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Fraud Heptagon Analysis from the Perspective of the Beneish M-Score

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ABSTRACT

This study examines the influence of Fraud Heptagon elements financial stability, nature of industry, change in auditor, change in director, CEO duality, insufficient corporate governance courses, and remuneration on financial statement fraud in construction companies listed on the Indonesia Stock Exchange during 2021–2025. Fraud was measured using the Beneish M-Score model. This quantitative study uses secondary data from annual reports, analyzed through logistic regression with SPSS 26. Results show that financial stability has a significant positive effect on financial statement fraud. The other variables nature of industry, change in auditor, change in director, CEO duality, insufficient corporate governance courses, and remuneration show no significant effect. This indicates that in the construction sector, financial pressure is the primary driver of fraud, whereas opportunity, rationalization, capability, arrogance, collusion, and greed can be mitigated by industry characteristics, regulatory compliance, and governance mechanisms.

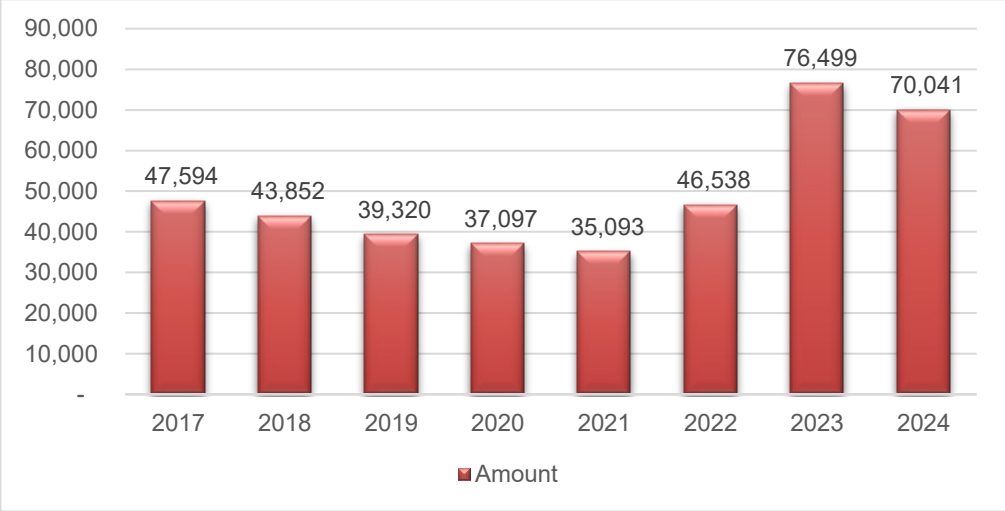
Keywords: Beneish M-Score; Construction Sector; Financial Statement Fraud; Fraud Heptagon; Logistic Regression

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INTRODUCTION

Financial statements are the primary medium for communicating a company's financial condition and performance to stakeholders, including investors, creditors, and regulators (Subramanyam, 2017). The information presented in financial statements serves as the basis for economic decision-making, performance evaluation of management, and assessment of the company's sustainability, making it essential for financial statements to be prepared reliably, relevantly, and to reflect the true condition of the company. The reliability of financial statements also plays a crucial role in maintaining the efficiency of capital markets and public trust in the financial reporting system (Kieso, 2020). Financial statements do not always fairly reflect a company's economic condition. Pressure to achieve performance targets, maintain investor confidence, and secure external funding may encourage management to manipulate financial information. This practice, known as financial statement fraud, involves intentional material misstatements to mislead financial statement users. It can cause financial losses, damage reputation, reduce public trust, and weaken corporate governance and oversight.

Figure 1. Graph Showing the Number of Crime Incidents Related to Fraud, Embezzlement, and Corruption from 2017-2024



Source: Badan Pusat Statistik 2022, 2023, 2024 and Biro Pengendalian Operasi Mabes Polri

Fraud in Indonesia remains a serious issue, with cases of fraud, embezzlement, and corruption increasing in recent years, particularly from 2021 to 2024. This aligns with ACFE Indonesia's findings that occupational fraud continues across various industries. According to ACFE (2024) in Occupational Fraud 2024: A Report to the Nation, occupational fraud consists of three categories: corruption, asset misappropriation, and financial statement fraud.

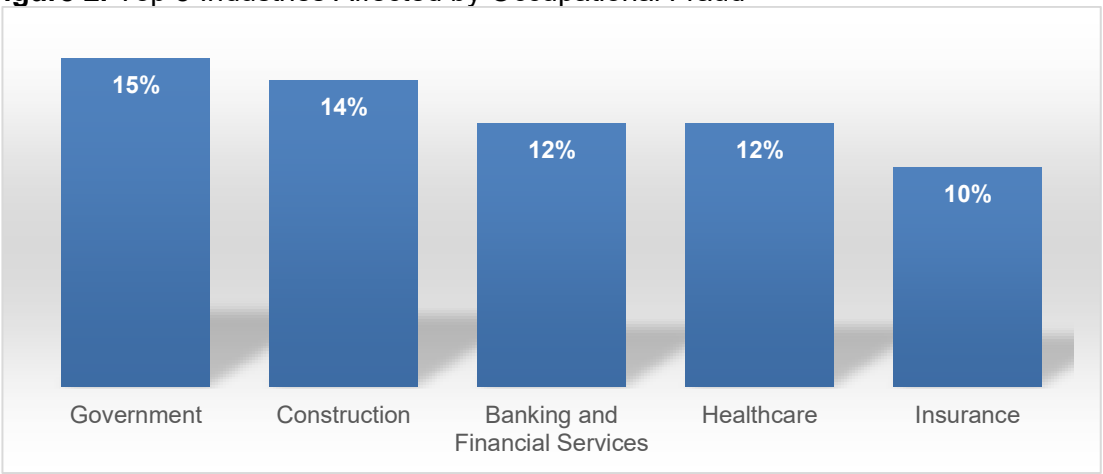
Table 1. Loss Value per Occupational Fraud Scheme

	Loss Range (Rupiah)	Corruption (%)	Asset Misappropriation (%)	Financial Statement Fraud (%)
1	> 1 billion – 50 billion	26	–	23,74
2	> 100 million – 500 miliion	20	19	16,55
3	> 500 million – 1 billion	–	18	17,51
4	> 50 million – 100 million	–	17	–
5	> 10 million – 50 million	16	–	–

Source: ACFE (2025)

Based on the Indonesia Fraud Survey 2025 by ACFE, corruption is the most common occupational fraud at 47.6%, followed by financial statement fraud at 40.2% and asset misappropriation at 12.2%. However, financial statement fraud causes the largest losses, with 23.74% of cases exceeding IDR 1 billion to IDR 50 billion, 17.51% ranging from IDR 500 million to IDR 1 billion, and 16.55% from IDR 100 million to IDR 500 million per case. Thus, although less frequent than corruption, financial statement fraud has a greater financial impact.

Figure 2. Top 5 Industries Affected by Occupational Fraud



Source: ACFE (2025)

The ACFE Indonesia Fraud Survey 2025 shows that construction is the second most fraud-prone industry, accounting for 14% of cases, after government. Its capital-intensive nature, large projects, long durations, and involvement of multiple parties create significant financial pressures Gee et al., (2021). Complex contracts, procurement processes, and cash flows also increase opportunities for difficult-to-detect financial statement fraud. Pressure to complete projects on time and maintain financial stability may further encourage aggressive financial reporting. This vulnerability is also reflected in various fraud cases involving major construction companies in Indonesia.Cases involving PT Waskita Karya and PT Wijaya Karya (WIKA) during 2021–2025 highlight weak corporate governance and financial management, reflected in fictitious projects, financing deviations, liquidity pressures, and alleged financial statement manipulation. The fraud triangle theory introduced by Cressey's, (1953). explains fraud through three factors: pressure, opportunity, and rationalization. Wolfe & Hermanson (2004) expanded it into the fraud diamond by adding capability. Crowe (2011) further developed it into the fraud pentagon by adding arrogance and competence, with competence being synonymous with capability.

The fraud hexagon theory introduced by Vousinas (2019) adds ego and collusion, while Yusof (2015) previously developed fraud theory by adding ignorance and greed. The limited research on the fraud heptagon theory creates an opportunity for further study. This study measures seven factors through nine proxies: pressure with financial stability, opportunity with nature of industry, rationalization with change in auditor, capability with change in director, arrogance with CEO duality, ignorance with insufficient corporate governance courses, and greed with remuneration. Differences in previous findings indicate a research gap, particularly in high-risk industries such as construction.

Based on this background, this study examines the effect of the fraud heptagon theory on financial statement fraud in construction companies listed on the Indonesia Stock Exchange during 2021–2024. The study is expected to contribute to fraud literature and provide practical implications for strengthening fraud prevention and control.

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LITERATURE REVIEW

Agency Theory

The agency theory introduced by Jensen dan Meckling (1976) explains the contractual relationship between the principal as the capital owner and the agent as the manager of the company. Conflicts of interest arise due to information asymmetry, where the agent has greater knowledge of the internal conditions and prospects of the company compared to the principal. The principal is fundamentally oriented toward increasing the value of the company and return on investment, while the agent tends to pursue personal interests, such as compensation and career benefits (Puspitasari & Harto, 2024). This difference in objectives can potentially drive the agent to act opportunistically, including presenting financial statements that do not reflect the actual conditions, thus increasing the risk of financial statement fraud.

Fraud Theory

The fraud theory originates from the fraud triangle proposed Cressey's (1953) which emphasizes three main triggers: pressure, opportunity, and rationalization. Subsequently, the fraud diamond proposed by Wolfe & Hermanson (2004) adds the element of capability. The fraud pentagon introduced by Crowe (2011) then includes the factors of arrogance and competence. Further development, the fraud hexagon proposed by Vousinas (2019) adds the elements of ego and collusion. Finally, the fraud heptagon proposed by Yusof (2015) expands the previous model (pressure, opportunity, rationalization, capability, and arrogance) by incorporating ignorance and greed, thereby providing a more comprehensive framework for explaining the occurrence of financial statement fraud.

Beneish M-Score

The Beneish M-Score is a method used to identify companies that are likely to commit fraud in their financial statements; the higher the M-Score of a company, the greater the likelihood that the company is engaging in fraud (Beneish, 1999). The Beneish M-Score employs eight financial ratios to identify potential manipulation of financial statements. These eight ratios include the days sales in receivables index (DSRI), gross margin index (GMI), asset quality index (AQI), sales growth index (SGI), depreciation index (DEPI), sales, general and administrative expenses index (SGAI), leverage index (LVGI), and total accruals to total assets (TATA) (Sujeewa & Kawshalya, 2020). Companies that produce a final calculation value (>-2.22) are categorized as manipulators, while those (<-2.22) are considered non-manipulators (Beneish, 1999).

Financial Statement Fraud

According to the Association of Certified Fraud Examiners (2024), financial statement fraud refers to the intentional manipulation of financial statements by management or employees such that the accounting information does not reflect the actual condition of the company, for example through fictitious revenues, omission of expenses, inflation of assets, or concealment of liabilities to present better performance. This practice can mislead investors and creditors, causing financial losses and damaging the organization's reputation.

Hypotheses Development

Financial Stability

The capacity of financial reports to serve ongoing and future demands illustrates an entity's financial stability (Marheni & Suryati, 2021). As noted in SAS No. 99, jeopardized stability puts pressure on management as the firm loses appeal to creditors and investors. Vousinas (2019) highlights in fraud theory that such financial stress acts as a

primary catalyst for fraud, driven by motives to preserve market standing, retain investor trust, and avert shareholder backlash over poor results. Skousen et al. (2009) revealed that higher asset growth ratios correlate with increased risks of reporting fraud. This finding is supported by Hermawati & Santyo Nugroho (2025), who confirmed the impact of financial instability on fraudulent reporting, whereas Wardhana et al. (2025) found no significant effect of financial stability on financial statement fraud.

H1: Financial stability affects financial statement fraud.

Nature of Industry

Industry characteristics indicate the optimal condition of a company in conducting its operations, which can be identified through the analysis of accounts receivable (Alyani et al., 2023). A high ratio of receivables to sales indicates that accounts receivable is an asset vulnerable to manipulation (Salamah & Marliani, 2025). In fraud theory, opportunity is placed as one of the key elements that open the door to fraud. In line with this theory, the research by Yadiati et al. (2023) shows that the nature of the industry positively affects financial statement fraud. Research by (Khoyumi et al., 2024) also yielded similar results, indicating that the nature of the industry measured by changes in receivables has a significant effect on financial statement fraud.

H2: Nature of industry affects financial statement fraud

Change in Auditor

Rationalization refers to justifying fraudulent actions as reasonable. Voluntary auditor changes may serve as rationalization because management seeks to avoid guilt or detection of fraud (Alyani et al., 2023). Such changes may aim to obtain a better auditor or avoid fraud detection (Bifadli et al., 2023). In agency theory, information asymmetry between principals and agents can create conflicts of interest and encourage fraud concealment (Yadiati et al., 2023). Newly appointed auditors may have limited knowledge of the company, making fraud detection more difficult (Rahayu & Susilowati, 2025). Research conducted by Omukaga (2021) ound that companies with financial statement fraud tend to change auditors, while frequent auditor changes may conceal fraud (Siswanto & Soeindra, 2022). Research by Angelia et al. (2025), Hardika et al. (2024) and Kirana et al. (2023) found that the change of auditor positively affects financial statement fraud.

H3: Change of auditor affects financial statement fraud

Change in Director

Capability refers to the ability and capacity required for fraud to occur (Wolfe & Hermanson, 2004), including strategic position, intelligence, confidence, influence, and understanding of systems and governance (Djami & Murtanto, 2024). In this study, capability is proxied by change in director, as leadership transitions may weaken oversight and create opportunities for fraud (Septiningrum & Mutmainah, 2022). Conversely, long director tenures may also increase fraud risk due to the authority and experience available to conceal misconduct (Handayani et al., 2023). Based on research conducted by Triyanto et al. (2023) dan Medlar & Umar (2023) found that change in director affects financial statement fraud. However, Djami & Murtanto (2024), Satata et al. (2024), and Damarjati & Yulianti (2025), found no effect.

H4: Change of director affects financial statement fraud

CEO Duality

Arrogance reflects a dominant attitude in which individuals feel powerful and tend to neglect internal controls for personal interests (Crowe, 2011). This condition can be represented by CEO duality, which indicates concentrated power and may create opportunities for financial statement manipulation (Tarjo et al., 2021). In Indonesia's two-tier board system, CEO duality may arise from familial relationships between directors and commissioners, weakening oversight and increasing fraud risk (Carla & Pangestu, 2021). Based on the research conducted by Tarjo et al. (2021) and Carla & Pangestu (2021) found that CEO duality affects financial statement fraud, while Permatasari & Suhendro (2025) found a negative effect. Meanwhile, Triyanto et al. (2023) found no effect on financial statement fraud.

H5: CEO duality affects financial statement fraud

Insufficient Corporate Governance Courses

In fraud theory, ignorance denotes a lack of awareness regarding fraud risks (Permatasari & Suhendro, 2025), which often leads to disregarding governance policies and elevating manipulation risks (Djami & Murtanto, 2024). This is frequently reflected in inadequate corporate governance training. Agency theory suggests that governance training mitigates agent-principal conflicts of interest (Damarjati & Yulianti, 2025); thus, insufficient training weakens governance controls and raises financial statement fraud risks (Satata et al., 2024). Empirical results remain mixed: Djami & Murtanto (2024) observed a positive effect Pamungkas et al. (2024) identified a negative effect, whereas Damarjati & Yulianti (2025), Satata et al. (2024), and Permatasari & Suhendro (2025) found no significant impact on financial statement fraud.

H6: Insufficient corporate governance courses affect financial statement fraud

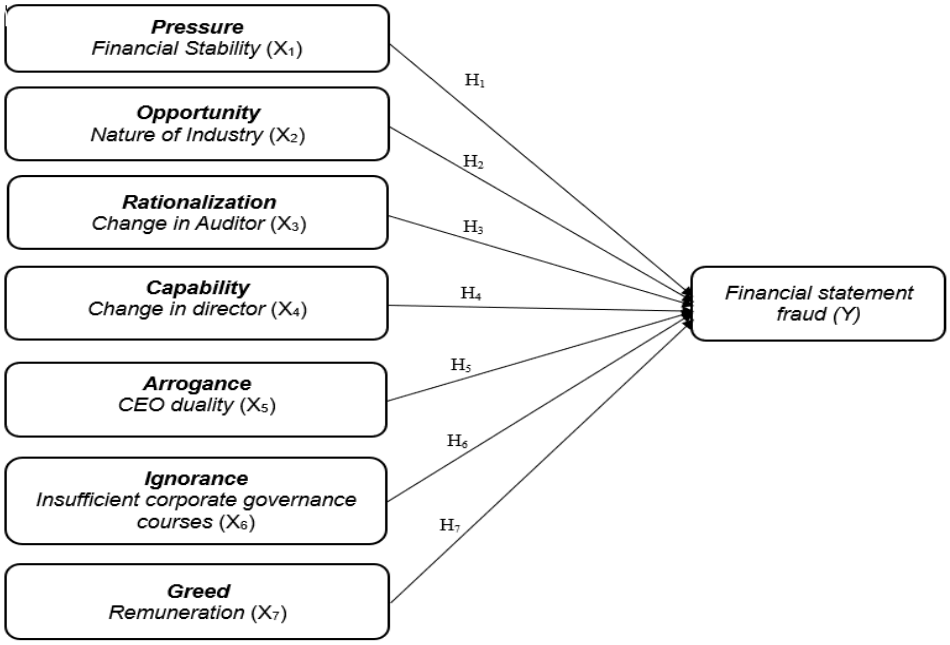
Remuneration

In fraud theory, greed refers to the desire for excessive profit, personal satisfaction, or power without considering honesty or others' interests (Djami & Murtanto, 2024). This trait may encourage individuals to ignore consequences and commit fraud for personal gain (Pamungkas et al., 2024). Greed can be proxied by remuneration, including salaries, bonuses, commissions, and incentives. From the agency theory perspective, high remuneration may create moral hazard and encourage management to manipulate financial statements to achieve targets and maintain compensation Damarjati & Yulianti (2025). Research by Pamungkas et al. (2024) and Astuti & Murdianingrum (2026) found that remuneration positively affects financial statement fraud. However, (Djami & Murtanto, 2024), Satata et al. (2024), Damarjati & Yulianti (2025), and Permatasari & Suhendro (2025) found that remuneration does not affect financial statement fraud.

H7: Remuneration affects financial statement fraud

Figure 3. Research Framework

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RESEARCH METHOD

This study employs a quantitative approach, emphasizing the collection and processing of numerical data from a specific population or sample to describe empirical conditions and systematically test previously formulated hypotheses. The population consists of infrastructure-sector companies, particularly building construction companies, listed on the Indonesia Stock Exchange. Secondary data were obtained through documentation and literature studies using annual reports, books, journals, and relevant literature. Purposive sampling was applied, resulting in 17 companies from 29 identified companies that met the criteria. The sample comprises annual reports for 2021–2025, obtained from the IDX and companies' official websites, totaling 85 observations. Data were analyzed using logistic regression with SPSS version 2.

Table 2. Sample Selection Criteria

No.	Sample Selection Criteria	Amount
1.	Construction companies listed on the Indonesia Stock Exchange (IDX) during the period 2021-2025.	29
2.	Construction companies that do not publish annual reports publicly, completely, and consecutively during the period 2021-2025	10
3.	Construction companies that do not provide data for the measurement of variables completely and consecutively during the period 2021-2025	2
Total sample companies each year		17
Total		85

Definition and Measurement of Variables

Dependent Variable

The dependent variable, financial statement fraud, is measured using the Beneish M-Score model. Based on Beneish (1999) , an M-Score > -2.22 indicates a financial statement manipulator, whereas an M-Score < -2.22 indicates a non-manipulator. The M-Score is transformed into a dummy variable, coded "1" for manipulators and "0" for non-manipulators (Kusumastuti & Sari, 2023). The calculation formula is as follows:

M-Score = -4,840 + 0,920 DSRI + 0,528 GMI + 0,404 AQI + 0,892 SGI + 0,115 DEPI – 0,172 SGAI – 0,327 LVGI + 4,697 TATA

The Beneish M-Score is employed to objectively detect financial statement fraud through eight financial ratios calculated from publicly available financial statements. This quantitative approach is suitable for secondary data-based research and aligns with the objective of detecting financial statement manipulation within the Fraud Heptagon framework. Thus, the Beneish M-Score strengthens the methodological validity of the analysis. The calculation of each M-Score index is presented below.

Table 3. Beneish M-Score Calculation Indices

Ratio	Formula
DSRI	$\frac{\text{Receivables}_t \ / \ \text{Sales}_t}{\text{Receivables}_{t-1} \ / \ \text{Sales}_{t-1}}$
GMI	$\frac{\text{Gross Profit}_{t-1} \ / \ \text{Sales}_{t-1}}{\text{Gross Profit}_t / \text{Sales}_t}$
AQI	$\frac{1-(\text{Current Asset}_t + \text{Fixed Assets}_t)/\text{Total Assets}_t}{1-(\text{Current Asset}_{t-1} + \text{Fixed Assets}_{t-1})/\text{Total Assets}_{t-1}}$
SGI	$\frac{Sales_t}{Sales_{t-1}}$
DEPI	$\frac{[\text{Depreciation}_{t-1} \ / \ (\text{Depreciation}_{t-1} + \text{Fixed Assets}_{t-1})]}{[\text{Depreciation}_t \ / \ (\text{Depreciation}_t + \text{Fixed Assets}_t)]}$
SGAI	$\frac{\text{SGA}_t \ / \ \text{Sales}_t}{\text{SGA}_{t-1} / \text{Sales}_{t-1}}$
LVGI	$\frac{[\text{Total Liabilities}_t / \text{Total assets}_t]}{[\text{Total Liabilities}_{t-1} / \text{Total assets}_{t-1}]}$
TATA	$\frac{(\text{Income from operating}_t\text{-Cash flows from operating}_t)}{\text{Total Assets}}$

Source: (Milania & Triyono, 2022)

Independent Variables

The independent variables in this study are based on the theory proposed by Yusof (2015) which is the fraud heptagon consisting of seven factors. Each factor will be approximated using reference variables from previous research.

Table 4. Measurement of Independent Variables (fraud heptagon)

Variable	Measurement	Scale
Financial Stability (pressure)	$ACHANGE = \frac{total\ aset_t - total\ aset_{t-1}}{total\ aset_{t-1}}$ (Dewa et al., 2025)	Ratio
Nature of Industry (opportunity)	$REC = \frac{piutang_t}{penjualan_t} - \frac{piutang_{t-1}}{penjualan_{t-1}}$ (Salamah & Marliani, 2025)	Ratio

Change in Auditor (rationalization)	Dummy Variable: 1 = there is a change in the public accounting firm 0 = no change (Inday Hardika et al., 2024)	Nominal
Change in Director (Cability)	Dummy Variable: 1 = there is a change in the board of directors 0 = no change (Dewa et al., 2025)	Nominal
CEO duality (ego)	Dummy Variable: 1 = CEO holds multiple positions within the entity or has a familial relationship between the board of directors, board of commissioners, and committees within the company 0 = CEO does not hold multiple positions within the entity or has a familial relationship between the board of directors, board of commissioners, and committees within the company (Yusof et al., 2015)	Nominal
Insufficient Corporate Governance Courses (ignorance)	$ICGC = \frac{Jumlah\ pelatihan\ tata\ kelola\ yang\ dilakukan\ dewan\ direksi}{Jumlah\ dewan\ direksi}$ (Yusof et al., 2015)	Ratio
Remuneration (Greed)	$REMU = \frac{Nominal\ remunerasi\ direksi}{Laba/(Rugi)\ setelah\ pajak}$ (Yusof et al., 2015)	Ratio

Source: Data processed, 2026

Data Analysis Techniques

This study employs two stages of data analysis, namely descriptive statistical analysis and logistic regression, using IBM SPSS Statistics 26. Logistic regression is selected because the dependent variable is categorical and the method allows metric and non-metric independent variables to be analyzed simultaneously without requiring the normality assumption (Ghozali, 2021). The logistic regression model used in this study is formulated as follows:

$$Ln\left(\frac{FSF}{1-FSF}\right) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \varepsilon$$

Note:

$Ln\left(\frac{FSF}{1-FSF}\right)$ = Financial statement fraud measured using a dummy variable, where category 0 indicates "non-manipulator" (no fraud committed) and category 1 indicates "manipulator" (fraud committed).

α = Constant term

β = Regression coefficient

X_1 = Financial Stability

X_2 = Nature of Industry

X_3 = Change in Auditor

X_4 = Change in Director

X_5 = CEO duality
X_6 = Insufficient Corporate Governance Courses
X_7 = Remuneration
ε = error

RESULTS

Table 5. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std.Deviaton
Financial Stability	85	-.29000	.57000	.03141	.143942
Nature of Industry	85	-.69000	.95000	.01635	.189660
Change in Auditor	85	0	1	.13	.276
Change in Director	85	0	1	.49	.449
CEO Duality	85	0	1	.34	.267
Insufficients Corporate Governance Courses	85	.00000	9.2900	1.3000	1.72851
Remuneration	85	-8.7100	5.8500	.04294	1.19592
Financial Statement Fraud (FSF)	85	0	1	.38	.487

Source: Processed Data SPSS 25 (2026)

This study utilizes 85 observation samples. The dependent variable, financial statement fraud, shows a mean of 0.38 (standard deviation 0.487), indicating that roughly 38% of observations exhibit fraud indications. Among independent variables, financial stability averages 0.03141 (standard deviation 0.143942), reflecting overall asset expansion despite cross-firm variations. The nature of industry exhibits moderate diversity around a mean of 0.01635 (standard deviation 0.189660). Auditor changes occurred in approximately 13% of observations (mean 0.13), whereas director changes were more frequent at 49% (mean 0.49). Additionally, CEO duality or cross-board familial ties were present in 34% of cases (mean 0.34). Lastly, both insufficient corporate governance courses (mean 1.3000; standard deviation 1.72851) and remuneration (mean 0.04294; standard deviation 1.19592) demonstrate substantial variance across the sampled companies.

Table 6. Overall Fit Model Test Result

Iteration	-2Log Likelihood	Explanation
-2LL awal (block number = 0)	112.593	Model Fit
-2LL akhir (block number = 1)	93.417	

Source: Processed Data SPSS 25 (2026)

The test results in Table 6 show that the value of −2 Log Likelihood decreased from 112.593 to 93.417. This decrease indicates that the independent variables collectively enhance the model's fit to the research data, thus the model is better able to explain the variation in the likelihood of financial statement fraud occurring.

Table 7. Hosmer-Lemeshow Test Result

Step	Chi-Square	Df	Sig.
1	9.558	7	.215

Source: Processed Data SPSS 25 (2026)

Based on the analysis results in Table 7, the significance value is 0.215 with 7 degrees of freedom (df) and a Chi-Square of 9.558. Since the significance value of 0.215 is

greater than 0.05, the logistic regression model has met the goodness-of-fit criteria and is suitable for use in the next stage of analysis.

Table 8. Omnibus Test of Model Coefficient Result

	Chi-square	df	Sig.
Step	19.176	7	.008
Block	19.176	7	.008
Model	19.176	7	.008

Source: Processed Data SPSS 25 (2026)

Analysis in Table 8 shows that the significance value is 0.008. This number is smaller than 0.05 (0.008 < 0.05), indicating that the independent variables simultaneously have an effect on the dependent variable.

Table 9. Coefficient of Determination Test Result

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	93.417	.202	.275

Source: Processed Data SPSS 25 (2026)

The test results show a Nagelkerke R Square value of 0.275, which means that the independent variables in the model have the ability to explain approximately 27.5% of the variation in the occurrence of financial statement fraud in construction companies. The remaining 72.5% is influenced by other factors or variables not included in this research model.

Table 10. Classification Matrix Test Result

Observed		Predicted		
		Financial Statement Fraud		Percentage Correct
		Non Manipulator	Manipulator	
Financial Statement Fraud		47	6	88.7
	Manipulator	13	19	59.4
Overall Percentage				77.6

Source: Processed Data SPSS 25 (2026)

Based on Table 9, the results of the classification matrix test show that the model is able to classify 77.6% of observations accurately. Among the non-manipulator companies, 47 observations were successfully classified correctly, with an accuracy rate of 88.7%. Meanwhile, among the manipulator companies, 19 observations were successfully classified correctly, with an accuracy rate of 59.4%. Thus, the model has a fairly good classification capability, especially in identifying non-manipulator companies, with an overall percentage of 77.6%.

Table 11. Hypothesis Test Result

Variable	B	S.E.	Wald	df	Sig.
Financial Stability	6.913	2.228	9.629	1	.002
Nature of Industry	-2.664	1.545	2.972	1	.085
Change in Auditor	-.322	.788	.167	1	.683
Change in Director	-.859	.573	2.243	1	.134
CEO Duality	-.842	.665	1.604	1	.205

Insufficients Corporate Governance Courses	.096	.147	.428	1	.513
Remuneration	.666	.551	1.463	1	.227
Constant	-.256	.552	.215	1	.643

Source: Processed Data SPSS 25 (2026)

The hypothesis testing results indicate that Financial Stability has a positive regression coefficient of 6.913 and a significance level of 0.002 (<0.05), indicating a significant positive effect on financial statement fraud. Therefore, H1 is supported. Nature of Industry has a regression coefficient of -2.664 with a significance level of 0.085 (>0.05), indicating no significant effect on financial statement fraud; thus, H2 is not supported. Change in Auditor has a regression coefficient of -0.322 with a significance level of 0.683 (>0.05), indicating no significant effect, so H3 is not supported. Change in Director has a regression coefficient of -0.859 with a significance level of 0.134 (>0.05), indicating no significant effect on financial statement fraud; therefore, H4 is not supported. CEO Duality has a regression coefficient of -0.842 with a significance level of 0.205 (>0.05), indicating no significant effect, thus H5 is not supported. Insufficient Corporate Governance Courses has a regression coefficient of 0.096 with a significance level of 0.513 (>0.05), indicating no significant effect on financial statement fraud; therefore, H6 is not supported. Finally, Remuneration has a regression coefficient of 0.666 with a significance level of 0.227 (>0.05), indicating no significant effect on financial statement fraud, so H7 is not supported.

DISCUSSION

The Effect of Financial Stability on Financial Statement Fraud

The test results confirm that financial stability, measured by changes in total assets, significantly impacts financial statement fraud (0.002 < 0.05), supporting the first hypothesis. Aligned with fraud theory, asset growth creates pressure on management to sustain performance and meet market expectations. In agency theory, this pressure intensifies principal-agent conflicts of interest, driving agents to manipulate financial statements for personal gain and to satisfy principal expectations. These results align with Alyani et al. (2023) and Dewa et al. (2025), which both indicate that higher annual asset changes increase the risk of financial statement fraud.

The Effect of Nature of Industry on Financial Statement Fraud

Test results indicate that the nature of industry (measured by the accounts receivable-to-sales ratio) does not significantly affect financial statement fraud (0.085 > 0.05), leaving the second hypothesis unsupported. Accounts receivable characteristics in the construction sector stem from gradual project recognition and the client's budget disbursement cycle, making them reasonable and uniform rather than manipulative. Although fraud theory suggests receivables offer opportunity for fraud due to estimation-based accounting, high receivable ratios in construction reflect industry-specific structures rather than opportunistic management. This finding aligns with Chandrawati & Dyah Ratnawati (2021), who also found that the nature of industry has no significant impact on financial statement fraud.

The Effect of Change in Auditor on Financial Statement Fraud

The test results show that auditor changes do not significantly influence financial statement fraud (0.683 > 0.05), thereby rejecting the third hypothesis. In fraud theory, switching public accounting firms can serve as a rationalization mechanism to conceal fraudulent behavior (Wilantari & Ariyanto, 2023). Nevertheless, companies often change auditors to maintain independence, enhance audit quality, and adhere to Minister of Finance Regulation No. 20/2015 Article 11 paragraph (1), which limits consecutive audit

service to five fiscal years. This outcome fits agency theory assumptions, where replacing non-independent auditors helps reduce potential conflicts. These findings corroborate prior studies by Lubis & Purba (2024) and Sary & Murdianingrum (2026), which concluded that auditor changes have no impact on financial statement fraud.

The Effect of Change in Director on Financial Statement Fraud

Test results indicate that changes in directors do not significantly affect financial statement fraud (0.134 > 0.05) with a negative coefficient, rejecting the fourth hypothesis. This outcome diverges from fraud theory, which positions capability—manifested through executive turnover—as a key fraud driver via authority abuse. However, robust internal controls and strong governance prevent director changes from creating manipulation opportunities. Newly appointed directors face heightened oversight during their initial tenure, fostering greater compliance and policy accountability. Furthermore, audit committee vigilance and capital market regulations mitigate potential misconduct throughout the transition. These findings support research by Djami & Murtanto (2024), Satata et al. (2024), and Damarjati & Yulianti (2025), which concluded that directorship changes have no impact on financial statement fraud.

The Effect of CEO Duality on Financial Statement Fraud

Test results indicate that CEO duality—holding simultaneous positions as CEO and board member—does not significantly affect financial statement fraud (0.205 > 0.05), unsupported the fifth hypothesis. This outcome stems partly from the low prevalence of CEO duality within the construction sector. Although fraud theory considers ego and the associated sense of superiority from dual roles or familial ties across boards as potential fraud drivers, they do not inherently lead to financial manipulation. Adaptive corporate governance, including independent commissioners, audit committees, and OJK oversight, effectively offsets CEO dominance. These findings reinforce previous studies by Triyanto et al. (2023), which confirmed that CEO duality has no significant impact on financial statement fraud.

The Effect of Insufficient Corporate Governance Courses on Financial Statement Fraud

Test results indicate that the insufficient corporate governance courses variable does not impact financial statement fraud (0.513 > 0.05), leaving the sixth hypothesis unsupported. While fraud theory posits that limited training elevates fraud risk by weakening ethical and regulatory understanding, these findings suggest management knowledge extends beyond formal instruction. From an agency theory perspective, practical work experience, regulatory compliance, and external monitoring by auditors and market authorities serve as more critical deterrents to opportunistic behavior. Consequently, governance course deficits act as a limited proxy for ignorance in predicting misconduct. This aligns with prior research by Damarjati & Yulianti (2025), Satata et al. (2024), and Permatasari & Suhendro (2025), which established that governance course insufficiency does not drive financial statement fraud.

The Effect of Remuneration on Financial Statement Fraud

Test results show that the remuneration variable has no significant impact on financial statement fraud (0.227 > 0.05), leaving the seventh hypothesis unsupported. While fraud theory treats remuneration as a proxy for greed—reflecting an individual's drive for higher personal compensation—its lack of effect stems from institutional oversight in public firms. Under OJK Regulation (POJK) No. 34/POJK.04/2014, Nomination and Remuneration Committees structure executive pay based on industry benchmarks, duties, corporate goals, and performance metrics. This systematic evaluation prevents compensation from being shaped by executive self-interest alone, meaning high remuneration does not directly signal fraud-inducing greed. These findings corroborate

Damarjati & Yulianti (2025), who concluded that greed, proxied by executive director remuneration, does not drive financial statement fraud.

CONCLUSION

This study examines the impact of the seven fraud heptagon elements on financial statement fraud among construction firms listed on the Indonesia Stock Exchange (2021–2025), utilizing the Beneish M-Score as a fraud detection proxy. Empirical results show that only financial stability significantly influences fraud, driven by asset growth pressures that compel management to manipulate financial statements to sustain performance expectations. In contrast, the remaining six variables—nature of industry, auditor change, director change, CEO duality, insufficient governance courses, and remuneration—demonstrate no significant effect. A key limitation is the exclusive focus on the construction industries within the 2021–2025 period, restricting the generalizability of findings to industries with distinct operational dynamics. Furthermore, the classification matrix indicates a relatively weak capability in pinpointing manipulating firms (59.4%), suggesting higher accuracy in identifying non-manipulators. Future research should explore alternative fraud detection frameworks or analytical methods to enhance manipulator classification accuracy.

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