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The Effect of Fraud Heptagon Theory on Fraudulent Financial Statements with Managerial Ownership as A Moderating Variable

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ABSTRACT
This study examines the effect of Fraud Heptagon elements on fraudulent financial statements, with managerial ownership as a moderating variable. Financial reporting fraud remains a critical issue due to agency conflicts and weaknesses in corporate governance mechanisms. This research aims to provide empirical evidence regarding how structural, psychological, and governance-related factors influence financial statement manipulation in construction companies listed on the Indonesia Stock Exchange during the 2017–2024 period. The sample was selected using purposive sampling, resulting in 16 companies with 128 units of analysis. The study employs panel data regression analysis and Moderated Regression Analysis (MRA), with model selection determined through the Hausman test. The results indicate that Opportunity, Rationalization, Capability, Arrogance, and Greed have a significant positive effect on fraudulent financial statements, while Ignorance has a significant negative effect. Pressure does not significantly affect fraudulent financial statements. Furthermore, managerial ownership strengthens the effect of Opportunity, while weakening the effects of Rationalization, Capability, Arrogance, Ignorance, and Greed on fraudulent financial statements. These findings support Fraud Heptagon Theory and Agency Theory in explaining fraudulent financial reporting behavior.

INTRODUCTION

Financial statements serve as the primary medium for communicating a company's financial information to stakeholders (Sari et al., 2022). They provide information regarding financial position, performance, and cash flows that investors, creditors, and other users rely on for economic decision-making (Handoko & Natasya, 2019). Financial statements must present relevant and reliable information to ensure transparency and accountability (Harjanto et al., 2024). However, in practice, financial statements are not always free from intentional misstatements. Management may manipulate financial reports to achieve specific objectives, thereby reducing the credibility of the information presented (Puspaningsih et al., 2024).

Fraudulent financial statements refer to the intentional misrepresentation or omission of financial information to mislead users of financial reports (Kurniawan & Trisnawati, 2021). According to the Association of Certified Fraud Examiners, financial statement fraud generates the highest median loss compared to other types of fraud, despite occurring less frequently (ACFE, 2024). This condition indicates that financial statement fraud has severe economic consequences and can significantly damage corporate reputation and investor confidence. Therefore, identifying the determinants of fraudulent financial reporting remains an important research agenda (Ariany & Murtanto, 2024).

The occurrence of financial statement fraud can be explained through fraud theories. The Fraud Triangle Theory introduced by Cressey (1953) states that fraud arises due to three elements: pressure, opportunity, and rationalization. Pressure emerges when individuals face financial or performance-related demands. Opportunity arises from weak internal controls and ineffective monitoring systems. Rationalization occurs when perpetrators justify unethical behavior as acceptable under certain circumstances (Cressey, 1953).

The development of fraud theory has expanded into the Fraud Heptagon Theory, which incorporates additional elements, namely capability, arrogance, ignorance, and greed. Capability reflects an individual's competence to design and execute complex fraud schemes. Arrogance represents managerial superiority that leads to disregard for internal control mechanisms. Ignorance refers to insufficient understanding of corporate governance principles, while greed reflects excessive desire for personal gain. The inclusion of these additional factors provides a more comprehensive framework for explaining fraudulent financial statements (Yusof, 2016).

The construction sector is considered highly vulnerable to financial reporting manipulation. Based on the ACFE (2024) report, the construction industry records a significant proportion of financial statement fraud cases, with a median loss of USD 250,000. The sector's project-based nature, reliance on long-term contracts, and extensive use of accounting estimates increase the risk of earnings manipulation. Furthermore, the construction sector contributes substantially to the national economy, accounting for 9.48% of Indonesia's Gross Domestic Product in the second quarter of 2025 (BPS, 2025). Given its economic significance, maintaining transparency and integrity in financial reporting within this sector is crucial.

From the agency theory perspective, conflicts of interest between managers (agents) and shareholders (principals) may encourage financial statement manipulation. Information asymmetry allows managers to act opportunistically to maximize personal benefits at the expense of shareholders. Managerial ownership is considered one of the corporate governance mechanisms that can mitigate agency problems through the alignment of interests. When managers hold company shares, they are expected to prioritize long-term firm value and avoid opportunistic actions that could harm their own investment (Jensen & Meckling, 1976).

Despite extensive studies examining the determinants of fraudulent financial statements, empirical findings regarding the Fraud Heptagon elements and the moderating role of managerial ownership remain inconsistent. These inconsistencies indicate the existence of a research gap that requires further empirical investigation, particularly within the Indonesian construction sector.

Therefore, this study aims to analyze the effect of pressure, opportunity, rationalization, capability, arrogance, ignorance, and greed on fraudulent financial statements and to examine the moderating role of managerial ownership in construction companies listed on the Indonesia Stock Exchange

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during the 2017–2024 period. This study is expected to contribute to the development of fraud literature by providing empirical evidence on the Fraud Heptagon framework and by highlighting the effectiveness of corporate governance mechanisms in mitigating financial statement fraud risk.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Agency Theory

Agency Theory explains the contractual relationship between principals (shareholders) and agents (managers), which potentially creates conflicts of interest due to differences in objectives and information asymmetry (Jensen & Meckling, 1976). Managers, as agents, possess greater access to internal company information than shareholders. This information asymmetry creates opportunities for opportunistic behavior that may harm the principals' interests.

In financial reporting, agency conflicts encourage managers to present financial information that does not fully reflect the company's actual condition. Managers may manipulate financial statements to secure incentives, maintain their reputation, or avoid negative consequences arising from failure to meet performance targets. Therefore, Agency Theory serves as the primary theoretical foundation for explaining the determinants of fraudulent financial statements.

The Development of Fraud Theory

Fraud theory was initially introduced by Cressey (1953) through the Fraud Triangle concept, which consists of pressure, opportunity, and rationalization. Cressey argued that fraud occurs when an individual experiences pressure, perceives an opportunity, and justifies the fraudulent act through rationalization (Cressey, 1953).

Wolfe and Hermanson (2004) later expanded the model into the Fraud Diamond by adding capability as a fourth element. They emphasized that fraud cannot occur without the perpetrator's ability to exploit opportunities and conceal the misconduct effectively (Wolfe & Hermanson, 2004). Crowe (2011) further developed the concept into the Fraud Pentagon by incorporating arrogance. This model highlights that a sense of superiority and belief that internal controls do not apply to oneself may increase the likelihood of fraudulent behavior.

The most recent development is the Fraud Heptagon model, which introduces two additional elements: ignorance and greed. This extended model provides a more comprehensive framework for explaining fraudulent financial statements, particularly in modern corporate environments characterized by complex governance structures (Yusof, 2016).

Fraudulent Financial Statement

A fraudulent financial statement refers to the intentional misrepresentation of financial information designed to mislead users of financial statements. Such manipulation may involve revenue overstatement, improper expense recognition, or concealment of liabilities. These practices undermine the reliability and credibility of financial reporting and harm shareholders and other stakeholders (Puspaningsih et al., 2024).

From the perspective of Agency Theory, fraudulent financial statements represent opportunistic behavior by agents who exploit information asymmetry for personal gain. The elements within the Fraud Heptagon framework are therefore used to explain the determinants of such fraudulent behavior.

HYPOTHESIS DEVELOPMENT

Pressure and Fraudulent Financial Statement

Pressure refers to financial or non-financial demands faced by management to achieve certain performance targets (Bader et al., 2024). Within Agency Theory, pressure arises when principals impose high performance expectations, while managers face the risk of losing incentives or positions if those targets are not achieved. Such pressure may motivate managers to manipulate financial statements as a response to performance demands (Sunardi & Amin, 2018).

Previous empirical studies indicate that financial pressure increases the likelihood of financial statement fraud. Previous studies have examined the effect of pressure, proxied by financial targets, on fraudulent financial statements. The findings indicate that pressure measured through financial targets has a significant positive effect on fraudulent financial reporting (Bader et al., 2024;

Handayani & Kusumawardhani, 2025; Junus et al., 2025; Nugraha & Nugraheni, 2025; Sihombing & Panggulu, 2022). Based on this argument, the following hypothesis is proposed:

H1: Pressure has a positive and significant effect on fraudulent financial statement.

Opportunity and Fraudulent Financial Statement

Opportunity arises from weak internal controls and ineffective corporate governance mechanisms (Apriyani & Ritonga, 2019). Information asymmetry in agency relationships enlarges the space for managers to manipulate financial statements without detection. When oversight mechanisms are weak, managers have greater flexibility to engage in opportunistic actions (Mukaromah & Budiwitjaksono, 2021).

Empirical evidence suggests that weak internal control systems increase fraud risk. Previous studies indicate that opportunity, proxied by ineffective monitoring, has a significant positive effect on fraudulent financial statements (Adhania et al., 2024; Lestari & Henny, 2019; Mukaromah & Budiwitjaksono, 2021; Nurbaiti & Putri, 2023; Satata et al., 2024). Therefore, the following hypothesis is formulated:

H2: Opportunity has a positive and significant effect on fraudulent financial statement.

Rationalization and Fraudulent Financial Statement

Rationalization refers to the process by which individuals justify unethical or fraudulent behavior as acceptable or necessary under certain circumstances (Mulya & Syofyan, 2025). In the context of agency theory, managers may rationalize financial statement manipulation as a temporary action to maintain company performance, protect shareholder interests, or achieve organizational targets (Khamainy et al., 2022).

One of the common indicators associated with rationalization is the tendency of management to engage in accrual manipulation. Managers who rationalize fraudulent actions are more likely to manipulate accounting accruals to present favorable financial conditions (Ariany & Murtanto, 2024). Therefore, this study uses Total Accruals to Total Assets (TATA) as a proxy for rationalization because it reflects the extent of accrual-based earnings manipulation conducted by management.

Previous studies have shown that rationalization significantly influences fraudulent financial statements. Higher accrual manipulation indicates a greater likelihood of management justifying fraudulent reporting practices. Several prior studies found that rationalization has a positive effect on fraudulent financial reporting (Achmad et al., 2024; Kusumosari & Solikhah, 2021; Umar et al., 2020). Thus, the following hypothesis is proposed:

H3: Rationalization has a positive and significant effect on fraudulent financial statement.

Capability and Fraudulent Financial Statement

Capability refers to an individual's ability, authority, and competence to identify opportunities and successfully execute fraudulent actions without being easily detected (Demetriades & Owusu-Agyei, 2022). Individuals occupying strategic positions within a company and possessing strong educational and managerial competencies tend to have greater ability to manipulate financial statements and circumvent internal control systems (Putri & Suryani, 2024). From the perspective of agency theory, capability strengthens opportunistic behavior because agents not only have access to organizational resources but also possess the expertise necessary to exploit weaknesses in monitoring mechanisms (Avortri & Agbanyo, 2020).

In this study, capability is proxied by CEO education level. Higher educational attainment is assumed to reflect greater analytical ability, managerial competence, and strategic decision-making skills, which may increase the capability of executives to conduct complex financial statement manipulation (Kusumosari & Solikhah, 2021).

Previous studies have shown that capability measured through CEO education has a positive and significant effect on fraudulent financial reporting. (Achmad et al., 2024; Aviantara, 2021; Preicilia et al., 2022). Accordingly, the hypothesis is formulated as follows:

H4: Capability has a positive and significant effect on fraudulent financial statement.

Arrogance and Fraudulent Financial Statement

Arrogance reflects a sense of superiority and excessive confidence that leads management to believe that internal controls, regulations, and

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ethical standards do not apply to them (Yovita & Suryani, 2024). In agency relationships, arrogant executives tend to prioritize personal interests over shareholders' interests and are more likely to override internal control mechanisms for personal gain (Jaunanda & Agoes, 2019).

Executive arrogance is often associated with narcissistic behavior demonstrated through excessive self-exposure in corporate reports (Sasongko & Wijayantika, 2019). Therefore, this study measures arrogance using the frequency of CEO photographs displayed in the company's annual report. A higher number of CEO photographs indicates a stronger level of executive arrogance and dominance within the organization (Situngkir & Triyanto, 2020).

Previous studies have shown that arrogant executives are more likely to engage in fraudulent financial reporting because they tend to underestimate monitoring systems and believe they are less likely to face sanctions for unethical behavior. Several prior studies found that arrogance has a positive and significant effect on fraudulent financial statements (Yovita & Suryani, 2024; Zahara & Ratnawati, 2024). Therefore, the following hypothesis is proposed:

H5: Arrogance has a positive and significant effect on fraudulent financial statement.

Ignorance and Fraudulent Financial Statement

Ignorance refers to the lack of understanding, awareness, or competence regarding accounting standards, corporate governance principles, and fraud prevention mechanisms (Smithson, 1985). Weak knowledge of governance practices may reduce management's ability to comply with regulations and increase the likelihood of fraudulent financial reporting. From an agency theory perspective, inadequate governance expertise among company directors can weaken oversight effectiveness and increase opportunities for reporting misconduct (Yusof, 2016).

In this study, ignorance is measured by the proportion of directors without corporate governance expertise, calculated using the inverse ratio of directors with corporate governance expertise to the total number of directors. A higher value indicates a greater level of ignorance within the board of directors regarding corporate governance practices.

Previous studies found that weak governance competence and limited understanding of regulatory compliance significantly increase the risk of fraudulent financial statements (Ariany & Murtanto, 2024; Yusof, 2016). Boards with insufficient governance expertise may fail to detect or prevent financial manipulation conducted by management. Thus, the following hypothesis is formulated:

H6: Ignorance has a positive and significant effect on fraudulent financial statement.

Greed and Fraudulent Financial Statement

Greed represents an excessive desire for personal gain (Ariany & Murtanto, 2024). In Agency Theory, greed intensifies conflicts of interest because managers prioritize personal benefits over shareholders' interests (Yusof, 2016).

Empirical findings suggest that greed is a fundamental motivation behind financial fraud cases. Previous studies have examined the effect of greed, proxied by executive directors' remuneration (EXTREMU), on fraudulent financial statements. The findings indicate that greed measured by EXTREMU has a significant positive effect on fraudulent financial reporting (Ariany & Murtanto, 2024; Handoko & Nicholas, 2023; Satata et al., 2024). Therefore, the proposed hypothesis is:

H7: Greed has a positive and significant effect on fraudulent financial statement.

Managerial Ownership as a Moderating Variable

Managerial ownership refers to the proportion of company shares owned by management (Anisykurlillah et al., 2022). Agency Theory suggests that managerial ownership aligns the interests of managers and shareholders because managers directly bear the financial consequences of their decisions. Higher managerial ownership is expected to reduce opportunistic behavior (Jensen & Meckling, 1976).

However, high managerial ownership may also strengthen managerial dominance and weaken monitoring mechanisms. Therefore, managerial ownership is predicted to moderate the relationship between Fraud Heptagon elements and fraudulent financial statements. The moderating hypotheses are formulated as follows:

H8: Managerial ownership weakens the effect of Pressure on fraudulent financial statement.

H9: Managerial ownership weakens the effect of Opportunity on fraudulent financial statement.
H10: Managerial ownership weakens the effect of Rationalization on fraudulent financial statement.
H11: Managerial ownership weakens the effect of Capability on fraudulent financial statement.
H12: Managerial ownership weakens the effect of Arrogance on fraudulent financial statement.
H13: Managerial ownership weakens the effect of Ignorance on fraudulent financial statement.
H14: Managerial ownership weakens the effect of Greed on fraudulent financial statement.

RESEARCH METHODS

This study employs a quantitative approach with a causal research design to examine the effect of the Fraud Heptagon elements on fraudulent financial statements, with managerial ownership as a moderating variable. The study aims to test the relationships among variables based on Agency Theory and Fraud Heptagon Theory using firm-year panel data analysis.

The research objects are companies listed on the Indonesia Stock Exchange (IDX) during the 2017–2024 period. The sample was selected using purposive sampling with the following criteria: companies that consistently published complete annual reports and financial statements during the observation period and provided all required data for the research variables. Based on these criteria, 16 companies were selected, resulting in 128 units of analysis.

This study uses secondary data collected through documentation techniques. The data were obtained from audited annual financial statements, annual reports, and ownership structure disclosures published on the official IDX website and the respective companies' websites. The collected data include financial performance indicators, corporate governance information, CEO educational background, executive directors' remuneration, and managerial share ownership.

The primary materials used in this study are financial statements and annual reports. Statistical software was utilized to process and analyze the quantitative data. Multiple linear regression analysis was applied to examine the direct effects of independent variables on fraudulent financial statements. Furthermore, Moderated Regression Analysis (MRA) was employed to test the moderating role of managerial ownership by creating interaction terms between managerial ownership and each independent variable. Hypothesis testing was conducted using the t-test for partial effects and the F-test for simultaneous effects at a 5 percent significance level ($\alpha = 0.05$). The Adjusted R^2 coefficient was used to assess the explanatory power of the model.

Operational Definitions and Measurement of Variables

The dependent variable in this study is fraudulent financial statements, measured using the F-Score model. The F-Score is used to detect the likelihood of financial statement manipulation by combining accrual quality and financial performance indicators. A higher F-Score indicates a greater probability of financial reporting fraud (Dechow et al., 2011).

The independent variables consist of the seven elements of the Fraud Heptagon, operationalized as follows:

1. Pressure is proxied by financial targets, measured using Return on Assets (ROA). ROA is calculated by dividing net income by total assets (S. P. Sari & Nugroho, 2020). Higher ROA reflects greater performance pressure on management to maintain or improve financial targets, which may increase the risk of financial statement manipulation (Andriani et al., 2022).
2. Opportunity is proxied by ineffective monitoring (Apriyani & Ritonga, 2019). This variable reflects weaknesses in the company's internal control and governance oversight mechanisms (Ariany & Murtanto, 2024). It is measured through the effectiveness of the board of commissioners, commonly proxied by the proportion of independent commissioners (Apriliana & Agustina, 2017). Ineffective oversight reduces monitoring quality and increases opportunities for fraudulent financial reporting.
3. Rationalization is proxied by Total Accruals to Total Assets (TATA) (Ariany & Murtanto, 2024). This proxy reflects the extent of accrual-based earnings manipulation conducted by management. Higher accrual manipulation may indicate management's tendency to justify unethical reporting practices in order

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to achieve certain financial objectives (Umar et al., 2020). TATA is calculated by dividing total accruals by total asset.

4. Capability is measured based on the CEO's educational level. A higher level of education is assumed to reflect greater managerial competence, authority, and ability, including the capability to understand internal control systems and potentially exploit weaknesses in financial reporting processes (Kusumosari & Solikhah, 2021).
5. Arrogance is proxied by the frequency of CEO photographs displayed in the company's annual report (Situngkir & Triyanto, 2020). This proxy reflects the level of executive narcissism, superiority, and excessive self-confidence demonstrated by top management. A higher number of CEO photographs indicates a greater tendency of executives to dominate the organization and disregard internal control mechanisms (Sasongko & Wijayantika, 2019).
6. Ignorance is proxied by the proportion of directors without corporate governance expertise. This variable reflects the lack of knowledge, understanding, and competence related to corporate governance practices among members of the board of directors. Limited governance expertise may weaken the effectiveness of oversight and reduce the board's ability to detect or prevent fraudulent financial reporting (Yusof, 2016).
7. Greed is measured by executive directors' remuneration (Yusof, 2016). Higher remuneration reflects stronger financial incentives, which may motivate management to manipulate earnings in order to maintain or enhance compensation levels (Satata et al., 2024).

The moderating variable in this study is managerial ownership, measured as the percentage of shares owned by management relative to total outstanding shares (Anisykurlillah et al., 2022). Higher managerial ownership is expected to align the interests of management and shareholders, thereby potentially strengthening or weakening the relationship between the Fraud Heptagon elements and fraudulent financial statements through interaction effects in the moderated regression model (Jensen & Meckling, 1976).

Table 1. Variable Operationalization

Variable	Measurement
Fraudulent Financial Statements	F-Score (accrual quality + financial performance)
Pressure	Net Income / Total Assets
Opportunity	Number of Independent Commissioners / Total Commissioners
Rationalization	Total Accruals / Total Assets
Capability	Commissioners with Master Degree / Total Commissioners
Arrogance	Frequency of CEO Photographs Displayed in the Company's Annual Report
Ignorance	1-(Directors with Corporate Governance Expertise / Total Directors)
Greed	Total Remunerations / Net Income
Managerial Ownership	Management Shares / Total Outstanding Shares

Source: Data processed, 2026

RESULTS AND DISCUSSION

Panel Data Moderated Regression Analysis

This study uses panel data analysis to examine the effect of Fraud Heptagon variables on fraudulent financial statements with managerial ownership as a moderating variable. Three panel data models were estimated: the Common Fixed Model (CEM), the Fixed Effect Model (FEM), and the Random Effect Model (REM). To determine the most appropriate model, a Hausman test was performed.

Table 2. Fixed Effect Model Estimation Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.19E-15	0.004001	5.47E-13	1.0000
X1	-0.040404	0.107414	-0.376153	0.7076
X2	1.783847	0.291866	6.111880	0.0000
X3	-0.025430	0.053543	-0.474957	0.6358
X4	0.493155	0.145351	3.392845	0.0010
X5	0.000729	0.004434	0.164477	0.8697
X6	-2.168424	0.190049	-11.40984	0.0000
X7	-0.003366	0.002391	-1.408076	0.1621
M	-0.274710	0.118596	-2.316357	0.0225

Source : Data processed, 2026

Table 3. Random Effect Model Estimation Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.63E-15	0.028511	9.23E-14	1.0000
X1	-0.047834	0.102844	-0.465109	0.6427
X2	1.855613	0.248309	7.473012	0.0000
X3	-0.028912	0.052921	-0.546326	0.5859
X4	0.497394	0.123298	4.034072	0.0001
X5	0.001139	0.004419	0.257684	0.7971
X6	-2.176517	0.178052	-12.22404	0.0000
X7	-0.003116	0.002382	-1.307882	0.1934
M	-0.255850	0.092359	-2.770158	0.0065

Source : Data processed, 2026

Table 4. Hausman Test

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	13.152212	8	0.1067

Source : Data processed, 2026

The Hausman test results indicate that REM is preferred, suggesting that the selected model provides consistent and efficient estimates for the panel data analysis. The Hausman test result shows a probability value of 0.1067, which is greater than 0.05. Therefore, the Random Effect Model (REM) is considered more appropriate than the Fixed Effect Model (FEM) for this study because it provides consistent and efficient estimators.

To ensure that the regression model is free from multicollinearity problems, a Variance Inflation Factor (VIF) test was conducted for all independent variables. Multicollinearity occurs when independent variables are highly correlated, potentially causing instability in regression coefficient estimates and reducing model reliability.

Table 5. Variance Inflation Factor Test Results

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.000155	1.000000	NA
X1	0.046523	2.045905	2.045905
X2	0.125880	9.105324	9.105324

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Variable	Coefficient Variance	Uncentered VIF	Centered VIF
X3	0.021213	1.898502	1.898502
X4	0.030694	9.653381	9.653381
X5	0.000153	1.146768	1.146768
X6	0.077964	7.483243	7.483243
X7	4.62E-05	1.104362	1.104362

Source : Data processed, 2026

Table 5, presents the VIF test results. The results indicate that all centered VIF values are below the commonly accepted threshold of 10. The highest VIF values are found in Opportunity (9.105324) and Capability (9.653381), but both values remain within acceptable limits. Therefore, it can be concluded that multicollinearity is not a serious issue in this research model, and the independent variables are appropriate for further regression analysis.

Results from estimation using the random effect then the following equation is formed:

$$Y = -0.024 - 0.0763X_1 + 2.2817X_2 + 0.1589X_3 + 0.2331X_4 + 0.0193X_5 - 2.3132X_6 + 0.0285X_7 - 0.2118M + 0.5948X_1M + 5.1168X_2M - 0.8225X_3M - 2.6943X_4M - 0.1193X_5M - 3.1468X_6M - 0.1211X_7M + e$$

The interpretation of the moderated regression equation shows that the constant value of 0.44233 indicates the value of Y when all independent variables are held constant. The regression coefficients of X2 = 2.2817, X3 = 0.1589, X4 = 0.2331, X5 = 0.0193, and X7 = 0.0285 are positive, meaning that a one-unit increase in each of these variables will increase Y by the respective coefficient value, assuming other variables remain constant. In contrast, X1 = –0.0763, X6 = –2.3132, and M = –0.2118 have negative coefficients, indicating that an increase in these variables will decrease Y by their coefficient values. For the interaction (moderating) variables, X3M = –0.8225, X4M = –2.6943, X5M = –0.1193, X6M = –3.1468, and X7M = –0.1211 have negative coefficients. This indicates that as the interaction term increases, the effect of each respective X variable on Y decreases (is weakened). Meanwhile, X1M = 0.5948 and X2M = 5.1168 have positive coefficients, meaning that as the interaction term increases, the effect of X1 and X2 on Y becomes stronger (increases), assuming other variables remain constant.

Hypothesis Testing

Hypothesis Test (T-Test)

Table 6. T-Test Results

Variable	Coefficient	t-Statistic	Prob.	Description
C	-0.024485	-5.493556	0.0000	
X1	-0.076349	-0.852271	0.3959	H1 Rejected
X2	2.281714	18.46180	0.0000	H2 Accepted
X3	0.158862	3.161020	0.0020	H3 Accepted
X4	0.233108	4.181400	0.0001	H4 Accepted
X5	0.019345	4.821738	0.0000	H5 Accepted
X6	-2.313174	-22.82245	0.0000	H6 Rejected
X7	0.028475	6.362634	0.0000	H7 Accepted
M	-0.211843	-6.888217	0.0000	
X1M	0.594794	1.315272	0.1911	H8 Rejected
X2M	5.116839	4.788200	0.0000	H9 Rejected
X3M	-0.822506	-2.255459	0.0260	H10 Accepted
X4M	-2.694285	-4.117036	0.0001	H11 Accepted
X5M	-0.119341	-4.947435	0.0000	H12 Accepted
X6M	-3.146825	-3.782423	0.0003	H13 Accepted
X7M	-0.121117	-4.833329	0.0000	H14 Accepted

Source : Data processed, 2026

Simultaneous Significance Test (F-Test)

Table 7. F-Test Results

Root MSE	0.117998
Mean dependent var	-1.99E-16
S.D. dependent var	0.568362
Sum squared resid	1.78221
Durbin-Watson stat	0.408052
R-squared	0.956558
Adjusted R-squared	0.950740
S.E. of regression	0.126145
F-statistic	164.4114
Prob(F-statistic)	0.000000

Source : Data processed, 2026

Based on Table 7, it is known that the calculated F value (F-Statistic) is greater than the F table value (164.4114 > 2.71) with a significance probability of 0.000000 < 0.05. Therefore, it can be concluded that H0 is rejected and H1 is accepted, indicating that simultaneously all independent variables, namely X1 (Pressure), X2 (Opportunity), X3 (Rationalization), X4 (Capability), X5 (Arrogance), X6 (Ignorance), and X7 (Greed), have a significant effect on Fraudulent Financial Statement (Y).

Coefficient of Determination Test (R^2)

Based on the research results presented in Table 7, the adjusted R-square is 0.956558. This means that 95.6% of the variation in Fraudulent

Financial Statement (Y) can be explained by X1 (Pressure), X2 (Opportunity), X3 (Rationalization), X4 (Capability), X5 (Arrogance), X6 (Ignorance), and X7 (Greed), while the remaining 4.4% is explained by other variables not included in this research model.

The standard error of the regression model is 0.024851, as indicated by the label S.E. of Regression. This standard error value is smaller than the standard deviation of the dependent variable, indicated by the label S.D. Dependent Var, which is 0.568362. This implies that the regression model is valid as a predictive model.

Discussion

Pressure has a positive and significant effect on fraudulent financial statement.

Pressure does not have a significant effect on fraudulent financial statements (β = -0.076349, Prob. = 0.3959). This indicates that financial performance targets measured by Return on Assets (ROA) do not necessarily encourage management to manipulate financial statements.

From the perspective of Agency Theory, pressure may arise due to conflicts of interest between principals (shareholders) and agents (management) regarding the achievement of financial targets (Jensen & Meckling, 1976). However, the insignificant result suggests that management in construction companies may prioritize maintaining long-term corporate credibility and operational sustainability rather than engaging in fraudulent reporting practices to meet short-term performance expectations.

Within Fraud Heptagon Theory, pressure is considered one of the primary motivations underlying fraudulent behavior. Nevertheless, this finding indicates that financial pressure alone is insufficient to trigger fraudulent financial statements when companies possess adequate monitoring systems, governance mechanisms, and external supervision. In addition, the use of ROA as a proxy for pressure may not fully capture direct managerial pressure because ROA primarily reflects overall company profitability and operational performance rather than psychological or personal financial pressure experienced by management.

This finding is inconsistent with several previous studies, which reported that financial pressure significantly increases the likelihood of fraudulent financial reporting (Bader et al., 2024; Nugraha & Nugraheni, 2025). However, the result is consistent with studies suggesting that pressure does not always lead to fraud because managerial decisions are also influenced by governance effectiveness, ethical considerations, audit quality, and regulatory supervision (Naldo & Widuri, 2023; Supriatiningsih et al., 2024).

Furthermore, the construction sector is characterized by long-term project contracts and strict regulatory oversight, which may reduce management's tendency to manipulate financial statements despite performance pressure. This condition indicates that external monitoring mechanisms may play an important role in mitigating the effect of financial pressure on fraudulent reporting practices.

Opportunity has a positive and significant effect on fraudulent financial statement.

Opportunity shows a positive and significant influence on FFS (β = 2.281714, Prob. = 0.0000). This finding indicates that weak monitoring mechanisms and ineffective internal controls increase the likelihood of fraudulent financial reporting practices.

According to Agency Theory, information asymmetry between management and shareholders creates opportunities for opportunistic behavior because managers possess greater access to internal company information (Jensen & Meckling, 1976). When monitoring mechanisms are ineffective, management may exploit this informational advantage to manipulate financial statements for personal or organizational interests (Indriani & Rohman, 2022).

Within the Fraud Heptagon framework, opportunity arises when corporate governance systems and internal controls fail to effectively prevent or detect fraudulent behavior (Skousen et al., 2009). In this study, opportunity is proxied by ineffective monitoring reflected through the proportion of independent commissioners. The results indicate that weaker oversight functions increase the possibility of financial statement manipulation because management faces lower risk of detection and sanctions.

This finding supports the argument that strong governance structures are essential in minimizing fraud risk. Although independent commissioners

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are expected to strengthen supervision, ineffective implementation of oversight functions may reduce their effectiveness in preventing fraudulent reporting practices. In the construction sector, complex project structures and extensive use of accounting estimates may further enlarge opportunities for management to manipulate financial statements when monitoring systems are weak.

This result is consistent with previous empirical findings, which conclude that ineffective monitoring and weak corporate governance structures significantly increase the risk of fraudulent financial reporting (Adhania et al., 2024; Nurbaiti & Putri, 2023). However, the finding also suggests that the existence of independent commissioners alone is insufficient if not supported by effective governance practices, active supervision, and transparent reporting mechanisms.

Rationalization has a positive and significant effect on fraudulent financial statement.

Rationalization has a positive and significant effect on fraudulent financial statement (β = 0.158862, Prob. = 0.0020). This indicates that higher levels of accrual manipulation increase the likelihood of fraudulent financial reporting practices.

Under Agency Theory, managers may rationalize opportunistic actions as necessary efforts to maintain company performance, protect corporate reputation, or satisfy shareholder expectations (Jensen & Meckling, 1976). Such justification may reduce ethical resistance and encourage management to manipulate accounting information under certain business conditions, particularly when companies face pressure to maintain financial stability and investor confidence.

Within Fraud Heptagon Theory, rationalization represents a psychological mechanism that enables perpetrators to perceive fraudulent actions as acceptable or justifiable. In this study, rationalization is proxied by Total Accruals to Total Assets (TATA), which reflects the extent of accrual-based earnings manipulation conducted by management. Higher accrual manipulation indicates a greater tendency of management to justify unethical reporting practices in achieving financial objectives (Ariany & Murtanto, 2024). The use of TATA also reflects management discretion in applying accounting policies and estimates that may potentially be used to distort financial reporting.

This finding confirms that accrual manipulation can serve as an early indication of fraudulent financial reporting because managers may gradually normalize aggressive accounting practices before engaging in more serious reporting misconduct. In the construction sector, the extensive use of estimates related to project revenues, percentage-of-completion methods, and long-term contracts may provide greater flexibility for management to rationalize accrual manipulation practices.

The findings align with prior research, which confirms that rationalization plays a significant role in enabling fraud by reducing ethical resistance and normalizing misconduct (Achmad et al., 2024; Kusumosari & Solikhah, 2021; Umar et al., 2020). However, this result also suggests that accrual-based manipulation may not always directly indicate intentional fraud because some accounting discretion remains permissible within financial reporting standards. Therefore, strong audit quality and effective governance mechanisms remain important in distinguishing legitimate accounting judgment from fraudulent reporting behavior.

Capablity has a positive and significant effect on fraudulent financial statement.

Capability has a positive and significant effect on fraudulent financial statements (β = 0.233108, Prob. = 0.0001). This finding indicates that higher managerial capability increases the likelihood of fraudulent financial reporting practices.

From an Agency Theory standpoint, managerial expertise enhances the agent's ability to exploit information asymmetry between management and shareholders (Jensen & Meckling, 1976). Executives with higher competence and educational backgrounds possess greater knowledge regarding accounting systems, internal controls, and financial reporting procedures, enabling them to identify weaknesses that may be exploited to conceal fraudulent activities (Demetriades & Owusu-Agyei, 2022).

Within Fraud Heptagon Theory, capability is considered an important extension beyond the traditional Fraud Triangle because fraud requires not only motivation and opportunity but also the technical ability to execute and conceal misconduct effectively (Avortri & Agbanyo, 2020). In this study, capability is proxied by CEO educational level. Higher educational attainment is assumed to reflect stronger analytical ability, strategic decision-making skills, and managerial competence, which may increase the executive's capability to conduct sophisticated financial statement manipulation (Kusumosari & Solikhah, 2021).

The findings indicate that highly educated executives may possess greater flexibility and understanding in utilizing accounting policies, estimates, and reporting techniques to manipulate financial statements without being easily detected. In the construction sector, which involves complex accounting estimates and long-term project recognition, managerial competence may further facilitate the implementation of sophisticated reporting manipulation strategies.

This result is consistent with earlier studies, which emphasize that executive competence and experience increase the sophistication and likelihood of financial manipulation (Aviantara, 2021; Preicilia et al., 2022). However, this finding also suggests that higher educational qualifications do not always guarantee ethical managerial behavior. Strong governance systems, effective monitoring, and ethical corporate culture remain essential to ensure that managerial competence is used to improve company performance rather than facilitate fraudulent reporting practices.

Arrogance has a positive and significant effect on fraudulent financial statement.

Arrogance has a positive and significant effect on fraudulent financial statements (β = 0.019345, Prob. = 0.0000). This finding indicates that executives with higher levels of arrogance are more likely to engage in financial statement manipulation.

Within Agency Theory, arrogance reflects managerial dominance and excessive confidence that may reduce accountability and intensify agency conflicts between management and shareholders (Jensen & Meckling, 1976). Executives who perceive themselves as highly influential may believe that they can override internal controls and governance mechanisms without facing significant consequences.

According to Fraud Heptagon Theory, arrogance is associated with a sense of superiority and overconfidence that reduces fear of detection and sanctions (Jaunanda & Agoes, 2019). In this study, arrogance is proxied by the frequency of CEO photographs displayed in the company's annual report. A higher frequency of CEO photographs reflects stronger executive narcissism, dominance, and self-centered leadership behavior (Situngkir & Triyanto, 2020). Such behavior may encourage executives to prioritize personal image and organizational reputation, potentially leading to manipulation of financial statements to maintain perceived success.

The findings suggest that executives with excessive self-confidence may underestimate risks associated with fraudulent reporting and believe that their authority can protect them from external scrutiny. In the construction sector, where managerial discretion in project estimation and revenue recognition is relatively high, arrogant executives may possess greater flexibility to influence financial reporting decisions.

These findings are consistent with prior research, which shows that executive overconfidence and dominance are positively associated with fraudulent reporting behavior (Yovita & Suryani, 2024; Zahara & Ratnawati, 2024). However, the result also implies that arrogance alone may not directly lead to fraud unless supported by weak governance systems and ineffective monitoring mechanisms. Therefore, strengthening independent oversight and improving corporate governance effectiveness remain important in reducing fraud risk associated with executive dominance.

Ignorance has a positive and significant effect on fraudulent financial statement.

Ignorance does not have a positive effect on fraudulent financial statements because the regression results show a negative and significant coefficient (β = -2.313174, Prob. = 0.0000). This finding indicates that stronger corporate governance expertise among directors reduces the likelihood of fraudulent financial reporting practices.

In Agency Theory, board competence plays an important role in reducing information asymmetry and strengthening monitoring effectiveness between principals and agents (Jensen & Meckling, 1976). Directors with adequate governance knowledge are better able to supervise management activities, evaluate financial reporting processes, and identify potential irregularities, thereby reducing agency

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conflicts and opportunistic behavior.

Within the Fraud Heptagon framework, ignorance reflects weaknesses in governance knowledge and oversight capability that may indirectly create opportunities for fraud (Yusof, 2016). In this study, ignorance is proxied by the proportion of directors without corporate governance expertise. Therefore, a higher level of governance expertise corresponds to lower ignorance within the board of directors. The negative coefficient indicates that companies with stronger governance competence among directors tend to have lower fraudulent financial reporting risk because oversight functions become more effective.

This finding highlights the importance of governance education and professional competence in strengthening internal control systems and improving the quality of corporate supervision. Directors with governance expertise are more likely to understand compliance requirements, fraud risk indicators, and ethical reporting standards, thereby increasing the company's ability to prevent fraudulent financial statement practices.

This result supports previous studies emphasizing that board competence and governance expertise play an important role in reducing financial reporting fraud risk (Ariany & Murtanto, 2024; Pamungkas & Irwandi, 2024). However, unlike studies suggesting that ignorance directly increases fraud risk, this finding demonstrates that improving governance competence among directors can function as an effective preventive mechanism against fraudulent financial reporting practices, particularly in industries characterized by complex operational activities such as the construction sector.

Greed has a positive and significant effect on fraudulent financial statement.

Greed has a positive and significant effect on fraudulent financial statements (β = 0.028475, Prob. = 0.0000). This finding indicates that higher executive remuneration increases the likelihood of fraudulent financial reporting practices.

From an Agency Theory perspective, excessive financial incentives may intensify conflicts of interest between principals and agents because managers tend to prioritize personal financial benefits over shareholders' interests (Jensen & Meckling, 1976). Executives receiving high remuneration may experience stronger motivation to maintain financial performance and compensation levels, thereby increasing the tendency to manipulate financial statements in order to achieve desired targets.

Within Fraud Heptagon Theory, greed reflects excessive personal desire and ambition to obtain financial gain beyond reasonable limits (Yusof, 2016). In this study, greed is proxied by executive directors' remuneration. Higher remuneration may encourage management to engage in aggressive financial reporting practices to maintain bonuses, incentives, reputation, and personal economic benefits. This finding suggests that strong financial motivation can become an important driver of fraudulent behavior, particularly when accompanied by opportunities and weak monitoring systems.

The result also indicates that large compensation schemes may unintentionally create pressure for management to sustain high performance levels continuously. In the construction sector, where company performance is highly dependent on long-term projects and revenue recognition estimates, executives may possess greater flexibility to manipulate accounting figures in order to maintain profitability and compensation expectations.

This finding is consistent with previous studies, which demonstrate that greed and excessive financial incentives significantly increase the likelihood of fraudulent financial reporting practices (Ariany & Murtanto, 2024; Handoko & Nicholas, 2023; Satata et al., 2024). However, the finding also implies that executive remuneration should be accompanied by effective governance mechanisms, transparent compensation policies, and strong oversight systems to prevent excessive financial incentives from encouraging opportunistic managerial behavior.

Moderating Role of Managerial Ownership

Managerial ownership does not significantly moderate the effect of Pressure on fraudulent financial statements (β = 0.594794, Prob. = 0.1911). This finding indicates that managerial share ownership is insufficient to reduce the influence of financial performance pressure on fraudulent reporting practices. Financial targets and operational demands in construction companies may remain dominant factors regardless of the proportion of shares owned by management.

In contrast, managerial ownership significantly moderates the effect of Opportunity on fraudulent financial statements (β = 5.116839, Prob. = 0.0000). The positive interaction coefficient indicates that managerial ownership strengthens the relationship between weak monitoring and fraudulent financial reporting. This finding suggests that higher managerial ownership may increase managerial dominance and reduce the effectiveness of oversight mechanisms, thereby enlarging opportunities for management to engage in opportunistic behavior.

Managerial ownership also significantly weakens the effect of Rationalization on fraudulent financial statements (β = -0.822506, Prob. = 0.0260). This result indicates that when managers own company shares, they tend to be more cautious in justifying aggressive accounting practices because fraudulent actions may directly harm their own investments. Ownership alignment therefore reduces the tendency of management to rationalize unethical reporting behavior.

Furthermore, managerial ownership significantly weakens the effect of Capability on fraudulent financial statements (β = -2.694285, Prob. = 0.0001). This finding suggests that although competent executives possess the technical ability to manipulate financial statements, managerial ownership may reduce incentives to misuse such capabilities for fraudulent purposes because managers also bear the financial consequences of fraud.

Managerial ownership also significantly weakens the effect of Arrogance on fraudulent financial statements (β = -0.119341, Prob. = 0.0000). This indicates that share ownership by management may reduce excessive opportunistic behavior among arrogant executives because managers become more concerned with maintaining long-term firm value and shareholder wealth.

In addition, managerial ownership significantly weakens the effect of Ignorance on fraudulent financial statements (β = -3.146825, Prob. = 0.0003). This finding implies that managerial ownership may encourage stronger governance awareness and improve monitoring effectiveness, thereby reducing the negative impact of weak governance competence on fraudulent reporting practices.

Managerial ownership also significantly weakens the effect of Greed on fraudulent financial statements (β = -0.121117, Prob. = 0.0000). The result suggests that when managers become shareholders, they are more likely to prioritize sustainable company performance over short-term personal financial gains, thereby reducing the tendency for greed-driven fraudulent behavior.

From the perspective of Agency Theory, managerial ownership aligns the interests of managers and shareholders, reducing agency conflicts because managers directly bear the financial consequences of their decisions (Jensen & Meckling, 1976). However, the strengthening effect found in the relationship between opportunity and fraudulent financial statements indicates that managerial ownership may also increase managerial dominance if governance mechanisms are not sufficiently effective.

Within the Fraud Heptagon framework, managerial ownership functions as a governance mechanism that can reduce several fraud drivers, particularly rationalization, capability, arrogance, ignorance, and greed. Nevertheless, ownership structures alone are insufficient to fully eliminate fraud risk because opportunistic behavior may still arise when monitoring systems are weak.

These findings are generally consistent with previous empirical studies, which show that managerial ownership can function as a governance mechanism that mitigates fraud risk through interest alignment between managers and shareholders (Anisykurlillah et al., 2022). However, this study also demonstrates that excessive managerial dominance may weaken oversight effectiveness and strengthen fraud opportunities under certain governance conditions.

CONCLUSION

This study aims to examine the effect of Fraud Heptagon elements (Pressure, Opportunity, Rationalization, Capability, Arrogance, Ignorance, and Greed) on fraudulent financial statements, with managerial ownership as a moderating variable. Based on panel data regression analysis, the results indicate that Opportunity, Rationalization,

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Capability, Arrogance, and Greed have a significant positive effect on fraudulent financial statements. Meanwhile, Pressure does not have a significant effect, and Ignorance shows a significant negative effect on fraudulent financial statements.

The findings indicate that fraudulent financial reporting is influenced by a combination of structural, psychological, and governance-related factors, as explained by Fraud Heptagon Theory. In addition, the results support Agency Theory, suggesting that information asymmetry, managerial dominance, and conflicts of interest between principals and agents may encourage opportunistic financial reporting behavior.

Furthermore, managerial ownership is found to significantly moderate several relationships between Fraud Heptagon elements and fraudulent financial statements. Managerial ownership strengthens the effect of Opportunity on fraudulent financial statements, while weakening the effects of Rationalization, Capability, Arrogance, Ignorance, and Greed. However, managerial ownership does not significantly moderate the effect of Pressure on fraudulent financial statements. These findings suggest that managerial ownership may function as a governance mechanism that aligns managerial and shareholder interests, although excessive managerial dominance may also weaken monitoring effectiveness under certain conditions.

Overall, this study contributes theoretically by providing empirical evidence supporting the integration of Agency Theory and Fraud Heptagon Theory in explaining fraudulent financial statements. Practically, the findings highlight the importance of strengthening corporate governance mechanisms, improving internal control systems, enhancing governance competence among directors, and designing effective ownership structures to reduce the risk of fraudulent financial reporting.

This study has several limitations. First, the research sample is limited to construction companies listed on the Indonesia Stock Exchange, which may reduce the generalizability of the findings to other sectors and countries. Second, the relatively high adjusted R^2 may be influenced by the homogeneous characteristics of the construction sector, the inclusion of interaction variables in the moderated regression model, and the possibility of overlap among several financial indicators used in the study. The unusually high adjusted R^2 should therefore be interpreted cautiously and may partly reflect overlap among accounting-based variables. In addition, the use of ROA as a proxy for Pressure may contain financial performance components related to the F-Score model, potentially creating partial overlap between the independent and dependent variables. Future studies are encouraged to employ alternative pressure proxies to avoid potential mechanical correlation with the F-Score model. This study also does not employ alternative fraud detection proxies, such as Beneish M-Score, for robustness testing.

For future research, it is recommended to expand the research sample to other industrial sectors and extend the observation period to enhance generalizability. Future studies may also incorporate additional governance variables, alternative fraud detection proxies, or comparative cross-country analysis to provide deeper insights into financial reporting fraud.

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