










# “Effect of internal audit, internal control, and audit quality on fraud prevention: Evidence from the public sector in Indonesia”

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# EFFECT OF INTERNAL AUDIT, INTERNAL CONTROL, AND AUDIT QUALITY ON FRAUD PREVENTION: EVIDENCE FROM THE PUBLIC SECTOR IN INDONESIA

## Abstract

Fraud prevention entails developing and implementing risk management strategies, particularly regarding fraud, and establishing internal controls and transparent corporate governance practices to eliminate fraudulent activities. This study aims to examine the effect of internal auditors, internal control, and audit quality on preventing fraud at the Inspectorate of North Sumatra Province, Indonesia. The sample included 61 government internal auditors of the Inspectorate of North Sumatra Province, Indonesia. The data collection process was carried out by administering questionnaires using Google Forms. Additionally, this investigation assessed the constructs under scrutiny using a five-point Likert and the partial least square (PLS) approach. The results showed that internal audit has a positive and significant effect on fraud prevention ( $p < 0.05$ ), internal control has a positive and significant effect on fraud prevention ( $p < 0.05$ ), and audit quality has no effect on fraud prevention at the Inspectorate of North Sumatra Province, Indonesia ( $p > 0.05$ ). The Inspectorate of North Sumatra Province, Indonesia, should conduct internal audits, implement an internal control system, and pay attention to the quality of audits to make them more effective as a basis for quality decision-making and fraud minimization.

**Keywords** fraud prevention, internal auditor, SEM-PLS, Indonesia

**JEL Classification** H11, H83, M42

## INTRODUCTION

The rising number of fraudulent incidents in Indonesia has become a significant issue for the government and the community. Fraud prevention is a cost-effective endeavor that combat fraudulent activities. It is comparable to illness prevention, as preventing fraud is more efficient than dealing with its consequences. There are three types of fraud. The first is the misappropriation of assets, which refers to the theft of an organization's assets. Furthermore, the deliberate inclusion of inaccurate information or purposeful withholding of relevant details on financial statements mislead the users of said statements. Thirdly, corruption refers to exploiting one's position inside the government sector for personal benefit. The internal audit function is crucial in overseeing activities, guaranteeing the effectiveness of the antifraud control program, and detecting and preventing fraud through its actions. Regular internal audits will minimize and prevent fraud, errors, and detrimental activities that affect an organization. Internal audits in government institutions or agencies have yet to achieve maximum efficiency. The occurrence of fraud cases within the Indonesian government can be

attributed to the deactivation of the detection system and internal audit within the region. This includes the non-functioning of the regional supervisory body, which is compromised by the presence of individuals who have been exiled or are nearing retirement.

Besides internal audits, internal control is also a factor that affects fraud prevention. Efforts to protect against misuse of company/organization assets or property, including policies and procedures, ensure that the accounting information available in the company/organization is accurate, and ensure that all employees comply with and enforce all provisions (regulations) of the law/laws on internal control. Quality public sector audits must support good government financial management. If the quality of public sector audits is low, it will likely provide leeway for government agencies to commit budget irregularities. In addition, it raises the risk of lawsuits against government officials who carry it out. This makes audit quality difficult to measure, making it a sensitive issue for individual audit practitioners. Audit results are said to be of quality if the audit examination adds weight to accountability and provides evidence of deviation from audit standards.

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## 1. LITERATURE REVIEW AND HYPOTHESES

The Institute of Internal Auditors (IIA), a US-based organization for internal auditors, defines fraud as a series of prohibited actions that contravene the law and are marked by a deliberate intent to deceive (IIA, 2016). Fraud is an act of intentional deception or misrepresentation carried out with the purpose of cheating or misleading others. Individuals within and outside an organization can perpetrate it (Lin et al., 2022). Moreover, fraud encompasses intentional error, masking of significant information, obliteration of evidence to support fraudulent activities, and manipulation resulting in financial detriment to an individual or organization. Fraud comprises embezzlement, theft, forgery, misuse, and deliberate evidence destruction (Hilal et al., 2022). In broad terms, fraud can be described as an umbrella term encompassing various techniques that individuals with a specific skill can employ to deceive others into parting ways with valuable assets. No standard and permanent rules can be issued to define fraud, including surprise, deception, or cunning and unnatural methods used to commit fraud. The only boundaries for defining fraud are things that limit human dishonesty (Zimbelman et al., 2012). Therefore, fraud is a deviant action or deed detrimental to the organization and contrary to statutory regulations, which should be followed up for the organization's survival. Fraud prevention involves formulating policies, systems, and procedures to ensure that committees, audit committees, management, and other relevant parties undertake the required actions

(Lukman & Chariri, 2023). The ability of an institution to ensure the achievement of organizational goals, including reliable financial reporting, operational efficiency, and compliance with policies and guidelines, is crucial (Teye et al., 2023). Preventing fraudulent activities is a cost-effective approach to mitigating such occurrences. Preventing fraud is akin to preventing a disease, where proactive measures are more effective than reactive ones (Dzomira, 2015). Implementing fraud prevention measures is the most effective and economically prudent way to counter deception. Therefore, it is crucial that everyone in an organization actively supports and facilitates these efforts. Accordingly, fraud prevention is a purposeful measure to eliminate opportunities or potential for fraudulent activities (Karyono, 2013).

The main purpose of auditing financial reports in a company or organization is to assess the accuracy of these reports (Francis, 2023). Internal audit, as defined by the Association of Chartered Certified Accountants (ACCA, 2013), plays a crucial role with significant benefits for businesses. An organization's mandatory function involves examining and evaluating operations as part of its institutional service (Francis, 2023). The internal audit department evaluates an organization's operations alongside its involvement in other business activities, aiming to provide valuable services to management. Alqudah et al. (2023) emphasized the importance of internal audits having independence and objectivity. According to Barua et al. (2010), internal audits are conducted to assist members of an organization in fulfilling their responsibilities by examining, eval-

uating, and providing recommendations for effective oversight. The primary role of internal audit includes providing services, such as advising and assisting management and committees and conducting analyses and assessments. Internal auditors are responsible for evaluating the effectiveness of the existing internal control system and ensuring organizational compliance with policies outlined in established plans and procedures (Alqudah et al., 2023). In the context of governmental entities in Indonesia, the Government's Internal Supervisory Apparatus, as explained by Yusup and Rahadian (2023), is responsible for conducting internal audits within the government. It oversees various tasks, including audits, reviews, assessments, monitoring, and other supervisory activities related to organizational duties and functions.

An organized framework, known as internal control, empowers a singular entity to oversee and regulate other elements autonomously (Glenardy et al., 2022). Internal control involves a coordinated system of procedures and strategic planning used by governmental entities to safeguard assets, optimize operational effectiveness, ensure the precision and reliability of accounting information, and adhere to pertinent management policies (Nurhayati et al., 2023). It comprises protocols and strategies to safeguard an organization's resources against potential exploitation, ensure accurate and comprehensive financial data availability, and guarantee compliance with relevant legal mandates and management strategies (Kartal et al., 2018). Executed by the entity committee, management, and other stakeholders, internal control is a systematic procedure designed to instill a reasonable degree of assurance in achieving three primary objectives:

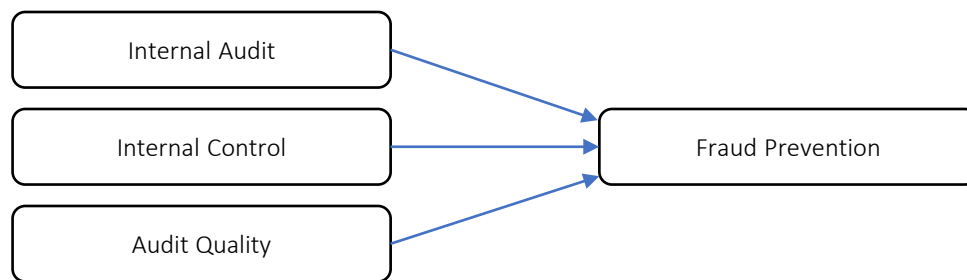
- (a) ensuring accurate and reliable financial reporting;
- (b) enhancing the efficiency and effectiveness of operations; and
- (c) ensuring compliance with relevant laws and regulations (Daniela & Attila, 2013).

This conceptualization of internal control transcends temporal limitations and remains an ongoing framework integral to operational activities

(Bouheraoua & Djafri, 2022). The internal control system plays a fundamental role in overseeing an organization's operational activities and should be seamlessly integrated into the organizational framework as an indispensable element. A unified internal control system enhances quality and proactivity, reduces unnecessary expenditures, and enables timely responses to changing circumstances (Pattawe, 2023).

Audit quality is a systematic procedure for impartially acquiring and assessing evidence related to assertions about economic activities and events. It seeks to ascertain the alignment between these assertions and the established criteria and report the findings to stakeholders (Mulyadi, 2014). Audit quality pertains to the likelihood that an auditor will identify and disclose defects or anomalies in the client's accounting system (Xiao et al., 2020). A positive correlation exists between the level of audit quality and the confidence and reliance of individuals reading financial reports. The capacity of audit quality to generate reliable financial reports that serve as a robust foundation for decision-making is of paramount significance (Rusmin & Evans, 2017). Furthermore, the auditor's efforts to deliver a reliable audit report conforming to established criteria determine the quality of an audit (Yan & Xie, 2016). Building upon the earlier definition, audit quality pertains to the systematic scrutiny carried out by an auditor to validate the accuracy of a financial report, adhering to pertinent procedures. Audit quality is contingent on contractual obligations and adherence to professional standards throughout the auditing process (Deis & Giroux, 1992).

Afrah et al. (2022) and Putra et al. (2022) demonstrate a compelling and statistically significant association between internal audit practices and the mitigation of fraudulent activities. Consequently, this linkage is robust, indicating a substantive and dependable connection. This robust connection enhances internal audit efficacy, fortifying fraud prevention measures within organizational contexts. This elucidates the pivotal role of internal audits in overseeing corporate operations and specifically deterring fraudulent acts. Moreover, Widilestariningtyas and Karo (2016) underscored that the efficacy of fraud prevention is intricately linked to deploying a resilient internal control



**Figure 1.** Research model

system, resulting in a discernible reduction in the probability of fraudulent activities. In contrast, Sanusi et al. (2019) and Umar et al. (2019) resent a departure from prior perspectives by positing that audit quality exerts a significant and positive influence on preventing fraud. This nuanced perspective challenges earlier assumptions and underscores the multifaceted nature of factors contributing to effective fraud prevention within organizational frameworks.

This study aims to evaluate the impact of internal auditors, internal control mechanisms, and audit quality on fraud prevention in the Inspectorate of North Sumatra Province, Indonesia. This study is guided by a structured research paradigm, as depicted in Figure 1, and further supported by a set of research hypotheses:

*H1: Internal audit affects fraud prevention.*

*H2: Internal control affects fraud prevention.*

*H3: Audit quality affects fraud prevention.*

## 2. METHODOLOGY

This study involves an explanatory approach that examines the causal relationship between the variables and evaluates the proposed hypotheses (Nasution et al., 2020). This investigation incorporates three pivotal variables: internal audit, internal control, and audit quality. In this context, the independent variables encompass internal audit, internal control, and audit quality, while the dependent variable pertains to fraud prevention. Internal audit variables are measured using indicators adapted from Bramasto et al. (2022). Internal control variables are measured using indicators adapted from Bouheraoua and

Djafri (2022). The measurements of the audit quality variable are adapted from Husain (2020), and the measurements of the fraud prevention variable are adapted from Bramasto et al. (2022).

The sample consisted of 61 government internal auditors at the Inspectorate of North Sumatra Province. Questionnaires were administered using Google Forms. Additionally, this investigation assessed the constructs under scrutiny using a five-point Likert scale (with one: strongly disagree to five: strongly agree). The study used the partial least squares (PLS) methodology. SEM-PLS is used to predict and develop the theory of SEM. This contrasts with covariance-based SEM, which tests existing theories and confirmations. SEM-PLS is utilized to predict endogenous latent variables or determine crucial factors in exploratory or theory extension research (Hair et al., 2014a).

## 3. RESULTS

Convergent validity, an integral facet of the measurement model, also known as the outer model in SEM-PLS, plays a pivotal role in substantiating the robustness of the measurement instruments. In contrast, confirmatory factor analysis (CFA), a subtype of structural equation modeling, relies on covariance structures to evaluate the latent constructs (Hair et al., 2021). To ascertain the appropriateness of the outer model (measurement model) for reflective constructs, two criteria are conventionally employed: factor loadings exceeding 0.7 and  $p$ -values below 0.05 (Hair et al., 2014b). Under certain circumstances, adhering to loading thresholds beyond 0.7 may be advantageous, particularly in newly devised surveys. Consequently, maintaining a loading range between 0.40 and 0.70 ensures methodological rigor (Hair et al., 2021).

**Table 1.** Factor loadings

Indicator	IA	IC	AQ	FP
IA.1	0.822			
IA.2	0.903			
IA.3	0.843			
IA.4	0.823			
IA.5	0.879			
IA.6	0.860			
IA.7	0.886			
IA.8	0.905			
IA.9	0.860			
IA.10	0.838			
IA.11	0.805			
IA.12	0.863			
IA.13	0.812			
IA.14	0.832			
IC.1		0.958		
IC.2		0.852		
IC.3		0.868		
IC.4		0.806		
IC.5		0.886		
IC.6		0.855		
IC.7		0.816		
IC.8		0.945		
IC.9		0.851		
IC.10		0.820		
AQ.1			0.792	
AQ.2			0.843	
AQ.3			0.872	
AQ.4			0.841	
AQ.5			0.842	
AQ.6			0.818	
AQ.7			0.789	
AQ.8			0.845	
AQ.9			0.887	
FP.1				0.761
FP.2				0.849
FP.3				0.926
FP.4				0.874
FP.5				0.937
FP.6				0.875
FP.7				0.877
FP.8				0.880
FP.9				0.866

Note: IA = internal audit; IC = internal control; AQ = audit quality; FP = fraud prevention.

Table 1 comprehensively summarizes the relationships among internal audit, internal control, audit quality, and fraud prevention. The correlation coefficients for each element exceed 0.6, affirming the construct validity of these components. This underscores the reliability and precision of the indicators related to internal audit, internal control, audit quality, and fraud prevention in the assessment of convergent validity.

The average variance extracted (AVE) is a key measure for convergent validity (Table 2). AVE is considered satisfactory when it reaches or surpasses the threshold of 0.50 for a specific indicator. This indicates how much the variance captured by the indicator aligns with the variance attributed to the underlying construct (Cheung et al., 2023).

**Table 2.** Average variance extracted

Variable	AVE
IA	0.727
IC	0.752
AQ	0.701
FP	0.762

Note: IA = internal audit; IC = internal control; AQ = audit quality; FP = fraud prevention.

The AVE value should exceed 0.50, aligning with established validity standards. AVE scores surpassing 0.50 signal adherence to the validity criteria stipulated for AVE (Ghozali & Latan, 2015).

Using indicator reflection, the Fornell-Larcker approach was employed to evaluate discriminant validity in the measurement model. It is widely recognized as the predominant criterion for discerning discriminant validity. The Fornell-Larcker approach suggests that if the correlation between an underlying concept and its corresponding measurement item is stronger than the correlation between an alternative concept and the same measurement item, the underlying concept is better suited to accurately predict the variance in the measurement item than the alternative concept.

**Table 3.** Discriminant validity

Variable	IA	IC	AQ	FP
IA	0.853			
IC	0.746	0.867		
AQ	0.961	0.730	0.873	
FP	0.833	0.937	0.785	0.873

Note: IA = internal audit; IC = internal control; AQ = audit quality; FP = fraud prevention.

To evaluate discriminant validity (Table 3), one analyzes the correlation coefficient between a given latent variable and other latent variables, comparing it to the square root of the average variance extracted (AVE) for that latent variable. The AVE root value for each latent variable is expected to be

higher than the correlation value with other latent variables, meeting the criterion for discriminant validity.

Reliability testing evaluates the internal consistency of measurement equipment. A construct is considered reliable if its composite reliability or Cronbach’s alpha value exceeds 0.70. Table 4 shows the composite reliability and Cronbach’s alpha test findings.

**Table 4.** Composite reliability and Cronbach’s alpha

Variable	Composite Reliability	Cronbach’s Alpha	Result
IA	0.974	0.971	Valid
IC	0.968	0.963	Valid
AQ	0.955	0.947	Valid
FP	0.966	0.961	Valid

Note: IA = internal audit; IC = internal control; AQ = audit quality; FP = fraud prevention.

Table 4 signifies that the reliability values for each latent variable satisfy the prescribed criteria for both composite reliability and Cronbach’s alpha. More specifically, the values associated with the internal audit, internal control, audit quality, and fraud prevention constructs surpass the 0.70 threshold, confirming their credibility.

Expanding beyond the realm of reliability assessments, the *R*-square statistic assumes a pivotal role in elucidating the extent to which another variable influences the value of a variable. It unveils the proportion of variability in the dependent variable that the influencing variable can explicate. This analytical metric is important in forecasting the model’s accuracy (Juliandi, 2018). Table 5 provides a detailed representation of the results derived from the *R*<sup>2</sup> test.

**Table 5.** R-square

Variable	R-square	R-square adjusted
FP	0.926	0.918

Note: FP = fraud prevention.

The cumulative influence exerted by internal audit, internal control, and audit quality on fraud prevention is quantified by an *R*-square value of 0.926, subsequently refined to an adjusted *R*-square value of 0.918. The exogenous components, specifically internal audit, internal control, and audit

quality, collectively greatly affect fraud prevention, accounting for 91.8% or 0.918 of the observed variability. The fact that the adjusted *R*-square exceeds the 70% threshold implies a noteworthy and statistically significant impact of the exogenous structures – internal audit, internal control, and audit quality – on fraud prevention.

The *F*-square metric is employed to further assess the model’s quality and gauge the relative influence of exogenous factors on endogenous variables. The measurement criteria for *F*-square are delineated as follows: *f*<sup>2</sup> = 0.02 signifies a weak influence, *f*<sup>2</sup> = 0.15 indicates a moderate influence, and *f*<sup>2</sup> = 0.35 indicates a strong influence from exogenous on endogenous variables (Ghozali, 2014). Table 6 shows *f*-square values.

**Table 6.** F-square

Variable	IA	IC	AQ	FB
IA				0.354
IC				0.374
AQ				0.106
FP				

Note: IA = internal audit; IC = internal control; AQ = audit quality; FP = fraud prevention.

Table 6 delves into a detailed examination of the impact of internal audit, internal control, and audit quality on fraud prevention, offering insights through the associated *f*<sup>2</sup> values for each test. Notably, Test 6 demonstrates a substantial and statistically significant *f*<sup>2</sup> value of 0.354, highlighting the considerable benefit of internal audit on fraud prevention. Similarly, internal control reveals a noteworthy influence on fraud prevention, supported by an *f*<sup>2</sup> value of 0.374. While audit quality demonstrates a more moderate impact, its significance is evident with an *f*<sup>2</sup> value of 0.106.

In hypothesis testing, the direct scrutiny of variable influences entails a meticulous analysis of processed data facilitated by the advanced PLS 4.0 tool. Table 7 encapsulates the results of the hypotheses testing, offering valuable insights into the direct influence of the variables under examination.

Table 7 includes the comprehensive findings obtained from the Smart PLS analysis. The results revealed that internal audit (*t* = 2.286, *p* = 0.023) and internal control (*t* = 5.772, *p* = 000) affect fraud

**Table 7.** Path coefficients

Hypothesis	Path	T-Statistics	P-Values	Decision
H1	Internal Audit → Fraud	2.286	0.023	Accepted
H2	Internal Control → Fraud	5.772	0.000	Accepted
H3	Audit Quality → Fraud	1.388	0.166	Rejected

prevention. Thus, H1 and H2 are accepted. In addition, audit quality has no significant effect on fraud prevention ( $t = 1.388$ ,  $p = 0.166$ ). Thus, H3 is rejected.

## 4. DISCUSSION

Based on the hypotheses testing results, internal audit has a positive effect on fraud prevention ( $t = 2.286$ ,  $p = 0.023$ ). Enhanced internal audits will inevitably be accompanied by effective fraud prevention. Four indicators are used to quantify internal audit variables: independence, professional competence, work scope, and execution of audit activities. According to Handoyo and Bayunitri (2021), internal audit functions as management supervision to assess the control system so that all management members can be held accountable effectively by making analyses, evaluations, recommendations, and reviews related to the activities analyzed to prevent fraud. The results align with Hussein (2018), who states that internal auditors influence fraud prevention, where better internal auditors will be followed by good fraud prevention. Brata and Aran (2021) and Petraşcu and Tieanu (2014) claimed that internal audits partially had a significant effect on fraud prevention. This proves that the internal audit owned by a company or agency greatly influences fraud prevention that could arise in a company or institution.

The results of hypotheses testing confirm that internal control has a positive and statistically significant impact on fraud prevention ( $t = 5.772$ ,  $p = 0.000$ ). According to Bouheraoua and Djafri (2022), internal control represents all activities that must be carried out in an organization to achieve effective and efficient organizational operations, reliability of financial reports, and compliance with applicable regulations. Thus, there will be effective internal control when making decisions, considering applicable ethical values, carrying out appropriate authority and activities, determining clear organizational goals, communicating rela-

tionships between employees, and separating duties. Therefore, internal control has a positive and significant effect in fraud prevention (Nugrahanti et al., 2023). This study aligns with Rashid (2022) and Joseph et al. (2015), who found a moderately positive and statistically significant (real) relationship between internal control and fraud prevention. The efficacy of a firm or institution's internal control system significantly affects the prevalence of fraud within that entity.

The hypothesis testing indicates no statistically significant impact of audit quality on fraud prevention ( $t = 1.388$ ,  $p = 0.166$ ). The audit quality variable is measured by five indicators, namely building integrity, creating exemplary leadership, minimizing opportunities, developing a good internal control system, developing collision prevention policies and systems, developing monitoring systems, hotlines, and whistle-blowing systems, developing reward systems, and punishment, and creating a balance of power. The results of this paper align with Umar et al. (2019), who state that for fraud prevention, audit quality is negative and insignificant. This contradicts Khan et al. (2023) and Arum and Wahyudi (2021), who found that audit quality positively and significantly affects fraud prevention. Audit quality has no effect due to other factors; for example, the results of audit findings are inaccurate in finding irregularities or fraud. This means that an auditor should guarantee that the audit results are accurate and there are no slightest errors.

This study suggests that the effectiveness of internal audit, internal control, and audit quality affect fraud prevention at the Inspectorate of North Sumatra Province. Therefore, routine internal audit and internal control activities are needed. Companies must cultivate and implement anti-fraud values and policies to be free from fraud and maintain the agency's image in the community. To improve the quality of internal audits, it is necessary to thoroughly test and evaluate the information, ensuring that all audited financial statements comply with government accounting standards.



## CONCLUSION

This study was conducted to analyze the effect of internal audit, internal control, and audit quality on fraud prevention at the Inspectorate of North Sumatra Province, Indonesia. Based on the data analysis, internal audit positively and significantly affect fraud prevention at the Inspectorate of North Sumatra Province, Indonesia. Internal control positively and significantly affects fraud prevention, and audit quality does not substantially affect fraud prevention.

This study carefully researched the relationships between internal audit, internal control, audit quality, and fraud prevention in North Sumatra Provincial Inspectorate, Indonesia. The results conclude that it is necessary to carry out more thorough testing and evaluation activities. This will ensure that all audited financial reports meet government accounting standards. To improve internal control, it is necessary to make control activities more effective by adding human resources, experts in accounting, so that there is a separation of functions between recording, receiving, spending, and storing finances. Moreover, it is necessary to add or improve/update an accounting information system. Future research can take more samples so that the results can represent the overall situation. Future research can also add other variables, such as good corporate governance, which can prevent fraud.

This paper is subject to various limitations. One drawback is the data collection approach, which involves employing a survey with questionnaire techniques. This might lead to discrepancies in perceptions between the respondents and the researchers regarding the items included in the questionnaire. The study used a questionnaire approach, so some respondents might not have taken this survey carefully and thoughtfully and gave dishonest answers. Finally, the study only focuses on the internal audit, internal control, and audit quality variables. Other factors may influence fraud prevention, which requires further testing.

## AUTHOR CONTRIBUTIONS

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