

THE ROLE OF FINANCIAL INFORMATION SYSTEMS, INTERNAL AUDIT, AND INVESTIGATIVE AUDIT IN ENHANCING PUBLIC SECTOR FINANCIAL ACCOUNTABILITY: SYSTEMATIC LITERATURE REVIEW

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Abstract

Public sector financial management demands transparency and accountability to realize good governance. However, challenges such as limited human resource competence, weak internal control, and fraud risks remain obstacles in the preparation of government financial statements. This study aims to review the role of financial information systems, internal audit, and investigative audit in enhancing public sector financial accountability. The method used is a Systematic Literature Review (SLR) by analyzing 20 articles published between 2021–2025, consisting of national and international literature selected through databases such as Scopus, Web of Science, EBSCO, Google Scholar, and Portal Garuda. The results show that financial information systems, particularly the implementation of SAKTI, serve as the technical foundation of transparency, but their effectiveness highly depends on user competence and organizational support. Internal audit, through the role of APIP/BPKP, functions as a preventive control mechanism that requires independence and institutional support. Meanwhile, investigative audit functions as a reactive protection instrument against fraud, in which the competence and experience of forensic auditors are dominant factors. The synthesis of the literature confirms that the synergy of these three aspects strengthens public financial accountability while supporting the implementation of good governance principles in state financial management.

Keywords: Financial Accountability, Financial Information Systems, Internal Audit, Investigative Audit, Public Sector

1. Introduction

Public sector financial management is a vital pillar in realizing good governance, as government financial statements serve as the main instrument of accountability and transparency to the public. In recent years, public expectations for clean, efficient government free from fraudulent practices have increased significantly. International organizations such as the International Public Sector Accounting Standards Board (IPSASB) emphasize that the primary objective of public sector financial reporting is to provide useful information and support accountability (IPSASB, 2023), while the International Organization of Supreme Audit Institutions (INTOSAI) establishes transparency and accountability principles as the foundation of public sector auditing (INTOSAI, 2019, 2024). These international standards underscore the universal recognition that robust financial governance is essential for maintaining public trust and ensuring the effective use of state resources.

The urgency of strengthening financial system integrity and public oversight is further reinforced by global evidence on fraudulent practices. The Association of Certified Fraud Examiners (ACFE) annual report (2024) shows that fraud continues to cause significant

losses worldwide, with organizations losing an estimated 5% of their annual revenues to fraud (ACFE, 2024). If a government institution does not have adequate recording and reporting systems, the risk of irregularities and fraud in financial management becomes greater, ultimately eroding public trust in the government. This condition is particularly concerning in developing countries like Indonesia, where public sector financial management reforms are ongoing but face numerous implementation challenges.

In this context, the roles of financial information systems, internal audit, and investigative audit become highly important. A financial information system is a set of procedures, technology, and human resources designed to collect, record, store, and report financial transactions accurately. Romney and Steinbart (2018) define an accounting information system as a mechanism that provides information for decision-making, safeguards assets, and ensures the reliability of reports (Romney & Steinbart, 2018). In the Indonesian public sector, this system is implemented in the form of the SAKTI (Sistem Aplikasi Keuangan Tingkat Instansi) in ministries and agencies and SIPD (Sistem Informasi Pemerintah Daerah) in local governments, both aimed at supporting the entire cycle of state financial management. Mahmudi (2021) emphasizes that public financial information systems play not only a technical role but also a strategic one in enhancing the transparency and accountability of reporting (Mahmudi, 2021). Recent studies by Gultom and Harahap (2023, 2024) and Punarto (2024) have examined the implementation of SAKTI in Indonesian government institutions, finding that while the system has improved financial reporting processes, challenges remain in user competence and system integration (Gultom & Harahap, 2023, 2024; Punarto, 2024). Jannah (2023) and Utomo (2024) further confirm that the effectiveness of SAKTI is significantly influenced by human resource competencies and institutional support (Jannah, 2023; Utomo, 2024). Qurratu'Aini (2025) adds that SAKTI implementation contributes to budget efficiency and reporting quality when properly supported by organizational commitment (Qurratu'Aini, 2025). International evidence from Meiranto et al. (2024) also demonstrates that behavioral intention to use SAKTI is influenced by perceived usefulness and ease of use, highlighting the importance of user acceptance in system effectiveness (Meiranto et al., 2024).

In addition to systems, internal audit is also a key component in ensuring the quality of financial statements. The Institute of Internal Auditors (IIA) defines internal audit as an independent and objective activity that provides assurance and consulting services to add value to the organization through systematic evaluation of risk management, control, and governance (IIA, 2017). In Indonesia, internal audit is carried out by APIP (Aparat Pengawasan Intern Pemerintah) based on Government Regulation No. 60 of 2008 concerning SPIP (Sistem Pengendalian Intern Pemerintah), which states that internal control is an integral process involving all leaders and employees to achieve organizational goals effectively (Pemerintah Republik Indonesia, 2008). The Committee of Sponsoring Organizations of the Treadway Commission (COSO, 2013) outlines five components of internal control, namely control environment, risk assessment, control activities, information and communication, and monitoring (COSO, 2013), which are also aligned with the U.S. Government Accountability Office Green Book (GAO, 2025) for the international public sector. In the national literature, Mulyadi (2016) states that internal control consists of organizational structure, methods, and coordinated measures to safeguard assets, improve operational efficiency, and ensure the reliability of accounting data and compliance with management policies (Mulyadi, 2016). However, Lusiana (2022) found that the implementation of internal control in government

institutions still encounters problems of consistency and procedural compliance, so its effectiveness has not been optimal (Lusiana, 2022). Recent studies by Ageng and Usman (2023) and Wijaya et al. (2025) demonstrate that APIP capability and SPIP maturity significantly influence the quality of local government financial reports (Ageng & Usman, 2023; Wijaya et al., 2025). Hilal (2024) and Sembiring (2024) further emphasize the strategic role of APIP in fraud prevention and risk management, while Kurniawati (2025) highlights APIP's contribution to asset oversight in regional governments (Hilal, 2024; Sembiring, 2024; Kurniawati, 2025). International research by Alqudah et al. (2023) identifies critical factors affecting internal audit effectiveness in the public sector, including management support, auditor competence, and organizational independence (Alqudah et al., 2023). Nadirsyah (2024) confirms the key role of internal audit in public sector governance across developing economies (Nadirsyah, 2024).

However, even with the presence of internal audit, irregularities may still occur, thereby requiring a special mechanism in the form of investigative audit. Investigative audit is conducted when there are indications of fraud, with the purpose of collecting evidence, revealing facts, and providing a legal basis for the enforcement of accountability. Singleton and Singleton (2010) explain that investigative audit is part of forensic audit that focuses on proving financial fraud (Singleton & Singleton, 2010). In Indonesia, BPKP (Badan Pengawasan Keuangan dan Pembangunan) plays a central role in conducting investigative audits of state financial management, which is highly relevant in the context of the Fraud Triangle (Cressey, 1953) that states fraud arises due to a combination of pressure, opportunity, and rationalization (Cressey, 1953). Thus, investigative audit plays a strategic role in closing opportunities for fraud while strengthening public accountability. Recent studies by Ningrum (2024), Putri and Rely (2024), and Dianto (2023) demonstrate that investigative audit effectiveness significantly influences fraud disclosure in Indonesian public sector institutions (Ningrum, 2024; Putri & Rely, 2024; Dianto, 2023). Sapitri and Putri (2024) add that auditor independence and investigative audit competence are crucial determinants of fraud detection success (Sapitri & Putri, 2024). Haldin et al. (2022) further confirm that auditor experience and competence significantly affect the effectiveness of investigative audit procedures (Haldin et al., 2022). International evidence from Dimitropoulos (2025) highlights the role of forensic accounting and investigative audits in detecting white-collar crime, while Alkhalaileh et al. (2024) demonstrate that forensic accounting skills enhance auditor effectiveness in the public sector (Dimitropoulos, 2025; Alkhalaileh et al., 2024).

Although various instruments have been implemented, challenges still arise in practice. Many government institutions face limitations in technical competence of employees, lack of training, limited integration of information systems, and weak implementation of SPIP, resulting in inconsistent quality of financial statements across regions and ministries/agencies. This condition affirms that the success of public financial governance cannot rely solely on systems, but must be supported by competent human resources (Spencer & Spencer, 1993; PermenPAN-RB, 2017), effective internal control, and a well-functioning investigative audit. The legal framework for public sector accounting in Indonesia, established through Government Regulation No. 71 of 2010 concerning Government Accounting Standards (Pemerintah Republik Indonesia, 2010), provides the foundation for consistent financial reporting, yet implementation gaps persist. Mardiasmo (2018) emphasizes that public sector accounting must be understood within the broader context of public sector governance and performance management (Mardiasmo, 2018).

Despite the growing body of literature on financial information systems, internal audit, and investigative audit, most existing studies examine these elements in isolation rather than as an integrated framework for strengthening public sector financial accountability. Research on SAKTI implementation (Gultom & Harahap, 2023, 2024; Punarto, 2024; Jannah, 2023; Utomo, 2024; Qurratu'Aini, 2025; Meiranto et al., 2024) focuses primarily on system adoption and user acceptance. Studies on APIP and internal control (Ageng & Usman, 2023; Wijaya et al., 2025; Hilal, 2024; Sembiring, 2024; Kurniawati, 2025; Alqudah et al., 2023; Nadirsyah, 2024) examine internal audit effectiveness and control maturity. Research on investigative audit (Ningrum, 2024; Putri & Rely, 2024; Dianto, 2023; Sapitri & Putri, 2024; Haldin et al., 2022; Dimitropoulos, 2025; Alkhalaileh et al., 2024) explores fraud detection and forensic accounting. However, limited research has integrated these three critical components into a comprehensive framework for understanding how they collectively contribute to public sector financial accountability.

Therefore, it is important to conduct a study that integrates the roles of financial information systems, internal audit, and investigative audit in enhancing public sector financial accountability. This study applies a Systematic Literature Review (SLR) approach to explore scientific findings related to the topic and to provide strategic recommendations for strengthening state financial governance in a sustainable manner. The objectives of this research are: (1) to systematically review the existing literature on financial information systems, internal audit, and investigative audit in the public sector; (2) to synthesize findings on the relationships between these three components and their collective contribution to financial accountability; (3) to identify research gaps and future research directions; and (4) to provide evidence-based recommendations for policymakers and practitioners in strengthening public sector financial governance.

The expected contributions of this research are twofold. Theoretically, this study contributes to the public sector accounting and governance literature by proposing an integrated framework that connects financial information systems, internal audit, and investigative audit as complementary mechanisms for ensuring financial accountability. Practically, the findings are intended to offer actionable insights for government institutions, supreme audit institutions, and oversight bodies in designing comprehensive strategies to enhance financial transparency, prevent fraud, and strengthen public trust. By synthesizing evidence from both national and international studies, this research aims to support ongoing public financial management reforms in Indonesia and comparable developing countries.

2. Theoretical Background

2.1 Public Sector Financial Accountability

Public sector financial accountability in Indonesia is regulated under Government Regulation No. 71 of 2010 concerning Government Accounting Standards (SAP), which requires the use of an accrual basis in financial reporting to enhance transparency and accountability (Pemerintah Republik Indonesia, 2010). According to Mardiasmo (2018), public accountability is the obligation of the government to openly account for the management of resources to the public, encompassing both horizontal accountability (to citizens) and vertical accountability (to higher authorities) (Mardiasmo, 2018). This accountability is manifested through the preparation of the Central Government Financial Statements (LKPP) and Local Government Financial Statements (LKPD), which are audited annually by the Supreme Audit Institution (BPK). The audit opinion issued by BPK ranging from unqualified to adverse opinions serves as a critical indicator of the quality of financial management and the reliability of government financial reporting.

Globally, the International Public Sector Accounting Standards Board (IPSASB, 2023) emphasizes that public sector financial reporting aims to provide relevant information for decision-making and to support accountability to stakeholders, including citizens, legislators, and oversight bodies (IPSASB, 2023). This international framework aligns with Indonesia's commitment to strengthening public financial governance through accrual-based accounting and transparent reporting practices. The concept of public sector accountability extends beyond mere compliance with regulations; it encompasses the government's responsibility to demonstrate that public resources have been used efficiently, effectively, and in accordance with established laws and policies. In the Indonesian context, the achievement of unqualified audit opinions by BPK has become a key performance indicator for government institutions, driving continuous improvement in financial management systems and internal controls.

2.2 Financial Information Systems

A financial information system is a set of procedures, technology, and human resources that manage financial transactions and produce accurate reports for decision-making and accountability purposes. Romney and Steinbart (2018) state that an accounting information system functions to provide information for decision-making, safeguard organizational assets, and ensure the reliability of financial data through systematic recording and reporting processes (Romney & Steinbart, 2018). In the public sector context, financial information systems must accommodate the unique characteristics of government accounting, including budget execution, fund accounting, and compliance with legal and regulatory requirements.

In Indonesia, the central government has implemented the SAKTI (Sistem Aplikasi Keuangan Tingkat Instansi) for ministries and agencies and the SIPD (Sistem Informasi Pemerintah Daerah) for local governments. Both systems are designed to improve integration, transparency, and efficiency in state financial management by consolidating various financial functions including budgeting, treasury, accounting, and reporting into a single integrated platform. According to Mahmudi (2021), public financial information systems not only record transactions but also support transparency in state financial management by providing real-time access to financial data and facilitating accurate and timely reporting (Mahmudi, 2021).

Research by Gultom and Harahap (2023) demonstrates that the success of SAKTI implementation is influenced by multiple factors, including user competence, organizational support, and technological infrastructure (Gultom & Harahap, 2023). Their study found that adequate training, clear guidance from supervisory authorities, and robust technical support are essential for ensuring that system users can effectively operate SAKTI and produce high-quality financial reports. Furthermore, Meiranto et al. (2024) identified that behavioral intention to use SAKTI is significantly influenced by perceived usefulness and ease of use, highlighting the importance of user acceptance in determining system effectiveness (Meiranto et al., 2024). These findings underscore that successful financial information system implementation requires not only appropriate technology but also attention to human factors and organizational context.

2.3 Internal Audit (APIP & BPKP)

Internal audit in the Indonesian public sector is carried out by APIP (Aparat Pengawasan Intern Pemerintah), which includes the Financial and Development Supervisory Agency (BPKP) at the central level and inspectorates in ministries, agencies, and local governments. BPKP serves as the supervisor and quality assurance body for the

entire APIP network, providing guidance, capacity building, and oversight to ensure consistent and effective internal audit practices across government institutions.

According to the Institute of Internal Auditors (IIA, 2017), internal audit is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations through systematic evaluation of risk management, control, and governance processes (IIA, 2017). In Indonesia, internal audit is based on the Government Internal Control System (SPIP) as regulated in Government Regulation No. 60 of 2008. This regulation outlines five components of internal control control environment, risk assessment, control activities, information and communication, and monitoring which are aligned with the internationally recognized COSO framework (Pemerintah Republik Indonesia, 2008).

The effectiveness of internal audit in the public sector depends on several critical factors. Research by Ramadhan and Wijaya (2025) demonstrates that APIP capability, SPIP maturity, and follow-up on BPK audit recommendations have a positive effect on the quality of local government financial statements (LKPD) (Ramadhan & Wijaya, 2025). Their findings indicate that when APIP units possess adequate competence, independence, and resources, and when internal control systems are mature and well-implemented, the resulting financial reports are more likely to be accurate, reliable, and compliant with accounting standards. This highlights the important role of BPKP in enhancing the capability and effectiveness of internal supervision through training, technical guidance, and quality assurance activities.

International research by Alqudah et al. (2023) identifies critical factors affecting internal audit effectiveness in the public sector, including management support, auditor competence, organizational independence, and the quality of audit planning and execution (Alqudah et al., 2023). Nadirsyah (2024) confirms the key role of internal audit in public sector governance across developing economies, emphasizing that strong internal audit functions contribute to improved financial management, reduced fraud risk, and enhanced public accountability (Nadirsyah, 2024). These international findings reinforce the importance of investing in internal audit capacity as a fundamental component of public financial governance.

2.4 Investigative Audit

Investigative audit is carried out when there are indications of fraud in the management of state finances, serving as a specialized mechanism for detecting, investigating, and proving fraudulent activities. Unlike regular financial audits that assess compliance and fairness of presentation, investigative audits focus on gathering evidence, uncovering facts, and supporting legal proceedings against alleged perpetrators of fraud.

Singleton and Singleton (2010) refer to investigative audit as part of forensic audit that focuses on proving fraud, employing techniques from accounting, auditing, and investigation to gather admissible evidence for legal proceedings (Singleton & Singleton, 2010). In Indonesia, BPKP and other APIP units are authorized to conduct investigative audits when there are reasonable indications of fraud in state financial management. These audits play a crucial role in the broader framework of public accountability by identifying irregularities, quantifying losses, and supporting law enforcement efforts.

Fraud can be explained through the Fraud Triangle theory developed by Cressey (1953), which posits that fraud occurs when three conditions converge: pressure (financial or personal pressure to commit fraud), opportunity (weak internal controls or oversight that enable fraud to occur), and rationalization (the perpetrator's ability to justify fraudulent behavior as acceptable) (Cressey, 1953). This theoretical framework has been

widely applied in fraud research and practice, providing insights into the underlying causes of fraudulent behavior and informing prevention and detection strategies.

Empirical studies in Indonesia have examined factors affecting investigative audit effectiveness. Haldin et al. (2022) found that the experience and competence of investigative auditors significantly affect the effectiveness of audit procedures in detecting and proving fraud (Haldin et al., 2022). Their research emphasizes that investigative audit requires specialized skills beyond those of regular financial auditors, including knowledge of forensic techniques, legal evidence requirements, and fraud schemes. Similarly, research by Pratiwi and Rely (2024) states that investigative audits combined with the implementation of Good Corporate Governance (GCG) principles can significantly strengthen fraud prevention efforts in public sector institutions (Pratiwi & Rely, 2024). Their findings suggest that investigative audit should not be viewed as a standalone activity but as part of an integrated governance framework that includes preventive controls, detective mechanisms, and corrective actions.

International evidence from Dimitropoulos (2025) highlights the role of forensic accounting and investigative audits in detecting white-collar crime and state-organized crime, demonstrating that these specialized techniques are essential for uncovering complex fraud schemes that evade routine audit procedures (Dimitropoulos, 2025). Alkhalaileh et al. (2024) further demonstrate that forensic accounting skills enhance auditor effectiveness in the public sector, particularly in contexts where fraud risks are high and legal standards for evidence are demanding (Alkhalaileh et al., 2024).

3. Methods

This study employs the Systematic Literature Review (SLR) method to examine the role of financial information systems, internal audit, and investigative audit in enhancing the accountability of public sector financial statements. The SLR method was chosen because it is able to integrate and synthesize various research findings systematically, objectively, and comprehensively. The main focus of this review is to identify the contribution of these three aspects to the quality of public financial accountability, as well as to map the latest findings in the academic literature.

The SLR process was carried out through several structured stages. The first stage was formulating the research question that would guide the search and analysis of the literature, namely: “How do financial information systems, internal audit, and investigative audit contribute to improving the accountability of public sector financial statements based on current literature?” This question served as an analytical framework that directed the entire process of article search and interpretation of findings.

The second stage was establishing inclusion and exclusion criteria to ensure the relevance and quality of the selected articles. The inclusion criteria were: (1) empirical or conceptual articles published between 2021–2025, (2) focusing on the public sector, (3) addressing at least one of the main variables, namely financial information systems, internal audit, or investigative audit, and (4) articles published in either Indonesian or English. Meanwhile, the exclusion criteria included articles that were not peer-reviewed, grey literature such as internal reports, and studies that focused solely on the private sector.

The third stage was a comprehensive literature search using academic databases, including Scopus, Web of Science, EBSCO, Google Scholar, and Portal Garuda. The search was conducted using combined keywords such as: “public financial information system,” “SAKTI,” “SIPD,” “public sector internal audit,” “APIP,” “BPKP,”

“investigative audit,” “fraud prevention,” and “government financial accountability.” To broaden the coverage, a snowballing technique was also employed by tracing the reference lists of relevant articles. The fourth stage was the article selection process. The articles found were independently screened by two researchers to minimize bias. In cases of disagreement, discussions were held to reach consensus. The selected articles were then subjected to data extraction using a predetermined recording format, which included information on the author, year of publication, country or research context, research method, variables studied, and key findings.

The fifth stage was data analysis. The analysis was carried out through a narrative synthesis approach to integrate qualitative as well as quantitative findings. This process aimed to identify the main themes in the literature, such as how financial information systems enhance transparency, how internal audits strengthen control, and how investigative audits prevent fraud. The analysis also explored research trends across countries and levels of government, both central and local.

Through this systematic approach, the study is expected to provide a comprehensive overview of the contribution of financial information systems, internal audit, and investigative audit to public sector financial accountability. The results of this review not only present a synthesis of existing knowledge but also identify research gaps that may guide the direction of future studies, particularly in the context of public financial governance in Indonesia.

4. Results and Discussion

4.1 Results

4.1.1 Article Selection Process

The article selection process in this study followed the flow of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). From the initial search across various databases (Scopus, Web of Science, Google Scholar, Portal Garuda), a total of 147 articles were obtained. After screening the titles and abstracts, 96 articles were eliminated because they were not relevant to the topics of financial information systems, internal audit, and investigative audit. Furthermore, 31 articles were excluded for not meeting the inclusion criteria (for example, not related to the public sector, not peer-reviewed, or published before 2021). The final stage resulted in 20 articles that met all inclusion criteria and were further analyzed in this study. These articles were then categorized according to the main themes: (1) Financial Information Systems, (2) Internal Audit, and (3) Investigative Audit.

4.1.2 Summary of Analyzed Articles

Table 1. Synthesis of Analyzed Articles

No.	Author (Year)	Focus Variables	Method	Key Findings
1	Gultom & Harahap (2024)	Financial Information System (SAKTI)	Qualitative Empirical Study	SAKTI is effective in supporting reporting; however, it is influenced by user competence and

No.	Author (Year)	Focus Variables	Method	Key Findings
				organizational support.
2	Punarto (2024)	Financial Information System (SAKTI)	Case Study	SAKTI facilitates data integration, but user adaptation challenges remain.
3	Jannah (2023)	Financial Information System (SAKTI – GLP Module)	Case Study at the Ministry of Religious Affairs	The GLP module of SAKTI improves reporting accuracy, but challenges remain in human resources.
4	Utomo (2024)	SAKTI & Human Resource Competence	Survey	Human resource competence significantly affects the quality of financial statements based on SAKTI.
5	Qurratu'Aini (2025)	SAKTI Implementation	Qualitative Study	SAKTI supports budget efficiency and reporting, but requires technical strengthening.
6	Ageng & Usman (2023)	Internal Audit (APIP/SPIP)	Survey	APIP capability and SPIP maturity positively influence LKPD audit opinions.
7	Wijaya et al. (2025)	Internal Audit (APIP)	Mixed methods	APIP capability affects reporting

No.	Author (Year)	Focus Variables	Method	Key Findings
				quality and audit effectiveness.
8	Hilal (2024)	Internal Audit (APIP)	Literature review	APIP plays a strategic role in preventing and detecting corruption in local governments.
9	Sembiring (2024)	Internal Audit (APIP)	Qualitative Study	APIP plays an important role in financial risk management.
10	Kurniawati (2025)	Internal Audit (APIP – Inspectorate)	Case Study	APIP is effective in fixed asset supervision, but constrained by limited independence.
11	Ningrum (2024)	Investigative Audit	Survey	Investigative audit has a positive effect on fraud disclosure.
12	Putri & Rely (2024)	Investigative Audit + GCG	Empirical Study	Investigative audit and the implementation of Good Corporate Governance (GCG) are simultaneously effective in preventing fraud.
13	Dianto (2023)	Investigative Audit & Forensics	Qualitative Study	Investigative audit, forensic audit, and whistleblowing are effective in uncovering fraud.
14	Sapitri & Putri (2024)	Investigative Audit & Independence	Survey	Investigative audit and auditor

No.	Author (Year)	Focus Variables	Method	Key Findings
				independence strengthen fraud disclosure.
15	Haldin et al. (2022)	Investigative Audit	Survey	The experience and competence of investigative auditors are significant to audit effectiveness.
16	Meiranto et al. (2024)	Financial Information System (SAKTI)	Survey	Social and hedonic factors are not significant; the success of SAKTI is more determined by technical and organizational factors.
17	Alqudah et al. (2023)	Internal Audit (Public Sector)	Survey	The effectiveness of internal audit is influenced by independence, management support, audit unit size, and external collaboration.
18	Nadirsyah (2024)	Internal Audit (Governance)	Literature review	Internal audit plays a key role in public sector governance; strengthening integrity and accountability.
19	Dimitropoulos (2025)	Investigative/Forensic Audit	Qualitative Study	Forensic accounting is effective in uncovering white-collar and state-

No.	Author (Year)	Focus Variables	Method	Key Findings
				organized crimes; crucial for the public sector.
20	Alkhalaileh et al. (2024)	Investigative/Forensic Audit	Survey	Forensic auditors' competence and skills are significant to the effectiveness of investigative audits.

Source: Author's synthesis (2026)

4.2 Discussion

4.2.1 Financial Information System

Findings from five articles indicate that the implementation of SAKTI is generally effective in improving data integration and the accuracy of financial statements. However, most studies emphasize that the effectiveness of this system is highly influenced by human resources and organizational support. Gultom and Harahap (2024) found that SAKTI is effective in supporting reporting, but its success is contingent upon user competence and organizational support [30]. Punarto (2024) confirmed that while SAKTI facilitates data integration, user adaptation challenges remain a significant barrier to optimal implementation [31]. Jannah (2023) specifically examined the GLP module of SAKTI at the Ministry of Religious Affairs and found that although the module improves reporting accuracy, human resource challenges persist [32].

Other studies confirm that employees' technical competence is the key factor in the utilization of SAKTI. Utomo (2024) demonstrated through survey research that human resource competence significantly affects the quality of financial statements based on SAKTI [33]. Qurratu'Aini (2025) added that SAKTI supports budget efficiency and reporting, but requires technical strengthening to achieve its full potential [34]. Thus, although technology plays an important role, human aspects remain the primary determinant of the success of public financial information systems.

In addition to findings from national literature, international studies also provide important perspectives. Meiranto et al. (2024) found that the implementation of SAKTI in Indonesia is influenced more by technical and organizational factors than by social or hedonic factors [45]. This finding is consistent with national studies, which highlight that employees' technical competence is the key determinant. This indicates that both in national and international contexts, the success of public financial information systems is largely determined by human and organizational aspects that support technology.

The synthesis of these findings suggests that financial information systems, while essential infrastructure for modern public financial management, cannot function optimally without adequate attention to the human dimension. System design, technological infrastructure, and technical features are necessary but not sufficient conditions for success. Organizations must invest in training, capacity building, and change management to ensure that users possess the competence and motivation to utilize

these systems effectively. Furthermore, organizational support in the form of clear policies, adequate resources, and strong leadership commitment is essential for creating an environment where financial information systems can deliver their intended benefits.

4.2.2 Internal Audit (APIP/BPKP)

The reviewed articles highlight the role of APIP in improving the quality of local government financial statements. APIP capability and SPIP maturity have been proven to have a significant influence on LKPD audit opinions. Ageng and Usman (2023) conducted a survey demonstrating that APIP capability and SPIP maturity positively influence LKPD audit opinions [35]. Wijaya et al. (2025) using mixed methods confirmed that APIP capability affects reporting quality and audit effectiveness [36]. These findings underscore the critical importance of strengthening internal audit functions as a mechanism for ensuring financial accountability in the public sector.

However, studies also show existing limitations, particularly in the number and competence of human resources as well as the independence of internal auditors. Hilal (2024) through literature review found that APIP plays a strategic role in preventing and detecting corruption in local governments, but this role is often constrained by resource limitations [37]. Sembiring (2024) in a qualitative study confirmed that APIP plays an important role in financial risk management, yet the effectiveness of this role depends on auditor competence and organizational support [38]. Kurniawati (2025) specifically examined APIP in the inspectorate context and found that while APIP is effective in fixed asset supervision, it is constrained by limited independence [39].

BPKP, as the supervisory authority of APIP, is considered strategic in strengthening the capability and effectiveness of internal oversight. The reviewed studies suggest that BPKP's role in providing guidance, training, and quality assurance is essential for building APIP capacity and ensuring consistent application of internal audit standards across government institutions. This supervisory function helps address the variation in APIP capability that currently exists across different regions and levels of government.

In the international context, Alqudah et al. (2023) emphasizes that the effectiveness of internal audit in the public sector is influenced by auditor independence, management support, and collaboration with external auditors [46]. Their survey research identified critical factors including audit unit size and external collaboration as significant determinants of internal audit effectiveness. Meanwhile, Nadirsyah (2024) highlights internal audit as a key element of public sector governance, particularly in maintaining integrity and accountability [47]. This is consistent with findings in Indonesia, where APIP capability has been shown to contribute to the quality of financial reporting. Thus, the role of APIP in Indonesia can be viewed as aligned with global internal audit practices, which demand independence and institutional support.

The synthesis of these findings indicates that internal audit functions in the public sector face common challenges across different contexts: resource constraints, independence concerns, and the need for continuous capacity building. Addressing these challenges requires sustained commitment from organizational leadership, adequate funding for audit units, and clear legal and regulatory frameworks that protect auditor independence. The role of BPKP as a supervisory and capacity-building institution is particularly important in the Indonesian context for ensuring that APIP units across the country develop the capabilities needed to fulfill their mandate effectively.

4.2.3 Investigative Audit

The five analyzed articles agree that investigative audit plays an important role in uncovering fraud and strengthening accountability. Ningrum (2024) through survey research found that investigative audit has a positive effect on fraud disclosure [40]. Putri and Rely (2024) in an empirical study demonstrated that investigative audit and the implementation of Good Corporate Governance (GCG) principles are simultaneously effective in preventing fraud [41]. Dianto (2023) through qualitative study confirmed that investigative audit, forensic audit, and whistleblowing are effective in uncovering fraud [42]. These findings collectively establish investigative audit as a crucial mechanism for detecting and addressing fraudulent activities in the public sector.

Auditor competence, independence, and experience are dominant factors influencing the effectiveness of investigative audits. Sapitri and Putri (2024) through survey research found that investigative audit and auditor independence strengthen fraud disclosure [43]. Haldin et al. (2022) confirmed that the experience and competence of investigative auditors are significant to audit effectiveness [44]. These findings highlight that investigative audit requires specialized skills beyond those of regular financial auditing, including knowledge of forensic techniques, legal evidence requirements, and fraud schemes. Organizations must therefore invest in developing these specialized competencies among their audit personnel.

Several studies also show that the synergy between investigative audits and the implementation of Good Corporate Governance (GCG) principles can significantly reduce the potential for fraud. Putri and Rely (2024) found that the combination of investigative audit and GCG implementation creates a comprehensive framework for fraud prevention that addresses both detection and deterrence [41]. This suggests that investigative audit should not be viewed as a standalone activity but as part of an integrated governance framework that includes preventive controls, detective mechanisms, and corrective actions.

International studies also reinforce the role of investigative audits in fraud prevention and detection. Dimitropoulos (2025) demonstrates that forensic accounting is effective in uncovering white-collar crimes and state-organized crimes, making it crucial for the public sector [48]. Alkhalaileh et al. (2024) confirm that the skills and competencies of forensic auditors are directly related to the effectiveness of investigative audits [49]. These findings are consistent with research in Indonesia, which highlights the importance of auditor experience and independence in detecting fraud. This means that both in national and global contexts, investigative audit serves as a crucial instrument to safeguard public sector accountability from fraud risks.

The synthesis of these findings indicates that investigative audit is an essential component of public financial accountability frameworks. Its effectiveness depends critically on the competence, independence, and experience of auditors, as well as on organizational support and the broader governance environment. The integration of investigative audit with other governance mechanisms, such as GCG principles and whistleblowing systems, creates synergies that enhance overall fraud prevention and detection capabilities. For Indonesia, strengthening investigative audit capacity within APIP and BPKP should be a priority for enhancing public sector accountability and reducing fraud risks.

5. Conclusion

Literature synthesis shows that financial information systems, internal audit, and investigative audit are three essential pillars in strengthening public financial accountability. In terms of information systems, SAKTI has been proven effective in improving data integration and the accuracy of financial statements, although its success is more determined by user competence and organizational support. Internal audit through APIP/BPKP functions as a preventive control mechanism, with its effectiveness depending on capability, independence, and institutional support. Meanwhile, investigative audit serves as a protection instrument in detecting and uncovering fraud, where the experience and skills of forensic auditors are key factors.

Thus, these three aspects complement each other: financial information systems as the technical foundation of transparency, internal audit as preventive control, and investigative audit as a protection layer against fraud. The synergy of the three strengthens the principles of good governance and accountability in financial management, both in Indonesia and from a global perspective.

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