

Analysis of Internal Audit, Whistleblowing System, and Good Corporate Governance in Fraud Prevention: The Moderating Role of Audit Quality

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ABSTRACT

Advances in digital technology within the banking sector have bolstered service efficiency; however, they have likewise given rise to fraud risks of increasing complexity. Effective control mechanisms are therefore requisite to forestall fraud. This study aims to analyse the influence of internal audit, whistleblowing systems, and Good Corporate Governance (GCG) upon fraud prevention, with audit quality serving as a moderating variable, within State-Owned Enterprises (SOEs) in Indonesia's banking sector. The study draws upon a quantitative approach, with data gathered via a questionnaire administered to 278 respondents employed within the internal audit, risk management, compliance, and corporate governance units at Bank Mandiri, BRI, BNI, and BTN. The analysis employed multiple linear regression using SPSS. The findings show that internal audit, the whistleblowing system, good corporate governance, and audit quality all have a positive and significant impact on fraud prevention. Among these, audit quality proves to be the strongest driver of effective fraud prevention. Collectively, the independent variables account for a substantial portion of fraud prevention, with an R^2 of 0.746, meaning the model explains 74.6 percent of the variance. These findings suggest that fortifying the internal audit function, optimising the whistleblowing system, consistently implementing Good Corporate Governance, and improving audit quality constitute key strategies for forestalling fraud within state-owned banks in the digital age.

Keywords: Audit Quality, Fraud Prevention, Good Corporate Governance, Internal Audit, State-Owned Banks

1. INTRODUCTION

Advances in digital technology have driven significant transformation in the banking sector, particularly among state-owned enterprises (SOEs). Digitalisation enhances service efficiency and transaction speed, but it also gives rise to increasingly complex fraud risks, such as fictitious loans, misuse of information systems, electronic fraud, data breaches and internal fraud (Pratopo & Wuryani, 2023). Fraud is an act carried out deliberately to gain personal benefit at the expense of others (Anik, 2020; Pratopo & Wuryani, 2023). In the banking industry, fraud poses a serious threat as it can disrupt operational stability, erode public trust, and cause significant financial losses (Yanti & Hidayah, 2023).

The phenomenon of fraud in state-owned banks continues to show an alarming trend. Data from the Financial Services Authority (OJK) for the period 2023-2025 records thousands of fraud cases resulting in losses of around Rp253 billion, predominantly involving fictitious loans, misuse of customer funds, manipulation of digital transactions, and abuse of authority. Furthermore, the 2025 Indonesia Fraud Survey conducted by the ACFE discloses that corruption constitutes the most prevalent form of fraud (47.6 per cent), followed by asset misappropriation (40.2 per cent) and financial statement fraud (12.2 per cent). Fraud is most frequently unearthed through whistleblowing systems (53.24 per cent) and internal audits (19.18 per cent). Several recent cases, such as a fictitious loan worth Rp122 billion at a state-owned bank and the hacking of dormant accounts resulting in losses of over Rp204 billion, demonstrate that weaknesses in internal controls and corporate governance remain vulnerabilities that facilitate fraud (Tanuwijaya & Pradipto, 2023).

To minimise these risks, OJK has implemented an anti-fraud strategy covering prevention, detection, investigation and monitoring. In this context, internal audit, whistleblowing systems and Good Corporate Governance (GCG) serve as vital instruments in fraud prevention. Internal audit plays a role in evaluating the effectiveness of controls and identifying fraud risks (Fatimah & Pramudyastuti, 2022; Marfiana & Gunarto, 2021; Saputri et al., 2025). Whistleblowing systems provide a secure reporting mechanism, thereby enhancing transparency and accelerating the detection of fraud (Arianto, 2021; Hanifah & Clyde, 2022; Wijayanti & Setyawan, 2022). Meanwhile, the implementation of GCG can reduce information asymmetry and opportunistic behaviour that may lead to fraud (Sudjono, 2023; Yanti & Hidayah, 2023). Various studies also indicate that internal audit, the whistleblowing system, and GCG influence fraud prevention (Pratopo & Wuryani, 2023; Martin et al., 2024).

In addition to these three factors, audit quality is regarded as capable of enhancing the effectiveness of fraud prevention, inasmuch as it bears upon auditors' capacity to detect and disclose irregularities with accuracy (Khan et al., 2023; Liana et al., 2026; Prasetyo et al., 2024). Previous research has, however, generally examined internal audit, whistleblowing systems, and corporate governance in isolation, and has yet to integrate these three variables extensively with audit quality as a moderating variable within the context of Indonesian state-owned banks (Putra et al., 2022). Studies drawing on empirical data from state-owned banks remain, furthermore, relatively scant; further research is accordingly required to yield more comprehensive evidence.

Given the issues and gaps outlined above, the present research aims to investigate the influence of internal audit, whistleblowing mechanisms, and Good Corporate Governance on fraud prevention within Indonesia's state-owned banking sector, while also testing the moderating role of audit quality.

2. LITERATURE REVIEW

2.1. The Impact of Internal Audit on Fraud Prevention

Internal audit constitutes an independent function furnishing assurance and consultancy with a view to enhancing operational effectiveness and organisational controls (Yanti & Hidayah, 2023). Within the context of fraud prevention, internal audit assumes a vital role by fortifying internal control systems, fraud prevention being contingent upon effective internal controls; the more robust the controls implemented, accordingly, the lower the likelihood of errors or fraud occurring (Thalha & Saad, 2023). Internal auditors are tasked with conducting examinations and evaluations and furnishing recommendations for improvement, so as to ensure that the organisation's activities accord with applicable regulations (Thalha & Saad, 2023). Internal audits, furthermore, contribute to the evaluation of control effectiveness and the early detection of fraud, whereby competent auditors are able to attenuate the risk of fraud within the organisation (Purba & Mahendra, 2023). Various studies have likewise shown the effectiveness of internal controls to bear upon the reduction in fraud rates (Yanti & Hidayah, 2023), and the role of internal auditors to exert a significant impact upon the detection of fraud (Saifudin et al., 2023). The more effective the implementation of internal audits, consequently, the greater the organisation's capacity to forestall fraud.

2.2. The Impact of Whistleblowing on Fraud Prevention

A whistleblowing system refers to a company's practice of disclosing instances of non-compliance with regulations or misconduct by certain individuals within an organisation, covering structural, operational and maintenance aspects. If this perspective is adopted by the organisation and its employees, it encourages representatives to report fraudulent activities. With this system in place, various fraudulent acts within the organisation can be minimised, or at the very least, such malpractices will not take root within the organisation due to the penalties imposed. This is because any disclosure must be made in good faith and must not be used as a means of slandering others or as a platform to vent grievances about a policy that has already been determined. Research conducted by Anandya and Werastuti (2020) indicates that the whistleblowing system has a positive and significant impact on fraud prevention.

2.3. The Impact of Good Corporate Governance on Fraud Prevention

As a governance structure, Good Corporate Governance (GCG) seeks to enhance corporate performance, secure stakeholder welfare, and maintain compliance with regulatory requirements and moral principles (Yanti & Hidayah, 2023). When principles like transparency, accountability, responsibility, independence, fairness, and equality are put into practice, they can lower fraud potential by decreasing information gaps and discouraging self-serving actions by management (Tampubolon et al., 2020). Sound GCG, furthermore, fosters openness and accountability in the preparation of financial statements, thereby serving as a means of fraud prevention (Khairunnisa et al., 2023). From an agency theory perspective, GCG functions as a supervisory mechanism to constrain management actions that prioritise personal interests over those of shareholders. Martin et al. (2024) found that GCG did not significantly affect fraud in publicly traded Indonesian banks. Nevertheless, from a theoretical standpoint, effective GCG practices are still expected to enhance organizational fraud deterrence.

2.4. Audit Quality Moderates the Effects of Internal Audit, Whistleblowing Systems and Good Corporate Governance on Fraud Prevention

Silambi et al. (2023) state that audit quality serves as a moderating variable capable of boosting the effectiveness of internal audit, whistleblowing systems, and Good Corporate Governance (GCG) in preventing fraud, including digital fraud. Their results show that audit quality significantly reinforces the impact of internal audit on fraud prevention (significance 0.009) and also strengthens GCG's effect on fraud prevention (significance 0.042). However, the moderating effect of audit quality on the link between the whistleblowing system and fraud prevention was not statistically significant (p value 0.647). Despite this, Silambi (2023) notes that, theoretically, high quality audits may still improve the reporting system's effectiveness by safeguarding whistleblowers and securing reporting channels. These findings are supported by researchers (Khan et al., 2023; Langoday & Sibarani, 2021; Mahsitah & Mahmudi, 2021; Oktariswan & Yuliyanti, 2020; Wijaya, 2020) which confirms that audit quality is a key factor in strengthening fraud prevention efforts effectively and sustainably.

2.5. Internal Audit, Whistleblowing and GCG Collectively Have a Significant Impact on Fraud Prevention, with Audit Quality as a Moderator

According to Silambi (2023), internal audit, whistleblowing mechanisms, and GCG together exert a significant impact on preventing fraud, including digital forms of fraud. Audit quality serves as a moderator in this relationship, reinforcing the overall effect. Internal audit plays a role in monitoring and evaluating organisational processes; whistleblowing, meanwhile, encourages the reporting of fraud through secure mechanisms; whilst GCG enhances transparency, accountability and independence in organisational management. The research shows that the coefficient of determination (R^2) increased from 0.420 to 0.504 after audit quality was included as a moderating variable, indicating an improvement in the model's ability to explain fraud prevention. These findings are supported by Khan et al. (2023), Langoday and Sibarani (2021), Mahsitah (2020), Wijaya (2020), and Oktariswan and Yuliyanti (2020), who confirm that the synergy between internal audit, whistleblowing, and good corporate governance (GCG), underpinned by audit quality, constitutes an effective strategy for preventing fraud and fostering a culture of organisational integrity (Silambi, 2023).

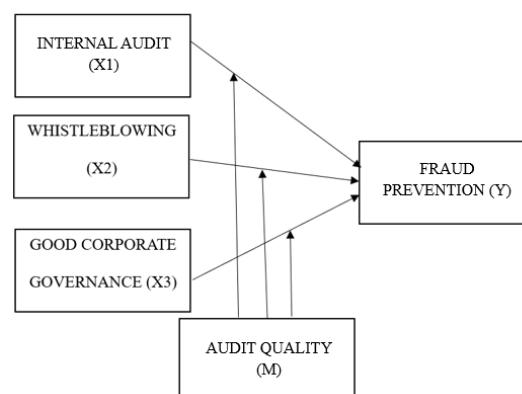


Figure 1. Conceptual Framework

Source: Adapted by the author, 2025

3. RESEARCH METHODS

Using a quantitative research design, this study aims to analyze the influence of internal audit, whistleblowing mechanisms, and good corporate governance (GCG) on digital fraud prevention within state-owned banks in Jakarta, with audit quality included as a moderating variable. The units of analysis in this study comprise employees engaged within the internal audit, risk management, compliance, and corporate governance units, given their direct involvement in the implementation of internal control systems, risk management, and digital fraud prevention efforts. The study population encompasses 1,050 employees drawn from Bank Rakyat Indonesia (BRI), Bank Mandiri, Bank Negara Indonesia (BNI), and Bank Tabungan Negara (BTN). The sample size was ascertained by recourse to the Krejcie and Morgan (1970) method, yielding a minimum sample size of 278 respondents at a 95% confidence level and a 5% margin of error. Sampling was conducted proportionally so as to ensure that each bank was represented commensurate with the population size within the work units constituting the study's focus.

Data were gathered by administering questionnaires to the selected participants. The survey instrument was developed using indicators for each research variable and utilized a five point Likert scale ranging from "strongly disagree" to "strongly agree." Internal audit was measured through indicators covering auditor independence, auditor competence, internal control effectiveness, the sufficiency of audit procedures, and the ability to detect and prevent fraud. The whistleblowing system variable was gauged on the basis of the availability of reporting channels, ease of access, protection afforded to whistleblowers, confidentiality of identity, and follow-up on reports received. The good corporate governance variable, meanwhile, was gauged through the principles of transparency, accountability, responsibility, independence, and fairness. The dependent variable, digital fraud prevention, is measured using indicators of prevention efforts, early detection, the effectiveness of information security systems, responses to fraud incidents, and the evaluation of digital internal controls. Audit quality, as a moderating variable, is measured through compliance with audit standards, auditor diligence, auditor independence, the timeliness of audit execution, and the auditor's understanding of the company's information systems.

Following data collection, multiple linear regression was applied using SPSS to explore the connections and impacts between the study variables. To confirm the regression model's validity, classical assumption testing was performed first, covering normality, multicollinearity, and heteroscedasticity. Next, hypothesis testing was carried out through partial t tests to examine each independent variable's individual contribution, F tests to assess the combined effect of all independent variables, and R² analysis to determine the model's explanatory power regarding the dependent variable. This analytical process is expected to yield empirical insights into how internal audit, whistleblowing systems, and good corporate governance contribute to digital fraud prevention in the state-owned banking industry, as well as to shed light on how audit quality moderates these relationships.

4. RESULTS AND DISCUSSION

4.1. Research Results

4.1.1. Descriptive Statistics

The characteristics of the 278 respondents show a fairly diverse composition. By age, the respondents were predominantly in the 26-30 age group (24.5%), followed by those aged 31-35 (19.8%), 20-25 (19.4%), 41 and over (18.7%), and 36-40 (17.6%). This composition indicates that the majority of respondents are of working age with varying levels of experience. By gender, there were 145 male respondents (52.2%) and 133 female respondents (47.8%), resulting in a relatively balanced distribution that is able to represent the views of both groups proportionally.

By job title, respondents were predominantly in Risk/Compliance roles (22.7%), followed by Supervisors (20.9%), Internal Auditors and Managers (19.4% each), and Staff (17.6%). In terms of institutions, respondents came from various state-owned banks with a fairly even distribution, namely Bank Mandiri (27.3 per cent), BRI (26.6 per cent), BNI (24.5 per cent) and BTN (21.6 per cent). Meanwhile, by department, the largest number of respondents came from Internal Audit (21.9%), Risk Management (20.9%) and Compliance (19.4%), followed by Operations (15.5%), Finance (12.2%) and IT/Digital Banking (10.1%). This diversity of characteristics indicates that the research data was obtained from various age groups, genders, job roles,

institutions and departments relevant to supervision, internal control, risk management and fraud prevention, thereby strengthening the representativeness and quality of the research data.

4.1.2. Test of Classical Assumptions

A. Normality Test

A normal distribution of residuals indicates that the model is able to accurately represent the relationship between the variables.

Table 1. Normality Test Results

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.056	278	.035	.992	278	.145

a. Lilliefors Significance Correction

Source: Processed data

The test results (table 1) disclosed a Kolmogorov-Smirnov significance value of 0.035 and a Shapiro-Wilk value of 0.145. A Shapiro-Wilk value exceeding 0.05 indicates the residuals to be normally distributed. The use of the Shapiro-Wilk test was deemed more apposite given that the sample size fell below 500; the results of this test accordingly served as the primary reference for gauging the normality of the data. Based on the normality assessment, the regression model satisfies the normality requirement, with residual data appearing well spread and the model ready for further testing.

B. Multicollinearity Test

A good regression model requires that each independent variable be able to stand on its own, without excessive linear correlation.

Table 2. Multicollinearity Test Results

		Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics
		B	Std. Error	Beta			Tolerance VIF
1	(Constant)	.332	.137		2.433	.016	
	Internal Audit	.245	.061	.240	3.989	.000	.257 3.891
	Whistleblowing System	.146	.062	.147	2.342	.020	.235 4.254
	GCG	.137	.058	.138	2.356	.019	.270 3.709
	Audit Quality	.391	.055	.407	7.078	.000	.281 3.555

a. Dependent Variable: Fraud Prevention

Source: Processed data

Table 2 presents the multicollinearity test outcomes, which confirm that every independent variable satisfies the multicollinearity criteria. The tolerance figures are all greater than 0.10, and the VIF values remain under 10. This suggests an absence of high correlation between the independent variables; each variable may, accordingly, account for the dependent variable independently, without significant overlap in information. The regression model is, consequently, fit for use and may proceed to the next stage of testing.

C. Heteroscedasticity Test

A good model is characterised by a stable distribution of residuals across all prediction levels, allowing the relationships between variables to be analysed without interference from non-constant error variation.

Table 3. Heteroscedasticity Test Results

Coefficients^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.191	.086		2.231	.027
Internal Audit	-.031	.039	-.097	-.812	.417
Whistleblowing System	-.005	.039	-.017	-.139	.889
GCG	-.008	.037	-.025	-.214	.830
Audit Quality	.038	.035	.125	1.097	.274

a. Dependent Variable: ABS_RES

Source: Processed data

According to Table 3, the heteroscedasticity assessment reveals that every independent variable exceeds the 0.05 significance threshold, indicating that heteroscedasticity is not an issue in the model. The residuals display constant variance without any systematic pattern. Therefore, the regression model satisfies the homoscedasticity condition and is suitable for continued analysis, offering dependable results.

4.1.3. Simultaneous Test (F-test)

Simultaneous testing was employed to examine whether the independent variables comprising Internal Audit, the Whistleblowing System, Good Corporate Governance, and Audit Quality were collectively capable of accounting for the variation in Fraud Prevention.

Table 4. F-test Results

Model	F-value	Sig.	Description
Regression	200.482	0.000	Significant model

Source: Processed data

According to Table 4, the F test yields a calculated value of 200.482 at $p = 0.000$ (< 0.05), demonstrating that Internal Audit, Whistleblowing Systems, Good Corporate Governance, and Audit Quality jointly exert a significant influence on Fraud Prevention. This validates the regression model and shows that it effectively accounts for differences in fraud prevention, thereby supporting its use in formulating the research's final conclusions.

4.1.4. Coefficient of Determination (R^2)

Table 5. Coefficient of Determination

Model Summary^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.864 ^a	.746	.742	.21287

a. Predictors: (Constant), Audit Quality, Internal Audit, GCG, Whistleblowing System

b. Dependent Variable: Fraud Prevention

Source: Processed data

As summarized in Table 5, the R value of 0.864 points to a notably strong relationship between the variables. The R squared value stands at 0.746, with an adjusted R squared of 0.742, which indicates that 74.6 percent of fraud prevention variation is explained by internal audit, whistleblowing, good corporate governance, and audit quality. The other 25.4 percent is due to external factors not included in the model. These values indicate the model to possess robust and stable explanatory power, buttressed by a relatively modest Standard Error of the Estimate (0.21287). The regression model is, accordingly, deemed capable of furnishing accurate estimates and is fit for elucidating the factors bearing upon Fraud Prevention.

4.1.5. Multiple Linear Regression Analysis

This approach provides a quantitative picture of the direction of the relationship and the strength of the influence of each variable under study.

Table 6. Multiple Linear Regression Analysis

Coefficients^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.332	.137		2.433	.016
Internal Audit	.245	.061	.240	3.989	.000
Whistleblowing System	.146	.062	.147	2.342	.020
GCG	.137	.058	.138	2.356	.019
Audit Quality	.391	.055	.407	7.078	.000

a. Dependent Variable: Fraud_Prevention

Source: Processed data

According to the regression analysis, Internal Audit, the Whistleblowing System, Good Corporate Governance (GCG), and Audit Quality each contribute positively and significantly to Fraud Prevention. Audit Quality ranks as the most influential factor, with Internal Audit, the Whistleblowing System, and GCG following in that order. This implies that higher audit quality, stronger internal audit functions, more robust whistleblowing systems, and better governance practices collectively boost fraud deterrence efforts. The model also demonstrates strong and significant explanatory power for the relationships examined.

4.2. Discussion

4.2.1. The Impact of Internal Audit on Fraud Prevention

Internal audit plays a strategic role as a supervisory mechanism aimed at ensuring that all organisational activities are conducted in accordance with established standards and procedures. This function focuses not only on inspection but also encompasses the evaluation of the effectiveness of internal controls and the identification of potential fraud risks. The existence of internal audit helps to reduce the likelihood of irregularities through a continuous monitoring process, thereby maintaining the organisation's operational stability. This role is consistent with agency theory, which emphasises the importance of oversight mechanisms in reducing conflicts of interest between agents and principals.

Findings show that internal audit significantly and positively affects fraud prevention. As internal audit quality improves, so does the organization's ability to prevent fraudulent acts. Key drivers include auditor independence, skill levels, and the capacity to spot red flags, all of which strengthen oversight. Systematic auditing ensures that activities are subject to consistent controls, greatly limiting the scope for misconduct, consistent with internal audit's contribution to both preventing and uncovering fraud.

The item with the highest score relates to the statement regarding the ability of internal audit to carry out its oversight and evaluation functions effectively. Respondents' high ratings for this indicator suggest that internal audit is viewed as a vital component in maintaining the effectiveness of a company's internal controls, particularly in preventing fraud within the state-owned banking sector.

These findings suggest that respondents see internal audit not just as an administrative oversight tool, but also as a strategic function for identifying system vulnerabilities, reducing operational risks, and improving policy compliance. As digital transformation advances, transaction complexity and technology adoption have made fraud risks more sophisticated. This demands that internal audit adapt by performing oversight in a more flexible and tech-enabled way.

The high scores on the internal audit indicators also suggest that internal auditors are deemed to possess sufficient independence and competence in carrying out their duties. Auditor independence is a crucial factor, as audits conducted objectively will yield more accurate assessments of potential irregularities. Furthermore, internal auditors' competence in understanding the company's digital systems and business processes also strengthens the effectiveness of the oversight carried out.

From a theoretical standpoint, the study's results lend support to Agency Theory, where internal audit acts as a supervisory tool to address principal agent tensions. Through vigilant monitoring, internal audit lessens information asymmetry and reduces the risk of managerial actions that might undermine organizational interests.

These findings are consistent with the research by Anthony et al. (2023), McInelly (2022), Dandriansyah et al. (2023) and Safitri (2024) which shows that internal audit has a positive and significant effect on fraud prevention. Research by Khairunnisa et al. (2023) as well as Irwansyah and Zega (2023) also revealed that internal audit is capable of curbing the tendency towards fraud through the strengthening of control and monitoring systems on an ongoing basis. These results indicate that internal audit is a crucial element in creating a transparent organisational system capable of reducing the risk of irregularities. The findings of this study are also consistent with research stating that internal audit has a positive effect on fraud control in the digital age. Furthermore, these results support previous research indicating that internal audit can assist organisations in detecting and preventing fraud through the continuous evaluation of internal controls.

These findings further clarify the fraud problems in state-owned banks described earlier in the research. Incidents of fake loans and misappropriated customer funds reveal shortcomings in oversight, document checks, and control mechanisms within certain operational areas. The positive relationship between internal audit and fraud prevention implies that a more effective audit function improves the organization's capacity to spot system deficiencies and close potential loopholes. Given the rising complexity of digital fraud faced by state-owned banks, internal audit plays a critical part in maintaining adherence to procedures, monitoring online transactions, and evaluating tech based controls. Strengthening internal audit is therefore a key strategic measure for reducing fraud that could affect both the company and its clients.

Given that state owned banks operate in a high risk environment involving asset misuse, falsified financial statements, and cyber threats, internal audit becomes especially vital. Its effectiveness forms one of the foundational elements for maintaining robust controls and ensuring the organization's long term stability.

4.2.2. The Impact of Whistleblowing Systems on Fraud Prevention

Whistleblowing systems serve as reporting channels that allow individuals to disclose misconduct safely and in confidence. They are essential for enhancing transparency because they expose information not captured by formal monitoring processes. The availability of this system empowers employees and stakeholders to participate in protecting the organization's reputation by reporting any breaches they observe.

In practice, the whistleblowing system functions as an early warning system, detecting fraud before it causes greater harm to the organisation. This system enables companies to obtain information swiftly regarding misconduct that is difficult to detect through routine monitoring. Consequently, organisations can immediately initiate investigations and take corrective action regarding any potential fraud that is uncovered.

From a theoretical standpoint, these findings reinforce corporate governance concepts that stress the value of openness and responsibility within organizations. A whistleblowing system promotes workplace transparency and bolsters internal oversight. These outcomes are consistent with existing literature that identifies whistleblowing systems as effective tools against fraud. In addition, past studies have demonstrated that such systems encourage staff to come forward with violations and expedite the handling of fraudulent activities.

According to the findings, whistleblowing systems have a significant positive influence on preventing fraud. The coefficients indicate that a more effective reporting system leads to better fraud deterrence. Key drivers include user friendly access, safeguards for whistleblowers, and privacy guarantees. When individuals are confident that their reports are protected, potential wrongdoing can be flagged early and dealt with swiftly and appropriately.

These results indicate that the success of a whistleblowing system is heavily influenced by users' level of trust in the system. Protection of the whistleblower's identity and the organisation's commitment to following up on reports are the main factors determining its effectiveness. The higher the level of trust in the reporting system, the greater the likelihood that individuals will report violations, thereby enabling fraud to be prevented more quickly and effectively.

These findings are consistent with research by Haryanto and Ardillah (2021), Riyanto and Arifin (2022), Pratopo and Wuryani (2023), and Baihaqie (2023), which states that whistleblowing systems have a significant impact on fraud prevention. Research by Kuncara (2022), Handajani et al. (2023) and Martin et al. (2024) also indicates that whistleblowing systems can enhance the effectiveness of early detection of fraud. However, studies by Yanto (2023) and Wardaha et al. (2022) yielded non-significant results, suggesting that the effectiveness of such systems is highly dependent on the level of implementation and organisational culture.

In the digital age, the adoption of technology-based whistleblowing systems is becoming increasingly important as it enables the reporting process to be carried out more quickly, securely and efficiently. Digital systems also assist organisations in systematically documenting reports, thereby enabling follow-up processes to be carried out in a more measurable and transparent manner.

The findings of this study are also relevant to developments in the Indonesian banking sector, particularly in light of the Indonesian Fraud Survey, which indicates that the majority of fraud cases are uncovered through reporting mechanisms or whistleblowing. These findings indicate that the existence of an effective reporting system is one of the key instruments in detecting and preventing fraud before it causes greater losses. In various cases of banking fraud, perpetrators often exploit the limitations of formal oversight and employees' reluctance to report irregularities. Therefore, research findings demonstrating the positive impact of whistleblowing systems on fraud prevention underscore the importance of providing reporting channels that are secure, easily accessible and guarantee protection for whistleblowers. The better the implementation of a whistleblowing system, the greater the likelihood that an organisation will obtain early information regarding potential fraud, enabling preventative measures to be taken more swiftly and effectively.

4.2.3. The Impact of Good Corporate Governance on Fraud Prevention

A system of governance, Good Corporate Governance ensures that companies act openly, accountably, and responsibly. By applying principles of transparency, independence, accountability, and equity, it establishes the foundation for effective monitoring. This approach promotes a more disciplined organizational culture centered on compliance with legal and regulatory standards.

Research findings indicate that Good Corporate Governance has a positive and significant impact on fraud prevention. The resulting coefficient values suggest that an increase in the application of governance principles is accompanied by an increase in the effectiveness of oversight over organisational activities. Transparency of information allows every activity to be monitored openly, whilst accountability in decision-making reduces the likelihood of irregularities. The application of the principle of independence also helps to ensure that every organisational function operates without any intervention that could lead to fraud.

High scores on the transparency indicator suggest that the organisation is deemed capable of communicating information openly, clearly and relevantly to stakeholders. Transparency is a key element in building public trust in a company, particularly in the state-owned banking sector, which bears significant responsibility towards society. A high rating for accountability indicates that the company is deemed to have a clear division of tasks and responsibilities in the conduct of its operational activities. Good accountability helps the organisation ensure that every activity can be accounted for in accordance with applicable regulations and procedures.

The successful adoption of Good Corporate Governance contributes to fraud reduction by subjecting every organizational function to well defined oversight. GCG principles such as openness, accountability, responsibility, impartiality, and independence are fundamental to cultivating a positive institutional culture. In theoretical terms, these findings support Agency Theory, which argues that good governance minimizes tensions between managers and owners. GCG also strengthens oversight processes and improves how decisions are made. These results are in line with previous studies that link GCG to improved fraud management, and earlier evidence further suggests that effective GCG adoption enhances both integrity and internal control systems.

These findings are consistent with the research by Handajani et al. (2023), (Wahyuni & Hayati, 2022), Martin et al. (2024), and Sudjono (2023), which states that Good Corporate Governance has an impact on fraud prevention. Research by Savitri and Herliansyah (2022) and Irwansyah and Zega (2023) also indicates that good governance can mitigate the risk of fraud by strengthening internal control systems. However, the study by Yanti and Hidayah (2023) found no significant results, suggesting that the effectiveness of GCG implementation is highly dependent on the consistency of its implementation within the organisation.

These findings indicate that Good Corporate Governance plays a vital role in creating an integrated oversight system. The application of good governance principles ensures that all organisational activities are conducted in accordance with established standards, thereby minimising the likelihood of fraud. The more effectively GCG is implemented, the stronger the organisation's control system will be in preventing fraud. In

the context of digital banking, the implementation of GCG is becoming increasingly important as technological developments can heighten the risk of data misuse, transaction manipulation and cybercrime. Therefore, companies need to ensure that all governance principles are applied consistently to maintain the organisation's stability and sustainability.

The findings of this study also provide an explanation for various cases of fraud occurring in state-owned banks, the majority of which were triggered by weak supervision, abuse of authority, and the sub-optimal application of corporate governance principles. Fraud cases such as fictitious lending and misuse of account access illustrate that lapses in applying GCG principles like openness, accountability, responsibility, impartiality, and independence create openings for wrongdoing. The study's evidence that Good Corporate Governance contributes to fraud deterrence implies that sound governance practices tighten controls and lower the chances of irregularities. In the digital age, the implementation of GCG has become increasingly important as organisations manage not only physical assets but also data and information systems that are vulnerable to misuse. Therefore, strengthening the implementation of GCG is a strategic necessity for state-owned banks to maintain organisational integrity and enhance public confidence in the national banking sector.

4.2.4. The Role of Audit Quality as a Moderating Variable

Audit quality reflects an auditor's ability to carry out the audit process professionally, independently and objectively. Auditors who possess a high level of competence and meticulousness in identifying errors are able to produce more accurate audit findings. Audit quality is a crucial element in the control system as it determines how effective the audit process is in detecting and preventing fraud.

According to the findings, audit quality has a significant positive impact on fraud prevention. Its coefficient surpasses that of other variables, indicating that audit quality is the dominant driver of fraud prevention efforts. Auditors who have a good understanding of the organisation's systems and are able to carry out their duties independently will be more effective in identifying potential fraud. A high level of meticulousness also enables auditors to uncover system weaknesses that are not detected by other oversight mechanisms. The high rating for audit quality indicates that auditors are deemed capable of conducting the audit process meticulously, independently and in a timely manner. In the digital age, auditors are required not only to understand financial aspects but also to understand the information technology systems used by the company. This capability is vital for detecting potential digital fraud. Good audit quality helps to enhance the effectiveness of an organisation's internal controls, as auditors are able to provide relevant recommendations regarding any system weaknesses identified. Furthermore, a high-quality audit also helps to increase stakeholders' confidence in the company's financial and operational reports.

From a theoretical perspective, audit quality acts as an independent oversight function that reduces information asymmetry within organizations. When auditors are both independent and competent, the audit process becomes more objective, which in turn improves transparency and accountability. These results align with earlier studies showing that audit quality reinforces internal controls and bolsters fraud prevention. Skilled auditors are more capable of detecting fraud risks and offering constructive recommendations. High quality auditing also improves the performance of internal audit, whistleblowing systems, and Good Corporate Governance practices. By elevating audit quality, all control mechanisms are strengthened, giving the organization a stronger overall defense against fraud.

These findings are consistent with the research by Badera and Jati (2020), Silambi (2023), Martin et al. (2024), and Lonto et al. (2023), which demonstrate that audit quality plays a crucial role in enhancing the effectiveness of fraud prevention. Research by Putra et al. (2022) also emphasises that the combination of audit quality and control systems can strengthen fraud detection. However, research by Savitri and Herliansyah (2022) indicates that, under certain conditions, audit quality is not always able to moderate the relationship between variables; consequently, its effectiveness may vary depending on implementation and organisational conditions.

In the context of state-owned banks, audit quality is a crucial factor because the banking sector is characterised by a high level of transaction complexity and operational risk. Consequently, companies need to continuously enhance auditors' competencies, particularly in the areas of information technology-based auditing and the digitalisation of supervisory systems.

Research findings on the role of audit quality as a moderating variable are also highly relevant to the phenomenon of fraud occurring within state-owned banks. Various fraud cases resulting in significant losses demonstrate that the mere existence of an audit is not always sufficient if it is not supported by high audit quality. Auditors who possess competence, independence, professionalism and an understanding of digital risks will be better able to identify weaknesses in internal controls and provide effective recommendations to prevent fraud. In the context of fictitious loan cases, the misuse of customer funds, and technology-based fraud, good audit quality can strengthen the effectiveness of internal audits, enhance the credibility of whistleblowing systems, and ensure that the implementation of Good Corporate Governance adheres to sound governance principles. Thus, audit quality serves not only as a mechanism for scrutiny but also as a reinforcing factor that ensures the entire fraud control system operates optimally in the face of increasingly complex fraud risks in the digital age.

5. CONCLUSION

This study discloses Internal Audit, the Whistleblowing System, and Good Corporate Governance to exert a positive and significant impact upon fraud prevention in state-owned banks in the digital age. Audit Quality, furthermore, has been shown to fortify the influence of these three variables upon the effectiveness of fraud prevention. Collectively, all these variables assume a strategic role in establishing control and oversight systems capable of minimising the risk of fraud, bolstering compliance, and undergirding sounder corporate governance amidst technological advancement and the complexity of digital risks.

According to the results, preventing fraud is shaped by more than just the presence of official monitoring systems. It also relies on how well internal audits are performed, how effectively breaches are reported, how steadily governance principles are applied, and how high audit quality stands. Companies should thus invest in auditor development, enhance whistleblowing mechanisms, bolster corporate governance practices, and build tech based oversight tools. Going forward, studies should consider other related factors to broaden the understanding of fraud prevention drivers.

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