“Factors affecting fraud detection: Evidence from Indonesia’s supreme audit institutions”

AUTHORS	Taufeni Taufik Meilda Wiguna

ARTICLE INFO	Taufeni Taufik and Meilda Wiguna (2026). Factors affecting fraud detection: Evidence from Indonesia’s supreme audit institutions. *Public and Municipal Finance*, *15*(1), 58-67. doi: 10.21511/pmf.15(1).2026.05
DOI	http://dx.doi.org/10.21511/pmf.15(1).2026.05
RELEASED ON	Thursday, 05 March 2026
RECEIVED ON	Saturday, 13 December 2025
ACCEPTED ON	Thursday, 26 February 2026

JOURNAL	"Public and Municipal Finance"
ISSN PRINT	2222-1867
ISSN ONLINE	2222-1875
PUBLISHER	LLC “Consulting Publishing Company “Business Perspectives”
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”

NUMBER OF REFERENCES	NUMBER OF FIGURES	NUMBER OF TABLES
50	0	7

BUSINESS PERSPECTIVES

LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10,
Sumy, 40022, Ukraine

www.businessperspectives.org

Taufeni Taufik (Indonesia), **Meilda Wiguna** (Indonesia)

FACTORS AFFECTING FRAUD DETECTION: EVIDENCE FROM INDONESIA'S SUPREME AUDIT INSTITUTIONS

Abstract

Improving fraud prevention processes requires systematic and ongoing efforts as part of implementing accountability, transparency, and integrity. By strengthening legislation and enhancing expertise, the government, audit companies, and financial management organizations must work together to establish an environment that lowers the likelihood of fraud. The goal of this study is to ascertain how internal audit, workload, and internal control affect auditors' capacity to identify fraud. Seventy government auditors from Indonesia's Supreme Audit Institution's Principal Inspectorate, who had been employed for at least 2 years, were given Google Forms surveys to collect data for this study. Partial least squares (SmartPLS) with a significance level of 5% was used for the analysis. The results showed that internal audit ($\beta = 0.419$; $p < 0.05$) and internal control ($\beta = 0.325$; $p < 0.05$) had a beneficial effect on fraud detection. However, workload had no effect ($\beta = 0.255$; $p > 0.05$). The audit body can increase risk-based audit techniques by using the research findings about factors impacting fraud detection, which will enable auditors to concentrate more on areas with high fraud potential. In order to enable faster and more accurate fraud detection, the financial and development audit agency may also include these findings when developing technical audit standards based on information technology and data analytics. Consequently, this study directly aids the financial and development audit agency in improving the effectiveness and efficiency of the audit process in detecting fraud.

Keywords fraud, internal audit, internal control, workload, Indonesia, SEM

JEL Classification J83, K42, M41, M42

Type of the article: Research Article

Received on: 13th of December, 2025
Accepted on: 26th of February, 2026
Published on: 5th of March, 2026

Taufeni Taufik, Dr., Lecturer, Department of Accounting, Faculty of Business and Management, Universitas Riau [University of Riau], Indonesia. (Corresponding author)

Meilda Wiguna, Dr., Lecturer, Department of Accounting, Faculty of Business and Management, Universitas Riau [University of Riau], Indonesia.

Conflict of interest statement:
Author(s) reported no conflict of interest

INTRODUCTION

Numerous cases of fraudulent practices occurring in Indonesia, particularly in the public sector, are no longer a public secret. The magnitude of financial losses resulting from fraudulent practices varies, and state finances are often impacted. The 1945 Constitution states that one of Indonesia's goals is to advance public welfare. This goal can be achieved, among other things, by eliminating fraudulent practices such as corruption, collusion, and nepotism.

To achieve a country free of all types of fraud, the supervision function is also a major priority, and government auditors play an important role. The financial and development supervisory agency is one of the government-established organizations tasked with monitoring and investigating the financial administration of federal and regional governments. Nevertheless, the financial and development supervisory agency frequently misses fraud cases.

For instance, WIKA-Waskita's financial statements were allegedly manipulated in a fraud case in Indonesia in 2023. In this instance, the Ministry of State-Owned Enterprises accused Waskita of fraud.

http://dx.doi.org/10.21511/pmf.15(1).2026.05

According to the building company's financial documents, Waskita recorded its highest profit in history in 2017–2018, between Rp 4.2 and Rp 4.6 trillion. Waskita Financial reported a negative loss of IDR 9.3 trillion when the epidemic struck in 2020 (CNN Indonesia, 2023). The Ministry of Foreign Affairs may file a lawsuit against the former management if Waskita's financial statements must be returned or restated due to circumstances that do not match reality or include illegal elements such as fraud or deception. The financial statements of PT Waskita Karya and PT Wijaya Karya are presently being assessed by the financial and development supervisory agency in response to this complaint. The Ministry of State-Owned Enterprises has asked the BPKP to conduct an audit of the two businesses, according to Muhammad Yusuf Ateh, head of the financial and development supervisory agency (CNN Indonesia, 2023). It is clearly difficult for the Supreme Audit Agency to confirm that government agencies have adhered to good governance norms, which will affect how simple it is to detect corruption in the Indonesian government.

1. LITERATURE REVIEW AND HYPOTHESES

A proactive audit that addresses fraud threats looks for indications of financial statement fraud (Chen et al., 2019). Any activity that includes deceit to get money is considered fraud (ACFE, 2022). Since fraud entails concealing facts by deceiving others and causing losses, it is prohibited. According to Alleyne and Howard (2005), technological improvements have made financial reporting fraud more complex and difficult to detect, especially when it is collusive and carried out by higher management who have the capacity to hide important financial information.

The process of identifying a planned or intentional behavior by an individual, organization, or third party that involves user manipulation to obtain illegal benefits is known as fraud detection (B. Schafer & J. Schafer, 2019). The capacity of an auditor to spot abnormalities in financial accounts by locating signs of fraud is also fraud detection. Pressure and the chance to commit fraud are two things that might lead to fraudulent conduct. According to Chen et al. (2019), fraud is a crime that may be addressed in two ways: detection and prevention.

There has been much discussion among scholars and professionals over the function of external auditors in identifying fraud (Kassem, 2014). In the past, major accounting scandals have led to the demise of large companies, including Wirecard, Steinhoff, Enron, Tyco, Worldcom, and Global Crossing, as well as losses for investors (Drozdiak et al., 2020; Mohamed Ali & Nesrine, 2015). Some of the main reasons for financial reporting fraud, according to Laubscher (2012), include ineffective financial management brought on by the hiring of inexperienced staff and a lack of consequence management. Auditors still have an obligation to notify management when signs of fraud are found; those in charge of the entity's governance and management bear the primary responsibility for preventing and identifying fraud.

The need to rebuild stakeholder trust in audited financial statements and a number of high-profile corporate failures linked to accounting scandals around the world since the early 2000s (such as Lehman Brothers in the US and Wirecard in Germany) are the driving forces behind this study (Cronje, 2021; Drozdiak et al., 2020). In an attempt to raise the possibility of finding financial reporting fraud, this encourages research into methods that can assist auditors in evaluating and responding to the risk.

Corporate governance experts, such as the board of directors, audit committee, senior management, internal auditors, and external auditors, must work together to uncover fraud (Dorminey et al., 2012). However, if financial reporting fraud goes unreported, external auditors are frequently held accountable (Kassem & Higson, 2016). External auditors are expected to play a significant role in fraud detection, even though they are not directly liable for it. This is because one of the main goals of external audits is to boost trust in the financial data a firm releases (Chen et al., 2013). The public and external auditors have different expectations about the external auditor's duty to identify fraud. The term "audit expectations gap" refers to this discrepancy (Dewing & Russell, 2002; Alleyne & Howard, 2005).

Internal control is a collection of methodical practices that an organization uses to safeguard resources and assets, increase operational effectiveness, and guarantee the completeness and accuracy of accounting data (COSO, 2013). The organization's resources are shielded from the possibility of loss via fraud, waste, misuse, and error by the entity's internal control system (Thomson, 2015). Effective risk identification and monitoring must be given top priority; management at all levels must play a stronger role; a dependable information system must be built to promptly identify and report anomalies; and thorough reporting on all operational activities must be provided (Chalmers et al., 2019).

The audit profession is under intense pressure to enhance audit quality and put more effort into detecting fraud due to the audit expectations gap and the rise in fraud scandals (ICAEW, 2005). Regardless of the extent of the fraud, Zager et al. (2016) stressed that once it is discovered, it must be reported and all required investigative actions must be carried out. Improving internal control procedures is necessary to eradicate fraud, and the auditor and management should work together to accomplish this, or hire an outside fraud investigator.

When fraud is found, auditors can be more confident that a company with robust internal controls and corporate governance has identified all significant fraud and stopped it from happening through its internal monitoring systems. According to Beasley et al. (2000), auditors must consider the possibility of increased audit risk when reviewing businesses with weak audit committee governance.

Donelson et al. (2017) investigated whether inadequate internal controls raise the possibility that senior managers will disclose financial information fraudulently. They discovered that a greater risk of fraudulent financial reporting was positively and significantly correlated with flaws in entity-wide controls, as opposed to process-level controls. In contrast to prior studies, this one takes false financial reporting into account rather than the effect of internal controls on MOA fraud. Additionally, this study investigates whether the presence of specific fraud-related internal controls affects the amount of audit work auditors perform when their clients engage in known MOA fraud, rather than analyzing the effect of internal controls on the probability of fraud.

Management may not be able to perpetrate fraud due to weak control environments and systems, such as a lack of responsibility segregation and flaws in internal controls (Mohd-Sanusi et al., 2015). Ghazali et al. (2014) contended that a perception of opportunity is produced by flaws in internal controls. Similarly, Srivastava et al. (2009) observed that fraudulent financial reporting will not occur unless there is an opportunity, even in the presence of incentives.

Opportunities for fraud will arise from unfair job rotation and a lack of segregation of duties. Weak control systems, such as inadequate regulations and a lack of property security, will give management the chance to perpetrate fraud (Fitri et al., 2019). Fraudulent financial reporting has also been found to be significantly influenced by complicated accounting activities, including related party transactions and intricate financial strategies (Lou & Wang, 2009).

One important aspect affecting the ability to detect fraud is the workload of auditors. The number of tasks and clients an auditor must manage within a specific period is known as their workload. According to Persellin et al. (2019), an excessive workload might lower professional skepticism and decrease audit quality, which is a severe problem. Additionally, because younger and older generations have different perspectives on work-life balance, there is a growing fear that heavy workloads may make the audit profession less appealing, particularly to younger generations (De Vries & Speklé, 2024).

The impact of working hours on overall audit quality is the main focus of Hwang and Hong's (2022) study, which also looks at how auditor skepticism and workload combine to impact their capacity to identify fraud. The findings highlight how crucial efficient workload management is to improving the efficacy of fraud detection in demanding settings. According to Bandiyono (2021) and Pratiyaksa and Rasmini (2021), auditors' effectiveness and capacity to conduct thorough audits can

http://dx.doi.org/10.21511/pmf.15(1).2026.05

be greatly impacted by heavy workloads, particularly during peak seasons.

Auditor efficacy in carrying out audit processes, especially those related to fraud detection, might be diminished by time constraints and heavy workloads (Johari et al., 2019). In line with Arifin (2022), auditors face hectic schedules during peak audit season, which typically takes place in the months preceding the fiscal year-end deadline. This leads to a decrease in physical stamina, and an overwhelming workload can make it more difficult for the auditor to identify fraud.

When it comes to auditing their companies, internal auditors are essential (Rezaee, 2010). Internal auditors are a skilled set of people in most organizations who can satisfy the board of directors' need for impartial and independent assurance. Internal auditors are in a unique position to serve as both a manager's consultation resource and an organization's assurance service provider. Internal auditors examine control effectiveness, operational viability, and governance practices using a methodical and regulated methodology (Kueppers & Sullivan, 2010). While external auditors fear that internal auditors lack objectivity, internal auditors feel a strong sense of employee identification with the company, which may be both a benefit and a drawback. However, employees' willingness to disclose sensitive material during investigations may be influenced by their strong sense of identity (Burt, 2016).

In order to ascertain the opinions of 200 external, internal, and government auditors in Malaysia regarding the efficacy of red flag checklists in identifying fraud, Omar and Din (2010) performed a postal survey. The findings showed that auditors' usage of red flags to identify fraud is extremely low, and the efficacy of fraud risk indicators in identifying and looking into financial fraud is still in doubt. Internal fraud is the most dangerous and expensive kind of fraud in the Egyptian environment (Kassem & Higson, 2015). The efforts of internal and external auditors, as well as regulators and researchers, were examined across four areas of fraud. The findings discovered that the absence of appropriate government accounting regulations increases the probability of fraud in Egypt.

Fraud incidents are more common in small businesses and nonprofit organizations with poorer internal control systems because fraud indications are simpler to spot (Craja et al., 2020). According to Mnguni and Subban (2022), local governments have major concerns about high vacancies in critical posts, a lack of expertise and knowledge, and inadequacies in internal controls, with no sufficient solutions. According to these academics, local governments can improve the efficiency of internal controls by using the Committee of Sponsoring Organizations (COSO) architecture.

In order to prevent fraud in the central government, this study aims to investigate the relationship between the internal control, workload, and internal audit in Indonesia's Supreme Audit Institution's Principal Inspectorate. Consequently, the hypotheses are:

H1: Internal control has a favorable impact on fraud detection.

H2: Workload has a favorable impact on fraud detection.

H3: Internal audit has a favorable impact on fraud detection.

2. METHODOLOGY

The sample for this study consisted of auditors from the Principal Inspectorate of Indonesia's Supreme Audit Institution. Indonesia's Supreme Audit Institution's Principal Inspectorate oversees and audits internal government operations in its capacity as the government's internal auditor. Purposive sampling was used to select the study sample of government auditors with at least 2 years of auditing experience. This sample was chosen to reflect the general role of auditors or audit teams needed to carry out audit procedures under the jurisdiction of the highest audit agency for businesses that are part of the public or government sector.

Each variable in this study is measured using a 5-point Likert scale. This scale can be used to gauge opinions, attitudes, and perceptions of the social phenomena under study. The measurement instruments used in this investigation are listed in Table 1.

Table 1. Measurement of research variables

Variable	Indicator	Questions	Source
Internal Audit	Competence and independence	4	Nwaobia et al. (2021), Aswar et al. (2021), Hariyani et al. (2024)
Workload	Number of examiners, clear objectives, on time and fast, same work every day, using break times, increasing workload, liking for work, in accordance with standards, speed in achieving work targets/goals	10	Hwang and Hong (2022), Hariyani et al. (2024)
Internal Control	Control environment, risk assessment, control activities, information and communication, and monitoring	13	Aswar (2020), Hariyani et al. (2024)
Fraud Detection	Detection of employee fraud, transactions, and falsification of financial statements	4	Drogalas et al. (2017), Hariyani et al. (2024)

The Indonesian Supreme Audit Agency's government internal auditors participated in the poll. The two groups of 79 officials and staff auditors are part of the Inspectorate of Obtaining Audit Quality Confidence (PKMP) and the Inspectorate of Internal Audit and Institutional Quality (PIMK). Table 2 lists structural locations.

Table 2. List of Indonesian supreme audit agencies

Structural position	PIMK Inspectorate	PKMP Inspectorate
Inspector	1	1
Head of departments	2	3
Head of sub-departments	7	7
Staff	20	38
Total number of auditors	30	49

To analyze data and evaluate hypotheses, this study used structural equation modeling with SmartPLS version 3.0. The distribution of the questionnaire and the total number of responses are shown in Table 3. Thus, 12% of the questionnaires were incomplete, while the study's response rate was 88%.

Table 3. Response rate

No.	Criteria	Quantity	Percentage
1	Questionnaires distributed	79	100%
2	Questionnaires returned and processed	70	88%
3	Unreturned questionnaires	9	12%

The questionnaires were distributed to officials and staff auditors in Indonesia's Supreme Audit Institution. Data collection procedures of this study took 60 days (October 2 until November 30, 2025) and collected 70 responses. Table 4 presents the demographic data of the respondents in this study.

Table 4. Description of the respondents

Characteristic	Item	Frequency	Percentage
Age	21 to 30 years old	10	14.28%
	31 to 40 years old	30	42.86%
	41 to 50 years old	20	28.57%
	More than 50 years old	10	14.28%
Gender	Male	39	55.71%
	Female	31	44.29%
Indonesian Supreme Audit Agency	PIMK Inspectorate	29	41.43%
	PKMP Inspectorate	41	58.57%
Auditors	2 to 5 years	2	2.86%
	6 to 10 years	7	10.00%
	11 to 15 years	35	50.00%
	More than 15 years	26	37.14%
Level of education	Bachelor	21	30.00%
	Master	33	47.14%
	Doctor	16	22.86%

The survey was carried out through Google Forms. The expected target number of filled questionnaires was 79, but only 70 were obtained.

3. RESULTS

Descriptive statistics are one type of statistics used to comprehend and analyze the samples. The mean and standard deviation are statistical metrics used to characterize the data. The standard deviation measures the spread of the data in the sample, while the mean is the average value of the data. PLS version 3 was used to gather descriptive statistical data after the analysis (Table 5).

http://dx.doi.org/10.21511/pmf.15(1).2026.05

Table 5. Descriptive statistics

Variables	Questions	Mean	Standard Deviation (SD)
Fraud detection (FD)	4	3.51	0.49
Internal audit (IA)	4	3.49	0.50
Workload (W)	10	3.46	0.51
Internal control (IC)	13	3.42	0.59

According to Table 5, auditors' fraud detection abilities had a mean of 3.51 and a standard deviation of 0.49. Internal audit had a mean of 3.49 and a standard deviation of 0.50. Workload had a mean of 3.46 and a standard deviation of 0.51. Lastly, the mean internal control was 3.46, with a standard deviation of 0.59. The validity and reliability tests are shown in Table 6.

Good convergent validity is shown by an AVE value higher than 0.5 (Hair et al., 2014). Table 6 demonstrates that for every variable, the discriminant validity value, represented by the average variance extracted (AVE), is greater than 0.50. Thus, it may be said that every processed construct is legitimate.

Additionally, Table 6 shows that every variable has a composite reliability score > 0.70, indicating that every statement in this study has satisfied the requirements. Workload has the lowest composite reliability value (0.817) in this test. Cronbach's Alpha is also used to support the composite reliability value during the reliability test; the result is a Cronbach's Alpha value > 0.70, with the lowest value being 0.722, for workload. However, since each indicator's result is over 0.70, the mentioned values can be considered good. Table 7 displays the PLS algorithm and bootstrapping in smart PLS version 3.0 as a result of the authorization of the feasibility data.

The statistical findings for calculating the path coefficient and significance level are displayed in Table 7. In this study, the predicate is deemed significant if the *t*-statistic exceeds the *t*-count and the *p*-value is less than 0.05. However, when confirming or rejecting the hypotheses, the study takes the path coefficient value into account.

4. DISCUSSION

One factor that may affect an auditor's capacity to identify fraud is the internal audit. Internal auditing is an impartial, independent assurance and consulting process that aims to enhance an organization's operations and add value. The data analysis suggests that internal audit has an impact on an auditor's capacity to identify fraud. This is corroborated by the path coefficient results, which demonstrate a positive correlation between the investigative audit experience and the auditor's capacity to identify fraud, as well as the *t*-count > *t*-table (3.085 > 2.018 and a significance value of 0.02 < 0.05), indicating a significant impact of internal audit on the auditor's capacity to identify fraud. *H1* is thus accepted. Therefore, an auditor's audit experience serves as a means of better understanding and developing their own potential.

The findings of this study are consistent with those of Modugu and Anyaduba's (2013) investigation into the quality of internal audit procedures and the efficacy of forensic accounting in preventing

Table 6. Convergent validity and reliability

Variable	Average Variance Extracted (AVE)	Composite Reliability	Cronbach's Alpha
Fraud detection (FD)	0.559	0.927	0.912
Internal audit (IA)	0.579	0.905	0.879
Workload (W)	0.529	0.817	0.722
Internal control (IC)	0.571	0.888	0.856

Table 7. PLS path algorithm and bootstrapping

Path	Path coefficient (Original Sample)	T Statistics	P Values
IA → FD	0.419	3.085	0.002
W → FD	0.255	1.853	0.064
IC → FD	0.325	2.385	0.017

Note: FD = Fraud detection; IA = Internal audit; W = Workload; IC = Internal control.

financial fraud. According to data analysis, participants agreed that forensic accounting is useful for reducing financial fraud, improving financial reporting, and enhancing the caliber of internal audit procedures. This is in line with Kaminski's (2013) findings that economic crime in Poland is positively correlated with the recession. Accounting fraud has increased as a result of Poland's rise in economic crime, and businesses have started putting in place efficient risk-reduction strategies like public accounting firm monitoring and efficient internal audits.

Hosho et al. (2013) evidenced that the internal audit function is essential to the detection and prevention of fraud. This result is consistent with Nwaobia et al. (2021), Drogalas et al. (2017), and Hariyani et al. (2024), who discovered that fraud detection is positively impacted by internal audit efficacy. These results show that internal audit prevents fraud by ensuring efficient controls, identifying risks, and offering suggestions for improvement. As members of the fraud control unit, internal auditors are directly in charge of investigating and identifying fraud. The likelihood of early fraud discovery before it has a larger impact is increased by ongoing oversight efforts. Thus, having capable and efficient internal auditors is essential to improving an organization's capacity to identify and stop fraud.

Workload is one of the elements that does not affect the auditor's capacity to identify fraud, according to the data processing results. This is corroborated by the path coefficient results, which demonstrate a negative correlation between the workload variable. The auditor's capacity to identify fraud, as well as the *t*-count > *t*-table calculation results (1.853 < 2.018, and the significance value of 0.064 > 0.05), indicate that workload has no impact on the auditor's capacity to identify fraud. As a result, *H2* is rejected. The hypothesis was disproved since auditors' workload had no bearing on their capacity to identify fraud. This is because auditors already have a time allotment and can adjust assignment difficulty without sacrificing their ability to identify fraud indicators (Hariyani et al., 2024). Although the average workload in this survey was 3.46, indicating that the majority of auditors had a heavy workload, this does not suggest that auditors should reduce their capacity to identify fraud, as this is one of the primary responsibilities of investigative auditors.

These results show that auditors' capacity to spot signs of fraud is not directly diminished by the large number of activities they must perform. This happens as a result of auditors adhering to professional standards, audit guidelines, and structured audit procedures, which guarantee excellent detection quality even in the face of increased workload. The idea that workload has a bigger influence on audit efficiency than on auditor efficacy in identifying fraud is thus supported by these study results.

Internal control is one element that may also affect the auditor's capacity to identify fraud in this investigation. This is corroborated by the path coefficient results, which demonstrate a positive correlation between the internal control variable and the auditor's capacity to detect fraud. The calculation results of the *t*-count > *t*-table, specifically 2.385 > 2.018 and a significant value of 0.017 < 0.05, indicate a significant influence of internal control on the auditor's capacity to detect fraud. As a result, *H3* is approved. In their study, Hosho et al. (2013) randomly selected 10 cotton depots from 96 locations in one region of Zimbabwe in 2012; this study clearly shows that the internal audit function plays a vital role in fraud detection and prevention. According to Smith et al. (2000), the likelihood of managers committing fraud is inversely correlated with the strength of a company's internal controls. Similar findings were reported in Indonesia by Hariyani et al. (2024), who found that internal auditors affect fraud detection.

These results show that an organization's capacity to detect signs of fraud increases with the strength of the internal control system implemented by the Financial and Development Supervisory Agency. Tracing and testing odd transactions is made easier by effective internal controls, which offer a system for segregation of duties, explicit authorization, and thorough documentation. A continuous monitoring method enables consistent monitoring of operational activities, accelerating the identification of abnormalities. Additionally, a robust control environment reduces the likelihood of information asymmetry, thereby reducing the likelihood that fraudsters can hide their actions.

http://dx.doi.org/10.21511/pmf.15(1).2026.05

CONCLUSION

This study aims to empirically examine how internal audit, workload, and internal control affect auditors' capacity to identify fraud. The results provided empirical evidence that the capacity of auditors to identify fraud is greatly impacted by internal audit. This indicates that having a competent internal auditor can help them become more adept at spotting fraud. The workload has no significant effect on fraud detection. This indicates that auditors' capacity to spot signs of fraud is not directly diminished by the volume of work they must accomplish. Lastly, internal control has a significant effect on fraud detection. This indicates that fraudsters have fewer opportunities to perpetrate fraud when effective internal controls are in place. As a result, fraud can be reduced.

A limitation of this study is that only 70 respondents were successfully recruited, despite 79 surveys being distributed. The poll was conducted during the busiest time of year or while books were closing, making it challenging for participants to finish. It is anticipated that auditors and Indonesia's Supreme Audit Institution's Principal Inspectorate would continue to broaden their knowledge of the skills and information that may be acquired through audit experience or training and seminars relevant to public sector audits.

Additionally, it is anticipated that the study's contribution will act as a guide for tightening rules pertaining to fraud risk assessment, internal control systems, and professional skepticism requirements for public sector auditors. By offering suggestions for strengthening internal control mechanisms in government organizations, this study can help the supreme audit agency develop policies to enhance transparent state financial governance. To further understand how workload affects fraud detection, future research should separate these effects. The impact of additional corporate governance features, such as external and internal governance mechanisms like audit fees, might be investigated in more detail.

AUTHOR CONTRIBUTIONS

Conceptualization: Taufeni Taufik, Meilda Wiguna.
Data curation: Taufeni Taufik, Meilda Wiguna.
Formal analysis: Taufeni Taufik.
Methodology: Taufeni Taufik, Meilda Wiguna.
Resources: Meilda Wiguna.
Software: Taufeni Taufik.
Validation: Meilda Wiguna.
Writing – original draft: Taufeni Taufik, Meilda Wiguna.
Writing – review & editing: Taufeni Taufik, Meilda Wiguna.

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