



THE IMPACT OF INTERNAL CONTROL ON FRAUDULENT FINANCIAL REPORTING OF STATE OWNED ENTERPRISES

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ABSTRACT

This study examines the influence of internal control effectiveness on the likelihood of financial statement fraud among 26 State-Owned Enterprises (SOEs) during the 2023–2024 period, using secondary data obtained from annual reports and analyzed through a Common Effect Model regression. Internal control effectiveness is measured using an Internal Control Index, while the probability of fraudulent reporting is proxied by the Beneish M-Score. The findings reveal that internal controls, in aggregate, have a significant negative effect on the potential for financial statement fraud. At the component level, Risk Assessment, Information and Communication, and Monitoring show significant negative effects, whereas Control Environment and Control Activities do not exhibit significant influence. Moreover, the average Beneish M-Score indicates a tendency toward potential financial reporting fraud within the sampled SOEs.



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1. INTRODUCTION

State-Owned Enterprises (SOEs) significantly impact Indonesia's economy (Setiorini, Rahmawati, Payamta, & Hartoko, 2021). In 2023 alone, SOEs reported a consolidated profit of Rp327 trillion and contributed substantial revenue to the state budget through taxes, dividends, and non-tax revenues (BPS, 2023). To further enhance synergy, the Ministry has restructured 47 SOEs into clusters (BUMN, 2023). However, despite these contributions, SOEs are frequently criticized for poor performance and political manipulation, raising doubts about their governance efficiency (Jahja, Mohammed, & Lokman, 2024). Financial statement fraud remains a critical issue. The ACFE's "Occupational Fraud 2024" report identifies it as the most costly fraud type, with a median loss of \$766,000, and notes that Indonesia ranks third for fraud cases in the Asia-Pacific (ACFE, 2024). This problem is evident in Indonesian SOEs, such as PT Waskita Karya Tbk and PT Wijaya Karya Tbk, which misrepresented financial conditions (Kompas, 2023). Similarly, PT Indofarma Tbk faced scrutiny for alleged manipulation, including fictitious entries, causing significant state losses (BPK, 2024).

When analyzing SOEs through the fraud hexagon, factors such as pressure and CEO duality observed in approximately 28% of SOEs demonstrate a positive influence on fraud (Sudrajat, Suryadnyana, & Supriadi, 2023). Furthermore, the Beneish M-Score, widely regarded as the "best forensic tool" for identifying earnings manipulation in developing countries (Handoko, Wiyardi, & Handoko, 2022; Narsa, Afifa, & Wardhaningrum, 2023), identified manipulation in 16 SOEs within the 2011–2020 timeframe (Husein, Saleh, Kriswanti, & Bonara, 2023).

A primary contributor to such fraud is the lack of internal control (ACFE, 2024), as research confirms that internal control effectiveness is inversely related to fraud likelihood (Wang, Bian, Xu, & Liu, 2025; Lubis, Sari, Ramadhany, & Brutu, 2024). In response, the Ministry of SOEs mandated governance and internal

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control assessments via Regulation No. PER-2/MBU/03/2023 (BPK, 2023) and issued specific 2024 technical guidelines (Decree No. SK-5/DKU.MBU/11/2024) for Internal Control over Financial Reporting (ICoFR) (PWC, 2024). This implementation utilizes the COSO Internal Control Framework (2013) (BUMN, 2024) to link control systems directly to high-quality financial information (Weli, Sjarief, & Madyakusumawati, 2020). Fraud theories explain the factors that cause fraud to occur. Cressey (1953) introduced these factors in the Fraud Triangle: pressure, opportunity, and rationalization. Wolfe and Hermanson (2004) later added competence/capability, evolving the model into the Fraud Diamond. Crowe Horwath expanded this to the Fraud Pentagon by including arrogance, and Georgios Vousinas further developed it into the Fraud Hexagon theory by adding collusion (Vousinas, 2019; Achmad, Ghozali, & Pamungkas, 2022; Wolfe & Hermanson, 2004; Burlacu, Robu, Anghel, Rogoz, & Munteanu, 2025; Gitman & Zutter, 2015).

The ACFE divides fraud into three main categories: corruption, asset misappropriation, and financial statement fraud (ACFE, 2024). Financial statement fraud is defined as the intentional manipulation of financial reports—by including, omitting, or altering information—to influence the decisions of its users (Crain, Hopwood, Pacini, & Young, 2015). Based on these fraud theories, factors such as pressure, financial stability, ego, capability, and ineffective monitoring have been found to influence the potential for financial statement fraud (Burlacu, Robu, Anghel, Rogoz, & Munteanu, 2025; Achmad, Ghozali, & Pamungkas, 2022; Larum, Zuhroh, & Subiyantoro, 2021). However, conflicting findings exist regarding ineffective monitoring, as Achmad, Ghozali, and Pamungkas (2022) found this factor to have no significant effect. Agency Theory, developed amid the historical separation of ownership and management, describes a contract where a principal (owner) delegates decision-making authority to an agent (manager) (Jensen & Meckling, 1976). As both parties are assumed utility-maximizers, an agency problem emerges: agents may pursue self-interest (e.g., excessive perks or bonuses) rather than maximizing the principal's welfare, creating a conflict (Godfrey, Hodgson, Tarca, Hamilton, & Holmes, 2010). In the context of State-Owned Enterprises (SOEs), the government acts as the de facto principal, possessing formal authority for appointments, monitoring, and sanctions. The public, holding only diffuse ownership, lacks the incentive or capacity for effective oversight. Consequently, government entities (Ministries, BPK, OJK, KPK) wield definitive control through formal supervision and informal influence (Apriliyanti, Dieleman, & Randoy, 2023).

The SOE CEO serves as the agent, tasked with balancing commercial objectives against government-directed social mandates and, potentially, private requests from political figures. The principal's enforcement mechanisms ranging from dismissal threats and audits (BPK, KPK) to informal political pressure influence the CEO's compliance with these varied demands (Apriliyanti, Dieleman, & Randoy, 2023). This inherent agency conflict (divergent interests) necessitates agent monitoring (Achmad, Ghozali, & Pamungkas, 2022). Ineffective monitoring creates an opportunity for fraudulent financial reporting (Larum, Zuhroh, & Subiyantoro, 2021), a finding supported by the ACFE, which identifies a lack of internal control as the primary driver of fraud (ACFE, 2024).

The Committee of Sponsoring Organizations of the Treadway Commission (COSO) defines internal control as a process influenced by an entity's board and personnel, designed to provide reasonable assurance regarding operational, reporting, and compliance objectives (COSO, 2013). An effective system requires the integrated operation of five components—control environment, risk assessment, control activities, information and communication, and monitoring—and their 17 associated principles to prevent misstatements and ensure consistent financial statement preparation (Rubino & Vitolla, 2014). Consequently, high-quality internal control enhances financial reporting credibility for investors (Chen, Dong, Han, & Zhou, 2017) and is capable of detecting fraud, errors, and inconsistent accounting standards (Asbaugh-Skaife, Collins, Kinney Jr., & LaFond, 2008; Donelson, Ege, & McInnis, 2017).

However, the efficacy of internal control against Real Earnings Management (REM) is debated; while (Wali & Masmoudi, 2020) found that specific components influence REM, (Boulhaga, Bouri, & Elbardan, 2022) argue it is often ineffective due to detection difficulties. Additionally, while factors like financial distress can weaken controls, strong internal control may moderate the impact of such pressures on earnings management (Li, Li, Xiang, & Djajadikerta, 2020; Bimo, Siregar, Hermawan, & Wardhani, 2019). In terms of disclosure, although identifying weaknesses can signal risk and diminish perceived earnings quality (Ji, Kaplan, Lu, & Qu, 2020; Donelson, Ege, & McInnis, 2017), management reports on ICoFR generally

improve reporting quality (Dowdell Jr, Herda, & Notbohm, 2014) and correlate negatively with earnings management, particularly in the Indonesian banking sector (Zulfikar, et al., 2021).

2. METHODS

2.1 Hypothesis Development

The Control Environment component has been found to influence financial statement fraud. This includes elements such as the company's ethical values and the effectiveness of internal audit quality (Djuitaningsih, 2016; Wali & Masmoudi, 2020; Soesanto, Noviyanti, & Purnamasari, 2024). Specifically, the Control Environment (along with Risk Assessment, Control Activities, and Monitoring, when measured by disclosure) was shown to affect real earnings management (Wali & Masmoudi, 2020).

H1. *Control environment has a negative effect on fraudulent financial reporting.*

Risk Assessment also impacts financial statement fraud through essential risk management activities, including the identification, evaluation, and supervision of risks. Through the systematic identification, assessment, and control of risks, managers gain greater insight into organizational processes, which in turn mitigates the likelihood of financial misstatements and fraudulent activities. (Marzuki, Majid, Bakar, & Wahab, 2024; Djuitaningsih, 2016; Wali & Masmoudi, 2020; Johnston & Soileau, 2020).

H2. *Risk assessment has a negative effect on fraudulent financial reporting.*

Control Activities, which encompass the implementation of systems like whistleblowing, have been demonstrated to influence financial statement fraud (Djuitaningsih, 2016; Wali & Masmoudi, 2020; Soesanto, Noviyanti, & Purnamasari, 2024). However, some studies contradict the effectiveness of control components; for example, one study found that the disclosure of internal control weaknesses did not effectively curb real earnings management (Boulhaga, Bouri, & Elbardan, 2022).

H3. *Control activities have a negative effect on fraudulent financial reporting.*

The Information and Communication component shows mixed results regarding its effect on financial misstatement. While one study concluded that this component does not influence real earnings management (Wali & Masmoudi, 2020), others suggest that anti-fraud education (a form of information and communication) is an effective measure for preventing financial statement fraud (Shonhadji & Maulidi, 2021). This view is supported by ACFE findings, which underscore the critical role of whistleblowing systems (a key communication mechanism) in reducing losses and ensuring rapid fraud detection (ACFE, 2024).

H4. *Control environment has a negative effect on fraudulent financial reporting.*

Within the COSO framework, monitoring entails continuous or separate assessments designed to verify that all internal control components are functioning effectively. Ongoing evaluations are embedded within daily operations to ensure timely feedback, while separate evaluations are conducted periodically, with scope and frequency determined by risk levels and control effectiveness; any identified deficiencies against established criteria must be reported to the relevant authorities (COSO, 2013). As a critical element of monitoring, internal audit plays a vital role in mitigating fraudulent financial statements. Research emphasizes that internal audit quality—characterized as a comprehensive, objective, and systematic evaluation of organizational activities—significantly influences the prevention of such fraud (Novatiani, Kusumah, Yadiati, Rachmat, & Rachman, 2024; Wali & Masmoudi, 2020).

H5. *Monitoring has a negative effect on fraudulent financial reporting.*

2.2 RESEARCH METHODS

This study adopts a quantitative approach to assess the impact of internal controls on fraudulent financial statements. The data were sourced from the companies' annual reports covering the 2023–2024 period. Consequently, companies with incomplete annual reports were excluded from the analysis. The final sample size for this research is 52 observations (representing 26 SOE's across the two-year period, 2023 and 2024). The research framework, grounded in internal control, agency, signaling theories, illustrates the hypothesized relationships among control environment, risk assessment, control activities, information and communication, and as determinants of fraudulent financial statement. This model is designed to investigate the impact of internal control components namely control environment, risk assessment,

control activities, information and communication, and monitoring on the occurrence of fraudulent financial statements, assessing their effects both partially and simultaneously.

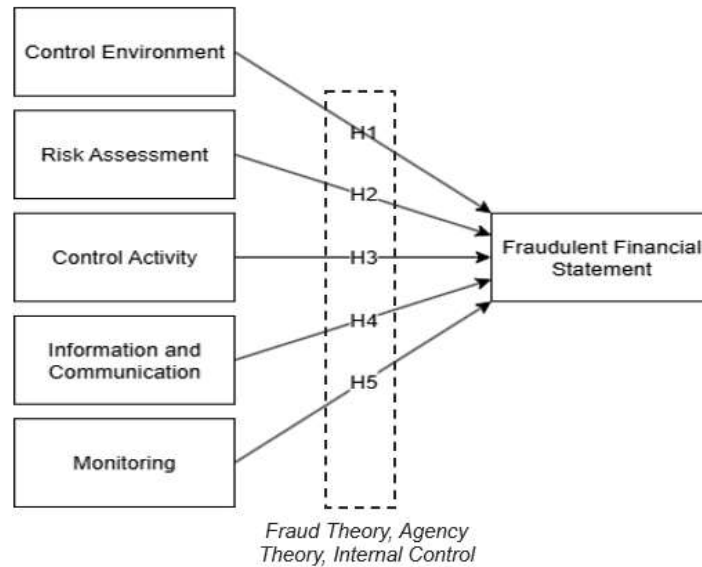


Figure 1 Research Framework Model

The dependent variable, financial statement fraud, is proxied by the Beneish M-Score, which aggregates eight distinct financial ratios (Beneish, 1999). Based on the established model (Achmad, Ghazali, & Pamungkas, 2022; Omeir, Vasiliauskaite, & Soleimanizadeh, 2023), the score is calculated as follows:

$$MScore = -4.84 + 0.920 DSRI + 0.528 GMI + 0.404 AQI + 0.892 SGI + 0.115 DEPI - 0.172 SGAI - 0.327 LVGI + 4.679 TATA$$

Companies with an M-Score exceeding -1.78 are classified as manipulators, indicating potential fraud, whereas scores below this threshold indicate non-manipulators (Achmad, Ghazali, & Pamungkas, 2022; Beneish, 1999; Omeir, Vasiliauskaite, & Soleimanizadeh, 2023). The formulas for each of these ratios are presented below:

Table 1 Beneish Model Ratio

Ratio	Formula
DSRI	$\frac{Receivables_t / Sales_t}{Receivables_{t-1} / Sales_{t-1}}$
GMI	$\frac{(Sales_{t-1} + Cost\ of\ goods\ sold_{t-1}) / Sales_{t-1}}{(Sales_t + Cost\ of\ goods\ sold_t) / Sales_t}$
AQI	$\frac{1 - (Current\ assets_t + PPE) / Total\ Assets_t}{1 - (Current\ assets_{t-1} + PPE_{t-1}) / Total\ Assets_{t-1}}$
SGI	$\frac{Sales_t}{Sales_{t-1}}$
DEPI	$\frac{Depreciation_{t-1} / (Depreciation_{t-1} + PPE_{t-1})}{Depreciation_t / (Depreciation_t + PPE_t)}$
SGAI	$\frac{Sales, general, and administrative\ expense_t / Sales_t}{Sales, general, and administrative\ expense_{t-1} / Sales_{t-1}}$
LVGI	$\frac{(LTD_t + Current\ liabilities_t) / Total\ assets_t}{(LTD_{t-1} + Current\ liabilities_{t-1}) / Total\ assets_{t-1}}$
TATA	$\frac{NI\ from\ Continuing\ Operation_t - CF\ from\ Operation_t}{Total\ Assets}$

The independent variable is measured using the Internal Control Quality Index developed by Chen et al. (2017). Each indicator is assessed based on its presence or absence within the annual report disclosures. The operational definitions and measurement indicators for each variable are summarized below:

Table 2 Variables Operationalization

Variable	Description	Measurement	Scale
Fraudulent Financial Statements (Y)	Tendency to manipulate financial statement	Beneish Model	Ratio
Control Environment(X1)	The level of firm’s Control Environment		Ratio
Risk Assessment (X2)	The level of firm’s Risk Assessment	Internal Control Quality Index by Chen, et al., (2017)	Ratio
Control Activities (X3)	The level of firm’s Control Activities	consisting of Control Environment, Control	Ratio
Information and Communication (X4)	The level of firm’s Information and Communication	Activities, Information and Communication, and Monitoring	Ratio
Monitoring (X5)	The level of firm’s Monitoring		Ratio

Panel data regression was used, combining cross-sectional and time-series dimensions to account for heterogeneity across firms and over time. The Random Effect Model was identified as the most appropriate for this dataset with the regression equation as below:

$$Y = \beta_0 + \beta_1X1 + \beta_2X2 + \beta_3X3 + \beta_4C1 + \beta_5C2 + \varepsilon$$

- Where** :
- Y : Fraudulent Financial Statements
 - X1 : Control Environment
 - X2 : Risk Assessment
 - X3 : Control Activities
 - X4 : Information and Communication
 - X5 : Monitoring
 - ε : Error term

3. RESULTS AND DISCUSSIONS

Table 3 Descriptive Statistics

	Mean	Minimum	Maximum	Std. Dev.
Control Environment (X1)	0.221197	0.006081	0.470803	0.101584
Risk Assessment (X2),	0.679953	0.129476	0.875000	0.138942
Control Activities (X3)	0.250178	0.000468	0.596668	0.135415
Information and Communication (X4)	0.052896	0.002622	0.08907	0.014542
Monitoring (X5)	0.010253	0.003433	0.013467	0.001756
Fraudulen Financial Statement (Y)	-1.71553	-3.30055	8.298796	1.787476

Table 3 presents the descriptive statistics of all variables, including mean, minimum, maximum, and standard deviation. The descriptive analysis reveals a heterogeneous implementation of internal control components among the sampled SOEs. While Risk Assessment (X2) demonstrates a relatively adequate performance (mean = 0.6799), the Control Environment (X1) and Control Activities (X3) remain at moderate levels (means of 0.2212 and 0.2502, respectively), whereas Information and Communication (X4) and Monitoring Activities (X5) are notably low (means of 0.0529 and 0.0103), indicating substantial room for improvement. Standard deviations across all components confirm that internal control quality varies among firms. Crucially, the dependent variable, Beneish M-Score, presents a mean of -1.7155 with a high standard deviation (1.7875); this suggests that, on average, the sampled SOEs exhibit a tendency toward financial statement fraud, though the degree of risk varies significantly across the observation period.

Chow Test

Table 4 Chow Test Result

Redundant Fixed Effects Tests			
Equation: Untitled			
Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.218837	(25,21)	0.3250

Lagrange Multiplier (LM) Test

Table 1 Lagrange Multiplier (LM) Test Result

Lagrange Multiplier Tests for Random Effects			
Null hypotheses: No effects			
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives			
	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	0.015010 (0.9025)	1.033513 (0.3093)	1.048523 (0.3058)

The Chow test yielded a cross-section F probability of 0.3250 (> 0.05), favoring the Common Effect Model (CEM) over the Fixed Effect Model. Subsequently, the Lagrange Multiplier test produced a Breusch-Pagan p-value of 0.9025 (> 0.05), further confirming the suitability of the CEM compared to the Random Effect Model. Given the consistency of these results, the Common Effect Model is adopted for this study.

Classical Assumption Test
Normality Test

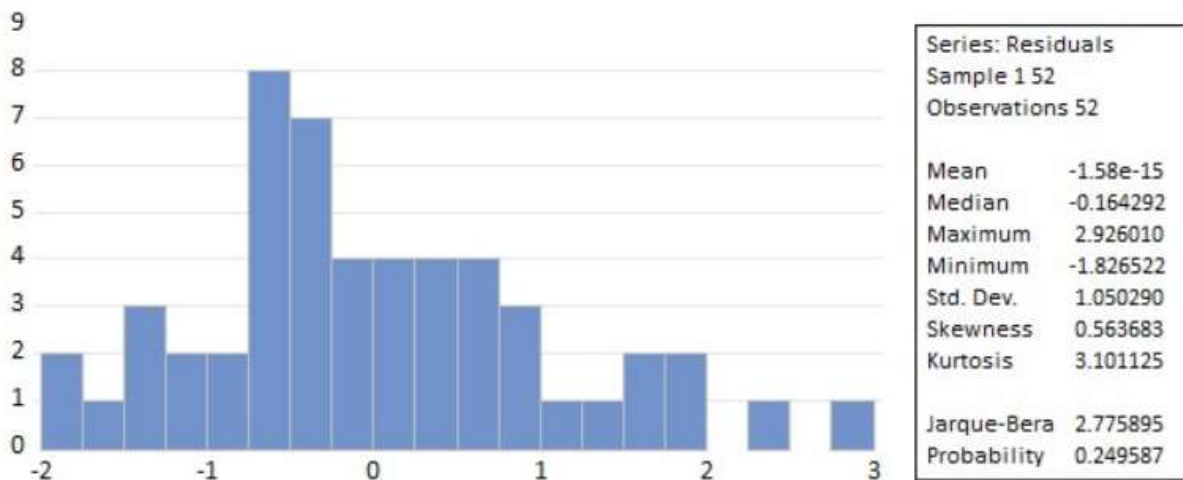


Figure 2 Normality Test Result

Multicollinearity Test

Table 6 Multicollinearity Test Result

Variable Infaltion Factors	
Variable	Centered VIF
Control Environment (X1)	1,3533
Risk Assessment (X2)	1,5235
Control Activities (X3)	1,2584
Information and Communication (X4)	1,4116
Monitoring (X5)	1,3170

Autocorrelation Test

Table 7 Autocorrelation Test Result

k	d _u	d _w	4 - d _u
5	1.7694	1.9875	2.2306

Heteroscedasticity Test

Table 8 Heteroscedasticity Test Result

Heteroskedasticity Test: Glejser			
Null hypothesis: Homoskedasticity			
F-statistic	2.191764	Prob. F(5,114)	0.0714
Obs*R-squared	10.00475	Prob. Chi-Square(5)	0.0751
Scaled explained SS	8.722616	Prob. Chi-Square(5)	0.1207

Source: Output Eviews 13.0

The model meets all classical assumptions: residuals are normally distributed (JB p = 0.2495), no multicollinearity exists (centered VIFs < 10), no autocorrelation is present (dU < DW < 4 - dU), and no heteroscedasticity is detected (Glejser test sig. = 0.0714).

Panel Data Regression Analysis and Hypothesis Testing

Table 9 Hypotesis Testing Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.543531	1.071649	7.039183	0.0000
Control Environment (X1)	-1.8388	1.7734	-1.0368	0.3052
Risk Assessment (X2)	-3.5901	1.3757	-2.6096	0.0122
Control Activities (X3)	-0.7175	1.2828	-0.5593	0.5786
Information and Communication (X4)	-25.9830	12.6519	-2.05367	0.0457
Monitoring (X5)	-473.7230	101.1777	-4.6820	0.0000
R-Squared	0.654747			
Adjusted R-Squared	0.617219			
F-statistic	17.44710			
Prob (F-statistic)	0.000000			

Regression Results and Hypothesis Testing

$$Y = 7,5435 - 1,8388(X1) - 3,5901(X2) - 0,7175(X3) - 25,9830(X4) - 473,7230(X5)$$

Using significance level of 5%, the panel data regression model and the hypothesis testing result for the full sample is as follows:

1. Control Environment (X1) has no effect on fraudulent financial statements tendency ($t = -1.0368; p = 0.3052 > 0.05$). This suggests that variations in the control environment do not necessarily influence the likelihood of financial statement fraud.
2. Risk Assessment (X2) has a negative and significant effect on fraudulent financial statements tendency ($t = -2.6096; p = 0.0122 < 0.05$). This suggests that SOE's with greater risk assessment level prefer to decrease the tendency to conduct fraudulent financial statements.
3. Control Activities (X3) has no effect on fraudulent financial statement tendency ($t = -0.5593; p = 0.5786 > 0.05$). This indicates that changes in control activities do not necessarily influence the company's tendency to engage in financial statement fraud.
4. Information and Communication (X4) has a negative and significant effect on fraudulent financial statement tendency ($t = -2.05367; p = 0.0457 < 0.05$). This indicates an inverse relationship, where higher quality Information and Communication significantly reduces the potential for fraudulent financial statements.
5. Monitoring (X5) has a negative and significant effect on dividend policy ($t = -4.6820; p = 0.0000 < 0.05$). This demonstrates that effective monitoring is associated with a reduced likelihood of fraudulent financial reporting.

The simultaneous test indicates that Control Environment, Risk Assessment, Control Activities, Information and Communication, and Monitoring jointly have a negative significant effect on fraudulent financial statement tendency, as evidenced by an F-statistic of 17.44710 and a Prob(F-statistic) of 0.0000 (< 0.05). The model's coefficient of determination (R²) is 0.654747, showing that approximately 65,47% of the variation in dividend policy is explained by the independent and control variables. With an Adjusted R-

squared of 0.6217, the model accounts for 62.17% of the variation in financial statement fraud. The close proximity of this value to the standard R-squared indicates that the predictors (X1–X5) contribute meaningfully to the model without causing overfitting.

4. CONCLUSION

The partial hypothesis testing reveals mixed results regarding the individual influence of internal control components on financial statement fraud. Specifically, Risk Assessment (X2), Information and Communication (X4), and Monitoring Activities (X5) demonstrate a significant negative effect on fraud potential, leading to the acceptance of H2, H4, and H5. These findings suggest that effective risk identification, robust anti-fraud education and whistleblowing systems, and competent internal audit functions are critical deterrents to manipulation, supporting prior studies by (Marzuki, Majid, Bakar, & Wahab, 2024), (Djuitaningsih, 2016), (Wali & Masmoudi, 2020), (ACFE, 2024), (Shonhadji & Maulidi, 2021), (COSO, 2013), and (Novatiani, Kusumah, Yadiati, Rachmat, & Rachman, 2024). Conversely, Control Environment (X1) and Control Activities (X3) were found to have no significant impact, resulting in the rejection of H1 and H3. This aligns with findings by (Djuitaningsih, 2016), (Soesanto, Noviyanti, & Purnamasari, 2024), and (Achmad, Ghozali, & Pamungkas, 2022), who noted that factors like audit committees or independent commissioners do not always directly mitigate fraud. However, this contrasts with (Wali & Masmoudi, 2020), a discrepancy likely attributed to differences in sample demographics (e.g., French firms) and measurement periods utilizing the index by (Chen, Dong, Han, & Zhou, 2017).

From a simultaneous perspective, the F-test confirms that all internal control variables (X1–X5) collectively exert a significant negative influence on the Beneish M-Score, indicating that a comprehensive internal control system effectively reduces the tendency for financial statement fraud. This empirical evidence substantiates Agency Theory and Fraud Theory, positing that effective oversight limits the "opportunities" for agents to commit fraud arising from conflicting interests (Voussinas, 2019; Jensen & Meckling, 1976; Achmad, Ghozali, & Pamungkas, 2022). These results reinforce the consensus that internal control weaknesses are primary drivers of fraud (ACFE, 2024; Donelson, Ege, & McInnis, 2017), while conversely, strong internal controls and high-quality disclosure significantly enhance reporting integrity and mitigate earnings management (Wang, Bian, Xu, & Liu, 2025; Lubis, Sari, Ramadhany, & Brutu, 2024; Suhud & Wardhani, 2019; Zulfikar, et al., 2021; Arisandi, Islami, & Soeprajitno, 2022).

This study makes significant contributions to both theoretical frameworks and practical applications. Theoretically, it enriches the literature on Agency Theory, Fraud Theory, and Internal Control by demonstrating that effective internal control mechanisms serve as a critical deterrent against fraudulent financial reporting. From a practical perspective, the findings offer actionable insights for regulatory bodies and State-Owned Enterprises (SOEs). For the Ministry of SOEs and Danantara, the evidence of persistent financial manipulation risks and weak control environments necessitates enhanced oversight of corporate governance, potentially through the adoption of international best practices in disclosure transparency. Concurrently, SOEs are encouraged to bolster public trust and mitigate fraud by improving both the quality and transparency of their internal control systems; this can be achieved by implementing comprehensive risk management protocols, optimizing whistleblowing mechanisms, and empowering Internal Audit units to ensure rigorous fraud prevention and effective governance.

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