

A MODERATION INSTITUTIONAL OWNERSHIP IMPACT ON FRAUDULENT FINANCIAL REPORTING: FRAUD PENTAGON THEORY PERSPECTIVE

Fatkhur Avi Yusuf¹, Sulis Rochayatun², Nungki Kartikasari³

^{1,2}Faculty of Economics, Universitas Islam Negeri Maulana Malik Ibrahim Malang
Jl. Gajayana No.50, Malang, East Java, 65144, Indonesia

³Yuan Ze University
Yuandong Rd 135, Taoyuan City, 320315, Taiwan
21052110083@student.uinmalang.ac.id

ABSTRACT

This study aims to evaluate the effect of the elements in the Fraud Pentagon theory, namely pressure, opportunity, rationalization, capability, and arrogance, on fraudulent financial reporting. This research method uses the F-score model to identify potential fraud in financial statements. The research data were obtained from the annual reports of companies engaged in the financial sector and listed on the Indonesia Stock Exchange (IDX) in the 2019-2023 period. By using a purposive sampling technique, 104 samples were obtained. Data analysis was carried out using the panel data analysis method through Eviews software version 12. The results of the analysis show that pressure has a significant effect on fraudulent financial reporting. However, the opportunity, rationalization, capability, and arrogance variables do not show a significant effect. In addition, institutional ownership is not proven to moderate the relationship between the elements of the Fraud Pentagon and fraudulent financial reporting. This study reveals that financial sector companies listed on the IDX tend to face the risk of fraud in financial reporting when under pressure to manipulate. limitations in this study, limited in its population, which only focuses on financial sector companies in Indonesia.

Keywords: Fraudulent Financial Reporting, Fraud Pentagon Theory, F-scores Model, institutional ownership.

INTRODUCTION

Financial reports are essential tools for companies to communicate financial information to stakeholders such as investors and creditors (Situngkir & Triyanto, 2020). Financial statements, as a critical component of these reports, serve as a primary source of information for assessing a company's financial health. They are indispensable for internal parties, external investors, creditors, and government entities in making informed decisions (Achmad, Hapsari, et al., 2022). However, the integrity of financial statements is often compromised by fraudulent activities, which pose significant risks to stakeholders and the economy at large.

Fraud in financial reporting remains a persistent issue, as evidenced by the Report to the Nations (RTTN) 2024 released by the Association of Certified Fraud Examiners (ACFE). The report analyzed 1,921 fraud cases worldwide between January 2022 and September 2023, highlighting that financial statement fraud, although accounting for only 5% of cases, resulted in the highest average loss of \$766,000 per incident (ACFE, 2024). Similarly, a 2019 survey by ACFE Indonesia revealed that financial statement fraud, while less prevalent (6.7%) compared to asset misappropriation (28.9%) and corruption (64.4%), accounted for approximately 70% of total losses, with estimated damages reaching up to IDR10,000,000 per case (ACFE Indonesia, 2020). These findings underscore the severe financial impact of financial statement fraud, despite its relatively low occurrence.

A notable case in Indonesia that illustrates the consequences of financial statement fraud is the credit card manipulation scandal at Bank Bukopin in 2018. Over five years, more than 100,000 credit cards were improperly modified, leading to misstatements in the

bank's financial reports for 2015-2017. The restatement of the 2017 financial statements revealed inaccuracies in the presentation of credit receivables and loss allowances, prompting investigations by independent auditors, Bank Indonesia, and the Financial Services Authority (OJK) (CNBC, 2018). This case highlights the critical need for robust internal and external controls to safeguard the integrity of financial statements.

Theoretical frameworks such as Agency Theory and the Fraud Triangle provide foundational insights into the causes of financial statement fraud. Agency Theory explains the inherent conflict of interest between principals (owners) and agents (management), where information asymmetry allows management to manipulate financial records for personal gain, such as securing bonuses or job security (Situngkir & Triyanto, 2020). The Fraud Triangle, introduced by Cressey (1953), identifies three factors driving fraudulent behavior: pressure, opportunity, and rationalization (Anisykurlillah et al., 2023). This theory was later expanded into the Fraud Diamond by Wolfe and Hermanson (2004), which added "capacity" as a fourth factor (Avortri & Agbanyo, 2020), and further developed into the Fraud Pentagon by Crowe Horwath (2011), incorporating "Arrogance" as the fifth element (Surepno et al., 2021). These theories collectively offer a comprehensive framework for understanding the multifaceted nature of financial statement fraud.

Despite extensive research on financial statement fraud, significant gaps remain. Previous studies have explored the influence of the Fraud Pentagon elements, pressure, opportunity, rationalization, capability, and Arrogance on fraudulent financial reporting (Achmad et al., 2022; Rohmatin et al., 2021). However, findings have been inconsistent, particularly regarding the significance of capability and Arrogance in driving fraud (Surepno et al., 2021). Moreover, the role of institutional ownership as a moderating variable in the relationship between the Fraud Pentagon and financial statement fraud has been underexplored. While some studies suggest that institutional ownership can enhance oversight and mitigate fraud risks (Pamungkas et al., 2018), others have found no significant moderating effect (Wulandari & Maulana, 2022). These inconsistencies highlight the need for further investigation into the interplay between the Fraud Pentagon and institutional ownership in the context of financial statement fraud.

The novelty of this study lies in its explicit focus on institutional ownership as a moderating variable in the relationship between the Fraud Pentagon and fraudulent financial reporting. Institutional ownership is chosen as a moderating variable due to its potential to strengthen corporate governance and reduce agency conflicts. Institutional investors, with their significant stakes in companies, are often more vigilant in monitoring management actions, thereby reducing opportunities for financial misreporting (Pamungkas et al., 2018). This research seeks to provide a deeper understanding of how institutional ownership can influence the relationship between the Fraud Pentagon and financial statement fraud, offering valuable insights for policymakers, regulators, and corporate governance practitioners.

In summary, this study contributes to the existing literature by systematically examining the influence of the Fraud Pentagon on financial statement fraud and investigating the moderating role of institutional ownership in this relationship. By providing empirical evidence on the effectiveness of institutional ownership in mitigating fraud risks, this research aims to enhance the integrity of financial reporting and contribute to the development of more effective fraud prevention mechanisms. The findings of this study are expected to offer valuable insights for policymakers.

LITERATURE REVIEW

Agency theory

Agency theory, introduced by Jensen and Meckling (1976), is the conceptual foundation underlying contractual relationships in modern corporate structures. This theory describes

the dynamics in which shareholders (principals) as owners of the company delegate decision-making authority and resource management to management (agents) to act on their behalf (Pratami et al., 2019). In this paradigm, management has a fiduciary and moral obligation to optimize the value of the company and account for all its actions to the principals, thus placing trust and accountability as key elements in corporate governance.

However, this agency relationship is not free from conflicts of interest and information asymmetry. As an internal party, the agent has access to more complete information about the company's operations and performance than the principal (Surepno et al., 2021). This imbalance condition, coupled with the agent's drive to maximize his personal welfare (such as through compensation or bonuses), creates opportunities for opportunistic actions, including manipulation of financial statements that can reduce earnings quality. This fundamental conflict between the interests of the principal and the agent's personal interests is the central challenge and triggers the potential for fraud in organizations (Jensen & Meckling, 1976; Pratami et al., 2019).

Fraud

Based on theoretical studies, fraud is defined as a strategy by individuals to obtain unauthorized benefits through the submission of false information (Pratami et al., 2019). This action generally takes advantage of the perpetrator's position in the organization to misuse company resources or assets for personal gain (ACFE, 2024). To classify its various modes, the Association of Certified Fraud Examiners (ACFE) developed a framework known as the Fraud Tree, which divides fraud into three main categories: corruption (such as bribery and conflicts of interest), misuse of assets (such as theft and embezzlement), and financial statement fraud (such as manipulation of revenues and expenses) aimed at presenting a misleading picture of company performance. The application of this framework helps organizations identify, detect, and take more systematic and targeted preventive measures against various fraud risks.

Fraudulent Financial Reporting

Fraudulent Financial Reporting is a deliberate act involving false representations or material misstatements in financial statements with the aim of deceiving report users (Pratami et al., 2019). This action, as stated by (Situngkir & Triyanto, 2020), reflects unethical and cunning behavior aimed at obtaining unlawful gain by creating a false perception of the company's financial condition, so that it can affect investment decisions or creditor assessments. According to Surepno et al., (2021), this practice is essentially a deliberate deviation from the entity's financial condition, which not only violates accounting principles but also has the potential to damage the integrity of financial markets and erode investor confidence.

HYPOTHESIS

Pressure uses financial pressure which is proxied by return on assets (ROA). A low level of return on assets (ROA) can encourage fraudulent financial statements. Research conducted by Ozcelik, (2020), Achmada et al., (2020), Situngkir & Triyanto, (2020), and Anisykurlillah et al., (2023) informs that the pressure arising from a low level of return on assets (ROA) can encourage management to carry out manipulations to meet the company's financial expectations.

H₁: The effect of pressure on fraudulent financial reporting.

Opportunity is proxied by effective monitoring. Weak supervision can trigger fraudulent acts in the financial statements. Research conducted by Ghozali & Achmad, (2019), Handoko et al., (2020), Achmada et al., (2020), and Rohmatin et al., (2021) shows that opportunity as measured by ineffective supervision has a significant effect on fraud in financial statements.

H₂: The effect of opportunity on fraudulent financial reporting.

Rationalization is proxied by Total Accrual Ratio. The Total Accrual Ratio is high, this may indicate an indication of fraudulent practices in the financial statements. Avortri & Agbanyo, (2020), Achmad, Hapsari, et al., (2022), and Achmada et al., (2020) support this by finding that rationalization, as measured by the Total Accrual Ratio, has a significant effect on financial statement fraud.

H₃: The effect of rationalization on fraudulent financial reporting.

Capability is parameterized by a dummy variable where if there is a change in the company's board of directors during the company's board of directors period during the 2019-2023 period, then it is coded 1, if there is none, it is coded 0. When companies plan to replace old directors with new, more competent directors with the aim of improving the performance of the previous management, this can trigger a period of stress or a period of adaptation for the new directors. This transition period has the potential to cause the company's performance to be less than optimal, which in turn can create opportunities for fraud. Rohmatin et al., (2021), Vousinas, (2019), and Achmada et al., (2020) supports this view by showing that capability as measured by changes in directors has a significant effect on fraud in financial statements (Wuryaningsih & Wafiroh, 2025).

H₄: The effect of capability on fraudulent financial reporting.

Arrogance is measured using the total number of CEO photos that appear in the annual financial statements for the 2019-2023 period. Excessive arrogance in leadership can increase the risk of fraud in the company. A CEO who feels superior may ignore the importance of internal control, considering it irrelevant due to his high status and position (Achmad, Hapsari, et al., 2022). In addition, CEOs who increasingly display their images in financial reports can be perceived as increasingly arrogant, often driven by a desire to show dominance and strengthen their reputation within the organization (Rohmatin et al., 2021).

Achmada et al., (2020), Achmad, Ghazali et al., (2022), and Situngkir & Triyanto, (2020) supported this view by stating that arrogance, as measured by the frequency of CEO photos, has a significant influence on financial statement fraud.

H₅: The effect of arrogance on fraudulent financial reporting.

Total institutional shares divided by total outstanding shares is a measurement of institutional ownership which is a moderating variable of this research. the amount of institutional share ownership compared to individuals makes management try hard not to lose its investors. One of them is by manipulating financial statements Pratami et al., (2019), and Anisykurlillah et al., (2023) proves that institutional ownership can affect the relationship between pressure and financial statement fraud.

H_{6a}: Institutional ownership can moderate the relationship between pressure and fraudulent financial reporting.

Significant institutional ownership, supervision of management becomes tighter because institutional shareholders tend to have a higher concern for transparency and accountability. (Wulandari & Maulana, 2022). Therefore, institutional ownership can moderate the relationship between opportunity and financial statement fraud, where management becomes more careful in making decisions that could potentially violate the rules (Wuryaningsih & Wafiroh, 2025).

H_{6b}: Institutional ownership can moderate the relationship between opportunity and fraudulent financial reporting.

Management with high institutional ownership tends to be more careful in rationalizing fraud, due to pressure from institutional shareholders who demand higher ethical standards and integrity in managing the company (Pamungkas et al., 2018). This makes institutional ownership an important moderating factor in the relationship between rationalization and financial statement fraud.

H_{6c}: Institutional ownership can moderate the relationship between rationalization and fraudulent financial reporting.

Strong institutional ownership can limit the negative influence of the ability to commit fraud, due to the close supervision of institutional shareholders who are experienced and have sufficient resources to monitor management activities (Rohmatin et al., 2021). Therefore, institutional ownership can moderate the relationship between capability and financial statement fraud, by strengthening oversight and accountability.

H6d: Institutional ownership can moderate the relationship between capability and fraudulent financial reporting.

significant institutional ownership can reduce the level of arrogance, because institutional shareholders have the power to influence management decisions and demand higher accountability (Pamungkas et al., 2018). Thus, institutional ownership acts as moderation that can reduce the negative impact of arrogance on financial statement fraud.

H6e: Institutional ownership can moderate the relationship between arrogance and fraudulent financial reporting.

METHODS

This study uses a population of companies incorporated in the financial sector in Indonesia and listed on the Indonesia Stock Exchange (IDX) in 2019-2023, with data obtained through the official website www.idx.co.id. The sample selection was carried out using purposive sampling method, as summarized in Table 1.

Table 1. Purposive Sampling

No	Sample Criteria	Amount
1	Amount Population sector financial	520
2	Companies that are not listed on the IDX during the 2019-2023 period.	(60)
3	Companies that did not publish annual financial reports on the company's website or the IDX website during the 2019-2023 period.	(20)
4	Companies that do not disclose data related to the research variables and that are not fully available (overall data is not available in publications during the 2019-2023 period).	(15)
Total companies that meet the criteria		425
Outlier data when processing data		20
Total Sampel		405

Source: Processed Data (2024)

This study covers a five-year period, from 2019 to 2023, involving 81 financial sector companies resulting in a total of 405 observations. The data used in this study comes from secondary data, in the form of financial reports, annual reports, and summaries of the financial performance of financial sector companies listed on the Indonesia Stock Exchange (IDX) during that period. Data analysis was carried out quantitatively using the panel data analysis method, using Eviews software version 12. The panel data regression equation used in this study is described as follows (Kusumadyahdewi et al., 2024).

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \text{eit} \dots \dots \dots (1)$$

Description:

Y : Fraudulent Financial Reporting

α : Konstanta

$\beta_1 - \beta_5$: Koefisien regresi

X1: Pressure

X2: Opportunity

X3 : Rationalization

X4: Capability
 X5: Arrogance
 e: Residual
 i: Financial Sector Company
 t: Period/time

The equation model for the moderation test in this study can be formulated as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_1 X_2 X_3 X_4 X_5 + e \dots (2)$$

Description:

Y = Fraudulent Financial Reporting
 α : Konstanta
 β_1-5 = Koefisien Regresi
 X1-5 = Variabel Independen
 E = Standard Error

In this study, the variable used is institutional ownership, which acts as a moderating variable in influencing the relationship between the fraud pentagon and fraudulent financial reporting.

$$Y = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \beta_6 X_{1Zit} + \beta_7 X_{2Zit} + \beta_8 X_{3Zit} + \beta_9 X_{4Zit} + \beta_{10} X_{5Zit} + e \dots (3)$$

Description:

Y = Fraudulent Financial Reporting
 α : Konstanta
 β_1-10 = Koefisien Regresi
 X1 = Pressure
 X2 = Opportunity
 X3 = Rationalization
 X4 = Capability
 X5 = Arrogance
 Z = institutional ownership
 X1Z = Interaction of institutional ownership with Pressure
 X2Z = Interaction of institutional ownership with opportunity
 X3Z = Interaction institutional ownership dengan Rationalization
 X4Z = Interaction of institutional ownership with Capability
 X5Z = The interaction of institutional ownership with Arrogance
 X1-5Z = Interaction Pressure, Opportunity, Rationalization, Capability, Arrogance dengan Fraudulent Financial Reporting
 E = Standar Error
 I = Company sample data
 T = Time period data.

Table 2. Operational Definition of Variables

Variables	Measurement	Source
Fraudulent Financial Reporting (Y)	F-Scores = Accrual Quality + Financial Performances Accrual Quality is calculated using RSST Accrual. $RSST \text{ Accrual} = (\Delta WC + \Delta NCO + \Delta FIN) / \text{Averages Total Assets}$ Financial Performances = Change in Receivables + Change in Inventories + Change in Cash Sales + Change in Earnings.	(Achmad, Hapsari, et al., 2022), (Surepno et al., 2021), and (Wulandari & Maulana, 2022)
Pressure (X1)	Financial Target $ROA = \text{Net Income} / \text{Total Asset}$	(Anisykurlillah et al., 2023),

Variables	Measurement	Source
		(Achmad, Hapsari, et al., 2022), and (Surepno et al., 2021)
Opportunity (X2)	Effective monitoring = Number of independent members of the examination board / total number of the examination board	(Pratami et al., 2019), and (Achmad, Hapsari, et al., 2022)
Rationalization (X3)	Total Accrual Ratio = Total Accrual (Net Income-Cashflow Operation/Total Assets)	(Achmad, Hapsari, et al., 2022)
Capability (X4)	Ability is measured by a dummy variable if there is a change in the company's board of directors during the company's board of directors period during the 2018-2023 period, then it is coded 1, if there is none, it is coded 0.	(Rohmatin et al., 2021)
Arrogance (X5)	In this study, arrogance is measured using the total CEO photos that appear in the annual financial statements for the 2018-2023 period.	(Rohmatin et al., 2021) and (Achmad, Hapsari, et al., 2022)
institutional ownership (Z)	institutional ownership = Total institutional share/ Total outstanding share	(Pramono Sari et al., 2020), (Surepno et al., 2021), and (Pamungkas et al., 2018)

Source: Extracted from various journals (2024)

In this study, the dependent variable Fraudulent Financial Reporting is measured using F-Score. F-Score, developed by Piotroski (2000), is a widely used tool to detect financial statement fraud. Hugo, (2019) found that F-Score is partially effective in detecting financial statement fraud and has a strong positive correlation. The operational definition of this variable refers to previous studies by Hugo, (2019), Achmad, Hapsari, et al., (2022), Surepno et al., (2021), and Wulandari & Maulana, (2022).

In this study, the pressure variable is measured using the company's return on assets (ROA). Anisykurillah et al., (2023) found that ROA, as an indicator of financial pressure, significantly affects financial statement fraud. The operational definition of this variable refers to the previous study by Anisykurillah et al., (2023), Achmad, Hapsari, et al., (2022) and Surepno et al., (2021).

In this study, the opportunity variable is measured using effective monitoring. Muchran et al., (2023) found that insufficient or ineffective monitoring has a positive effect on the detection of fraud in financial statements, which indicates an opportunity to commit fraud. The operational definition of this variable refers to a previous study by Muchran et al., (2023) Pratami et al., (2019) and Achmad, Hapsari, et al., (2022).

In this study, the rationalization variable is measured using the Total Accrual Ratio (TAR), which is the main indicator in assessing accrual earnings management and is often associated with financial statement fraud. Umarsono, (1970) states that TAR can be influenced by various factors, such as financial targets, financial stability, and auditor

turnover. The operational definition of this variable refers to a previous study by Umarsono, (1970) and Achmad, Hapsari, et al., (2022).

In this study, the capability variable is measured using a dummy variable, where a value of 1 is given if there is a change in the company's board of directors during the 2019-2023 period, and a value of 0 is given if there is no change in the board of directors in the same period. The operational definition of this variable refers to measurement methods commonly used in similar research, including studies by Rohmatin et al., (2021).

In this study, the variable arrogance is measured using the number of CEO photos that appear in the annual financial statements during the 2019-2023 period. The operational definition of this variable refers to the measurement method used in previous studies by Rohmatin et al., (2021) and Achmad, Hapsari, et al., (2022).

In this study, the moderating variable uses institutional ownership. Wulandari & Maulana, (2022) and Satata et al., (2024) found that institutional ownership can moderate the effect of certain elements of fraud on fraudulent financial reporting. The operational definition of this variable refers to previous studies by Wulandari & Maulana, (2022), Satata et al., (2024), Pramono Sari et al., (2020), Surepno et al., (2021), and (Pamungkas et al., 2018).

RESULTS

Descriptive statistical data of the research variables were examined in this study. The description of the data includes the minimum value, maximum value, mean, variance, and standard deviation. Table 3 displays the descriptive statistics for the research data.

In Table 3, the independent variable fraudulent financial reporting measured using F-Score shows a maximum value of 3.404 (Equity Development Investment) and a minimum of -3.845 (Danasupra Erapacific Tbk), which is in the high risk category according to (Dechow et al., 2012), so financial manipulation is suspected. The median of 0.009 indicates that the majority of companies have a low F-Score, with a moderate spread of data (standard deviation of 0.538) although there are extreme values that reflect variations in the tendency of financial statement manipulation among companies.

Table 3. Results of Descriptive Analysis Test

Descriptive Statistics						
	N	Mean	Median	Maximum	Minimum	Std. Dev
FFR (F-Score)	405	0,047	0,009	3,404	-3,845	0,539
Pressure (ROA)	405	0,012	0,012	0,490	-0,375	0,060
Opportunity (Effective Monitoring)	405	0,534	0,500	1,000	0,000	0,125
Rationalization (TAR)	405	0,020	0,021	0,570	-0,509	0,116
Capability	405	0,588	1,000	1,000	0,000	0,493
Arrogance	405	3,911	4,000	38,000	0,000	3,885
Institutional Ownership	405	0,764	0,830	3,010	0,030	0,195

Source: Research Data (2024)

The pressure variable, measured using ROA, has a maximum value of 0.493 and a minimum of -0.375, reflecting company performance from excellent to poor financially. The median of 0.012 indicates the majority of companies have ROA performance close to zero, with relatively homogeneous data as shown by the standard deviation of 0.012.

Opportunity, as measured by the effective monitoring indicator, has a value range of 0.200 to 1.000, with a median of 0.500, indicating that the level of effective monitoring is at the medium level in most companies. The standard deviation of 0.125 reflects the

small spread of the data, indicating a distribution that tends to be concentrated around the middle value.

Rationalization, measured through the total accrual ratio, has a range of values from - 0.509 to 0.570, with a median of 0.021 indicating most companies have a small but positive accrual ratio. The standard deviation of 0.115 reflects a fairly even distribution of the data, although there are large variations and significant extreme values (Amrullah et al., 2025).

Capability, represented by changes in the board of directors, has a maximum and median value of 1.000 and a minimum value of 0.000, indicating that the majority of companies experienced changes in the board of directors during the study period. The standard deviation of 0.492 reflects the even distribution of data between companies that experienced changes and those that did not.

Arrogance, measured through the total number of CEO photos, has a maximum value of 38,000, a minimum of 0,000, and a median of 3,000, indicating most companies have a small number of CEO photos. However, the standard deviation of 3.885 reflects considerable variation, with some companies having a much higher number of CEO photos.

Institutional Ownership, calculated as the ratio of total institutional shares to total outstanding shares, has a maximum value of 1.000, a minimum of 0.031, and a median of 0.830, indicating the majority of companies have high institutional ownership. The standard deviation of 0.194 reflects data that is concentrated around the mean, although there are some companies with very low institutional ownership ratios.

To determine the most appropriate regression model in panel data analysis, a series of tests are required. There are three types of tests, namely Chow, Hausman, and Lagrange multiplier tests.

Table 4. Model Selection Test Results

Model Specification	Statistics	P-Value	Model
Chow Test	Chi-square Prob	0,9946	Common Effect Model (CEM)
Hausman test	Random cross-section prob	0,6321	Random Model (REM)
LM Test	Cross-section Prob	0,0025	Random Model (REM)

Source: Research Data (2024)

Based on Table 4, the Chi-Square test results show a probability value of 0.9946, which exceeds the significance level of 0.05. Therefore, the Chow test identifies that the best model is the Common Effect Model. In addition, the cross-sectional random probability of 0.6321 also exceeds the 0.05 threshold, so the Hausman test concludes that the most appropriate model is the Random Effects Model, with a probability value of 0.0025 which is below 0.05. Based on the LM test, the Random Effects model is also declared as the optimal model. With the random effects model selected in two different estimation stages, this confirms that the model is the most suitable choice for this study.

Pressure proxied by return on assets (ROA) is accepted, this means that pressure has an effect on fraudulent financial reporting. coefficient value of 1.3390 and has a probability value of 0.0114 which is less than 0.05. Setting financial targets with a high ROA value in financial sector companies listed on the IDX can increase the risk of financial statement fraud. The pressure to achieve these targets encourages management to take various actions, including potential manipulation of financial statements, in order to meet the expectations set. The results of this study are in line with research conducted by

Anisykurlillah et al., (2023) and Ozcelik, (2020) stated that pressure measured using ROA has an influence on fraudulent financial reporting.

Table 5. Hypothesis Test Results

Variables	Coefficient	Std. Error	Prob.	Hypothesis
ROA	1,339099	0,526761	0,0114	Accepted
BDOUT	-0,004772	0,229624	0,9834	Rejected
TAR	0,186263	0,262384	0,4782	Rejected
CAPABILITY	-0,005398	0,057967	0,9259	Rejected
ARROGANCE	0,000471	0,007303	0,9486	Rejected
INST	0,904237	0,694677	0,1938	Rejected
ROA*INST	-2,715974	2,177256	0,2130	Rejected
BDOUT*INST	-1,894920	1,231001	0,1245	Rejected
TAR*INST	2,028443	1,512335	0,1806	Rejected
CAPABILITY*INST	0,057948	0,293523	0,8436	Rejected
ARROGANCE*INST	0,035654	0,055333	0,5197	Rejected

Source: Research Data (2024)

Table 6. Results of the Determination Coefficient Test

	Panel Data Regression	MRA
R-squared	0,028509	0,041357
Prob(F-statistic)	0,040964	0,114314

Source: Research Data (2024)

Opportunity proxied by effective monitoring is rejected, this means that opportunity has no effect on fraudulent financial reporting. coefficient value -0.0047 and has a probability value of 0.9834 which is higher than 0.05. This is what underlies the statement that H2 is rejected. These results are in line with research conducted by Achmad et al., (2022) and Surepno et al., (2021) which state that opportunities with ineffective supervision have no effect on financial statement fraud. This can be caused by the appointment of the board of commissioners in the company only to fulfill regulatory requirements, namely POJK No. 33 / PJOK.04 / 2014. Therefore, the appointment of independent commissioners is only for the fulfillment of good corporate governance, so that the role and function of independent commissioners in overseeing the company is not optimal.

Rationalization proxied by Total Accrual Ratio (TAR) is rejected, this means that rationalization has no effect on fraudulent financial reporting. coefficient value of 0.1862 and has a probability value of 0.4782 which is higher than 0.05. This underlies the statement that H3 is rejected. These results support the research of Indriaty and Thomas, (2023) which states that rationalization has no effect on financial statement fraud. High accruals can be caused by certain legitimate operational or accounting conditions, without any intention to manipulate.

Capability proxied by measured by the change of company directors during the company's board of directors period during the 2019-2023 period is rejected, this means that capability has no effect on fraudulent financial reporting. coefficient value -0.0053 and has a probability value of 0.9259 which is higher than 0.05. This is what underlies the statement that H4 is rejected. These results are in line with research conducted by Achmad, Hapsari, et al., (2022), The change of directors can improve company performance by hiring directors who are more competent than the previous directors, which has an impact on better business performance.

Arrogance proxied by the total CEO photos that appear in the annual financial statements for the 2019-2023 period is rejected, this means that arrogance has no effect on fraudulent financial reporting. coefficient value of 0.0004 and has a probability value of 0.9486 which is higher than 0.05. This underlies the statement that H5 is rejected. These results support the research of Achmad, Hapsari, et al., (2022) which states that

arrogance has no effect on financial statements. This happens because the CEO photo displayed in the company's annual report can be a form of transparency regarding who is responsible for the company's activities and a form of leadership involvement and responsibility for every action of the company.

The results of moderation testing with hypothesis 6a are rejected, the coefficient value is -2.7159 and has a probability value of 0.1963 which is higher than 0.05. These results support research conducted by Pamungkas et al., (2018). The absence of this moderating effect may be due to the weak supervision of institutional investors, who are more oriented towards short-term investment returns. As a result, pressure remains the main factor in influencing the possibility of fraudulent financial reporting without significant intervention from institutional ownership.

Hypothesis 6b is rejected, because the coefficient value is -1.8949 and has a probability value of 0.1110 which is higher than 0.05. These results are in line with research conducted by Pamungkas et al., (2018), Wulandari and Maulana, (2022). The results showed that institutional investor oversight has not been effective in reducing management opportunities for fraud, possibly due to a lack of active involvement in governance or a focus on short-term profits.

With a coefficient value of 2.0284 and has a probability value of 0.1647 which is higher than 0.05. This underlies the statement that H6c is rejected. Research by Pamungkas et al., (2018), Wulandari and Maulana, (2022), These results indicate that institutional owners are less effective in suppressing management's rationalization for manipulation, possibly due to the lack of involvement in understanding and overcoming these motives.

Hipotesis 6d is rejected, the coefficient value is 0.0579 and has a probability value of 0.8378 which is higher than 0.05. These results are supported by research conducted by Pamungkas et al., (2018) which states that institutional ownership cannot moderate the relationship between capability and fraudulent financial reporting. The results showed that institutional ownership did not significantly affect the relationship between capability and fraud, possibly due to a lack of supervision of the turnover or ability of the board of directors.

With a coefficient value of 0.0356 and has a probability value of 0.5041 which is higher than 0.05. This is what underlies the statement that H6e is rejected. These results are in line with research conducted by Pamungkas et al., (2018). The results showed that institutional ownership did not significantly affect the relationship between arrogance and potential fraud, possibly due to a lack of attention or control over top management behavior.

In table 6, the R-Squared value for regression without moderation obtained is 0.028509 and in regression with moderation the R-Squared value is 0.041357. This value indicates that the dependent variable, namely Fraudulent Financial Reporting, can be explained by the independent variable used in this study, namely the Fraud Pentagon component, by 2.85%. Meanwhile, the remaining 97.15% is explained by other factors outside the research model used. And regression with the addition of the moderation variable can be explained by 4.13% Meanwhile, the rest, namely 95.87%, is explained by other factors outside the research model used.

CONCLUSION

This study aims to evaluate the effect of the elements in the Fraud Pentagon theory, namely pressure, opportunity, rationalization, capability, and arrogance, on fraudulent financial reporting in financial sector companies listed on the Indonesia Stock Exchange (IDX) for the 2019-2023 period. The research findings show that pressure has a significant influence on fraudulent financial reporting. However, the opportunity,

rationalization, capability, and arrogance variables did not show a significant effect. In addition, institutional ownership is not proven to moderate the relationship between the elements of the Fraud Pentagon and fraudulent financial reporting. This study reveals that financial sector companies listed on the IDX tend to face the risk of fraud in financial reporting when under pressure to manipulate.

The limitations in this study include several things beyond the control of the researcher. First, this study relies on publicly available secondary data, such as annual financial reports, which may not provide enough in-depth details. Second, the time period of the study, which only covers 2019-2023, may not fully represent the long-term dynamics of fraudulent financial reporting. Third, the measurement of some variables, such as arrogance using the number of CEO photos, may have limitations in fully capturing the complexity of the concept. Fourth, this study does not consider external factors, such as regulatory changes or macroeconomic conditions, which may affect financial statement fraud.

For future research, it is recommended to expand sector coverage by testing companies in other sectors, such as raw materials, manufacturing, energy, and property, in order to compare findings and increase the generalizability of the results. In addition, future research can consider other independent variables that have the potential to influence fraudulent financial reporting, such as leverage, changes in total assets, external auditor quality, or external auditor turnover. The development of a more comprehensive measurement method, especially for variables such as arrogance and capability, is also recommended in order to capture a broader concept dimension. Finally, future research can expand the scope of the time period to observe long-term trends and the impact of external factors on financial statement fraud.

REFERENCES

- ACFE. (2024). *Occupational Fraud 2024: A Report To The Nations*. <https://www.acfe.com/-/media/files/acfe/pdfs/rtrn/2024/2024-report-to-the-nations.pdf>
- ACFE Indonesia. (2020). *Survei Fraud Indonesia 2019*. Jakarta:ACFE Indonesia Chapter.
- Achmad, T., Ghozali, I., & Pamungkas, I. D. (2022). Hexagon Fraud: Detection of Fraudulent Financial Reporting in State-Owned Enterprises Indonesia. *Economies*, 10(1), 13. <https://doi.org/10.3390/economies10010013>
- Achmad, T., Hapsari, D. I., & Pamungkas, I. D. (2022). Analysis of Fraud Pentagon Theory to Detecting Fraudulent Financial Reporting using F-Score Model in State-Owned Companies Indonesia. *WSEAS TRANSACTIONS ON BUSINESS AND ECONOMICS*, 19, 124–133. <https://doi.org/10.37394/23207.2022.19.13>
- Achmada, T., Ghozali, I., Pamungkas, I. D., & Nuswantoro, U. D. (2020). Detection of Academic Dishonesty: A Perspective of the Fraud Pentagon Model. *International Journal of Innovation*, 13(12).
- Amrullah, A. M. K., Safitri, R., & Wuryaningsih. (2025). Exploring The Influence of Attitude, Subjective Norm, and Perceived Behavioral Control on Intention Behavior: The Moderating Effect of Benefits. *Salud, Ciencia y Tecnología*, 5.
- Anisykurlillah, I., Ardiansah, M. N., & Nurrahmasari, A. (2023). Fraudulent Financial Statements Detection Using Fraud Triangle Analysis: Institutional Ownership as A Moderating Variable. *Accounting Analysis Journal*, 11(2), 138–148. <https://doi.org/10.15294/aaj.v11i2.57517>
- Avortri, C., & Agbanyo, R. (2020). Determinants of Management Fraud in The Banking Sector of Ghana: The Perspective of the Diamond Fraud Theory. *Journal of Financial Crime*, 28(1), 142–155. <https://doi.org/10.1108/JFC-06-2020-0102>

- CNBC, I. (2018). *Drama Bank Bukopin: Kartu Kredit Modifikasi dan Rights Issue*. <https://www.cnbcindonesia.com/market/20180427144303-17-12810/drama-bank-bukopin-kartu-kredit-modifikasi-dan-rights-issue>
- Ghozali, I., & Achmad, T. (2019). *Determinants Of Fraudulent Financial Reporting And Whistleblowing System: Applying Theory Of Planned Behavior*. 16.
- Handoko, B. L., Lindawati, A. S. L., & Vienna, M. (2020). Fraud Pentagon Model for Detecting Fraudulent Financial Reporting in Banking Sector. *International Journal of Recent Technology and Engineering (IJRTE)*, 8(6), 2832–2838. <https://doi.org/10.35940/ijrte.F8380.038620>
- Hugo, J. (2019). Efektivitas Model Beneish M-Score Dan Model F-Score Dalam Mendeteksi Kecurangan Laporan Keuangan. *Jurnal Muara Ilmu Ekonomi dan Bisnis*, 3(1), 165. <https://doi.org/10.24912/jmieb.v3i1.2296>
- Indriaty, L., & Thomas, G. N. (2023). Analysis of Hexagon Fraud Model, the S.C.C.O.R.E Model Influencing Fraudulent Financial Reporting on State-Owned Companies of Indonesia. *ECONOMICS*, 11(s1), 73–92. <https://doi.org/10.2478/eoik-2023-0060>
- Kusumadyahdewi, Lestari, Y. O., & Ramadhani, F. (2024). Development of accounting e-module based on contextual learning to increase student interest in learning. *Jurnal Ilmu Pendidikan*, 30(1).
- Michael C. Jensen, & Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economic*, 3(4), 305–360.
- Muchran, M., Irawati, F., & Razak, L. A. (2023). The Effect Of Pressure And Opportunity In Detecting Financial Statement Frauds In Consumer Goods Industry Companies. *AJAR*, 6(01), Article 01. <https://doi.org/10.35129/ajar.v6i01.398>
- Ozcelik, H. (2020). An Analysis of Fraudulent Financial Reporting Using the Fraud Diamond Theory Perspective: An Empirical Study on the Manufacturing Sector Companies Listed on the Borsa Istanbul. In S. Grima, E. Boztepe, & P. J. Baldacchino (Eds.), *Contemporary Studies in Economic and Financial Analysis* (pp. 131–153). Emerald Publishing Limited. <https://doi.org/10.1108/S1569-375920200000102012>
- Pamungkas, Ghozali, Achmad, T., Khaddafi, & Hidayah. (2018). *Corporate Governance Mechanisms in Preventing Accounting Fraud: A Study of Fraud Pentagon Model*. 13(2), 549-560.
- Pramono Sari, M., Kiswanto, Rahmadani, L. V., Khairunnisa, H., & Pamungkas, I. D. (2020). Detection Fraudulent Financial Reporting and Corporate Governance Mechanisms Using Fraud Diamond Theory of The Property and Construction Sectors in Indonesia. *Humanities & Social Sciences Reviews*, 8(3), 1065–1072. <https://doi.org/10.18510/hssr.2020.83109>
- Pratami, S. R., Widowati, Y. S., & Prapti, L. (2019). *Influence of Fraud Pentagon Toward Fraudulent Financial Reporting in Indonesia an Empirical Study on Financial Sector Listed In Indonesian Stock Exchange*. 8(08), 237–242.
- Rohmatin, B. L., Apriyanto, G., & Zuhroh, D. (2021). The Role of Good Corporate Governance to Fraud Prevention: An analysis based on the Fraud Pentagon. *Jurnal Keuangan Dan Perbankan*, 25(2), 280–294. <https://doi.org/10.26905/jkdp.v25i2.5554>
- Satata, D. P. I., Pamungkas, I. D., Sumaryati, A., & Minarso, B. (2024). The Role of Institutional Ownership in Detecting Fraudulent Financial Reporting: Fraud Heptagon Model Analysis. *MAKSIMUM*, 14(1), 37. <https://doi.org/10.26714/mki.14.1.2024.37-47>
- Situngkir, N. C., & Triyanto, D. N. (2020). Detecting Fraudulent Financial Reporting Using Fraud Score Model and Fraud Pentagon Theory: Empirical Study of Companies Listed in the LQ 45 Index. *The Indonesian Journal of Accounting Research*, 23(03). <https://doi.org/10.33312/ijar.486>
- Surepno, Vahaya, B. T., Andriani, A., & Marpaung, M. (2021). *Fraud Pentagon and Fraudulent Financial Reporting in Jakarta Islamic Index*. Vol. 14 (1) 2021 PP. 143-160. DOI : 10.21043/iqtishadia.v14i1.12374

- Umarsono, U. (1970). Efektivitas Fraud Triangle dalam Mendeteksi Manajemen Laba Akrua Berbasis SAS NO. 99 pada Perusahaan Penanaman Modal Asing. *Jurnal Riset Akuntansi & Perpajakan (JRAP)*, 3(02), 225–237. <https://doi.org/10.35838/jrap.2016.003.02.18>
- Vousinas, G. L. (2019). Advancing Theory of Fraud: The S.C.O.R.E. Model. *Journal of Financial Crime*, 26(1), 372–381. <https://doi.org/10.1108/JFC-12-2017-0128>
- Wulandari, R., & Maulana, A. (2022). Institutional Ownership as Moderation Variable of Fraud Triangle on Fraudulent Financial Statement. *Jurnal ASET (Akuntansi Riset)*, 14(2), 207–222. <https://doi.org/10.17509/jaset.v14i2.44183>
- Wuryaningsih, & Wafiroh, N. L. (2025). Islamic work Ethics and Accounting Practices in Indonesia: A study on Fraud. *JAS (Jurnal Akuntansi Syariah)*, 9(1).