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Pentagon Fraud and Financial Statement Fraud in State-Owned Enterprises Listed on the Indonesia Stock Exchange During 2021–2025: The Moderating Role of the Audit Committee

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Abstract

This study seeks to examine the impact of the Fraud Pentagon factors pressure, opportunity, rationalization, competence, and arrogance on financial statement fraud within Indonesian State-Owned Enterprises (SOEs), while also investigating the moderating influence of the audit committee on this relationship. The research used a quantitative methodology, analyzing panel data from 16 state owned enterprises listed on the IDX from 2021 to 2025, yielding 80 balanced panel observations. Panel regression analysis was performed, using the FEM as determined by the Chow and Hausman tests. Financial statement fraud was assessed using the F-Score model, while the audit committee was evaluated as a moderating variable via MRA. The findings indicate that pressure, opportunity, and arrogance positively and significantly influence financial statement fraud, whereas rationalization and competence do not. Regarding the moderating role of the audit committee, the results show that the audit committee significantly weakens the relationship between opportunity and financial statement fraud at the 5 percent significance level. Meanwhile, the moderating effects on the relationships between pressure and financial statement fraud and between arrogance and financial statement fraud are only marginally significant at the 10 percent significance level. No significant moderating effects were found for rationalization and competence. This study contributes to the development of Fraud Pentagon Theory and Agency Theory by emphasizing the importance of monitoring effectiveness in preventing fraudulent financial reporting in SOEs.

KEYWORDS

digital capital; educational development; human capital; pasirmae village; social capital.

Introduction

Financial statement fraud remains a critical issue in corporate governance because it undermines the credibility of financial information, reduces stakeholder trust, and weakens the efficiency of capital markets. In Indonesia, the issue is especially relevant for State-Owned Enterprises (SOEs), which operate under dual mandates of achieving commercial performance while fulfilling public service and government policy objectives.

This unique institutional environment may create additional pressures and incentives that increase the risk of financial reporting manipulation, making Indonesian listed SOEs an important context for examining the determinants of financial statementand the effectiveness of governance mechanisms such as the audit committee. This is reinforced by the statement of fraud (Velte, 2022) that financial statement fraud is still one of the main issues in corporate governance because it can reduce the credibility of financial information, disturb capital market efficiency, and give rise to losses for investors as well as other stakeholders' interests (Velte, 2022)

Corporate governance and financial statement fraud. Corporate Ownership & Control, 19(3), 2022) (Omar et al., 2015) Manipulation of financial reports not only influences the internal performance of the company, but also reduces public trust in the financial reporting system and supervision of the company (Devi, 2024; Nindito et al., 2025)Several global accounting firm scandals, such as Wirecard in Germany and Carillion in the UK, show that financial fraud reports remain a serious challenge for regulators, investors, auditors, and academics. (Teichmann et al., 2024)and (Li, 2025) In Indonesia, the issue of financial statement fraud is more important, especially in State-Owned Enterprises (BUMN). Dual purpose. This creates pressure on management to maintain the performance of the company and the legitimacy of the organization (Ibrahim & Darwis, 2024; Megginson & Netter, 2001; Supriatiningsih., Darwis, H. P., & Saleh, 2024). The dual objectives of Indonesian State-Owned Enterprises (SOEs) may create unique incentives for financial reporting manipulation. Unlike private firms that primarily focus on maximizing shareholder value, SOEs are required to achieve profitability while simultaneously fulfilling public service obligations and supporting government economic policies. In addition, government ownership and political oversight often expose SOEs to greater scrutiny regarding financial performance, strategic projects, and policy outcomes. These conditions can generate substantial pressure on management to demonstrate favorable financial results, maintain organizational legitimacy, and meet the expectations of multiple stakeholders. as a result, managers may face stronger incentives to engage in earnings management or financial statement manipulation when actual performance falls short of expected targets. As a result, managers can behave opportunistically, including manipulation of financial reports, to fulfill stakeholders' expectations. In addition to facing pressure to achieve financial targets, State-Owned Enterprises (SOEs) in Indonesia also face more complex governance risks than private companies. Several cases involving SOEs have highlighted weaknesses in internal controls, practices of financial reporting manipulation, and corporate governance issues. For example, the case of PT Asuransi Jiwasraya and PT Asabri demonstrate how weaknesses in oversight and investment decision-making can lead to significant state losses. Findings from the Supreme Audit Agency (BPK) and the Corruption Eradication Commission (KPK) also demonstrate that the risk of irregularities in SOE financial management remains a significant concern in Indonesia's public sector governance system. This situation indicates that SOEs constitute a relevant research context for examining the factors influencing financial statement fraud and the effectiveness of oversight mechanisms such as audit committees. (BPK, 2023; KPK, 2024; OECD, 2024)

Pentagon Fraud Theory explained that fraud is influenced by five main factors, namely opportunity, pressure, competence, rationalization and arrogance (Vousinas, 2019) This work seeks to elucidate the idea of fraud by augmenting the current views of the variables that compel individuals to engage in fraudulent behavior. The study examines the predominant and generally recognized models that elucidate the reasons for fraudulent behavior: the fraud diamond, the fraud triangle, the MICE model and the fraud scale. (Muchlis., 2025; Pandaya; Supriatiningsih, 2025; Supriatiningsih & Darwis, 2023)The author contends that these models require revision to accommodate recent advances in the field and the increasing prevalence and severity of fraud incidents, and utilizes theoretical foundations to develop a new model aimed at elucidating the principal factors contributing to fraudulent behavior. The author discovers a significant factor ego that is crucial in driving individuals to perpetrate fraud and culminate with the development of the SCORE model, which is visually represented in the fraud pentagon. He additionally incorporated the element of cooperation to enhance applicability in instances of white-collar crimes. The study formulates the SCORE model to enhance fraud theory by pinpointing the critical aspects influencing the occurrence of fraud and serving as a theoretical standard for future reference (Supriatiningsih et al., 2023; Taufiqurahman., 2025) Pressure reflects demands, financial and operational challenges faced by management, whereas opportunities appear as a consequence of weakness in internal control and inadequate supervision of systems. Rationalization refers to the justification process used by individuals to legitimize cheating actions. Competence reflects the ability of an individual to utilize weaknesses in the system organization, while arrogance shows self-confidence and excessive dominance so that pushes management to feel like they are on top control of the organization.

Although the Pentagon Theory of Fraud is widely applied to explain financial statement fraud, previous empirical evidence remains inconclusive. Across various studies in Indonesia, the influence of the five dimensions of fraud varies significantly. Pressure and opportunity are often identified as the strongest predictors of financial statement fraud, however, some studies report insignificant relationships depending on the industry, institutional environment, and measurement proxies used. Similarly, empirical findings regarding rationalization, competence, and arrogance remain inconsistent, suggesting that the explanatory power of the Pentagon Theory of Fraud is highly context-dependent and not universally applicable. These inconsistencies indicate that the influence of fraud drivers may differ according to organizational characteristics, governance structures, and regulatory environments (Kharimah et al., 2024). This study differs from previous studies in Indonesia. First, while previous research has largely examined the impact of the Pentagon's Fraud on manufacturing firms, banking institutions, mining companies, or other private-sector organizations, this study specifically focuses on Indonesian state-owned enterprises (SOEs), which operate under a unique institutional framework characterized by dual commercial and public service objectives, government ownership, and political oversight. These characteristics create governance pressures and fraud incentives that differ substantially from those in private companies. Second, previous Indonesian studies generally concentrated on the direct effects of the Pentagon Fraud dimensions on financial statement fraud, with limited attention to whether corporate governance mechanisms could mitigate this relationship. This study expands the existing literature by incorporating the audit committee as a moderating variable, thereby evaluating not only whether the "Pentagon Fraud" factors increase the likelihood of financial statement fraud but also whether effective audit committee oversight can mitigate these effects in the context of Indonesian SOEs. Consequently, this study provides context specific evidence that complements and expands upon previous research on fraud in Indonesia.

Although the Fraud Pentagon Theory has been widely used to explain financial statement fraud, previous research has shown inconsistencies. Some studies found that pressure and opportunity significantly influence financial statement fraud (Velte, 2023), while others reported insignificant results (Septiani, 2025). Similarly, the influence of rationalization, competence, and arrogance still shows mixed results due to differences in industry context, company characteristics, and measurement proxies used.

Furthermore, most previous studies have focused on manufacturing companies, the banking sector, or private companies. Research on Pentagon Fraud in State-Owned Enterprises (SOEs) is still relatively limited, particularly those examining the role of audit committees as a moderating variable. Therefore, this study fills this gap in the literature by examining the influence of Fraud Pentagon on financial statement fraud in Indonesian SOEs and evaluating the effectiveness of audit committees in mitigating this relationship.

In order to improve a company's governance, an audit committee must oversee quality reporting, finances, and the efficacy of internal controls. The committee must also be able to spot opportunistic management and conduct (Ibrahim et al., 2022; Taneja et al., 2023) An effective audit committee is expected to be capable of mitigating the influence of Pentagon Fraud Factors against financial statement fraud. Prior studies have examined the moderating role of audit committees within the fraud pentagon framework; However, empirical evidence remains inconclusive regarding which fraud dimensions can be effectively mitigated through audit committee oversight. This study offers two main contributions to the literature. First, it extends Fraud Pentagon Theory by examining its ability to explain financial statement fraud specifically within Indonesian State-Owned Enterprises (SOEs), a context that has received limited empirical attention. Second, it evaluates whether the audit committee functions as an effective governance mechanism in moderating the relationship between Fraud Pentagon dimensions and financial statement fraud

Based on the stated problem, this study aims to examine the influence of the five dimensions of the Pentagon Fraud Model, namely pressure, opportunity, rationalization, competence, and arrogance on financial statement fraud in Indonesian state-owned enterprises. In addition, this study seeks to evaluate whether audit committees function as effective corporate governance mechanisms by moderating the relationship between each dimension of the Fraud Pentagon and financial statement fraud.

Conceptual Framework

This conceptual framework explains the relationship between the dimensions of pentagon fraud comprising opportunity, pressure, competence, rationalization, and arrogance as independent variables and financial statement fraud as the dependent variable, with the audit committee as a moderating variable

Conceptual Framework of Fraud Pentagon and Financial Statement Fraud

The framework explains that Drawing on Fraud Pentagon Theory and Agency Theory, pressure, opportunity, rationalization, competence, and arrogance are expected to increase the likelihood of financial statement fraud (see Figure 1). Pressure creates incentives for managers to manipulate financial reports in order to achieve financial targets, while opportunity arises from weaknesses in monitoring and internal controls that facilitate fraudulent behavior. Rationalization enables individuals to justify unethical actions, competence provides the capability to exploit organizational weaknesses, and arrogance reflects excessive confidence that reduces compliance with governance mechanisms. Therefore, the study proposes the following hypotheses: H1: Pressure positively affects financial statement fraud; H2: Opportunity positively affects financial statement fraud; H3: Rationalization positively affects financial statement fraud; H4: Competence positively affects financial statement fraud; and H5: Arrogance positively affects financial statement fraud.

From an Agency Theory perspective, the audit committee serves as a monitoring mechanism that reduces information asymmetry and strengthens corporate governance. As a result, an effective audit committee is expected to weaken the positive relationship between Fraud Pentagon factors and financial statement fraud.

Hypothesis Development

The Pentagon Fraud Theory identifies pressure as one of the primary motivations driving individuals to engage in financial statement fraud (Crowe, 2011). Pressure generally arises from demanding financial targets, profitability expectations, debt obligations, or other performance-related

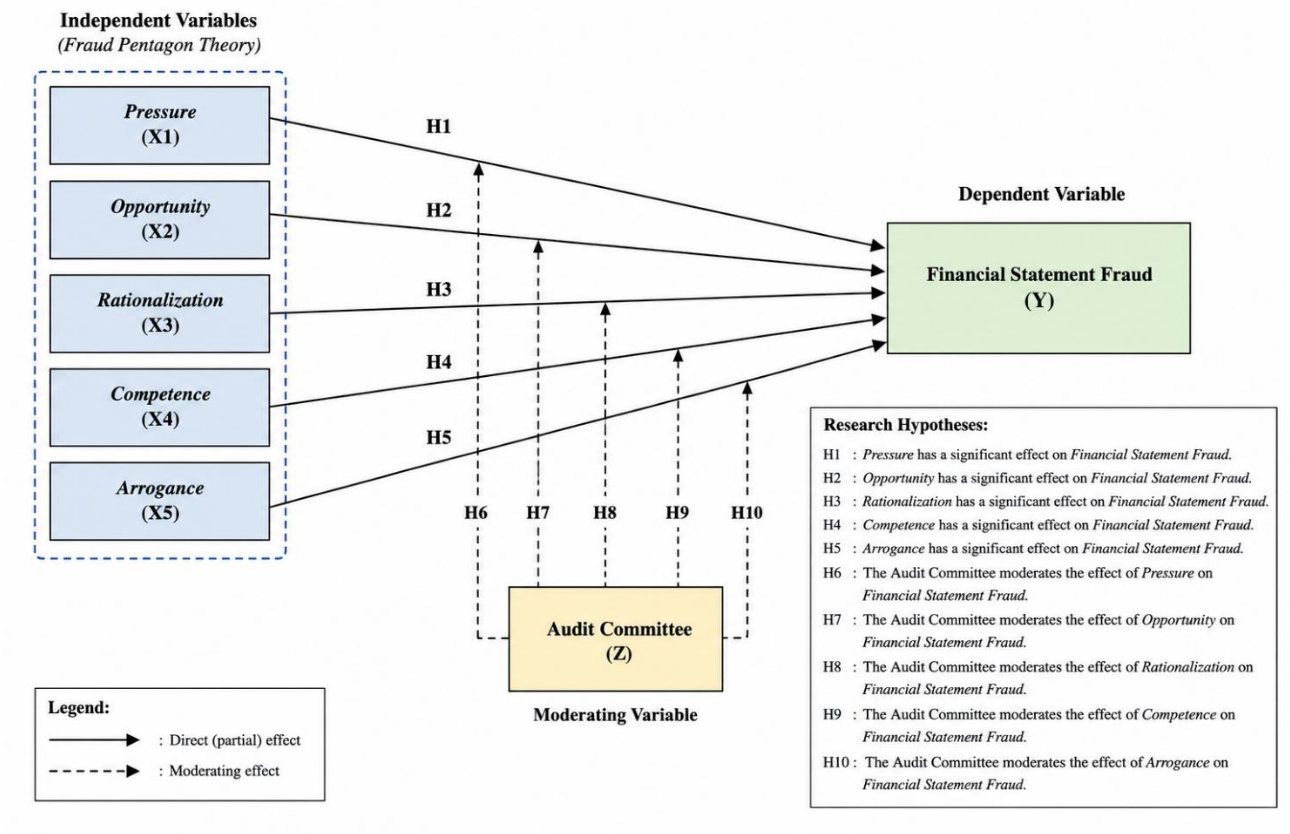

Figure 1. Conceptual Framework for Pentagon Fraud, Audit Committee, and Financial Statement Fraud

incentives that create a strong managerial motivation to present favorable financial results. Agency Theory (Jensen, M.C., and Meckling, 1976) further explains that managers, acting as agents, may pursue their own interests by manipulating accounting information when they face pressure to meet shareholders' expectations while possessing superior information compared to the principals. In this context, financial reporting manipulation serves as a mechanism to reduce perceived performance gaps and protect managerial reputation. Empirical evidence generally supports thistheoretical argument. (Skousen et al., 2009) demonstrate that financial targets serve as an effective proxy for managerial pressure related to financial statement fraud. Similarly, (Indiraswari et al., 2025; Said, J., Alam, M. M., & Ramli, 2021; Submitter et al., 2021)and (Velte, 2023) report that greater financial pressure significantly increases the likelihood of financial statement fraud. Therefore, the following hypothesis is proposed.

H1: Pressure positively affects financial statement fraud.

According to the Pentagon Fraud Theory, opportunities refer to organizational conditions that allow fraudulent behavior to occur with a relatively low probability of detection (Crowe, 2011). Opportunities generally arise from ineffective oversight, weak internal controls, inadequate segregation of duties, and deficiencies in corporate governance. Agency Theory suggests that information asymmetry between managers and shareholders becomes more severe when oversight mechanisms are ineffective, thereby increasing managerial discretion to manipulate financial reporting for personal gain (Jensen, M.C., and Meckling, 1976, 1976; Tjen et al., 2020) found that ineffective oversight significantly increases the likelihood of fraudulent financial reporting because inadequate governance oversight allows managers greater discretion to manipulate accounting information. Similarly, (Stevansyah & Suhendah, 2023)found that ineffective oversight has a positive effect on financial statement fraud in Indonesian banking companies, while (Sinaga & Siagian, 2025)documented similar findings among multinational companies listed on the Indonesia Stock Exchange. (Ozcelik, 2020) also emphasizes that opportunity remains one of the most influential determinants of fraudulent financial reporting because weak internal controls and inadequate oversight reduce the perceived risk of fraud detection. Therefore, the following hypothesis is proposed

H2: Opportunity positively affects financial statement fraud.

The Pentagon Fraud Theory proposes that rationalization allows individuals to justify unethical or illegal actions as acceptable, thereby reducing the guilt associated with fraudulent behavior (Crowe, 2011). Rationalization represents a psychological mechanism through which managers view the manipulation of financial statements as necessary to protect organizational performance or maintain stakeholder trust. Agency Theory complements this perspective by explaining that managers may rationalize opportunistic behavior when their personal interests conflict with those of shareholders, particularly under conditions of limited oversight and information asymmetry (Jensen, M.C., and Meckling, 1976; Kassem, 2022) argues that rationalization is one of the most difficult dimensions of fraud to observe because it reflects internal cognitive processes rather than directly observable organizational characteristics. Consequently, empirical studies often use auditor turnover as a proxy for rationalization in accordance with (Board, 2002). Findings by (Rifa & Tasrif, 2022)and (Irianto et al., 2025)indicate that rationalization contributes to financial statement fraud. Therefore, the following hypothesis is proposed.

H3: Rationalization positively affects financial statement fraud.

Competence refers to the abilities, authority, experience, and technical expertise required to successfully carry out and conceal fraudulent activities. This dimension originates from the Fraud Diamond Theory (Wolfe & Hermanson, 2004) and was later incorporated into the Fraud Pentagon Theory by (Crowe, 2011). Fraud cannot be successfully committed solely due to pressure or opportunity; perpetrators must also possess sufficient competence to exploit weaknesses in internal controls while avoiding detection. Agency Theory further explains that managers with greater authority and organizational knowledge possess superior information that can be used opportunistically when governance mechanisms fail to function effectively. Empirical evidence regarding competence remains mixed. (Vousinas, 2019) argues that competent executives are more likely to manipulate financial reporting because they understand the organization's control systems and accounting procedures. Similarly, (Irman & Suriyanti, 2025)found that managerial competence significantly increases the risk of fraud. Therefore, the following hypothesis is proposed.

H4: Competence positively affects financial statement fraud.

The Pentagon Fraud Theory introduces arrogance as an additional behavioral dimension that reflects excessive managerial self-confidence and the belief that organizational rules and governance mechanisms do not apply equally to top executives (Crowe, 2011). Managers with high levels of arrogance tend to overestimate their abilities, underestimate oversight mechanisms, and believe they can circumvent internal controls without being detected. Agency Theory suggests that such executive dominance intensifies agency conflicts because powerful managers can prioritize personal interests over those of shareholders while exploiting information asymmetries. Previous empirical studies generally support the relationship between executive arrogance and financial statement fraud. (Ozcelik, 2020) emphasizes that excessive executive self-confidence drives aggressive financial reporting practices. Similarly, (Andriani et al., 2022) and (Riany et al., 2024)found that CEO dominance significantly increases the likelihood of financial statement fraud. Therefore, the following hypothesis is proposed.

H5: Arrogance positively affects financial statement fraud.

Agency Theory (Jensen, M.C., and Meckling, 1976) states that effective corporate governance mechanisms reduce agency conflicts arising from information asymmetry and differences in interests between managers and shareholders. Within this governance framework, the audit committee serves as an independent oversight body responsible for monitoring the financial reporting process, evaluating the effectiveness of internal controls, ensuring compliance with accounting standards, and strengthening communication with internal and external auditors. Through these monitoring and oversight functions, an effective audit committee reduces managerial discretion and increases the likelihood of detecting fraudulent financial reporting, thereby preventing managers from engaging in opportunistic behavior. Previous studies have consistently shown that effective audit committees improve the quality of financial reporting and reduce the risk of financial misconduct (Abbott, L. J., Parker, S., & Peters, 2004a; Hasnan, S., Rahman, R. A., & Mahenthiran, 2020; Nindito et al., 2025; Velte, 2023)From the perspective of the Pentagon Theory of Fraud (Crowe, 2011), audit committees are expected to mitigate the influence of the five dimensions of fraud on financial statement fraud. Effective oversight can reduce managerial incentives arising from excessive pressure, limit opportunities through stronger internal controls and monitoring, prevent rationalization by strengthening ethical accountability, curb the abuse of managerial competence through better supervision, and mitigate the adverse effects of executive arrogance by strengthening independent governance oversight. Thus, the effectiveness of the audit committee is expected to weaken the positive relationship

between each dimension of the “Pentagon of Fraud”—pressure, opportunity, rationalization, competence, and arrogance and financial statement fraud in Indonesian SOEs. Based on the theoretical arguments and previous empirical evidence, the following moderation hypothesis is proposed.
H6 : Audit committee weakens the positive effect of pressure on financial statement fraud.
H7 : Audit committee weakens the positive effect of opportunity on financial statement fraud.
H8 : Audit committee weakens the positive effect of rationalization on financial statement fraud.
H9 : Audit committee weakens the positive effect of competence on financial statement fraud.
H10 : Audit committee weakens the positive effect of arrogance on financial statement fraud.

Methods

Research Design

This study employs a quantitative exploratory research design using panel data to test the empirical association between the dimensions of the Fraud Pentagon, audit committees, and financial statement fraud in Indonesian state-owned enterprises (SOEs). This study uses secondary data obtained from publicly available annual reports, audited financial statements, and corporate governance reports of SOEs listed on the Indonesia Stock Exchange (IDX) during the 2021–2025 period. This data is organized as a balanced panel that combines cross-firm observations across sectors with time-series observations over several years. The use of panel data allows the analysis to capture variations both across firms and over time, thereby providing stronger empirical evidence than analyses based solely on cross-firm or time-series data.

Population and Sample

Population study: This consists of all BUMN listed on the IDX during the 2021–2025 period. Data collection technique sample using purposive sampling based on several criteria, including the availability of the annual report, complete financial information about the audit committee, as well as the necessary data for all variables studied (see Table 1). The final sample study consists of the 16 SOEs observed for five years, resulting in 80 balanced panel observations.

Variables Measurement

Financial statement fraud is operationally defined as the intentional manipulation or material misstatement of financial information intended to mislead stakeholders regarding a company’s performance and financial condition (Dechow et al., 2011) (ACFE, 2024). In this study, financial statement fraud is proxied by the F-Score model developed by (Dechow et al., 2011), which combines measures of accrual quality and financial performance to estimate the likelihood of financial reporting manipulation. The F-Score has been widely adopted in accounting research because it provides a more comprehensive indicator of fraudulent financial reporting than single accrual-based measures. This variable is measured using the F-Score formula, which consists of RSST Accruals and Financial Performance components, as proposed by (Dechow et al., 2011).
Pressure is operationally defined as financial or non-financial demands placed on management that create incentives to achieve predetermined organizational goals, thereby increasing the motivation to manipulate financial statements ((Vousinas, 2019). In this study, pressure is proxied by Financial Targets, which are measured using Return on Assets (ROA) following (Skousen et al., 2009). ROA reflects the profitability targets expected by shareholders and other stakeholders and represents the level of performance pressure faced by management. This variable is measured as net income divided by total assets

Table 1. Sample Selection

No	Criteria	Amount
1	State-owned enterprises listed on the IDX for the 2021–2025 period	20
2	The company does not have a complete annual report	(2)
3	Companies that do not have complete financial data to measure one or more of the Fraud Pentagon variables (pressure, opportunity, rationalization, competence, arrogance) or financial statement fraud	(2)
4	Sample end	16
5	Period observation	5 years
6	Total observations	80

Table 2. Operational Definition

No	Variables	Proxy	Formula	Reference
1	Financial Statement Fraud	F-Score	RSST Accrual + Financial Performance $\text{RSST Accrual} = \frac{(\Delta\text{WC} + \Delta\text{NCO} + \Delta\text{FIN})}{\text{Average Total Assets}}$ ΔWC = change Working Capital ΔNCO = change Non-Current Operating Accruals ΔFIN = change Financial Accruals Average Total Assets = average total assets	(Dechow et al., 2011)
2	Pressure	ROA	Net Income / Total Assets	(Skousen et al., 2009)
3	Opportunity	NOI	Commissioner Independent / Total Commissioners	(Skousen et al., 2009)
4	Rationalization	AUDCHANGE	Dummy 1= Change Auditor	(Board, 2002)
5	Competence	DCHANGE	Dummy 1= Change Board of Directors	(Wolfe & Hermanson, 2004)
6	Arrogance	CEOPIC	Amount CEO photo	(Crowe, 2011)
7	Audit Committee	AC	Amount member audit committee	(Velte, 2023)

Data Analysis Technique

Opportunity is operationally defined as a condition arising from weaknesses in a company's internal controls and oversight that enables management to commit financial statement fraud while minimizing the likelihood of detection (Vousinas, 2019). Opportunity is proxied by Non-Operational Oversight (NOI) following (Skousen et al., 2009). This proxy reflects the effectiveness of board oversight through the proportion of independent directors. This variable is measured by dividing the number of independent directors by the total number of directors.

Rationalization is operationally defined as a cognitive process in which individuals justify unethical or fraudulent behavior as acceptable under certain circumstances (Kassem, 2022; Vousinas, 2019). In this study, rationalization is proxied by Auditor Change (AUDCHANGE) because a change in external auditors may indicate management's efforts to justify or conceal aggressive accounting practices, although such a change may also be caused by mandatory audit rotation requirements. This variable is measured using a dummy variable, where a value of one indicates that the company changed its external auditor during the observation year, and zero indicates otherwise.

Competence is operationally defined as the ability, authority, knowledge, and experience that enable individuals to exploit organizational weaknesses to commit fraud (Vousinas, 2019; Wolfe & Hermanson, 2004). This study uses board changes (DCHANGE) as a proxy for competence, assuming that changes in top management may introduce individuals with the ability to influence financial reporting decisions. This variable is measured using a dummy variable, where a value of one indicates a change in the board of directors during the observation year and zero indicates

Arrogance is operationally defined as excessive self-confidence, a sense of superiority, and a desire for dominance that leads executives to believe they are beyond the control of organizational and governance mechanisms (Crowe, 2011; Vousinas, 2019). This variable is proxied by the number of CEO photos (CEOPIC) featured in annual reports. This proxy reflects the CEO's level of dominance and self-promotion in corporate reporting. The variable is measured by counting the total number of CEO photos appearing in the company's annual report.

The audit committee is operationally defined as a corporate governance mechanism responsible for overseeing the quality of financial reporting, the effectiveness of internal controls, risk management, and the external audit process to enhance the credibility of financial information (Velte, 2023). In this study, the audit committee is proxied by the audit committee size, in accordance with (Velte, 2023). This variable is measured by the total number of audit committee members serving during the observation year (see Table 2).

This study uses panel data regression analysis with the help of the EViews software. Model selection is done through the Chow, Hausman, and Lagrange Multiplier tests. Because the FEM was selected as the best model, the hypothesis was tested using FEM with MRA.

$FFS = \alpha + \beta_1 FT + \beta_2 NOI + B_3 AUDCHANGE + B_4 DCHANGE + B_5 CEOPIC + €$

$FFS = \alpha + \beta_1 FT + \beta_2 NOI + \beta 3\ AUDCHANGE + \beta_4 DCHANGE + \beta_5 CEOPIC + \beta_6 AC + \beta_7 FT{\times}AC + \beta_8 NO{\times}AC + \beta_9 AUDCHANGE{\times}AC + \beta_{10} CEOPIC{\times}AC + €$

FFS = Financial Statement Fraud (F-Score)
FT = Financial Target (Pressure)
NOI = Ineffective Monitoring (Opportunity)
AUDCHANGE = Auditor Change (Rationalization)
DCHANGE = Director Change (Competence)
CEOPIC = Number of CEO photographs (Arrogance)
AC = Audit Committee
FT × AC, NOI × AC, AUDCHANGE × AC, DCHANGE × AC, and CEOPIC × AC = interaction terms representing the moderating effect of the audit committee on each Fraud Pentagon dimension
α = intercept
β = regression coefficients
Criteria:

- $p < 0.05$ = significant
- $p < 0.10$ = marginally significant

Result and Discussion

Descriptive Statistics

Descriptive Statistics data shows that the average score of the fraud report financial (FFS) is 0.027000, with a minimum value of -7.320000 and a max of 2.180000. Variable pressure (FT) has an average value of 0.031750, which indicates that the company that became the sample experience pressure relative to finances until currently during the period of observation. Variable opportunity (NOI) has an average value of 0.040500, which reflects existence variation level effectiveness of supervision. The average value of the variable audit committee (AC) of 0.647000 indicates that part of the big company's own structure is relatively ad equate for the audit committee.

Descriptive results also show that the variable arrogance, which is measured through frequency of emergence of the CEO photo, has an average value close to 1, which indicates dominance relative to managerial tally in the annual report. Overall, findings describe the existence of variation-related factors with Fraud among state-owned enterprises in Indonesia. Model Selection Test

The Chow test yielded a mark probability of 0.0000, which indicates that the FEM is more appropriate compared to the CEM. Furthermore, the Hausman test also produces a mark probability of 0.0000, which confirms that the FEM is superior compared to the REM. Therefore, the FEM is selected as the best model for testing the hypothesis.

Heteroscedasticity test results show that all over variables own mark probability is bigger than 0.05, so it can be

Table 3. Fixed Effect Model Regression Results

Variables	Coefficient	t-statistic	Prob.	Decision
FT	8.690026	2.578544	0.0127	H1 accepted
NOI	5.225194	4.110042	0.0001	H2 accepted
AUDCHANGE	0.299318	0.801222	0.4265	H3 is rejected
DCHANGE	0.243464	0.705187	0.4837	H4 is rejected
CEOPIC	1.011322	2.751715	0.0081	H5 is accepted
FT×AC	-8.161590	-1.753185	0.0852	H6 rejected *
NOI×AC	-14.93803	-6.695783	0.0000	H7 accepted
AUDCHANGE×AC	-0.533233	-0.906629	0.3686	H8 rejected
DCHANGE×AC	-0.623569	-1.205883	0.2331	H9 rejected
CEOPIC×AC	-0.788871	-1.728008	0.0897	H10 rejected *

concluded that the model is free from the problem of heteroscedasticity. In addition, the correlation matrix shows no existence problem with multicollinearity because all the coefficient correlations are below 0.90.

This study aims to analyze the influence of the Pentagon Fraud proxy through pressure, opportunity, rationalization, competence, and arrogance towards financial statement fraud in State-Owned Enterprises (BUMN) in Indonesia, as well as test the role of audit committee moderation in connection with that. Results panel data model selection through the Chow test and the Hausman test, the best model used in the study is the FEM. The FEM outperforms the common effects model, according to the Chow test results, which show a substantial probability of 0.0000 (see Table 3). Furthermore, the FEM is superior to the random effect model, as shown by the Hausman test, which yields a probability of 0.0000. Thus, testing hypotheses uses the Fixed Effect Model approach.

Test results simultaneously show that Pentagon Fraud variables and interactions audit committee in general together have a significant influence on financial statement fraud. This is indicated by the Prob (F-statistic) value of 0.000000 with an Adjusted R-Squared value of 0.759598.

Findings show that the research model is capable of explaining the variation of financial statement fraud, which was 75.95%, while the rest was explained by other variables outside the research model.

Information:

* significant at α = 10%

Model Statistics

- Observation = 80
- Adjusted R^2 = 0.759598
- F-statistic = 10.98465
- Prob(F-statistic) = 0.000000
- Durbin-Watson = 2.060845

The Influence of Pressure on Financial Statement Fraud

Research findings indicate that pressure has a favorable and substantial influence on financial statement fraud. The pressure variable is represented by financial goals (FT). which has a coefficient totaling to 8.690026 with a significance level of 0.0127. Findings This shows that the higher pressure finances and demands to achieve company targets, the greater the possibility that management do manipulate report finance.

This research result supports the Fraud Pentagon Theory, which explains that pressure is the main factor driving force individuals do fraudulent actions. In the context of sample companies, pressure not only originates from the demands of the company's profitability, but also comes from expectations of government, public, and stakeholder share related stability and performance of the company. Condition the cause management be in a situation that encourages the presentation of more finances, Good, compared to the actual condition.

Findings also show that companies with high-pressure finance tend to own incentives bigger For carry out earnings manipulation to maintain the company and maintain investor confidence. From the Agency Theory perspective, conditions appear because of the existence of a conflict of interest between the principal and agent. Management as an agent has encouragement to maintain the image of a performance company in order to obtain incentives, compensation, and organizational legitimacy. (Velte, 2023)

Research results. This is in line with the study (Submitter et al., 2021)and (Indiraswari et al., 2025)which found that financial pressure itself has a significant influence on financial statement fraud. Research. This strengthens the argument that pressure on institutions in state-owned companies can increase risk manipulation report on finance.

The findings of this study support the Fraud Pentagon Theory, which states that pressure is a main fraud driver. Pressure finances and demands company target achievement, increase trend management, and performance earnings manipulation to maintain the stability of the company and maintain investor confidence. These results align with those of (Indiraswari et al., 2025)and (Rifa & Tasrif, 2022)but contradict those of (Tjen et al., 2020)and (Septiani, 2025)who found that pressure had no significant effect on financial statement fraud.

The Influence of Opportunity on Financial Statement Fraud

Research results show that opportunity has a positive and significant influence against financial statement fraud. The opportunity variable, represented by ineffective monitoring (NOI), has a coefficient of 5.225194 with a Sig of 0.0001. Findings: This shows that an ineffective company supervision increases the opportunity for manipulation of financial reports.

In a way, theoretically, the Fraud Pentagon Theory explains that fraud can occur when an individual has a chance to do manipulative actions with the risk of detection. In the study, this opportunity reflects the weakness of the company's internal supervision and control. When the monitoring mechanism is not working in an effective management has more space big for utilize asymmetrical information in compile report.

In state-owned companies, the complex structure of organizations and multi-layered bureaucracy can increase the opportunity for the occurrence of weakness supervision. In addition, pressure politics and external intervention in the process of decision making can reduce the effectiveness of the mechanism of control of the company. Condition the cause management easier to do manipulation report without detection in a direct way.

Findings of this study support (Velte, 2022)Corporate governance and financial statement fraud. Corporate Ownership & Control, 19(3), 2022) (Stevansyah & Suhendah, 2023)and the opposite to the results of the study (Sinaga & Siagian, 2025)and (Gita et al., 2025)who stated that the weakness of internal supervision and control increases the risk of financial statement fraud. These results also confirm the importance of strengthening the corporate governance system in state-owned companies to minimize the occurrence of opportunity manipulation of financial reports.

The Effect of Rationalization on Financial Statement Fraud

Research findings indicate that rationalization does not have a substantial impact on financial statement fraud. The proxy rationalization variable, use change of external auditor (AUDCHANGE) has a mark probability of 0.4265. Findings This shows that the change of auditors is not in a way directly related to the possibility of the occurrence of financial report manipulation. The insignificant result may also indicate that auditor change is a relatively weak proxy for rationalization in the context of Indonesian State-Owned Enterprises (SOEs). Rationalization refers to an internal cognitive process through which individuals justify unethical behavior, making it inherently difficult to observe through external organizational indicators. In SOEs, auditor changes are frequently driven by regulatory requirements, mandatory auditor rotation policies, procurement procedures, and government governance regulations rather than managerial attempts to justify or conceal fraudulent activities. Consequently, the occurrence of auditor changes may not accurately capture the psychological justification mechanisms underlying financial statement fraud, which helps explain the absence of a significant relationship in this study.

This research result indicates that auditor changes in state-owned companies are more frequent. Lots are influenced by compliance to regulations and policies, auditor rotation compared to effort management to hide fraudulent actions. Thus, the change of auditor has not yet been made capable of representing the process of rationalization management in the manipulation of financial reports.

In addition, state-owned companies generally have more external talent compared to private companies, so that a change of auditors does not always reflect an effort to manage risk and fraud detection. Research results show that proxy rationalization using auditor change still has limitations in explaining fraudulent behavior in general empirical.

Findings of the study show that auditor changes in state-owned enterprises in Indonesia are more frequent and tend to be influenced by compliance to regulations and policies, and must auditor rotation compared to effort management for hiding cheating activity. Therefore, the change of auditors has limitations in representing behavior rationalization in fraud report financial findings. This is in line with the study (Irianto et al., 2025; Rifa & Tasrif, 2022)and (Tjen et al., 2020) and, however, contradict (Kassem, 2022)and (Rifa & Tasrif, 2022) who found that auditor changes may indicate an effort to reduce the risk of fraud detection.

The Influence of Competence on Financial Statement Fraud

The study's findings demonstrate that competency does not much affect financial statement fraud. The competence variable, represented by board change (DCHANGE), has a probability value of 0.4837. This finding suggests that board change does not directly increase the risk of financial statement manipulation.

Competence theoretically refers to an individual's capacity to comprehend organizational processes and use their vulnerabilities to perpetrate fraud. However, in the context of this research, board changes do not always reflect an individual's ability to manipulate financial statements. In state-owned enterprises, board changes are often due to organizational restructuring, government policies, political changes, or the need for corporate transformation.

The findings of this research demonstrate that competence, as shown by director turnover, does not substantially account for financial statement fraud. This finding indicates the need for the use of more representative competence proxies in future research, such as management experience, the financial background of directors, or the complexity of the company's organizational structure.

The research findings indicate that changes in the board of directors do not directly increase the likelihood of financial statement fraud. Director changes can be implemented as part of organizational restructuring, strategic decisions, or improvements in corporate governance, rather than as a mechanism to facilitate fraudulent activity. This finding aligns with research by (Tjen et al., 2020) and (Fabiolla et al., 2021)but contradicts (Irman & Suriyanti, 2025; Vousinas, 2019)found that changes in directors significantly increase the risk of financial reporting fraud.

The Influence of Arrogance on Financial Statement Fraud

Financial statement fraud is positively and significantly impacted by arrogance, according to the research. An annual report's use of the CEO's picture serves as a proxy for the arrogance variable, which has a coefficient totaling to 1.011322 with a significance level of 0.0081. Findings This shows that the higher level of CEO dominance and exposure in the annual report, then the possibility of the occurrence of financial report manipulation.

This research result supports the Fraud Pentagon Theory, which explains that individuals with a high level of arrogance tend to feel they own great power and control, so they consider themselves difficult to detect by the mechanisms of supervision companies. CEO dominance in a company can create a culture too large an organization power - centered individual so that reduces the effectiveness of internal control.

In context in state - owned companies, the CEO position often has a strong influence in making strategic decisions for the company. The height of CEO exposure in the annual report can reflect the dominant management peak in the form of the image of the company and maintain the legitimacy of the organization in front of the public and government.

The results of this study are in line with (Andriani et al., 2022) and (Riany et al., 2024)however contradictory with the study (Yovita & Suryani, 2024) as well as study Does the Fraud Pentagon Theory Effectively Detect Fraudulent Financial Statements? (Sari, 2024)who found that the frequency of CEO photos no always reflects arrogant management.

The Role of the Moderation Audit Committee

Research results show that the audit committee does not capable moderate influence pressure to prevent financial statement fraud. Interaction between pressure and the audit committee (FT*AC) has a negative coefficient of -8.161590 with level significance of 0.0852. Findings This indicates that the audit committee is not yet capable in a way effective pressing for financial transparency and preventing financial reporting manipulation. Although the interaction coefficient is negative and consistent with the expected direction, the moderating effect of the audit committee on the relationship between pressure and financial statement fraud is not statistically supported. Consequently, the results do not provide sufficient evidence that the audit committee significantly reduces pressure-induced fraud risk in Indonesian State-Owned Enterprises. This finding suggests that while audit committees are an important governance mechanism, their ability to mitigate fraud arising from organizational pressure may be constrained by other institutional and managerial factors

The audit committee is basically functioning as a mechanism of supervision that assists the board of commissioners in ensuring quality reporting as well as the effectiveness of the company's internal control. In condition pressure high financial environment, an active and independent audit committee should be capable increase quality supervision so that the room for do manipulation report finance become more limited. Findings. This lends credence to Agency Theory, which states that principal-agent conflicts may be mitigated by better functional supervision and other corporate governance procedures. This is in line with Patrick's research in (Velte, 2023), which states that governance mechanisms in effective companies, including the audit committee, are capable of lowering the risk of financial misconduct as well as increasing the quality of reporting. Research findings indicate that audit committees contribute to more effective monitoring and lower the likelihood of financial reporting fraud through improved governance practices and reduced information gaps between managers and stakeholders. In addition, (Abbott, L. J., Parker, S., & Peters, 2004) also found that the effectiveness of the audit committee can reduce pressure on organizations to report financial fraud.

In addition, the results of the study show that audit committees in general significant capable of weakening their influence on the opportunity to detect financial statement fraud. NOI*AC interaction has a coefficient of -14.93803 with a level of Sig of 0.0000. Findings: This shows that the audit committee plays an important role in reducing the opportunity for the occurrence of fraud through improving the effectiveness of supervision of the company.

The existence of the audit committee can strengthen the monitoring function, improving transparency in financial reporting, as well as reduce asymmetry information between management and shareholders. Research results. This strengthens the view that effective corporate governance is capable of reducing the risk of financial statement fraud in state-owned enterprises. Consistent with other studies, this one finds that audit committees are more successful when its members are independent, actively participate, and competent. This, in turn, improves financial reporting accuracy and decreases the possibility of financial statement manipulation (Abbott, L. J., Parker, S., & Peters, 2004). Research by (Velte, 2022) also shows that strong governance mechanisms can reduce the likelihood of management engaging in opportunistic behavior. However, these findings contradict research by (Abbott, L. J., Parker, S., & Peters, 2004), which states that the existence of an audit committee is not necessarily effective if it is not supported by the independence of its members and the quality of the company's internal control system.

Furthermore, the audit committee does not prove capable of moderate influence, rationalization, and competence to detect financial statement fraud. The interaction of AUDCHANGEAC and DCHANGEAC shows results that are not significant. Findings: This indicates that the audit committee is more effective in reducing related fraud factors with pressure and opportunity compared to the factor behavior of individuals who are psychologically driven.

Rationalization and competence factors tend to be related to individual personal characteristics, decision-making processes, and difficult psychological justification observed through the mechanism of formal company supervision. Research results. This is in line with (Kassem, 2022), which explains that rationalization is difficult, including internal individual factors identified by the auditor, as well as governance mechanisms of the company. However, the results are different from the study (Vousinas, 2019) stated that individual competence in utilise weakness system organization can be minimized through supervision of stronger companies.

Temporarily, the audit committee also does not prove capable moderate influence of arrogance to financial statement fraud. CEOPICTURES*AC interaction has a coefficient of -0.788871 with a level of Sig 0.0897. Findings This shows that the existence the audit committee has not yet been capable in a way significant reduce CEO dominance in the financial reporting process finance so that potential manipulation of financial reports can still happen.

An effective audit committee can essentially increase supervision of policy management as well as reduce domination individual certain in the process of taking decision company. Research results. This is in line with (Velte, 2023) research, which found that effective governance mechanisms company can reduce behavior opportunistic management and CEO dominance in reporting finance. However, (Abbott, L. J., Parker, S., & Peters, 2004) found that the influence of CEO dominance over quality reporting finance can still happen, although the company has its own strong mechanism of supervision.

Overall, the study's findings suggest that the audit committee does not uniformly moderate all relationships between Fraud Pentagon dimensions and financial statement fraud. The strongest moderating effect was observed in the relationship between opportunity and financial statement fraud, suggesting that effective audit committee oversight can significantly reduce fraud risks arising from weaknesses in monitoring and control systems. In contrast, the moderating effects on pressure and arrogance were only marginally supported, indicating limited statistical evidence that audit committees can mitigate fraud risk associated with these factors. Therefore, while audit committees play an important governance role in reducing certain fraud risks, their effectiveness may vary depending on the specific fraud drivers and organizational context within Indonesian State-Owned Enterprises. Findings This supports research by (Velte, 2022) and (Abbott, L. J., Parker, S., & Peters, 2004), which states that effectiveness audit committee contributes significant in increase quality reporting as well as lowering the risk of fraud. In addition, the results of this also strengthen Agency Theory, which explains that effective governance mechanisms in a company can reduce conflict of interest and asymmetrical information between management and shareholders.

Conclusion

The results of the study indicate that pressure, opportunity, and arrogance have a positive and significant effect on financial statement fraud at the 5% significance level. Conversely, rationalization and competence do not show a significant effect. The moderating role of the audit committee yields different results. The audit committee is proven to significantly weaken the effect of opportunity on financial statement fraud at the 5% significance level. Meanwhile, the moderating effect of the audit committee on the relationship between pressure and arrogance and financial statement fraud is only marginally supported.

The findings have important practical implications, such as the need for more open financial reporting from state-owned firms, better internal control mechanisms, and more effective audit committees. Further research is recommended to increase the sample size, apply alternative fraud detection models, and incorporate additional variables in the area of corporate governance to gain more insight into fraud in financial reporting.

Author contributions

From the initial idea for the problem to the conclusion and solution, each author contributed equally to the present study.

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