualitative, descriptive systematic literature review (SLR) approach. This method was chosen to ensure a more focused and transparent literature review, providing a comprehensive understanding of the role of auditors, the use of artificial intelligence (AI), and their collaboration in fraud prevention and detection. The research data sources were obtained from various reputable national and international journal databases, such as Scopus, ScienceDirect, Emerald, Google Scholar, and Garuda. The search process was conducted using related keywords, including auditor, internal audit, artificial intelligence, fraud prevention, fraud detection, and digital audit. Selected articles had to meet certain criteria: published between 2019 and 2024, from peer-reviewed journals or proceedings, and address topics relevant to the research focus. Articles containing only popular opinion pieces, news articles, or studies outside the context of audit and fraud were excluded from the analysis.

The research stages included literature identification, selection according to inclusion and exclusion criteria, and extraction of key data such as author, year, title, methods, and key findings. The study results were then grouped thematically into three main focuses: the role of auditors, the contribution of AI, and collaboration between auditors and AI. The analysis results were then compared to identify patterns, similarities, differences, and remaining research gaps. To ensure the reliability of the results, validation was conducted through discussions between the authors and checking for consistency with systematic literature review guidelines, such as the PRISMA guidelines.

The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines serve as a standard for ensuring transparency and accuracy in the preparation of Systematic Literature Reviews (SLRs). PRISMA serves as a framework that ensures that the process of searching, selecting, and determining articles is carried out in a structured, objective, and replicable manner. The PRISMA procedure includes four main stages: (1) Identification, namely the collection of all relevant articles from various databases using certain keywords; (2) Screening, namely initial screening based on titles and abstracts to remove irrelevant or duplicative articles; (3) Eligibility, namely a more comprehensive assessment of the suitability of articles based on inclusion and exclusion criteria; and (4) Included, namely the determination of the final articles used for further analysis. This flow is generally presented in the form of a PRISMA diagram to show the selection process in a transparent and systematic manner. By using PRISMA, the quality of SLRs can be maintained by increasing the validity, consistency, and accountability of the review process.

FINDINGS AND DISCUSSION

Findings

The Role of Auditors in Fraud Prevention

Auditors play a crucial role in fraud prevention efforts because they act as independent parties who assess the fairness of financial reports. Through integrity, independence, and professional skepticism, auditors can examine whether the information presented complies with applicable accounting standards and is free from material misstatement. This role makes auditors the frontline, capable of identifying indications of fraud at an early stage before it has a broader impact on the company and stakeholders. The auditor's role in fraud prevention is inseparable from their function as an independent party bridging the information imbalance between management and owners. This aligns with the findings of Gusmiarni (2018), who stated that auditing is a process to reduce the information misalignment between managers and shareholders. A third party (auditor) is needed to assure the reliability of financial reports.

The primary strength of auditors lies in their ability to provide professional judgment. Auditors focus not only on the numbers in the reports but also on assessing the conformity of transactions to their true economic substance. With experience and analytical skills, auditors can detect signs of fraud that may be hidden behind routine accounting practices. This demonstrates that auditors' contribution to fraud prevention is not merely technical but also contextual and based on professional ethics. On the other hand, the auditor's role also has limitations. Traditional audit processes typically employ sample-based testing, so not all transactions are thoroughly analyzed. As a result, there is the potential for fraud to go undetected if it occurs outside the selected sample. Furthermore, auditors, as human beings, remain at risk of error due to time constraints, client pressure, and the complexity of transactions in the digital age. These limitations highlight the need for technological support to enable auditors to work more effectively.

Table 1. Strengths and weaknesses of auditors in fraud prevention

No	Strengths and Weaknesses of Auditors in Fraud Prevention	
	Strength	Weakness
1	Have integrity, independence, and an attitude of professional skepticism.	Traditional audits are generally sample-based, so potential fraud outside the sample may go undetected.
2	Provide professional judgment by considering the business context and ethics.	Prone to human error due to time constraints, client pressure, or high workload.
3	Able to identify indications of fraud through interviews, observations, and understanding business processes.	Not always able to detect the increasingly complexities of digital-based transactions.
4	Act as a consultant in strengthening internal control systems and anti-fraud culture.	Reliance on manual procedures can limit audit effectiveness without technological support.

Source: Data by author.

The 2019 case of PT. Garuda Indonesia Tbk provides a clear example of how weak auditor oversight can open the door to financial statement manipulation. In this case, the company recognized revenue prematurely, resulting in information that did not reflect the company's true financial condition. Had the auditor been able to identify these irregularities early, the company's reputation could have been salvaged. This emphasizes that the auditor's role extends beyond providing an audit opinion, requiring vigilance and proactive measures to prevent fraud through an adequate evaluation of internal control systems.

The Role of Artificial Intelligence in Fraud Prevention

Artificial intelligence (AI) plays an increasingly significant role in supporting fraud prevention, primarily due to its ability to process large amounts of data quickly and accurately. This technology is capable of identifying transaction patterns, detecting anomalies, and providing early warnings of fraudulent indications. These characteristics make AI a crucial tool that can expand audit scope while increasing the effectiveness of financial reporting oversight.

The primary strength of AI lies in its analytical speed and audit scope. While traditional auditors typically examine only a small sample of transactions, AI can process the entire data population in real time. Supported by machine learning algorithms, AI can learn fraud patterns from historical data

and adapt to emerging risks. This allows auditors to focus on the riskiest areas, enabling more accurate, efficient, and targeted audits. However, the use of AI also faces several limitations. The analytical results provided by AI are highly dependent on the quality of the available data. If the data used is inaccurate or incomplete, the analysis results can be biased. Furthermore, AI cannot fully replace the auditor's professional judgment, especially in situations that require an understanding of the business context and ethical considerations. Implementation costs, infrastructure limitations, and low digital literacy among auditors are also challenges that need to be addressed to ensure optimal AI implementation.

Table 2. Advantages and disadvantages of Artificial Intelligence (AI) in Fraud Prevention

No	Advantages and Limitations of Artificial Intelligence (AI) in Fraud Prevention	
	Strength	Weakness
1	Process big data quickly and accurately	The results of the analysis are highly dependent on the quality of the data used.
2	Analyze the entire population of transactions	Vulnerable to algorithmic bias if data is not representative
3	Real-time pattern and anomaly detection	Not yet able to replace the professional judgment of auditors in the context of business and ethics
4	Provides early warning of fraud indications	Implementation costs and infrastructure requirements are relatively high.
5	Improve audit efficiency by reducing manual work	Requires organizational readiness and digital literacy of auditors for optimal results.

Source: Data by author.

Previous research has shown that the use of artificial intelligence (AI) can significantly improve audit quality. Dewi & Dewayanto (2024) demonstrated that integrating AI with big data analytics can accelerate the audit process while increasing the accuracy of fraud detection. On the other hand, Sholiqah, Widyastuti, & Ratnawati (2023) emphasized that AI is more appropriately positioned as a means of supporting auditors rather than replacing human roles. A concrete implementation is seen in the use of the MindBridge AI platform, which can identify financial statement anomalies in real time and provide risk signals for auditors to follow up. Thus, AI can be viewed as a strategic partner that strengthens the role of auditors in fraud prevention efforts in the digital era.

Discussion

Collaboration between Auditors and AI in Fraud Prevention

Integrity is the primary foundation for auditors in maintaining honesty and objectivity when assessing the fairness of financial reports. When this attitude is combined with the capabilities of AI, which can process data precisely and consistently, potential fraud can be identified more quickly. This synergy minimizes the risk of manipulation because audit results rely not solely on human judgment but are also strengthened by technology-based data analysis. This makes the presented financial reports more credible as a reflection of the company's true condition.

Furthermore, auditor independence also plays a key role in producing audits free from influence from any party. When this independence is combined with the objectivity of AI, which operates purely based on algorithms and data, the audit process becomes more robust and transparent. The combination of the two produces more credible information, as it is derived from a combination of unbiased human judgment and technological analysis unaffected by external pressures. This provides greater protection against the risk of fraud.

Auditors' professional skepticism is even more effective when supported by AI technology. Critical auditors will not readily accept information without sufficient evidence, and AI can strengthen this with its ability to detect anomalies in real time. Through this support, auditors can focus on high-risk areas and follow up on each finding with a stronger evidence base. This makes concealing fraud in financial statements increasingly difficult.

Amid the increasing complexity of business transactions, auditors' manual analytical capabilities are often limited. AI is here to fill this gap, with its superiority in processing large-scale data and uncovering hidden patterns that are not easily visible to humans. Auditors with adequate analytical skills can interpret AI-processed results more precisely, resulting in more accurate decisions. This collaboration makes fraud prevention more effective and adaptable to modern business dynamics.

Collaboration between auditors and artificial intelligence (AI) provides significant added value in fraud prevention, particularly through increased analytical precision and expanded audit scope. These findings align with research by Gu et al. (2024), which emphasized that the concept of AI co-piloted auditing allows auditors to obtain machine learning-based analytical support to detect irregularities that are not easily visible through manual procedures. However, this approach differs from Leoc's (2024) opinion, which argues that the effectiveness of AI in auditing can only be achieved if auditors have sufficient technological understanding to accurately interpret AI analysis results.

Furthermore, Shivram's (2024) study shows that the use of machine learning can accelerate the anomaly identification process, but still requires the auditor's professional judgment to validate each finding to prevent misinterpretation. Meanwhile, Minkkinen et al. (2022) emphasize the importance of implementing continuous auditing, which utilizes AI as a tool for continuous monitoring of financial transactions. Contrary to these findings, Reddy (2024) emphasizes that the use of AI in auditing faces challenges in the form of auditors' tendency to rely on technological output if professional accountability is not consistently maintained.

This comparison demonstrates that while previous research agrees on AI's ability to enhance audit effectiveness, there are varying views regarding the auditor's role in the process. This study strengthens previous literature by emphasizing that auditor-AI collaboration is not simply a technological integration, but requires auditor competency readiness, a critical understanding of technological output, and a professional verification process that cannot be replaced by algorithms. Thus, the novelty of this research lies in the comprehensive mapping that connects the role of auditors, the contribution of AI, and the synergy of both as a strategic approach in strengthening fraud prevention in the digital era.

These findings confirm that AI is not a replacement for auditors, but rather a partner that complements their performance. This collaborative implementation is also relevant in the Garuda Indonesia case. If auditors had utilized AI for real-time analysis, the recognition of fictitious revenue would likely have been identified earlier. Therefore, integrating auditors and AI not only results in higher-quality audits but also provides a more adaptive and effective fraud prevention system in the face of business complexity in the digital age.

Based on the literature review, it can be concluded that both auditors and Artificial Intelligence (AI) have their own strengths and limitations in fraud prevention. The limitations of both auditors and AI indicate that neither can stand alone in addressing the complexity of fraud in the digital age. Collaboration is a more relevant option because it combines human strengths with technological sophistication. Auditors maintain professionalism and ethics in assessing results, while AI enhances analysis through speed, broad coverage, and high accuracy. This synergy results in a more efficient, transparent, and convincing audit process, thereby enhancing public trust. Therefore, collaboration between auditors and AI is the most effective strategy to address each other's weaknesses in fraud prevention. The following table presents the auditor-AI collaboration process.

Table 3. Auditor and AI Collaboration Process in Fraud Prevention

Audit Stage	The Role of AI	The Role of the Auditor	Forms of Collaboration
Data collection & analysis	Process big data, detect anomalous patterns, provide initial screening.	Ensure data integrity and relevance, determine audit focus areas.	Auditors use the results of AI analysis as a basis for further investigation.
Fraud risk identification	Provides early warnings of suspicious transactions in real-time.	Test AI findings with professional skepticism and assess the business context.	AI detects indications of fraud, auditors validate with professional judgment.
evidence examination	Speed up the search for documents, contracts and transaction records.	Evaluate evidence with independence, auditing standards, and ethical considerations.	Auditors verify AI-processed evidence to ensure the validity of audit results.
Preparation of audit report	Provides a summary of data analysis, transaction trends, and classification results.	Formulate conclusions, recommendations, and emphasize ethical and governance aspects.	The final report is an integration of: technology-based analysis + human judgment.

Source: Data by author.

Table 4. Analysis of Previous Research Results on Fraud Prevention

Analysis of Previous Research Results on Fraud Prevention			
Research Focus	Researchers and Years	Key Findings	Limitations/Critical Notes
The Role of the Auditor	Ginanjar & Syamsul (2020)	Internal auditors are more effective at preventing fraud than simply detecting it; they make a major contribution to strengthening internal control.	1. The research is normative and does not provide clear empirical metrics for "effectiveness." 2. The study is limited to Islamic financial institutions, resulting in low generalizability. 3. It does not consider organizational culture, management pressure, or moral hazard, which contemporary literature suggests are key determinants of fraud.
	Lasiyono dkk (2024)	Auditor independence and competence have been proven to significantly reduce the risk of fraud.	1. Using self-report surveys is highly susceptible to social desirability bias. 2. The research model is too simplistic; it does not include technology, big data, or AI as control variables. 3. It does not test interaction effects (competence × technology readiness), so the findings are less relevant to the context of digital audits.
The Role of AI	Dewi & Dewayanto (2024)	The integration of AI and big data analytics increases the speed and accuracy of fraud detection.	1. Not analyzing the risks of algorithmic bias, false positives, and data imbalance—the biggest challenges in fraud detection. 2. Assuming company data quality is high, when in fact many organizations still have a low data maturity level. 3. Focusing too technically, without assessing governance aspects (explainability and auditability).
	Sholiqah, Widyastuti, & Ratnawati (2023)	AI speeds up audit analysis and helps identify fraud.	1. It failed to compare AI performance with manual audit methods as a baseline, so improvements could not be objectively measured. 2. It failed to address AI failure scenarios; conclusions were overly optimistic and uncritical. 3. It failed to evaluate the impact of acceleration on the quality of auditor judgment.
Kolaborasi Auditor & AI	Gu dkk (2024)	The concept of AI Co-Piloted Auditing positions AI as a supporting partner for auditors to produce faster analysis.	1. It does not assess the phenomenon of technological resistance among senior auditors, which has been shown to be significant in the literature. 2. It does not address the risk of over-reliance on AI, which could undermine auditors' professional skepticism. 3. It lacks discussion of AI governance (model transparency and interpretability), despite it being a central issue in modern auditing.
	McClung (2024)	Generative AI is able to automate audit planning so that auditors focus on strategic analysis.	1. It is still based on case studies, so the findings cannot be generalized. 2. It ignores the risk of errors in the GenAI system (hallucinations), which is crucial when applied to the audit planning process. 3. It does not review the internal controls, AI output verification, or audit standards required to oversee the use of GenAI.
	Handoko dkk. (2024)	Auditor readiness (digital literacy and technology adoption) is key to successful collaboration.	1. Emphasizes human resource readiness but fails to address institutional readiness (management commitment, budget, IT infrastructure). 2. Fails to assess the difference in readiness between junior and senior auditors, even though the literature shows a significant gap. 3. Ignores the need for clear audit policies and regulations to ensure AI can be implemented safely and auditably.

Source: Data by author.

Implications of Collaboration Between Auditors and Artificial Intelligence (AI)

Collaboration between auditors and AI has significant practical implications, as outlined in the following table:

Table 5. Implications of collaboration between auditors and AI

Kategori	Implications
Practical	Auditor: improve digital literacy, understand AI algorithms, interpret analysis results, maintain professional standards.
	Company: building an AI-based internal control system, monitoring real-time transactions, improving fraud detection.
	Regulators: develop standards and regulations for the use of AI in auditing, ensuring transparency, ethics, and accountability.
Academic	Empirical research opportunities related to the application of AI in auditing.
	Trials in specific sectors (banks, state-owned enterprises, fintech) to evaluate effectiveness and efficiency.
	Research on the integration of AI with professional auditing standards and the impact on public trust.
Strategic	Transforming the auditor's role: from manual auditing to a focus on interpreting results and data-driven advisory.
	The audit profession is becoming more strategic, adaptive to technology, and able to deal with complex business risks.

Source: Data by author.

Thus, collaboration between auditors and AI has broad impacts, both practically, academically, and strategically, which ultimately drives improvements in audit quality and professional transformation in the digital era.

Limitations and Challenges

Implementing collaboration between auditors and AI faces several practical challenges. The costs of hardware, software, and maintenance of AI systems are quite high, making it difficult for all companies to adopt. Furthermore, auditors need digital skills and technological understanding to effectively use AI, while regulations regarding the use of AI in audits are still limited, creating compliance risks. From an academic perspective, studies on collaboration between auditors and AI are still limited. Much of the research is theoretical or conceptual, resulting in limited empirical evidence to support practical applications. This highlights the need for further research to assess the effectiveness, efficiency, and impact of AI on audit quality. This collaboration also carries potential ethical risks. The processing of sensitive data by AI opens the possibility of misuse of information or privacy violations. Excessive reliance on AI can diminish auditors' critical analytical skills, leading to less accurate audit decisions if the AI system experiences errors or biases.

CONCLUSION

From the discussion above, it can be concluded that fraud prevention in the digital era cannot rely solely on auditors or AI alone. Auditors play a crucial role through their integrity, independence, professional skepticism, and analytical skills. On the other hand, AI offers the ability to process big data, recognize suspicious transaction patterns, and provide early warnings. The combination of these two results in a more efficient, accurate, and reliable audit process, reducing the scope for financial statement manipulation. This study contributes by demonstrating the importance of collaboration between auditors and AI as an innovative strategy to address fraud challenges. From a theoretical perspective, this research adds to the literature on the relationship between auditor competency and modern audit technology. From a practical perspective, the results of this study can serve as a reference for auditors, companies, and regulators in developing technology-based audit systems that adhere to the principles of integrity and professionalism. Thus, the synergy between auditors and AI not only improves the quality of financial reports but also strengthens corporate governance and rebuilds public trust. The implications of collaboration between auditors and Artificial Intelligence (AI) indicate that auditors need to improve their digital literacy, understand how algorithms work, and be able to interpret AI analysis results without compromising professional standards. For companies, this collaboration encourages the strengthening of technology-based internal control systems and real-time transaction monitoring to accelerate fraud

detection. At the regulatory level, standards and guidelines for the use of AI in audits are needed to maintain transparency, ethics, and accountability. From an academic perspective, the auditor-AI collaboration opens up opportunities for broader empirical research, including implementation trials in various sectors such as banking, state-owned enterprises, and fintech, as well as the development of research on the integration of AI with professional audit standards and its impact on public trust. Strategically, this collaboration encourages the transformation of the auditor's role from a manual examiner to a data-driven analyst and advisor, thereby making the audit profession more strategic, adaptive to technology, and capable of addressing increasingly complex business risks.

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