Jurnal Manajemen Bisnis, Akuntansi dan Keuangan (JAMBAK)
Vol. 4, No. 1 2025: 197-214

An Analysis of Fraud Hexagon and its Influence on Fraudulent Financial Reporting of Construction Companies in Indonesia

Syifani Andira[1], Islahuddin[2*]
Universitas Syiah Kuala
Corresponding Author: Islahuddin islahuddin@usk.ac.id

ARTICLEINFO

Keywords: Fraud Hexagon, Fraudulent Financial Report, Construction Industry, Beneish M-Score, IDX

Received : 23, March
Revised : 25, April
Accepted: 27, May

ABSTRACT

This study aims to analyze the influence of the elements within the Fraud Hexagon theory on fraudulent financial report in construction companies. The Fraud Hexagon is an expansion of previous fraud theories and consists of six key dimensions: pressure, opportunity, rationalization, capability, arrogance, and collusion. This research adopts a quantitative approach using multiple linear regression analysis. The variables used as proxies for the Fraud Hexagon elements include asset growth, monitoring effectiveness, audit opinion, board of director changes, CEO duality, and political connections. Data were obtained from annual reports of IDX-listed construction companies during the period of 2019-2023. The results show that several elements of the Fraud Hexagon have a significant effect on financial statement fraud, particularly within the construction industry, which is characterized by operational complexity and vulnerability to manipulation.

INTRODUCTION

Financial statements serve as the primary source of information for stakeholders to assess a company's financial position, cash flows, and overall performance. However, gaps in reporting can be exploited to commit fraud. The Association of Certified Fraud Examiners (ACFE, 2020) defines fraud as the misuse of company resources or assets for personal gain through manipulation, falsification, or the concealment of essential data. Fraud in employment relationships is generally categorized into three types corruption, asset misappropriation, and financial statement fraud. Cases in the construction sector illustrate this vulnerability. PT Wijaya Karya (WIKA) and PT Waskita Karya were involved in alleged financial statement manipulations that misrepresented the actual condition, resulted in significant losses, and included fraudulent work contracts. This phenomenon highlights the importance of understanding the driving factors of fraud.

The Fraud Triangle Theory (Cressy, 1953) identifies three key elements of fraud pressure, opportunity, and rationalization. The Fraud Diamond (Wolfe & Hermanson, 2004) adds capability, while the Fraud Hexagon (Vousinas, 2019) further expands the framework by including ego and collusion. Pressure arises from performance targets or the pursuit of quick gains opportunity emerges from weak internal controls rationalization is employed by perpetrators to justify their actions capability reflects the ability to carry out fraud ego is associated with the ambition to maintain reputation or power and collusion involves cooperation among parties to conceal fraudulent activities.

The construction sector is highly vulnerable to fraud due to large-scale projects, complex organizational structures, and weak oversight. ACFE (2022) survey identifies construction as one of the sectors with the highest frequency of fraud, with an average loss of USD 2.86 million. Fraud preventive measures require strengthening internal controls, providing fair incentives, and fostering a culture of transparency and accountability across all organizational levels.

Table 1. Percentage of Financial Report Fraud Cases

Industry	*Cases Financial Statement Fraud*
Construction	18%
Food Service and Hospitally	13%
Manufacturing	12%
Education	12%
Information	12%
Banking and Financial Service	11%

Source: Association of Certified Fraud Examiners (ACFE) (2022)

The construction sector faces a high risk of fraud and corruption due to large-scale projects, the involvement of multiple parties, as well as time and budget pressures. ACFE (2020) notes that 51% of fraud cases in this sector involved more than one perpetrator, with significant median losses resulting from collusion, cost mark-ups, and contract manipulation. A lack of transparency and independent oversight further increases the likelihood of fraud, underscoring the need for strong internal controls such as external audits and anti-fraud training.

The characteristics of construction projects such as long-term contracts, phased payments, and uncertainties in costs and schedules create opportunities for financial statement manipulation, for instance through premature revenue recognition or changes in cost estimates (Skog, 2018). Dependence on subcontractors and substantial financing needs also provide room for manipulation to meet the demands of shareholders or creditors (Singleton & Singleton, 2010).

This study employs the Fraud Hexagon Theory (Vousinas, 2019), which comprises six dimensions, pressure, opportunity, rationalization, capability, ego, and collusion. The purpose of this study is to examine the influence of these elements on financial statement fraud in construction companies listed on the Indonesia Stock Exchange (IDX) during the 2019–2023 period, as well as to provide practical recommendations for management and regulators to enhance transparency and accountability in this sector.

LITERATURE REVIEW

Agency Theory

Agency theory explains the relationship between principals and agents, in which one or more individuals (principals) delegate decision-making authority to another individual (agent) through a contractual arrangement (Jensen & Meckling, 1979). In the corporate context, shareholders act as principals, while the board of directors serves as agents employed to act in the best interests of the owners. However, differences in objectives between the two parties often give rise to agency conflicts.

As agents, managers are morally obligated to maximize the owners' profits while receiving compensation in accordance with contractual agreements (Utami, 2009). This divergence of interests creates potential friction, as each party seeks to protect its own welfare. Eisenhardt (1989) further asserts that agency theory is grounded in the assumptions that individuals are self-interested, boundedly rational, and risk-averse. These conditions give rise to information asymmetry, in which agents possess greater information than principals, thereby creating opportunities for managers to engage in earnings management.

Financial reporting fraud is often a consequence of earnings management practices carried out by management as a result of conflicts of interest and information asymmetry. Faradiza (2015) emphasizes that earnings management strategies are closely linked to fraud, as they are undertaken without the owners' knowledge and ultimately lead to misleading financial statements. Thus, conflicts between agents and principals may create opportunities for fraud that harm the owners of the company.

Fraud Hexagon Theory

Fraud theory has evolved since Donald R. Cressey introduced the Fraud Triangle model in 1953, which explains that fraud occurs when pressure, opportunity, and rationalization simultaneously exist (Cressy, 1953). Pressure may take the form of targets or financial needs, opportunity arises from weak internal controls, while rationalization serves as a moral justification for wrongful actions. This model has become a fundamental basis in auditing and risk management. With the increasing complexity of business, Wolfe & Hermanson (2004) developed the Fraud Diamond by adding the element of capability, which refers to the perpetrator's skills, strategic position, knowledge, and confidence to both commit and conceal fraud. Without capability, not everyone facing pressure and opportunity will necessarily engage in fraudulent behavior.

Vousinas (2019) further developed the Fraud Hexagon by incorporating the four previous elements and adding ego and collusion. Ego reflects psychological drives such as arrogance, ambition, and the need to maintain image, while collusion represents cooperation among perpetrators, both internal and external, that complicates detection and amplifies the impact of fraud. These two elements are often found in major cases involving systematic manipulation of financial statements.

According to ACFE (2022), financial statement fraud is the deliberate manipulation intended to mislead users of financial reports through inaccurate or incomplete information, taking forms such as revenue inflation, expense understatement, or liability concealment. The ACFE report notes that losses from fraud can amount to an average of 5 percent of a company's annual revenue. With its six elements pressure, opportunity, rationalization, capability, ego, and collusion the Fraud Hexagon provides a comprehensive framework that is valuable for auditors, regulators, and management in developing effective prevention and detection systems.

Fraudulent Financial Report

Fraudulent financial report is considered the most damaging form of fraud, as it involves the deliberate manipulation of financial information to mislead investors, creditors, regulators, and the public. According to SAS No. 99 and ACFE (2022), such actions include falsifying accounting records, concealing liabilities, providing misleading disclosures, and the improper application of accounting principles. Common forms include fictitious revenue recognition, asset overstatement, liability omission, and unreasonable accounting estimates.

Perpetrators' motivations are often associated with financial pressures, performance targets, efforts to maintain the company's image, or managerial incentives. Agency theory (Jensen & Meckling, 1979) explains that conflicts of interest between owners and management may drive manipulation aimed at meeting market expectations or increasing compensation. Financial statements are thus frequently exploited as a strategic tool to shape external perceptions, even through unlawful means.

The impact of financial statement fraud is extensive, ranging from declining stock values, increased cost of capital, to legal sanctions and reputational collapse, as evidenced in the cases of Enron, WorldCom, PT Kimia Farma, and PT Waskita Karya. Although accounting for only 9% of total fraud cases, (ACFE, 2022) reports that financial statement fraud causes the greatest losses, averaging USD 593,000 per case. Advances in technology have also heightened the challenges, thereby necessitating strong internal controls, forensic audits, data analytics, machine learning, as well as active oversight by audit committees and external auditors to safeguard reporting integrity and maintain public trust.

Hypothesis

Based on the theoretical review and conceptual framework, the hypotheses are formulated as follows:

H_1: *Pressure* has a positive effect on financial statement fraud.
H_2: *Opportunity* has a negative effect on financial statement fraud.
H_3: *Capability* has a positive effect on financial statement fraud.
H_4: *Ego* has a positive effect on financial statement fraud.
H_5: *Rationalization* has a positive effect on financial statement fraud.
H_6: *Collusion* have a positive effect on financial statement fraud.

METHODOLOGY

Research Design

This study employs an empirical research approach. An empirical study refers to a research method that can be observed through human senses, allowing others to examine and understand the method used (Sugiyono, 2018). A quantitative method is also applied, involving data acquisition through research instruments and statistical analysis to test the predetermined hypotheses. The documentation method serves as the data collection technique in this study. Descriptive statistical analysis utilizing a panel data regression model is employed, with the assistance of SPSS version 23 software.

This study utilizes secondary data obtained from the financial and annual reports of construction sector companies listed on the Indonesia Stock Exchange (IDX) during the 2019–2023 period to analyze the potential for financial statement fraud based on the Fraud Hexagon theory. The independent variables consist of asset growth (pressure), director change (capability), political connections (collusion), the number of independent commissioners (opportunity), audit opinion (rationalization), and CEO duality (ego). The dependent variable, financial statement fraud, is measured using the Beneish M-Score model. Data were collected through documentation methods from the official publications of the IDX J211 index and analyzed using descriptive statistics and panel data regression with the assistance of SPSS software, in order to examine the causal relationships among variables. This approach provides empirical contributions to the understanding of the determinants of financial reporting fraud in the construction sector.

The hypotheses in this study are tested using a quantitative method with secondary data obtained through documentation techniques from the annual financial reports of construction companies listed on the Indonesia Stock Exchange (IDX) for the 2019–2023 period. The data cover variables such as asset growth, board change, political connections, ineffective monitoring, audit opinion, and CEO duality, accessed from the official IDX website as well as other supporting sources. The sample was determined using a purposive sampling technique, with criteria including construction companies in the IDX J211 index that provided complete and consistent annual financial reports during the research period and met relevant requirements to ensure data validity.

Population and Research Sample

Sugiyono (2018) defines population as a general area consisting of objects or subjects with specific characteristics and a defined number, which is utilized by researchers to conduct studies and subsequently draw conclusions. The population of this research comprises construction sector companies listed on the Indonesia Stock Exchange (IDX) during the 2019–2023 period.

The sample was selected using purposive sampling, a technique in which the sample is determined based on specific considerations (Sugiyono, 2018). These considerations are as follows:

1) Construction companies listed in the J211 index on the Indonesia Stock Exchange (IDX) during the 2019–2023 period.
2) Companies that regularly and consecutively published annual financial reports for the 2019–2023 period.

The research sample was determined based on specific criteria. Out of 29 construction companies listed in the J211 Index on the Indonesia Stock Exchange (IDX) during the 2019–2023 period, 11 companies were excluded due to not publishing annual reports consistently and consecutively throughout the research period. Consequently, the final sample consisted of 18 companies. Considering that the research period covered five years, the total number of observations obtained was 90 (18 companies × 5 years).

Dependent Variable

This variable refers to the factor influenced by the independent variables (Sugiyono, 2018). The dependent variable in this study is financial statement fraud, measured using the Beneish M-Score model developed by Sugiyono (2018). The Beneish M-Score is a widely used financial analysis tool among forensic accountants, auditors, and regulatory bodies such as the SEC to identify potential manipulation in corporate financial statements. Comprising eight financial ratios, the Beneish M-Score aims to detect distortions in financial reports that stem from earnings manipulation or indicate a tendency toward such practices. The ratios include:

$$\textbf{M-Score} = -4.84 + 0.92DSRI + 0.528GMI + 0.404AQI + 0.892SGI + 0.115DEPI - 0.172SGAI + 4.679TATA - 0.327LVGI$$

The following are the details of the eight variables in the form of indices based on Beneish et al. (1999):

1) DSRI (Days Sales in Receivables Index) = Measuring a company's accounts receivable and revenue conditions.
2) GMI (Gross Margin Index) = Comparing this year's gross margin with the previous year to identify unusual changes.
3) AQI (Asset Quality Index) = Measuring the proportion of non-current assets to total assets and detecting declines in asset quality.
4) SGI (Sales Growth Index) = Comparing the current year's sales growth rate with the industry average.
5) DEPI (Depreciation Index) = Examining the rate of change in depreciation expenses to identify potential distortions.
6) SGAI (Sales General and Administrative Expenses Index) = Comparing the increase in general and administrative expenses with sales growth.
7) LVGI (Leverage Index) = Measuring the ratio of long-term debt to total assets.
8) TATA (Total Accruals to Total Assets) = Comparing the amount of accruals with total assets to identify abnormal accruals.

The formulas used to calculate the variable indices in the Beneish M-score, as proposed by Beneish et al. (1999), are as follows:

Table 2. The Beneish M-Score Formula

No	Rasio	Formula
1	DSRI (*Days' Sales in Receivables Index*)	$\text{DSRI} = \frac{\left(\frac{Account\ Receivables_t}{Sales_t}\right)}{\left(\frac{Account\ Receivables_{t-1}}{Sales_{t-1}}\right)}$
2	GMI (*Gross Margin Index*)	$\text{GMI} = \frac{\left(\frac{Sales_{t-1} - Cost\ of\ Goods\ Solds_{t-1}}{Sales_{t-1}}\right)}{\left(\frac{Sales_t - Cost\ of\ Goods\ Solds_t}{Sales_t}\right)}$
3	AQI (*Asset Quality Index*)	$\text{AQI} = \left[1 \frac{\left(\frac{Cuurent\ Assets_t + Net\ Fixed\ Assets_t}{Total\ Assets_t}\right)}{\left(\frac{Cuurent\ Assets_{t-1} + Net\ Fixed\ Assets_{t-1}}{Total\ Assets_{t-1}}\right)}\right]$
4	SGI (*Sales Growth Index*)	$\text{SGI} = \frac{Sales_t}{Sales_{t-1}}$
5	DEPI (*Depreciation Index*)	$\text{DEPI} = \frac{\left(\frac{Depreciation\ Expense_{t-1}}{Depreciation\ Expense_{t-1} + Net\ PPE_{t-1}}\right)}{\left(\frac{Depreciation\ Expense_t}{Depreciation\ Expense_t + Net\ PPE_t}\right)}$
6	SGAI (*Sales General and Administrative Expenses Index*)	$\text{SGAI} = \frac{\left(\frac{\mathbf{Sales,\ General,\ and\ Administrative\ Expenses_t}}{\mathbf{Sales_t}}\right)}{\left(\frac{\mathbf{Sales,\ General,\ and\ Administrative\ Expenses_{t-1}}}{\mathbf{Sales_{t-1}}}\right)}$
7	LVGI (*Leverage Index*)	$\text{LVGI} = \frac{\left(\frac{\mathbf{Long\ Term\ Debt_t + Current\ Liabilities_t}}{\mathbf{Total\ Assets_t}}\right)}{\left(\frac{\mathbf{Long\ Term\ Debt_{t-1} + Current\ Liabilities_{t-1}}}{\mathbf{Total\ Assets_{t-1}}}\right)}$
8	TATA (*Total Accruals to Total Assets*)	$\text{TATA} = \frac{[(\mathbf{Income\ from\ continuing\ operation_t - Cash\ Flow\ from\ Oper}}{\mathbf{Total\ Assets_t}}$

Source: Beneish et al. (1999)

The Beneish M-Score method is employed to detect financial statement fraud, particularly earnings manipulation and revenue overstatement, by comparing the financial ratios of firms suspected of manipulation with those that are not. Beneish developed a set of ratios related to asset changes and sales growth, where an M-Score greater than -2.22 indicates the potential for earnings manipulation (Aghghaleh et al., 2016) Alternative thresholds proposed by Beneish et al. (1999) include scores greater than -1.89 with 76% accuracy or greater than -1.78 with 74% accuracy, although both are subject to certain misclassification rates. This model provides a quantitative measure of the probability of earnings manipulation and financial statement fraud.

Independent Variable

The independent variable is a variable that influences the dependent variable (Sugiyono, 2018). In this study, pressure is proxied by asset growth, opportunity is proxied by monitoring effectiveness, rationalization is proxied by audit opinion, capability is proxied by board of directors changes, arrogance (or ego) is proxied by CEO duality, and finally, collusion is proxied by political connections. The operationalization matrix of variables is summarized in the following table.

Table 3. Operationalization Variable

Variable	Definition	Measurement	Scale
Dependent Variable			
Fraudulent Financial Report	A managerial action taken to influence the financial statements in a certain way, with the aim of presenting a more positive picture of the company's performance. (Beneish et al., 1999).	M-Score = -4.84 + 0.92DSRI + 0.528GMI + 0.404AQI + 0.892SGI + 0.115DEPI – 0.172SGAI + 4.679TATA – 0.327LVGI	Ratio
Independent Variable			
Aset Growth	A condition that reflects the financial stability of a company. (Cressey's, 2008)	$\frac{Total\ Asset_t - Total\ Asset_{t-1}}{Total\ Asset_{t-1}}$	Ratio
Monitoring Effectiveness	A situation where the company lacks an effective monitoring unit	The number of independent commissioners in a company, measured by the Board of	Ratio

	to oversee its performance, which can trigger fraudulent actions. (Cressey's, 2008)	Directors Outsider Ratio (BDOUT). $\frac{Number\ of\ Independent\ Comisso}{Total\ Number\ of\ Comissioner}$	
Audit Opinion	A statement by an independent auditor regarding the fairness of a company's financial statement presentation, based on generally accepted accounting standards. (Cressey's, 2008)	1 if the company receives an unqualified audit opinion 0 if the company receives an audit opinion other than unqualified	Nominal
Board Change	A change or transfer of duties and authority from the former board of directors to the new board of directors within a company. (Chang & Sun, 2018)	1 if there is a change in the company's board of directors during the period 2019–2023 0 if there is no change in the company's board of directors during the period 2019–2023	Nominal
CEO Duality	A situation in which a CEO holds multiple positions within the company. (Yang et al., 2017)	1 if the CEO holds more than one position within the company 0 if the CEO does not hold more than one position within the company	Nominal
Political Connection	A situation where a company has close ties with politicians or the government. (McCarten et al., 2022)	1 if the company has commissioners or a president director who concurrently serves as a politician, government official, former government official, or former military officer 0 if the company does not have commissioners or a president director who concurrently serves as a politician, government	Nominal

	official, former government official, or former military officer

Source: Processed Data (2025)

Data Analysis Model

Descriptive statistical analysis will be applied in this study. Descriptive statistics is a primary method used to represent research variable data in order to assess the level of financial statement fraud risk within a particular entity (Rini, 2014). Descriptive statistics include mean values, variance, standard deviation, minimum values, and maximum values, as explained by Ghozali (2012). The descriptive statistics for financial statement fraud, asset growth, board change, political connections, monitoring effectiveness, audit opinion, and CEO duality are presented numerically in the dataset.

The data analysis model used in this study is panel data regression analysis. Panel data regression combines both time-series and cross-sectional data. In this study, panel data regression is employed to analyze the effect of independent variables, such as asset growth, board of director changes, political connections, ineffective monitoring, auditor changes, and CEO duality, on the dependent variable, namely the potential for financial statement fraud in construction companies listed in the IDX J211 index from 2019 to 2023.

$$\boldsymbol{FFR_{it}} = \alpha + \boldsymbol{\beta_1 AG_{it}} + \boldsymbol{\beta_2 DC_{it}} + \boldsymbol{\beta_3 PC_{it}} + \boldsymbol{\beta_4 ME_{it}} + \boldsymbol{\beta_5 AO_{it}} + \boldsymbol{\beta_6 CD_{it}} + \boldsymbol{\epsilon_i}$$

Where:

1) $\boldsymbol{FFR_{it}}$ represent fraudulent Financial Report Company i at time period t.
2) $\boldsymbol{AG_{it}}$ is an independent variable measuring asset growth of company i at time period t.
3) $\boldsymbol{BC_{it}}$ is an independent variable representing changes in the board of directors of company i at time period t.
4) $\boldsymbol{PC_{it}}$ is an independent variable representing the political connections of company i at time period t.
5) $\boldsymbol{ME_{it}}$ is an independent variable representing the monitoring effectiveness of company i at time period t.
6) $\boldsymbol{AO_{it}}$ is an independent variable representing the audit opinion of company i at time period t.
7) $\boldsymbol{CD_{it}}$ is an independent variable representing CEO duality in company i at time period t.
8) α represents constant term in the regression model, representing the initial financial performance (FR) when all independent variables are equal to zero.
9) $\boldsymbol{\beta}$ represents the regression coefficient for each independent variable. The coefficient indicates the extent to which changes in the independent variable affect the dependent variable (FFR).
10) $\boldsymbol{\epsilon_i}$ is the error term, which reflects other factors affecting the dependent variable that are not included in the regression model.

RESEARCH RESULT

Table 4. Descriptive Statistics

Descriptive Statistics					
	N	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
FFR	90	-51.28	10.31	-3.5033	7.34282
AG	90	-.71	.85	.0186	.18543
ME	90	.17	.60	.4232	.09101
BC	90	.00	1.00	.4444	.49969
CD	90	.00	.00	.0000	.00000
AO	90	.00	1.00	.9778	.14823
PC	90	.00	1.00	.3222	.46995
Valid N (listwise)	90				

Source: SPSS Output (2025)

Based on Table 4, from 90 observations, the financial statement fraud variable has a mean M-Score of -3.50, below Beneish's threshold (-2.22), with a standard deviation of 7.34, indicating a high variation in potential fraud among companies. The asset growth has a minimum value of -0.71 and a maximum of 0.85, with a mean of 0.018, suggesting a low average asset growth. The monitoring effectiveness variable (number of independent commissioners) has a mean of 0.423, ranging from 17% to 60% of the total commissioners.

The board change variable has a minimum value of 0 and a maximum of 1, with a mean of 0.44, indicating that approximately 44% of companies experienced changes in the board of directors. The CEO duality variable has a mean of 0 with a standard deviation of 0, implying that no company has a CEO who simultaneously serves as the board chair. The audit opinion variable has a mean of 0.977, indicating that the majority of companies received an unqualified audit opinion.

The political connections variable is a dummy variable with a mean of 0.32, indicating that 32% of companies have commissioners or directors who currently hold or previously held positions as politicians, government officials, or military officers. Overall, most independent variables exhibit adequate data distribution, except for CEO duality, which shows no variation. The dependent variable displays a wide range of M-Score values, indicating heterogeneity in the potential or occurrence of financial statement fraud among construction companies listed on the IDX during the 2019–2023 period.

Table 5. Normality Test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		70
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	.03418611
Most Extreme Differences	Absolute	.040
	Positive	.036
	Negative	-.040
Test Statistic		.040
Asymp. Sig. (2-tailed)		.200[c,d]
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		

Source: SPSS Output (2025)

Next, the classical assumption testing began with the normality test. The normality test was conducted using the One-Sample Kolmogorov-Smirnov method, yielding an Asymp. Sig. (2-tailed) value of 0.210, which is greater than 0.05. This indicates that the residuals are normally distributed, and therefore, the regression model satisfies the normality assumption in classical regression analysis.

Table 6. Multicollinearity Test

Coefficients[a]			
Model		**Collinearity Statistics**	
		Tolerance	**VIF**
1	Trans_AG	.564	1.773
	Trans_ME	.855	1.170
	BC	.689	1.452
	CD	.183	5.475
	AO	.162	6.186
	PC	.694	1.441
a. Dependent Variable: Trans_FFR			

Source: SPSS Output (2025)

The analysis results indicate that the regression model passed the multicollinearity test, with all Variance Inflation Factor (VIF) values below the threshold of 10. This condition shows that there is no high correlation among the independent variables, and each variable contributes uniquely to the model (Gujarati & Porter, 2009).

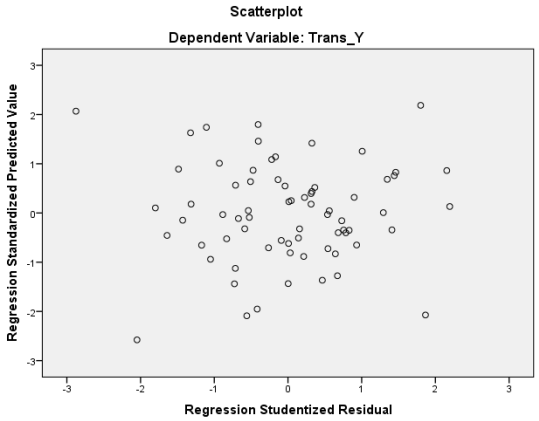

Figure 1. Heteroscedasticity Test

Source: SPSS Output (2025)

Figure 1 illustrates a scatterplot of random data points around a horizontal line without any specific pattern, indicating that the regression model satisfies the homoscedasticity assumption, with constant residual variance across the range of predictor values.

Multiple Linear Regression Results

This study uses Fraudulent Financial Report as the dependent variable, with independent variables including Asset Growth (AG), Monitoring Effectiveness (ME), Board Change (BC), CEO Duality (CD), Audit Oppinion (AO), and Political Connection (PC). The regression constant of 0.391 indicates that when all independent variables are zero, the potential for fraud is at this baseline level.

Table 7. Multiple Linear Regression

Coefficients[a]					
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	.391	.045		8.750	.000
	Trans_AG	.595	.070	.632	8.541	.000
	Trans_ME	-.144	.046	-.231	-3.121	.003
	BC	.049	.010	.410	5.055	.000
	CD	.264	.061	.333	4.310	.000
	AO	.021	.040	.038	.526	.601
	PC	.015	.011	.120	1.414	.032
a. Dependent Variable: Trans_FFR						

Source: SPSS Output (2025)

Based on the t-test, most independent variables have a significant effect on fraudulent financial fraud, either positively or negatively. The AG variable has a coefficient of 0.595 with a significance of 0.000, indicating a significant positive effect, meaning that higher asset growth increases the risk of fraud. The ME variable has a coefficient of -0.144 with a significance of 0.003, showing a significant negative effect, implying that a higher number of independent commissioners reduces the potential for fraud.

The BC variable has a coefficient of 0.049 with a significance of 0.000, indicating that board change has a significant positive effect on fraud. CD has a coefficient of 0.264 with a significance of 0.000, meaning that CEO duality increases the risk of fraud. Meanwhile, AO has a coefficient of 0.021 with a significance of 0.601, indicating no significant effect on fraud. PC has a coefficient of 0.015 with a significance of 0.032, showing that political connections have a significant positive effect.

Table 8. R Square Coefficient Test

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.824[a]	.678	.648	.03578
a. Predictors: (Constant), PC, Trans_ME, AO, Trans_AG, CD, BC				

Source: SPSS Output (2025)

Based on Table 8, the Adjusted R Square of 0.648 shows that 64.8% of the variation in financial statement fraud can be explained by the six independent variables: Asset Growth (AG), Monitoring Effectiveness (ME), Board Change (BC), CEO Duality (CD), Audit Opinion (AO), and Political Connections (PC), while 35.2% is influenced by other factors. The standard error of 0.03578 indicates a small prediction deviation, showing the regression model is accurate and reliable.

Table 9. Simultaneous Test (F-Test)

ANOVA[a]						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	.170	6	.028	22.129	.000[b]
	Residual	.081	63	.001		
	Total	.251	69			
a. Dependent Variable: Trans_FFR						

ANOVA[a]					
Model	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
b. Predictors: (Constant), PC, Trans_ME, AO, Trans_AG, CD, BC					

Source: SPSS Output (2025)

The F-test shows a probability of 0.00 (< 0.05), indicating that the six independent variables, Asset Growth (AG), Total Independent Commissioners (ME), Board Change (BC), Audit Opinion (AO), CEO Duality (CD), and Political Connections (PC), simultaneously have a significant effect on financial statement fraud. This confirms that the multiple linear regression model is suitable for explaining the relationships among the variables in this study.

DISCUSSION

The Influence of Asset Growth on Financial Reporting Fraud

Based on the t-statistic test, Asset Growth (AG) is proven to have a significant positive effect on financial statement fraud , with a coefficient of 0.595 and a significance of 0.00 (<0.05), thus supporting the first hypothesis. This finding aligns with the Fraud Triangle (Cressey's, 2008), which identifies aset growth as a primary driver of fraud, where high asset growth can create pressure on management to maintain a positive image in the eyes of investors and stakeholders, prompting manipulative actions. Studies by Beneish et al. (1999) and Cressey's (2008) also indicate that rapidly growing companies are more vulnerable to earnings manipulation. From the Agency Theory perspective (Jensen & Meckling, 1979), managers, especially when compensation depends on financial performance, tend to engage in manipulation to maintain market confidence.

The influence of Monitoring Effectiveness on Financial Reporting Fraud

Based on the t-statistic test, Monitoring Effectiveness (ME) has a significant negative effect on financial statement fraud, with a coefficient of -0.144 and a significance of 0.003 (<0.05), thus supporting the second hypothesis. The higher the proportion of independent commissioners, the stricter the oversight of management and the lower the likelihood of financial statement manipulation or fraud. Neutral independent commissioners are able to monitor objectively, reduce information asymmetry, and prevent moral hazard by management. These findings are consistent with Tan. et al. (2022) and align with Agency Theory, which states that conflicts of interest between agents and principals can trigger deviant behavior if oversight is weak. Therefore, an adequate proportion of independent commissioners, supported by active roles, training, and sufficient access to information, is key to enhancing monitoring effectiveness and mitigating the risk of financial statement fraud.

The Influence of Board Change on Financial Report Fraud

The t-statistic test indicates that Board Change (BC) has a significant positive effect on financial statement fraud with a coefficient of 0.049 and a significance of 0.00 (<0.05), thus supporting the third hypothesis. The more frequent the board change, the higher the potential for financial statement manipulation, particularly during transition periods accompanied by policy changes and weakened oversight. This finding aligns with previous studies and the Fraud Hexagon theory (Vousinas, 2019), which identifies capability as a key factor in fraud. In the complex construction sector, which is prone to oversight gaps, new boards can exploit control systems, highlighting the need for strict supervision and transparent leadership transitions to minimize fraud risk.

The Influence of CEO Duality on Financial Reporting Fraud

The t-statistic test shows that CEO Duality (CD) has a significant positive effect on financial statement fraud with a coefficient of 0.264 and a significance of 0.00 (<0.05), thus supporting the fourth hypothesis. Although all samples have a value of zero for this dummy variable, its use remains valid as long as it does not cause multicollinearity (Gujarati & Porter, 2009) and (Wooldridge, 2010). CEO duality, where a CEO also serves as the chairman of the board, weakens corporate governance because the concentration of power reduces oversight independence and check-and-balance mechanisms. This finding is consistent with studies by Salehi et al. (2017), Xie et al. (2005) and Wang et al. (2017) which show that CEO duality increases the risk of fraud, especially in companies with low audit quality or weak governance. According to Agency Theory (Jensen & Meckling, 1979), CEO duality amplifies potential conflicts of interest and opportunistic management behavior, thereby increasing the likelihood of financial statement fraud.

The Influence of Audit Opinion on Financial Statement Fraud

The results of the study indicate that Audit Opinion (AO) does not have a significant effect on financial statement fraud, because auditor opinions, whether Unqualified Opinion or others, are prepared to assess the fairness of financial statement presentation rather than to conduct an in-depth investigation of fraud (Emeritus et al., 2012). Audits are historical, sample-based, and often unable to detect well-concealed fraud, especially when it involves top management (Newman et al., 1996). Limitations of time, cost, information, and potential auditor conflicts of interest (Ayuningtyas & Harymawan, 2022) can also reduce audit effectiveness.

The Influence of Political Connections on Financial Report Fraud

The t-statistic test shows that Political Connections (PC) have a significant positive effect on financial statement fraud with a coefficient of 0.015 and a significance of 0.032. Political connections provide management opportunities to avoid oversight, obtain legal protection, and engage in collusion that undermines transparency and governance (Vousinas, 2019). Previous studies also demonstrate that political connections increase the risk of financial statement manipulation, highlighting the need for stricter transparency regulations and limitations on political intervention in public companies.

CONCLUSIONS AND RECOMMENDATIONS

This study examines the effect of Fraud Hexagon variables, namely Asset Growth (AG), Monitoring Effectiveness (ME), Audit Opinion (AO), Board Change (BC), CEO Duality (CD), and Political Connections (PC) on Fraudulent Finansial Reporting in 18 construction companies listed on the J211 Index during the 2019–2023 period. The results indicate that Asset Growth, Board Change, CEO Duality, and Political Connections have a significant positive effect, Monitoring Effectiveness has a significant negative effect, while Audit Opinion does not have a significant effect. The limitation of this study is the small sample size and the use of the M-score with eight relatively complex indicators. Therefore, it is recommended that future research consider using the F-score as an alternative.

ADVANCED RESEARCH

Future research is recommended to expand across industrial sectors, combine quantitative and qualitative methods, and include variables such as ownership structure, corporate governance, external pressures, and performance-based incentives to enhance understanding and prevention of financial statement fraud. This suggestion is given because the research is still limited to the construction sector, a quantitative approach, and certain variables. By expanding the sector, combining quantitative and qualitative methods, and adding independent variables such as ownership structure, corporate governance, external pressure, and performance-based incentives, future research is expected to provide a more comprehensive perspective while strengthening efforts to prevent financial statement fraud.

REFERENCES

ACFE. (2020). 2020 Report to the Nations.

ACFE. (2022). Occupational Fraud 2022: A Report To The Nations.

Aghghaleh, S. F., Mohamed, Z. M., & Rahmat, M. M. (2016). Detecting Financial Statement Frauds in Malaysia: Comparing the Abilities of Beneish and Dechow Models. Asian Journal of Accounting and Governance, 7, 57–65.

Ayuningtyas, E. S., & Harymawan, I. (2022). Risk Management Committee and Textual Risk Disclosure. Risks, 10(2), 183–199. https://doi.org/10.3390/risks10020030.

Beneish, M. D., Bernard, V., Ciesielski, J., Deangelo, L., Fridson, M., Harvey, C., Hsieh, D., Lee, C., Press, E., Whaley, B., & Zmijewski, M. (1999). The Detection of Earnings Manipulation Comments Welcome.

Chang, C., & Sun, H. (2018). Reputation and regulation effects on director turnover and change of directorships. The Eletronic Library, 34(1), 1–5.

Cressey's. (2008). Detecting and Predicting Financial Statement Fraud : The Efectiveness Of The Fraud Triangle and SAS No.99. 99, 53–81.

Cressy, D. R. (1953). Other People's Money: A Study in the Social Psychology of Embezzlement.

Eisenhardt, K. (1989). Teori Portofolio dan Analisis Investasi (Edisi ke 10). Academy of Management Review, 14(1), 57–74.

Emeritus, P., Arens, A. A., Elder, R. J., Beasley, M. S., Columbus, B., New, I., San, Y., Upper, F., River, S., Cape, A., Dubai, T., Madrid, L., Munich, M., Montreal, P., Delhi, T., Sao, M. C., Sydney, P., Kong, H., Singapore, S., & Tokyo, T. (2012). AN INTEGRATED APPROACH AUDITING AND ASSURANCE SERVICES (Vol. 14).

Faradiza, S. A. (2015). Fraud Pentagon dan Kecurangan Laporan Keuangan. EkBis: Jurnal Ekonomi Dan Bisnis Sekar Akrom Faradiza.

Ghozali, I. (2012). Aplikasi Analisis Multivariate Dengan Program IBM SPSS 19 edisi 5.

Gujarati, D. N., & Porter, D. C. (2009). Basic Econometrics.

Jensen, M. G., & Meckling, W. H. (1979). Theory of The Firm: Managerial Behavior, Agency Costs, and Ownership Structure.

McCarten, M., Diaz-Rainey, I., Roberts, H., & Tan, E. K. M. (2022). Political connections, tacit power and corporate misconduct. Journal of Business Finance and Accounting, 49(9–10), 1530–1552. https://doi.org/10.1111/jbfa.12603.

Newman, P., Rhoades, S., & Smith, R. (1996). Allocating audit resources to detect fraud. Review of Accounting Studies, 1(2), 161–182.

Rini, A. S. (2014). Opini Audit dan Pengungkapan Atas Laporan Keuangan Pemerintah Kabupaten Serta Kaitannya Dengan Koripsi Indonesia. Jurnal Etikonomi, 13(1).

Salehi, M., Moradi, M., & Paiydarmanesh, N. (2017). The effect of corporate governance and audit quality on disclosure quality: Evidence from Tehran stock exchange. Periodica Polytechnica Social and Management Sciences, 25(1), 32–48.

Singleton, T. w., & Singleton, A. J. (2010). Fraud Auditing and Forensic Accounting (4th ed.). Wiley Corporate F&A.

Skog, I. (2018). IFRS 15 Revenue from contracts with customers.

Sugiyono. (2018). Metode Penelitian Kuantitatif, Kualitatif, dan R&D. Alfabeta.

Tan., Angelina, Novita., & Chariri, Anis. (2022). Pengaruh Proporsi Dewan Komisaris Independen , Terhadap Kecurangan Laporan Keuangan. Diponegoro Journal of Accounting, 11, 1–13.

Utami, D. (2009). Mekanisme Corporate Governance, Manajemen Laba dan Kinerja Keuangan.

Vousinas, G. L. (2019). Advancing theory of fraud: the S.C.O.R.E. model. Journal of Financial Crime, 26(1), 372–381. https://doi.org/10.1108/JFC-12-2017-0128.

Wang, Z., Chen, M. H., Chin, C. L., & Zheng, Q. (2017). Managerial ability, political connections, and fraudulent financial reporting in China. Journal of Accounting and Public Policy, 36(2), 141–162.

Wolfe, D. T., & Hermanson, D. R. (2004). The FWolfe, D. T. and Hermanson, D. R. (2004) 'The Fraud Diamond: Considering the Four Elements of Fraud: Certified Public Accountant', The CPA Journal, 74(12), pp. 38–42.

Wooldridge, J. M. (2010). Econometric Analysis of Cross Section and Panel Data.

Xie, B., Davidson, W. N., & DaDalt, P. J. (2005). Earnings Management and Corporate Governance: The Roles of the Board and the Audit Committee.

Yang, D., Jiao, H., & Buckland, R. (2017). The determinants of financial fraud in Chinese firms: Does corporate governance as an institutional innovation matter? Technological Forecasting and Social Change, 125(August 2015), 309–320. https://doi.org/10.1016/j.techfore.2017.06.035.