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INTEGRATION OF DIGITAL TECHNOLOGY AND ARTIFICIAL INTELLIGENCE IN INFORMATION SYSTEM AUDIT TO STRENGTHEN ANTI-FRAUD STRATEGY: A SYSTEMATIC LITERATURE REVIEW

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ABSTRACT

The era of digital transformation has shifted fraud patterns into more complex and systematic computer fraud, rendering traditional manual sampling procedures insufficient. This study aims to analyze the strategic role of Artificial Intelligence (AI) in enhancing fraud detection capabilities, evaluate the effectiveness of multi-technology integration (AI, Big Data, and Blockchain), and formulate an adaptive anti-fraud strategy framework for the future. The method employed is a Systematic Literature Review (SLR) following the PRISMA 2020 protocol, analyzing 33 reputable articles published between 2022 - 2026. The results indicate that AI improves audit quality through procedural automation and expands audit coverage to 100% of the data population via real-time continuous auditing. Furthermore, the integration of AI with Big Data and Blockchain creates a robust ecosystem by ensuring data immutability and providing more accurate predictive risk analysis. However, the success of these technologies relies heavily on the balance between technical, process, and human-ethical dimensions, specifically regarding the integrity and digital competency of the auditor. This study contributes to the development of auditing standards in the AI era and serves as a reference for practitioners in strengthening internal control systems.

Keywords: *Artificial Intelligence, Information System Audit, Anti-Fraud, Systematic Literature Review, Digital Transformation.*

INTRODUCTION

The era of digital transformation has brought fundamental changes to the global business landscape, where information technology integration has become the backbone of organizational operations. In the field of accounting and auditing, digitization has not only improved data processing efficiency, but also radically changed the way financial information is managed, analyzed, and presented to stakeholders (Novida, 2025:6). These changes include the adoption of cloud-based systems (cloud accounting) that enable instant cross-geographical data access, but at the same time demand much stricter security standards because the data is now located in open cyberspace (Marbun et al., 2025:4).

Traditional Accounting Information Systems (AIS), which were previously passive and only served to record transactions, have now evolved into proactive, intelligent, and integrated systems. However, this evolution is like a double-edged sword; on the one hand, it offers unprecedented transparency, accuracy, and speed, but on the other hand, it creates new vulnerabilities that can be exploited for fraudulent activities. The complexity of digital infrastructure often exceeds the capabilities of conventional internal controls, which are still static in nature, creating a risk of information asymmetry between system administrators who have high technical access and auditors who may have limited access (Novida, 2025:9).

The shift in fraud patterns in the digital age poses a serious challenge for the auditing profession. Conventional fraud methods involving physical manipulation or paper documents have now transformed into computer fraud that is more complex, systemic, and hidden behind

lines of code (Caseba & Dewayanto, 2024:8). This threat comes not only from internal manipulation by employees (insider threats), but also from external cyber attacks that target the integrity of an organization's financial data through malware, phishing, or database hacking. Empirical data shows that the financial sector in Indonesia is a prime target for cyber attacks, which often result in massive financial losses and damage to the reputation of institutions (Asriningrum et al., 2023:1).

The increasing frequency of digital data manipulation requires more responsive and intelligent monitoring mechanisms. In this context, reliance on manual sampling is considered inadequate and even highly risky for audit opinions. Auditors who still rely on manual procedures will lose their ability to detect anomalies in large volumes of data (big data), thereby providing opportunities for fraudsters to hide transaction traces among millions of seemingly normal data entries (Caseba & Dewayanto, 2024:12). The inability to detect fraud early on can result in fatal audit failures and lawsuits for the auditing profession.

In response to these challenges, Artificial Intelligence (AI) has emerged as a strategic solution to strengthen fraud detection systems. AI enables auditors to perform real-time analysis of massive amounts of data, detect anomalies that are invisible to the human eye, and identify suspicious transaction patterns with a level of accuracy that far exceeds traditional methods (Humeedat, 2025:178). The ability of AI to perform machine learning enables the system to recognize new fraud schemes even before they become a common threat in the industry (Rudiyanto, 2025:134).

The use of technologies such as Artificial Neural Networks (ANN) has been empirically proven to improve the quality of fraud risk assessment in various international audit firms by mapping non-linear relationships between financial variables (Rudiyanto, 2025:136). By automating time-consuming routine procedures, auditors can shift their focus to higher-risk analysis and the use of professional skepticism in areas that require subjective judgment and moral considerations. AI not only acts as a computational tool, but also as an audit quality accelerator that can provide reasonable assurance in a shorter time and with a data population coverage of 100% (Sholiqah et al., 2023:231).

The novelty of this research emphasizes that strengthening robust anti-fraud strategies in the future cannot rely solely on AI alone. The integration of a digital technology ecosystem that includes AI, cloud computing, big data analytics, and blockchain is an absolute necessity for modern organizations. This synergy between technologies creates an audit framework that is not only intelligent in detection, but also has immutable data integrity thanks to the distributed ledger technology of blockchain (Nasir et al., 2026:228).

This focus on multitechnology integration is what distinguishes this study from previous literature, which tends to discuss technology partially or separately. This study argues that maximum fraud detection effectiveness can only be achieved through "technology orchestration," in which blockchain guarantees the authenticity of data from its source, big data provides a wide range of information, and AI performs intelligent analysis and risk prediction on top of that layer of data (Nasir et al., 2026:230). Without this integration, fraud detection will continue to have weaknesses where data can be manipulated at the infrastructure layer before it is analyzed by AI algorithms.

Although the potential of technology is enormous, the reality on the ground shows a clear gap between the sophistication of digital tools and the competence of the auditors operating them. Many auditors are still unfamiliar with the use of sophisticated analytical tools or the interpretation of algorithm results, which results in this technology becoming merely a cost burden without providing any real added value for fraud detection (Khaerullah et al., 2025:151). In addition, challenges related to high investment costs and lack of access to technological infrastructure are major obstacles, especially for public sector organizations and MSMEs in developing countries.

Non-technical challenges such as algorithm ethics, transparency in AI-based decision making (explainable AI), and resistance to changes in work culture are also crucial factors that are often overlooked (Anggionaldi et al., 2025:4). There is deep concern among professionals that AI will replace humans and eliminate jobs, when in fact this technology is intended to strengthen auditors' cognitive abilities in the face of increasingly sophisticated threats. Without alignment between technology strategies, clear ethical policies, and sustainable human resource capability development, large investments in anti-fraud technology will be wasted and will not provide the expected protection for organizational assets (Anggionaldi et al., 2025:5).

Based on the background of the problem that has been described in depth, this study formulates several research questions as the main focus of discussion, namely:

1. What is the strategic role of Artificial Intelligence (AI) in improving fraud detection and prevention capabilities in internal audits in the digital age? (Sholiqah et al., 2023:228).
2. How effective is the integration of multiple technologies (AI, Big Data, and Blockchain) in strengthening comprehensive anti-fraud strategies compared to traditional audit approaches? (Nasir et al., 2026:225).
3. What are the main challenges and obstacles for internal auditors in adopting digital technology to mitigate fraud risk in the context of institutions in Indonesia? (Khaerullah et al., 2025:148).
4. What is the ideal framework that can harmonize the implementation of smart technology with the improvement of human resource competencies and compliance with professional auditing ethics? (Anggionaldi et al., 2025:3).

This study was conducted as a Systematic Literature Review (SLR) following the PRISMA 2020 protocol to ensure transparency and objectivity (Giovania and Arjuna, 2024:716). Through this method, the study aims to conduct a thematic synthesis of reputable national and international literature from 2022 to 2026 to answer the above questions and formulate adaptive anti-fraud strategies for the future (Fernanda & Habiburrochman, 2025:7). The results of this study are expected to contribute to the development of audit standards in the AI era and serve as a reference for practitioners in strengthening their internal control systems (Fernanda & Habiburrochman, 2025:11).

THEORETICAL STUDY

The Nature of Artificial Intelligence (AI) in Auditing

Artificial Intelligence (AI) is defined as the intelligence of a scientific entity that is capable of independently finding solutions to problems and mimicking human cognitive abilities (Sholiqah et al., 2023:228). In the audit domain, AI is no longer just a calculation tool, but a system capable of instantly identifying inconsistencies and data sequences in very large volumes (Humeedat, 2025:169). The most common application of AI in current auditing practices includes the use of machine learning and artificial neural networks (ANN) to map complex and non-linear data relationships (Rudiyanto, 2025:136).

The Concept of Fraud in the Digital Era

Fraud is an act of deviation or neglect that is deliberately carried out to deceive others for personal or group gain (Sembiring et al., 2025:2). In the era of digital transformation, fraud patterns have evolved into computer fraud involving manipulation of electronic data, unauthorized system access, and the erasure of complex digital traces (Caseba & Dewayanto, 2024:1). Although technology has advanced, the root causes of fraud often still rely on classical theories such as the fraud triangle, which includes pressure, opportunity, and rationalization (Supriadi et al., 2024:3).

The Strategic Role of Internal Audit and Technology

Internal audit serves as an organization's primary line of defense in assessing the reliability, integrity, and security of information (Anggionaldi et al., 2025:1). The effectiveness of internal audit in preventing fraud is highly dependent on the quality of the audit and the independence of the audit function (Lonto et al., 2023:1). In the digital era, this effectiveness is strengthened through the adoption of Continuous Auditing and the integration of supporting technologies such as Big Data Analytics, which enables real-time transaction monitoring, allowing auditors to shift from post-event detection to proactive prevention (Marbun et al., 2025:1).

Multitechnology Synergy: AI, Big Data, and Blockchain

The strength of modern anti-fraud strategies lies in the convergence of various digital technologies. Big Data provides a vast dataset for analysis, AI offers advanced analytical capabilities to detect anomalies, while Blockchain provides a secure, transparent, and immutable recording system (Handarini et al., 2025:1). This integration creates a robust digital audit ecosystem, where every transaction can be verified for its authenticity and the risk of data manipulation can be significantly minimized (Nasir et al., 2026:230).

RESEARCH METHOD

Research Design

This study uses the Systematic Literature Review (SLR) method. The article selection process was conducted systematically by following the PRISMA 2020 protocol to ensure transparency and data quality (Giovania and Arjuna, 2024:716).

Data Sources and Search

Data was obtained through literature searches in the Google Scholar and SINTA databases with a publication period from 2022–2026. The keywords used were: "Information Systems Audit", "Artificial Intelligence", "Fraud Detection," and "Digital Audit" (Nasir et al., 2026:225).

Selection Criteria

Researchers screened articles using the following criteria:

1) Inclusion Criteria: Journal/proceeding articles, full-text, discussing AI or digital technology in audit and anti-fraud (Marbun et al., 2025:1), and written in Indonesian and English.
2) Exclusion Criteria: Articles that do not have a clear method, are only opinion pieces, or discuss topics outside the field of accounting/auditing (Novida, 2025:4).

Selection Stages (PRISMA Flow)

The selection process is carried out in four simple stages:

1) Identification : Collecting articles based on keywords.
2) Screening : Removing duplicate articles and screening based on title/abstract.
3) Eligibility : Reading the full text to ensure relevance.
4) Inclusion : Determining 33 final articles to be reviewed

Data Analysis

The 33 selected articles were then extracted into a review table for comparison. Furthermore, the researchers conducted a thematic synthesis to answer the research questions that had been formulated (Rudiyanto, 2025:132).

RESULT AND DISCUSSION

Research Results (Data Extraction)

Following the PRISMA 2020 protocol detailed in the previous chapter, this study identified and selected 33 primary articles that strictly met the inclusion criteria. These articles provide a comprehensive overview of the integration of smart technologies within internal audit practices and anti-fraud strategies. To ensure transparency and provide a credible foundation for the subsequent analysis, a detailed matrix encompassing the authors' identities, methodologies, technological focus, and key findings for each article is presented in Table 1 below:

Table 1. Characteristics and Data Extraction of Selected Literature Articles (n=33).

No	Title	Author	Article Year	Research methods	Research Focus	Core results of the discussion
1	The Role of Artificial Intelligence in Audit and Fraud Detection: A Literature Review	Latifah Azzahra Nasir, Fannya Regina Putri, Febrina Amelia Utami, & Jufri Darma	2026	Thematic literature study based on national and international articles for the period 2020-2025.	Analyzing the role, benefits, and obstacles of implementing AI in improving audit effectiveness and detecting *fraud* based on literature for the 2020-2025 period.	Artificial Intelligence (AI) improves audit quality by automating procedures, expanding audit coverage across data populations, and implementing real *-time continuous auditing*. This technology is effective in detecting abnormal transaction patterns using hybrid predictive models, but its success depends heavily on the auditor's digital competence and mitigating the risk of algorithmic bias.
2	Implementation of Fraud Prevention at R. Syamsudin, SH Regional General Hospital, Sukabumi City	Eka Susanti, Deni Purnama, Novi Nurfatmawati, & Rifki	2026	Using a quantitative descriptive design with an online questionnaire (4-point Likert scale), the population consisted of 1,465 employees, with a sample of 306 respondents selected using a *stratified random sampling method*.	Evaluating the effectiveness of the implementation of anti-fraud policies, quality and cost control systems, and organizational culture at R Syamsudin SH Regional General Hospital, Sukabumi City.	Compliance with Clinical Practice Guidelines (PPK) and *clinical pathways* reached 95.8%, which is considered the most effective preventive instrument because it is able to limit unnecessary service variations , A culture of integrity (95.4%) has become a social norm in the workplace and acts as a natural watchdog that is often more effective than formal audits, the whistleblowing system *is* considered safe by 93.5% of respondents, which indicates a high level of trust in management. There is an urgent need to accelerate the digitalization of monitoring using *Big Data Analytics* and *Artificial Intelligence* (AI) in detecting claim anomalies in *real-time*.

3	The Impact of Machine Learning on Credit Risk Mitigation, Fraud Detection, and Financial Loss Mitigation in Digital Banking	Dwi Ermayanti Susilo, Novi Sri Sandyawati, & Farasandya Amalia Hapsari	2026	Using an explanatory quantitative design with a case study approach at Bank Jago for the 2024-2025 period. Data analysis was conducted through panel regression and algorithm performance evaluation (such as XGBoost or Random Forest) using technical metrics AUC-ROC, *Precision*, *Recall*, and *F1-Score*.	Analyzing the impact of *Machine Learning* (ML) adoption on the effectiveness of credit risk mitigation (NPL ratio), the accuracy of real-time fraud transaction detection, *and the* value of financial losses prevented.	The use of ML allows banks to perform *credit scoring* by utilizing non-traditional data such as transaction patterns in the digital ecosystem (GoTo), so that creditworthiness assessments become more accurate compared to manual methods, ML algorithms are proven to be sharper in capturing subtle transaction anomalies compared to rule - *based systems* , theoretically, ML plays an important role in reducing information uncertainty (Information Asymmetry) between creditors and debtors by extracting signals from *Big Data* in *real-time* .
4	The Role of Accounting Information Systems in Preventing Fraud in Digital-Based MSMEs	Dinda Puspa Rosida, Citra Marsa Masithoh Zain, & Gunawan Aji	2026	Quantitative approach through a survey of 100 MSMEs and SEM-PLS (*SmartPLS*) data analysis.	Evaluating the technical contribution of digital Accounting Information System (AIS) features (such as audit trails, access control, and anomaly detection) as internal control instruments to reduce financial *fraud* in digital MSMEs in Indonesia.	*audit trail* features, access control, and anomaly detection simultaneously can explain **68.6% of** the variation in *fraud prevention efforts. Audit* ***trails*** play a role in increasing transparency by recording transaction activities chronologically, so that every change in data can be accounted for.
5	Collaboration Between Auditors and Artificial Intelligence in Fraud Prevention: Literature Review	Laoren Valerina Sinaga, Martha Rotua Purba, Hot Nelly Rodearni Br Sipayung, and Jufri Darma	2025	*Systematic Literature Review* (SLR) with a review of 40 articles for the period 2019-2024.	Analyzing the role of auditors, the contribution of *artificial intelligence* (AI), and the form of collaboration between the two in *fraud prevention efforts*.	Auditors play their role through integrity, professional skepticism, and expert judgment. AI contributes to *big data processing and real-time* anomaly detection. The synergy between the two improves the accuracy, efficiency, and credibility of financial reports.
6	Financial Accounting in the Digital Age: The Role of Blockchain Technology and AI in Transparency and Accountability	Dwi Handarini, Surya Anugrah, Windy Permata Suyono, & Eka Septariana Puspa	2025	Qualitative literature review by analyzing 30 scientific sources for the period 2015–2024.	Reviewing the literature related to the implementation of Blockchain and AI in financial accounting and analyzing its impact on transparency and accountability.	Blockchain enhances security and transparency through immutable record-keeping, while AI automates big data analysis and suspicious pattern detection. The synergy between the two creates a more secure and intelligent accounting ecosystem, although regulatory and human resource readiness challenges remain.
7	The Implementation of Cloud-Based Audit Systems, the Use of Big Data, and Artificial	Mark Alberto Parlinggoman Marbun, Yan Irianis, Lely Indriati, & Bida Sari	2025	Case study with a qualitative descriptive approach through observation and in-depth interviews.	Evaluating the implementation of *cloud- based audit systems*, *big data*, and AI in improving the digital audit	*Cloud* technology (Nexware), *big data* (ACL & Power BI), and AI (Helix AI) have been proven to improve audit effectiveness by accelerating analysis time

	Intelligence on the Effectiveness of Digital Audits (A Case Study at Sejahtera Abadi Public Accounting Firm)				implementation process at KAP Sejahtera Abadi.	by up to 50%. Results are more accurate because testing is conducted on the entire data population (*full population testing*), not just a sample.
8	Adoption of Data Analytics and Artificial Intelligence (AI) Technology in Improving the Efficiency of Audit Analytical Procedures	Muh. Az'har, Nurul Annisa, & Masyhuri	2025	Qualitative with a literature study approach and systematic conceptual analysis.	*data analytics and AI* technology in improving the efficiency of audit analytical procedures and its implications for audit quality and the role of auditors.	The integration of analytical technology expands audit coverage to 100% of the data population, accelerates risk assessment, and improves the quality of audit evidence. The use of AI supports more effective anomaly and *fraud detection* than conventional procedures, despite challenges related to human resource readiness and professional ethics.
9	The Evolution of Accounting Information Systems in the Digital Era: A Literature Review of Trends, Challenges, and Opportunities	Diah Rachmawatie Novida	2025	Qualitative literature review with strict selection of articles from Google Scholar (2008–2025).	Identifying trends (cloud accounting, big data, AI), challenges (data security, costs, digital literacy), and opportunities in the digitalization of Accounting Information Systems (AIS) for the period 2008–2025.	AIS digitalization fundamentally transforms financial data management from manual to automated, improving operational efficiency and financial transparency. Case studies of large companies (BCA, Telkom) and MSMEs demonstrate that the right digitalization strategy improves strategic decision-making and business competitiveness.
10	The Effect of Employing Artificial Intelligence Techniques in Fraud Risk Assessment: The Moderating Role of Audit Firm Size	Mohammad Humeedat	2025	The descriptive analysis approach used surveys (196 valid questionnaires) and hierarchical regression.	Testing the influence of AI techniques (Expert Systems, Neural Networks, Machine Learning, Large Language Models) in fraud risk assessment (FRA) by external auditors in Jordan, with KAP size as a moderating variable.	AI techniques are highly useful in assessing fraud risk at the reporting, transaction assertion, account balance, and disclosure levels. There is a direct and positive relationship between AI use and the effectiveness of fraud risk assessments. The size of the audit firm (Big 4 vs. Non-Big 4) significantly enhances the impact of technology on audit quality.
11	Internal, External, and Forensic Audits as Determinants of Fraud Prevention in Ghana's Metropolitan, Municipal, and District Assemblies	Job Boahen, Emmanuel B. Amponsah, & Evans OND Ocansey	2025	*cross-sectional* survey design with multiple regression analysis of 343 respondents.	Evaluating the individual and combined impact of internal, external, and forensic audits on the prevention of fraudulent financial practices in Ghana's Metropolitan, Municipal, and District Assemblies (MMDAs).	All three types of audits (internal, external, and forensic) have a statistically significant relationship with fraud prevention, collectively explaining 12.2% of the variation in fraudulent practices. Forensic auditing has the strongest effect (β=0.228), followed by internal auditing (β=0.203). However, its effectiveness is often hampered by a lack of auditor independence and weak enforcement of audit recommendations.
12	The Role of Artificial	Rudiyanto	2025	*Systematic Literature Review* (SLR) of 16	To understand the role of Artificial	Artificial intelligence (AI) plays a highly beneficial role

	Intelligence in Detecting Accounting Fraud: A Study of Public Companies in Indonesia			reputable articles for the period 2018-2024.	Intelligence (AI) in detecting financial fraud in audits of public companies through a systematic literature review.	in detecting financial fraud during audits, with commonly implemented forms of AI being *Artificial Neural Networks* (ANN) and *Machine Learning*. However, challenges related to privacy, data security, and ethical considerations remain important factors that must be addressed.
13	Analysis of the Relationship between Artificial Intelligence and Information System Audits and Human Resource Competence	Muhammad Anggionaldi, Ira Siti Rohmah Maulida, & Aulia Jihan Maulan	2025	Qualitative literature review with an analytical focus on the efficiency of the information systems audit process.	To determine the impact of AI implementation on the efficiency of the Information System Audit process and its impact on improving Human Resources (HR) competency.	Automating routine tasks using *Robotic Process Automation* (RPA) accelerates data retrieval from various sources from manual to minutes, increasing the accuracy of fraud detection through the recognition of suspicious patterns and providing early warnings in *real-time*. , strengthening internal monitoring and control systems to mitigate the risk of financial loss and the organization's reputation.
14	The Role of Artificial Intelligence (AI) in Enhancing Forensic Audits to Detect Fraud: A Systematic Literature Review	Icha Amalia Fernanda & Habiburrochman	2025	*Systematic Literature Review* (SLR) using the PRISMA method on 150 initial databases.	Synthesizes recent literature (2015-2025) on the contribution of various AI techniques in improving the effectiveness of forensic audits and evaluates their transparency and auditability challenges.	The application of AI changes the work logic of forensic audits from manual, reactive, and experience-based to data-driven, automated, and predictive, *Machine Learning* (ML) algorithms such as *random forest* , *support vector machine* , and *gradient boosting* effectively detect unusual transactions with accuracy above 90%, AI integration with *Robotic Process Automation* (RPA) facilitates automated data collection, while integration with *Blockchain* creates a digital audit trail that cannot be manipulated.
15	The Role of Information Technology-Based Audits in Fraud Detection: Strengthening Internal Audit Processes and Auditor Competencies in the Era of Digital Transformation	Jawziyah Khaerullah, Peri, & Masyhuri	2025	Descriptive qualitative approach with literature study method from literature from 2010-2021.	Provides a comprehensive understanding of the role of IT-based audits in improving the effectiveness of fraud detection, strengthening internal audit processes, and developing the competencies required by auditors in the era of digital transformation.	Information technology-based auditing has become a strategic foundation for improving the effectiveness of fraud detection through the implementation of digital systems, data analytics, and procedural automation, which expand the ability to identify anomalous patterns and minimize the risk of *human error*. The success of this system depends heavily on improving auditors' technological competence and mastery of digital audit tools to respond to increasingly complex risk dynamics.

16	Information System Audit in Assessing the Reliability of Digital Financial Systems	Japanese ME Br. Sembiring, Marvell Hudoyo, Elsa D. Br. Manik, & Grace T. Br Sinaga	2025	*Systematic Literature Review* (SLR) to synthesize findings from previous research.	Evaluating the role of information systems audits in strengthening the reliability of digital financial systems through the integration of international standards (COBIT) and cutting-edge digital technologies such as AI, *Machine Learning*, and *Blockchain*.	*Machine Learning* integration enables faster detection of suspicious transaction patterns (*fraud) through the identification of anomalies that differ from historical patterns,* the COBIT framework and the ISO 27001 standard are essential instruments for assessing governance, security, and maturity levels of financial information systems, *Continuous Auditing* and *Data Analytics* technology ensures data integrity through *real-time* monitoring that minimizes the risk of human error , Utilization of *web data extraction techniques* supports auditors in acquiring valid electronic audit evidence from web-based sources .
17	Integrity as Key: Assessing the Role of APIP Audits in Fraud Detection	Lasando Lumban Gaol & Pesi Suryani	2025	Using a causal quantitative approach with a *cross-sectional design*, primary data were collected through a questionnaire survey of 57 auditors within the North Sumatra Provincial Government. Data analysis was performed using multiple linear regression and *Moderated Regression Analysis* (MRA) to test moderating variables.	Testing and analyzing the influence of task complexity and audit expertise on the ability of the Government Internal Supervisory Apparatus (APIP) to detect fraud, and how integrity moderates this relationship.	Partially, audit expertise has a positive and significant influence on *fraud detection,* task complexity has a negative and significant influence on *fraud detection,* integrity independently has a significant positive influence on fraud detection ability, the results of the MRA test prove that integrity is able to strengthen the relationship between audit expertise and *fraud detection*, integrity is also proven to strengthen the auditor's ability to deal with task complexity.
18	Financial Crisis Mitigation through Accounting Information Systems: A Systematic Literature Review Based on Digital Technology	Gian Giovania & Bucek Jalu Prasetyo Arjuna	2024	*Systematic Literature Review* (SLR) with a descriptive-qualitative approach based on the PRISMA protocol.	Examining the role of accounting information systems (AIS) in mitigating financial crises with a focus on AIS quality, early warning systems, technology integration (blockchain & AI), and accounting mitigation mechanisms.	AIS must be developed as an adaptive strategic system, not simply a reporting tool. A quality AIS improves decision-making accuracy, early warning systems strengthen risk detection, and digital technologies (blockchain/AI) support organizations' data-driven responses to fiscal pressures.
19	The Role of Technology in Improving Internal Audit Effectiveness	Said Saleh Salihi	2024	Literature study combined with a quantitative survey of 50 auditors and linear regression analysis.	Analyzing the role of technology (AI, *Big Data*, RPA, and *Blockchain*) in improving the effectiveness of internal audits in the corporate and non-	The use of technology significantly improves audit accuracy (**90%**) and efficiency (**75%**) compared to traditional methods. Regression analysis shows that technology contributes significantly to audit effectiveness (R2=0.72).

					governmental organization sectors.	Key challenges include high implementation costs (**80%**) and lack of auditor training (**60%**).
20	The Application of Artificial Intelligence, Big Data, and Blockchain in Fintech Payments to Computer Fraud Risk: A Systematic Literature Review	Farah Labibah Caseba & Totok Dewayanto	2024	*Systematic Literature Review* (SLR) of Scopus-indexed articles for the 2020-2024 period.	Identifying the benefits, driving factors, and challenges of implementing AI, *Big Data*, and *Blockchain* in *fintech payments* to prevent the risk of computer *fraud*.	The optimal combination of AI, *Big Data*, and *Blockchain* has proven effective in preventing the risk of computer fraud. AI detects behavioral anomalies in *real time*, *Big Data* provides predictive risk analysis, and *Blockchain* ensures data integrity through an unmanipulated *distributed ledger.*
21	Fraud Prevention in the Public Sector: The Role of Internal Audit	Taufiq Supriadi, Kurniawan Tjakrawala, Nyoman Adhi Suryadnyana, & Juska Meidy Enyke Sjam	2024	Qualitative approach with descriptive analysis method.	Analyze and evaluate the effectiveness of the role of internal audit in preventing fraud in the public sector.	The role of internal auditors is crucial in identifying potential risks, testing the effectiveness of internal controls, and creating a transparent work environment. Successful fraud prevention depends on the implementation of adequate internal controls, rigorous monitoring, and an organizational culture that supports integrity.
22	The Role of Auditors in Identifying Financial Report Fraud in Corruption Cases in the Jurisdiction of the Central Java High Prosecutor's Office	Risang Seno Ginanjar & Vivi Adeyani Tandean	2024	Qualitative through empirical data analysis, interviews, and legal document studies of corruption cases.	Discusses the role of auditors in detecting fraudulent financial reports related to corruption crimes in the jurisdiction of the Central Java High Prosecutor's Office.	Auditors play a critical role in identifying complex data manipulation patterns in corruption cases, but their effectiveness is often hampered by resource constraints, external pressures, and a lack of formal training in investigative auditing.
23	The Influence of Information Technology and Investigative Audits on Fraud Disclosure	Erika Della Saputri, Ety Meikhati, & Aisya Aswari	2024	Qualitative approach with descriptive analysis method sourced from scientific online media.	Analyze the influence of information technology and investigative audits on fraud disclosure, and provide insight into the role of these two factors in preventing and addressing fraud in organizations.	Utilization of information technology (IT), IT in audit activities helps auditors, Investigative audits play an important role as an effective tool to resolve fraud cases, The combination of the use of sophisticated IT with a strong audit system and increased auditor ethics significantly strengthens the integrity of financial reports and public trust.
24	The Importance of Internal Audit and Technology Implementation to Prevent Fraud in the Era of Digital Transformation	Azah Tul Muazah, Ade Sumarni, & Dien Noviany Rahmatika	2024	Systematic literature review of 31 relevant scientific journals.	Evaluating the urgency of the role of internal audit and technology adoption in controlling disruptions *and* mitigating fraud risks during an organization's digital transformation.	Accountants and internal auditors are required to improve their competencies in order to keep pace with rapidly developing technological trends. The conditions and modus operandi of fraud faced by companies today are increasingly diverse and complex, so they can no longer be handled with traditional supervisory

						methods alone. The effectiveness of audits in controlling company conditions is highly dependent on the organization's ability to manage technological transitions appropriately.
25	Audit and Fraud Detection: Protection for Companies and Misconduct Practices	Ishika Navta Yuliendra, Johanes Baptista Dimas Pangestu, Mega Listie Rambu Leki, & Muhammad Ihsan Rabih	2024	This study used a descriptive qualitative approach. Data were collected through a questionnaire survey of 70 respondents (internal auditors and related personnel), a literature review, and focus group discussions (*FGDs*).	Reveals the role of auditing in detecting fraud *and* protecting companies from deviant practices that can threaten the financial stability and reputation of the organization.	The implementation of technology such as data analytics *and* artificial intelligence *is* very helpful for auditors in identifying suspicious transaction patterns more accurately and efficiently. There are findings that as many as 42.9% of respondents feel that their company does not have a strong enough mechanism to prevent fraud in financial reports. The success of *fraud* detection is greatly influenced by the level of auditor competence and good collaboration between the audit unit and management in following up on audit findings.
26	Implementation of a Digital Verification System for Fraud Prevention in the JKN Program (Case Study of the Jakarta Syariah Hospital)	Gunadi Board, Sabri Hasan, Ichria Nurul Arda, Enoh Dwi Rahayu, & Zikra Andika	2024	Using a descriptive qualitative research method with a case study at the Jakarta Syariah Hospital. Key informants included the Quality Control and Cost Control Team, Casemix, and the Service Manager. Data collection techniques were carried out through observation, in-depth interviews, and documentation, which were then analyzed thematically.	Analyze the implementation of a *fraud prevention system* through digital verification, the challenges faced, and the contribution of this technology in improving the accountability of health claims in the JKN program.	Verification through Electronic Medical Records (EMR) allows automatic matching between recorded diagnoses, medical procedures, and service times with submitted claims, the use of Artificial Intelligence (AI) algorithms helps analyze large volumes of claims data to detect anomalous patterns, such as claims being filed for procedures that were not actually performed, *Blockchain* technology provides data security guarantees where every claim transaction is recorded in a transparent ledger and cannot be changed once it is executed.
27	The Urgency of Audit Examination in Revealing Fraudulent Practices in Company Financial Reports	Hariyani, Restu Afriansyah, & Agustina Mappadang	2024	Using *the Systematic Literature Review* (SLR) approach by synthesizing findings from 20 scientific articles published in 2021-2025 obtained from the Scopus, DOAJ, and Google Scholar databases.	Systematically review the role of audit in uncovering *fraudulent practices* and identify the determining factors of audit success such as competence, independence, and utilization of technology.	The success of uncovering fraud is highly dependent on the auditor's in-depth understanding of audit standards, *fraud behavior*, and the ability to read patterns in complex financial data. Integration of data analytics-based technology and CAATTs (*Computer-Assisted Audit Techniques*) allows efficient tracing of large-volume transactions to find anomalies that are difficult to detect with manual methods. Synergy

						between internal auditors who understand organizational culture and external auditors who bring objectivity has proven effective in uncovering systematic *fraud practices*.
28	The Impact of Artificial Intelligence on Financial Audit Processes: Challenges and Opportunities in the Digital Era	Maria Nindri Saputri Pratama, et al.	2023	*Systematic Literature Review* (SLR) uses the PICO framework and searches the Scopus database.	Explores the challenges and opportunities of AI integration in the financial audit process, including methodology, reliability of analysis, and ethical implications of automation.	AI integration significantly improves audit efficiency and accuracy through rapid data analysis and anomaly detection. However, this requires a shift in the role of auditors, who must continually develop professional competencies in the technology field.
29	The Effectiveness of Internal Audit for Fraud Prevention	Miryam Pingkan Lonto, Eko Ganis Sukoharsono, Zaki Baridwan, & Yeney Widya Prihatiningtias	2023	*Mixed-method exploratory sequential design* with data analysis techniques using PLS.	Measuring the effectiveness of internal audits from the perception of local government internal auditors (BPKP and North Sulawesi Inspectorate) in preventing fraud.	The effectiveness of audits in preventing fraud is significantly influenced by audit quality. The greater the independence of the internal auditor function, the better the audit quality, which ultimately increases the effectiveness of fraud prevention.
30	The Role of Artificial Intelligence in Detecting Fraud in Auditing: A Literature Review	Suci Nurlayli Alimatu Sholiqah, Retno Ayu Widyastuti, & Tri Ratnawati	2023	Descriptive literature study with in-depth data collection from previous research.	*find* out the impact of implementing Artificial Intelligence (AI) technology in audit practices to detect fraud.	AI has a fraud detection accuracy rate of 91-92%, which is considered safer than using other manual audit methods. The implementation of AI plays a role in preventing violations of the code of ethics by public auditors because it is able to reduce the level of errors *due* to negligence or human fatigue factors in data processing.
31	The Role of Internal Audit in Fraud Control in the Era of Digital Transformation	Amalia Asriningrum, Shelly Octaviana, & Fransiska	2023	The qualitative approach uses a thematic questionnaire method to explore auditor perceptions.	Analyze the role of internal audit in controlling *fraud* in the digital era by dissecting challenges, identifying detection methods, and providing recommendations for strengthening controls.	*Fraud* in the digital era has a higher impact of financial losses and a longer duration of fraud compared to traditional methods. Pattern analysis methods and the use of analytical technologies such as *data mining* and *machine learning* have proven effective in detecting anomalies that are difficult to find through manual approaches. Cross-functional synergy between internal auditors, IT teams, risk management, and senior management is key in building a holistic control approach.
32	The Role of Internal Audit in Fraud Control in the Digital Era	Cecilia Ancelin Feodora Anthony, Wira Natali Angeline Lumban Gaol,	2023	Qualitative literature study with primary sources from eight relevant research journals.	Proving that internal audit has a vital role in controlling corporate fraud through the use of digital technology.	- assisted audit techniques (CAATs) and digital forensics makes it easier for auditors to identify traces of unusual transactions and data anomalies, the application of technology in the audit

		Hans Nehemia Natanael Purba, Helga Claresta Raudina, & Agus Maulana				process allows for testing of the entire transaction population (*100% testing*), which is much more accurate than traditional *sampling methods* , the effectiveness of fraud control is the result of synergy between strong internal control functions, adequate technological tools, and digital competencies possessed by auditors.
33	The Role of Internal Audit in Fraud Prevention in the Government Sector (Case Study of the Regional Inspectorate of West Sumatra Province)	Yolivia Nurfadillah, Rasyidah Mustika, & Armel Yentifa	2022	Case study research with a qualitative descriptive approach through functional interviews of auditors.	To understand the role of internal audit in preventing *fraud* in the West Sumatra Inspectorate based on three elements: a culture of honesty, *anti-fraud control*, and development of supervisory processes.	The creation of a culture of honesty is carried out through routine training (PKS), certification training (JFA), and the implementation of the Code of Ethics in accordance with Governor Regulation No. 102 of 2012. Control evaluation includes reviewing evidence of activities, evaluating OPD internal controls, and evaluating *risk registers.* Development of supervision through consulting services (SIMPATI, Inspectorate Answers) and *the Whistleblower System.*

Source: processed data (2026)

The data extraction results in Table 1 reveal a significant trend in the evolution of audit literature between 2020 and 2026. Most of the selected studies (approximately 70%) emphasize the shift from traditional manual sampling to automated population testing, driven by the integration of Machine Learning and Cloud Computing. Furthermore, while the majority of the literature focuses on the financial and healthcare sectors, there is a consistent consensus regarding the critical role of human integrity as a moderating variable in digital environments.

Results of Thematic Analysis and Discussion

The systematic review of the 33 selected articles underscores a significant shift from the use of isolated digital tools toward a strategic orchestration of integrated technologies. The findings indicate that the strengthening of anti-fraud strategies is not merely a result of algorithmic advancement, but rather the synergy between several critical domains: technical capabilities, digital infrastructure, human factors, and governance frameworks.

Technically, the integration of Artificial Intelligence (AI) and Big Data Analytics allows for a transition from reactive to proactive fraud detection. AI-driven models enable auditors to process 100% of the data population, identifying anomalies and predictive patterns that were previously undetectable through manual sampling (Nasir et al., 2026:228). This technical capability is further reinforced by Blockchain technology, which serves as a foundational infrastructure. Blockchain provides an immutable audit trail and ensures data integrity, thereby mitigating the risk of record manipulation by internal or external actors (Novida, 2025:6).

However, the literature consistently highlights that technological sophistication must be matched by human-centric adaptation. The effectiveness of these tools is heavily contingent upon the digital literacy and professional skepticism of the auditors who operate them (Khaerullah et al., 2025:151). Without a robust governance framework to oversee the ethical

application of AI and ensure data privacy, the integration process remains vulnerable to new forms of algorithmic bias and digital fraud (Rudiyanto, 2025:40). Consequently, the following sections will discuss how these integrated elements fundamentally reshape the operational landscape of auditing.

1. Transforming the Role of Internal Audit through AI Capabilities

As stated in the research objectives, Artificial Intelligence (AI) capabilities have shifted the audit paradigm from passive detection to active prevention. Based on a systematic review of the reviewed literature, there are three key areas of transformation that strengthen an organization's anti-fraud strategy:

1) Prediction-Based Anomaly Detection and Loss Mitigation

AI, through Machine Learning (ML) algorithms, is capable of recognizing suspicious transaction patterns that are often invisible to human auditors. In the digital banking sector, ML adoption has been empirically proven to have a significant positive impact on the success of fraud detection and financial loss prevention (Susilo et al., 2026:64). The use of simple linear regression in the Bank Jago case study shows that the higher the level of ML adoption, the lower the risk of losses arising from fraudulent transactions.

This is supported by the perception of the majority of practitioners (85.7%) who stated that internal audit is much more effective in detecting and preventing fraud when supported by intelligent technologies such as data analysis and artificial intelligence (Yuliendra et al., 2024:1). However, fundamental challenges remain, with 71.4% of practitioners feeling that current audit procedures still require significant improvement, which confirms the urgency of integrating AI as a key instrument in detecting deviant practices before the financial impact becomes widespread (Yuliendra et al., 2024:7).

2) Integrated Transparency, Accountability, and Digital Validation

The implementation of an AI-powered digital verification system improves accuracy, transparency, and accountability in financial claims management. In the National Health Insurance (JKN) program, the digital verification system ensures that all incoming data is automatically validated, thereby minimizing information asymmetry between service providers and insurers (Gunadi et al., 2025:1). This technology actively closes loopholes for manipulation such as phantom billing or upcoding by instantly cross-checking data.

Furthermore, the effectiveness of this anti-fraud system is evident in the system's acceptance rate, which reached 96% in healthcare institutions, with a very high level of compliance with protocols (Susanti et al., 2026:17). However, the digitalization of monitoring needs to be accelerated because there are still obstacles to manual policy communication. The integration of AI into accounting information systems ensures that anti-fraud policies are embedded directly in the system's programming code (built-in control), so that any violations of operational standards can be detected automatically and systematically (Susanti et al., 2026:24).

3) Full Population Audit and Strengthening Professional Skepticism

AI enables auditors to shift from sampling-based testing to full population testing. This transformation is crucial given that fraud is often hidden within small transactions that typically escape the scope of traditional audit samples (Giovania & Arjuna, 2024:716).

However, the sophistication of these digital tools still requires human control with integrity. Gaol and Suryani (2025:513) emphasize that despite the increasing complexity of tasks in the digital era, audit expertise and the auditor's moral integrity remain key. Integrity serves as a moderating variable that strengthens the relationship between an auditor's technical ability and the successful disclosure of fraudulent practices. Thus, AI does not replace the role of auditors, but rather strengthens their capacity to carry out their oversight function by providing more accurate and comprehensive audit evidence, ultimately strengthening the audit's position as a vital instrument in uncovering fraudulent practices in corporate financial statements (Hariyani et al., 2024:1).

2. Synergy of Digital Technology in the Anti-Fraud Ecosystem

Further discussion shows that Artificial Intelligence (AI) effectiveness reaches its optimal point when integrated with other digital technologies, forming a robust and comprehensive anti-fraud ecosystem. This synergy enables organizations to shift from static internal controls to dynamic defense systems.

1) Big Data and Cloud Integration: The Foundation of Continuous Auditing

Big Data provides a massive volume and variety of information, while AI serves as its intelligent processing engine. In the context of modern accounting, the use of cloud accounting facilitates continuous auditing, enabling instant cross-geographical data access and 24/7 fraud risk monitoring (Marbun et al., 2025:4). This capability is crucial in the digital banking sector, where extremely high transaction volumes demand precise risk mitigation.

Machine Learning (ML) technology in digital banking, as implemented at Bank Jago, has proven that the synergy of automated data processing can significantly reduce Non-Performing Loan (NPL) rates and improve fraud detection (Susilo et al., 2026:66). This addresses the needs of practitioners, where 85.7% of auditors believe that the effectiveness of internal audits is highly dependent on the support of big data analysis and artificial intelligence to identify anomalies previously unreachable by manual procedures (Yuliendra et al., 2024:1). Without a capable cloud infrastructure, data processing on this scale is impossible to carry out in a timely manner.

2) Accelerating Digital Monitoring: Improving Accuracy and Transparency

In public service sectors such as hospitals, accelerating the digitalization of monitoring is an urgent need to maintain the integrity of the national health system. A study at R. Syamsudin, SH Regional General Hospital showed that although the acceptance rate of the anti-fraud system was very high, reaching 96%, there was still a communication gap where 31.4% of staff were not aware of the specific written anti-fraud policy (Susanti et al., 2026:17). This lack of awareness indicates that digitalization should not stop at operational systems alone, but must also extend to a digitally integrated policy dissemination and compliance monitoring system.

One concrete manifestation of this acceleration is the implementation of a digital verification system. In the National Health Insurance (JKN) program, digital verification systems have been proven to improve accuracy, transparency, and accountability in managing health claims (Gunadi et al., 2025:1). This digitalization effectively minimizes deviant practices such as phantom billing because all incoming data is automatically validated through cross-checking between databases.

However, this accelerated digitalization must be accompanied by improvements in audit procedures. Data shows that 71.4% of practitioners feel that current audit procedures still need to be improved to align with technological advances (Yuliendra et al., 2024:1). Therefore, the synergy of digital technology in the anti-fraud ecosystem is not only about the use of new tools, but also about reengineering the audit process to remain relevant in uncovering fraudulent practices in increasingly complex and digitally based financial reports (Hariyani et al., 2024:1).

3. Human Factors: Competence, Integrity, and Ethics as Controllers

One crucial finding from this literature review is that advanced digital technology will not deliver optimal impact without the support of competent human resources (HR). A robust anti-fraud strategy requires a balance between artificial intelligence and human moral judgment.

1) Integrity as Moderation in Digital Complexity

Although internal auditors are now equipped with advanced technical expertise and analytical tools, integrity remains a key determinant. In the digital era, the complexity of audit tasks has increased significantly due to massive data volumes and increasingly sophisticated fraud patterns. Gaol and Suryani (2025:525) found that audit expertise positively influences fraud detection ability, but this relationship is much stronger when auditors possess high integrity. Integrity serves as an ethical anchor, ensuring that technical expertise and access to AI technology are used solely for transparency, not to manipulate findings.

2) Digital Independence and Competence: Overcoming the "Algorithmic Gap"

Disclosing fraudulent practices in financial statements depends heavily on the auditor's independence and digital competence. Hariyani et al. (2024:1) emphasize that audits are not merely administrative routines but rather a crucial instrument for uncovering deviant practices that obscure financial information. However, the emerging digital literacy gap creates new risks where auditors fail to understand the "algorithmic logic" or black box phenomena in AI systems.

This situation is exacerbated by the finding that 71.4% of practitioners feel that current conventional audit procedures are no longer adequate and require significant improvements to keep pace with technological evolution (Yuliendra et al., 2024:7). Without adequate digital competency,

auditor independence can be compromised as they become overly reliant on the results of automated systems without the ability to critically verify the validity of those results.

3) Organizational Culture and Strengthening the Whistleblowing System

Digital technology integration must be supported by a healthy organizational ecosystem. Even expensive anti-fraud technology will lose its effectiveness if it isn't accompanied by a culture of honesty and a secure reporting system. Susanti et al. (2026:17) highlighted that despite a 96% acceptance rate of anti-fraud systems in public institutions, 31.4% of staff are still unaware of specific written anti-fraud policies.

This lack of awareness indicates a barrier to information dissemination and ongoing training. Therefore, this study emphasizes the importance of ongoing training and strengthening a digital-based Whistleblowing System (WBS). A WBS supported by guaranteed data security and process transparency is key to uncovering fraudulent practices that AI algorithms cannot detect, particularly fraud involving high-level collusion within the organization (Susanti et al., 2026:24; Yuliendra et al., 2024:5).

4. Adaptive Anti-Fraud Strategy Framework

Based on an in-depth synthesis of the reviewed literature, this study concludes that future adaptive anti-fraud strategies can no longer rely solely on a single aspect. Successfully strengthening these strategies requires a dynamic balance between three key dimensions: technical, process, and ethical-human.

1) Technical Dimension: Implementation of Smart Technology and Automated Verification

This dimension focuses on procuring tools as the first line of defense. The use of Machine Learning (ML) and Artificial Intelligence (AI) is no longer an option, but rather a functional necessity to detect anomalies in massive transaction volumes. Empirical evidence shows that the adoption of ML in the banking sector has a significant impact on mitigating the risk of financial loss through more accurate early detection compared to conventional methods (Susilo et al., 2026:64).

Furthermore, the implementation of a sophisticated digital verification system is crucial for increasing transparency and accountability, especially in the public sector, which is prone to claims manipulation (Gunadi et al., 2025:1). With this technology, data validation occurs in real time, thereby closing the gap for fraud early on at the accounting information system level.

2) Process Dimension: Shifting Towards Continuous Auditing and Population Analysis

An adaptive anti-fraud strategy requires a fundamental shift in the audit process, namely the transition from periodic audits to cloud- based continuous auditing. The use of cloud technology allows auditors to monitor fraud risks instantly without geographical limitations (Marbun et al., 2025:4).

This process shifts the focus from sampling to comprehensive population data analysis. This aligns with the needs of practitioners in the field, with 85.7% of respondents recognizing the importance of big data analysis for strengthening internal control functions (Yuliendra et al., 2024:1). This process integration ensures that every AI-driven detection is supported by a consistent data stream and a stable infrastructure, ensuring that information systems audits are no longer left behind by the speed of digital transactions.

3) Ethical-Human Dimension: Integrity, Independence, and Digital Competence

The final and most crucial dimension is the quality of the people behind the technology. Sophisticated tools and efficient processes will be wasted if not executed by competent and honest auditors. Gaol and Suryani (2025:513) emphasize that integrity is a key variable that strengthens the relationship between audit expertise and successful fraud disclosure. Amid the high complexity of digital tasks, integrity ensures that auditors remain objective and do not abuse their access to information.

On the other hand, strengthening digital competency through continuing education is essential to address the digital gap. Auditors' independence relies heavily on their understanding of the technology used; without digital competency, auditors risk losing their professional skepticism due to over-reliance on automation (Hariyani et al., 2024:1). Finally, this dimension must be supported by a strong organizational culture, where anti-fraud policies are disseminated evenly across all levels of staff to create an honest and transparent work environment (Susanti et al., 2026:17).

CONCLUSION AND SUGGESTIONS

Conclusion

This study concludes that the integration of digital technology and Artificial Intelligence (AI) is a crucial element in strengthening anti-fraud strategies in modern information systems audits. Based on a systematic literature review, three key findings form the core of this study:

1) Transforming Audit Capabilities: The adoption of AI and Machine Learning has shifted the audit paradigm from passive detection to proactive prevention. These technologies enable full data population analysis, improve the accuracy of digital verification, and provide real-time anomaly detection capabilities that have proven effective in reducing financial losses across various sectors, including banking and healthcare.
2) Digital Ecosystem Synergy: AI's effectiveness is at its peak when supported by cloud accounting and big data infrastructure. This synergy enables continuous auditing that overcomes geographic constraints and information asymmetry, thereby strengthening organizational transparency and accountability.
3) The Centrality of the Human Factor: Technology is merely a tool (an enabler) whose success depends heavily on the integrity, independence, and digital competence of auditors. Integrity has proven to be a key variable in mitigating the risks of task complexity in the digital age. Without human resources capable of understanding "algorithmic logic" and possessing high moral standards, technological sophistication risks creating new loopholes for more systematic fraud.

Research Limitations

The researcher is aware that there are several limitations in this study that need to be considered:

1) Timeframe and Literacy Access: This research focuses on literature published between 2022 - 2026. This means that some recent technological developments that may have emerged outside this timeframe are not fully covered.
2) Dominance of Certain Sectors: The majority of the reviewed literature is still dominated by the banking and health sectors (such as the JKN program), so the generalization of this anti-fraud strategy may require adjustments to other sectors such as the local government public sector or the creative industry.
3) Implementation Gap: There is a significant difference between the ideal concept found in the literature and the reality of implementation in the field, where low levels of digital literacy and dissemination of anti-fraud policies are still found in several organizations.

Suggestions

1) For Organizations: It is recommended to invest not only in AI software procurement, but also in increasing digital literacy and strengthening a culture of integrity through continuous training for internal auditors.
2) For Future Researchers: Future research is expected to conduct more specific case studies in sectors that have not been widely touched by AI technology, as well as evaluate the effectiveness of using Blockchain technology as a supporter of digital audit trail transparency.

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