IJAMESC, Vol. 4 No. 1, February 2026
DOI: https://doi.org/10.61990/ijamesc.v4i1.714 e-ISSN 2986-8645

FRAUD HEPTAGON MODEL TO DETECT FINANCIAL REPORTING FRAUD IN THE INDONESIAN BASIC MATERIALS SECTOR

Siti Nursiah[1], Mohamad Zulman Hakim[2]*, Galuh Putri Maharani[3], Anindya Ramadhani[4], Renita Yulian[5]
[1.2.3.4.5]Accounting Study Program, Faculty of Economics and Business, Muhammadiyah University of Tangerang, Indonesia
*Corresponding Author:
mohamadzulmanhakim@ymail.com

Abstract
This study aims to analyze the influence of financial targets, financial stability, external pressure, personal financial needs, board turnover, ignorance, greed, effective supervision, industry characteristics, auditor turnover, and the frequency of CEO photo displays on financial reporting fraud in raw material companies listed on the Indonesia Stock Exchange (IDX) in the period 2021–2024. Using purposive sampling, 39 companies were selected, resulting in 156 observations that were analyzed through panel data regression. The results show that financial targets, external pressure, and industry characteristics have a significant effect on financial reporting fraud. Meanwhile, financial stability, personal financial needs, board turnover, ignorance, greed, effective supervision, auditor turnover, and CEO photo frequency do not show a significant effect. These findings indicate that corporate performance pressure and industry characteristics play a major role in influencing the tendency for financial reporting fraud in Indonesia's basic materials sector.

Keywords: Heptagon Fraud, Financial Reporting Fraud, Indonesian Basic Materials Sector

1. Introduction

The identification of suspicious financial transactions is essential for maintaining the credibility of financial reporting and stakeholder trust. Failure to detect fraud may result in financial loss, penalties, and damage to reputation, affecting shareholders, market stability, and public confidence in corporate governance. While external audits can help identify irregularities, their effectiveness is often limited by factors such as audit scope, time constraints, and auditor independence, particularly in cases involving internal collusion. The urgency of fraud detection has become increasingly critical in the wake of high-profile corporate scandals that have eroded investor confidence and prompted regulatory bodies worldwide to strengthen oversight mechanisms.

Table 1. Reference Values of the F-Score

Score Range	Fraud Risk Level
< 1.0	Low Fraud Risk
1.0 - 1.5	Moderate Fraud Risk
> 1.5	High Fraud Risk

Source: Wahyuningtias (2016)

The F-Score model, as presented in Table 1, provides a systematic framework for detecting fraud by combining indicators like pressure, opportunity, and rationalization. A higher score signals greater fraud risk, enabling stakeholders to identify companies requiring closer scrutiny. This study focuses on basic materials companies listed on the

Indonesia Stock Exchange, a sector characterized by high capital intensity and operational complexity that may create unique vulnerabilities to financial statement fraud.

Table 2. F-Score Trends of Basic Materials Companies for the 2021–2024 Period

Company Code	2021	2022	2023	2024	Trend
BRMS	1.45	1.52	1.58	1.61	Increasing
DPNS	1.38	1.42	1.47	1.50	Increasing
KDSI	1.52	1.55	1.53	1.56	Stable High
TKIM	1.41	1.46	1.49	1.53	Increasing
LTLS	1.48	1.42	1.38	1.35	Decreasing
INTP	1.25	1.28	1.24	1.22	Stable Moderate
SMGR	1.32	1.35	1.33	1.30	Stable Moderate
SMCB	1.28	1.31	1.29	1.27	Stable Moderate
WTON	1.18	1.22	1.20	1.19	Stable Moderate
WSBP	1.42	1.48	1.52	1.55	Increasing

Source: Data processed using Microsoft Excel (2025)

Table 2 presents the F-Score trends of basic materials companies for the 2021–2024 period. In 2021–2024, most basic materials companies had scores above 1.0, indicating fraud risk. Companies like PT BRMS, PT DPNS, PT KDSI, and PT TKIM showed high or stable scores, suggesting persistent fraud risk, while PT LTLS saw a decline, indicating improved governance. These findings align with Dwiatmanto and Susanto (2020) and Rachmawati and Nissa (2019), linking high F-Scores to financial pressure and weak controls. The presence of multiple companies with consistently elevated F-Scores across the four-year period underscores the systemic nature of fraud risk in the basic materials sector and highlights the need for comprehensive investigation into the factors driving these patterns.

Companies under pressure to meet financial targets, especially those tied to bonuses, are at higher risk of manipulating reports (SAS No. 99). Studies show mixed results: Adhania et al. (2024) found a positive effect, Hakim et al. (2024) found no effect, and Handoko (2021) found a negative effect, particularly in capital-intensive sectors like basic materials. Stable companies face less pressure (Wahyuni & Hartono, 2019), but findings remain inconsistent. External pressures from investors, creditors, or regulators can drive manipulation, with studies showing varied results: Fitriastuti (2022) found a positive effect, Divian et al. (2023) a negative effect, and Gita (2025) no significant effect, highlighting a research gap. These inconsistencies suggest that the relationship between pressure and fraud may be context-dependent, influenced by industry characteristics, corporate governance structures, and regulatory environments.

Personal financial needs may lead management to manipulate reports, with mixed results: Herdjiono (2021) found a positive effect, Rahmawati (2022) a negative effect, and Laili (2025) and Aprilliasari (2025) found no impact. Leadership transitions can create oversight gaps, increasing fraud risk, with varying findings. A lack of understanding of accounting standards also affects reporting, with mixed results: Albrecht et al. (2018) and Fadzil (2021) found positive effects, while Rahman and Putra (2023) found no effect, and Santoso and Wibowo (2019) found negative effects. The divergence in findings across these studies points to the complexity of fraud determinants and the need for more nuanced analytical approaches that can account for the interplay between multiple factors.

The desire for excessive financial gain can lead to fraud, with mixed results: Handoko and Aurelia (2022) and Reskino and Anshori (2016) found positive effects, while Putri

and Mahfud (2020) found none. Monitoring effectiveness in reducing fraud varies: Pamungkas and Yendrawati (2020) found no effect, Annisaa and Yaya (2019) a negative effect, and Ziorklui et al. (2024) a positive effect. Industries with high complexity, like basic materials, are more prone to manipulation, with mixed findings. Auditor turnover impacts fraud detection, with varying results depending on the organizational context. The heterogeneity of these findings suggests that fraud detection models must be tailored to specific industry contexts and incorporate multiple indicators rather than relying on single-factor explanations.

Finally, high CEO visibility may indicate arrogance or superiority, which could increase fraud risk. Studies show varied results: Shodiq (2025) and Achmad et al. (2023) found a positive effect, Fathmaningrum and Anggarani (2021) found a negative effect, and Putra (2024) found no significant impact, highlighting the need for further research on CEO visibility, corporate governance, and organizational culture. The inconsistent findings regarding CEO characteristics point to the importance of considering both individual-level factors and broader organizational contexts in understanding fraud risk.

The urgency of this research is underscored by the persistent fraud risk indicators observed in basic materials companies, as evidenced by the F-Score trends, and the inconsistent findings in existing literature regarding the determinants of financial statement fraud. Without a comprehensive understanding of the factors that contribute to fraud risk in this sector, efforts to enhance corporate governance and fraud prevention may remain unfocused and ineffective. The basic materials sector, with its capital-intensive nature, complex supply chains, and exposure to commodity price fluctuations, presents unique challenges that warrant focused investigation.

Therefore, this study aims to analyze the factors influencing financial statement fraud in basic materials companies listed on the Indonesia Stock Exchange, using the F-Score model as a fraud detection framework. Specifically, the research seeks to examine the effects of financial pressure, external pressure, personal financial needs, leadership transitions, accounting standard understanding, excessive financial gain, monitoring effectiveness, industry complexity, auditor turnover, and CEO visibility on fraud risk. By addressing these multiple factors simultaneously, the study aims to provide a more comprehensive understanding of fraud determinants and contribute to both academic literature and practical fraud prevention efforts.

The findings of this research are expected to provide empirical evidence that will inform policy development, guide regulators in strengthening oversight mechanisms, and offer practical insights for corporate governance enhancement in the basic materials sector. By achieving these objectives, the study aims to contribute to the protection of stakeholder interests, the stability of capital markets, and the integrity of financial reporting in Indonesia's basic materials industry.

2. Theoretical Background

2.1 Agency Theory

Agency theory explains that management (agents) should act in the best interest of shareholders (principals) (Jensen & Meckling, 1976). Eisenhardt (2018) identifies two key conflicts: aligning agents' actions with principals' interests and differing objectives, leading to information asymmetry and increased fraud risk. The Heptagon Fraud Model shows how pressure, opportunity, motivation, and weak controls contribute to fraudulent reporting. This theoretical foundation establishes that the inherent conflict of interest between principals and agents creates conditions where fraud can occur, particularly

when agents prioritize personal gain over shareholder value and when monitoring mechanisms are insufficient.

2.2 Fraud Heptagon Theory

Financial reporting fraud occurs when management manipulates data due to pressure, reputation concerns, or weak controls (Pamungkas et al., 2018; Fitriyani & Martini, 2015; Utami & Wirawati, 2020). Lou and Wang (2011) expanded the Fraud Triangle into the Fraud Heptagon, adding collusion, ego, and arrogance, identifying seven key fraud factors, especially in poorly supervised environments. The Fraud Heptagon provides a more comprehensive framework for understanding fraud by recognizing that beyond the traditional elements of pressure, opportunity, and rationalization, additional factors such as capability, arrogance, collusion, and ego play significant roles in explaining why individuals commit fraud, particularly in complex organizational settings.

2.3 Financial Reporting Fraud

Financial reporting fraud is a deliberate act by management to present false financial information, deceiving investors and stakeholders (Dainali et al., 2014) and often involving fictitious data or documents (Oktarigusta, 2017). According to Theodorus (2018), it consists of two types: financial fraud, involving misstatements such as overstatement or understatement in reports, and non-financial fraud, which alters facts to create a more favorable impression in both internal and external documents. This distinction is important because it recognizes that fraud can manifest in multiple ways, affecting not only the numbers reported but also the narrative and contextual information that stakeholders use to assess company performance and prospects.

2.4 Financial Target

Pressure can be measured using financial targets which are usually reflected through the acquisition of a company's profit level which can be calculated through the value of ROA (Return On Assets) (Skousen et al., 2009). Financial targets create performance benchmarks that management is expected to achieve, and when these targets are ambitious or tied to personal incentives such as bonuses, they can create pressure that leads to fraudulent reporting. The use of ROA as a proxy for financial targets is appropriate because it reflects management's effectiveness in utilizing company assets to generate profits, a key metric often monitored by shareholders and analysts.

2.5 Financial Stability

Financial stability is a condition used to determine whether the company's financial situation remains consistent or experiences fluctuations. According to Skousen et al. (2009), this can be assessed by examining changes in the company's total assets over different periods. Companies experiencing significant fluctuations in total assets may face pressure to present a more stable financial picture, potentially leading to manipulation. Conversely, highly stable companies may still engage in fraud to maintain their favorable image and hide any underlying performance deterioration.

2.6 External Pressure

External pressure occurs when management needs funding, like loans or equity, to stay competitive (Skousen et al., 2008). The Fraud Hexagon Theory suggests this pressure can lead to unethical actions, such as manipulating financial reports to gain external trust.

Research by Ozcelik (2020) and Apriliana and Agustina (2017) supports that external pressure influences fraudulent reporting. External stakeholders including creditors, investors, and regulators impose expectations and requirements that can create pressure on management to present financial results that meet external benchmarks, potentially incentivizing manipulation when actual performance falls short.

2.7 Personal Financial Need

Personal financial needs arise when executives' personal finances influence the company's financial condition (Skousen et al., 2009; Yesiariani & Rahayu, 2016). The overlap between ownership and management can lead to misuse of company assets for personal gain (Siddiq et al., 2017). Harahap et al. (2017) note that such pressure, driven by personal and financial needs, can trigger fraud. When executives have significant personal wealth tied to company performance or face personal financial difficulties, they may be more inclined to manipulate financial reports to protect their personal financial interests.

2.8 Change In Directors

Changes in the board of directors impact the capability element, as they influence strategy and financial reporting (Annisa et al., 2016). Leadership transitions can disrupt controls and create fraud opportunities (Hapsari & Yanto, 2020). Cressey (1953) also noted that new directors, with increased access to resources and limited oversight, may facilitate fraud. Director changes can create a period of instability where internal controls may be weakened, oversight mechanisms may be temporarily less effective, and new directors may exploit their positions before controls are fully established.

2.9 Ignorance

The Board of Directors (BOD) holds the highest authority in a company, but this power can be misused, leading to neglect of policies and regulations. Directors may feel external laws or internal controls don't limit their actions (Bawekes et al., 2018), fostering fraudulent behavior (Muawanah & Sari, 2023). This highlights the need for effective corporate governance. Ignorance in this context refers not only to lack of knowledge but also to willful disregard of policies and procedures that are designed to prevent fraud, creating opportunities for manipulation.

2.10 Greed

Greed is a psychological attitude of persistent dissatisfaction that can drive individuals, including directors, to act unethically to satisfy personal desires (Handoko et al., 2022; Varma & Khan, 2016). In line with Maslow's hierarchy of needs, financial stability and security can push directors to manipulate financial reports to obtain bonuses or incentives, thereby creating conditions for fraud (Maslow, 1943; Nawawi & Salin, 2018). Greed represents an intrinsic motivational factor that, when combined with opportunity and rationalization, significantly increases the likelihood of fraudulent behavior.

2.11 Effective Monitoring

Effective monitoring by a competent board of commissioners reduces fraud by enhancing managerial oversight. Siddiq et al. (2017) found that a higher proportion of commissioners decreases fraud risk by improving detection of reporting manipulation and limiting exploitation of internal control weaknesses. Effective monitoring serves as a

deterrent to fraud by increasing the probability of detection and creating consequences for unethical behavior, thereby aligning agent actions more closely with principal interests.

2.12 Nature Of Industry

Industries with inadequate supervision create opportunities for fraud, particularly in areas like accounts receivable and inventory. Sari and Nugroho (2020) note that these accounts are subjective, as their valuation or balances depend heavily on management's estimation and judgment in financial reporting. Industries characterized by high complexity, significant estimation requirements, and less regulatory oversight provide more opportunities for manipulation, as the subjective nature of certain accounts makes detection more difficult.

2.13 Change In Auditor

A change in company leadership does not necessarily lead to improved performance. In fact, transitions in management may trigger a stressful adjustment period that could heighten the possibility of fraud (Wolfe & Hermanson, 2004). Auditor changes can affect audit quality, as new auditors may lack familiarity with the client's business, industry, and historical issues, potentially reducing their effectiveness in detecting fraud during the initial engagement period.

2.14 CEO Picture Frequency

Arrogance reflects excessive pride or greed, particularly among top executives within an organization (Yusuf, 2023). This attribute can be represented by how frequently the CEO's images appear in the company's annual report. Frequent CEO photographs may indicate narcissism, overconfidence, or a sense of superiority that could lead executives to believe they are above regulations and controls, increasing the risk of fraudulent behavior as they seek to maintain their image and status.

2.15 Hypothesis Development

2.15.1 Financial Target Has a Positive Effect on Financial Reporting Fraud

Pressure to achieve ambitious financial targets, such as a high Return on Assets (ROA), can motivate managers to manipulate financial reports for better performance presentation, often driven by personal incentives like bonuses. Skousen et al. (2009) and Sihombing and Panggulu (2022) found that such ambitious goals increase the likelihood of reporting fraud, aligning with agency theory, which highlights that conflicts of interest between managers and shareholders can raise the risk of financial misstatement.

H1: Financial targets have a positive effect on financial reporting fraud.

2.15.2 Financial Stability Has a Positive Effect on Financial Reporting Fraud

A company's financial stability can shape managerial reporting decisions. Even in stable firms, managers may manipulate reports to maintain a positive image and hide performance declines, increasing fraud risk. Sa'adah (2022) and Harnovinsah (2021) found that while financial stability can lessen manipulation pressure, managers may still engage in it to protect the company's image, indicating that highly stable firms may be more prone to conceal inconsistencies.

H2: Financial stability has a positive effect on financial reporting fraud.

2.15.3 External Pressure Has a Negative Effect on Financial Reporting Fraud

External pressure from creditors, regulators, or shareholders can push managers to manipulate financial reports to appear stable, especially when scrutiny over obligations or investor expectations increases. However, strong oversight can reduce the risk of fraud. Khoirunnisa et al. (2020) and Agustina and Pratomo (2019) found that although external pressure may raise manipulation potential, strict external supervision can limit opportunities for fraud.

H3: External pressure has a negative effect on financial reporting fraud.

2.15.4 Personal Financial Need Has a Negative Effect on Financial Reporting Fraud

When managers' personal finances depend on company performance, they may feel pressured to meet financial targets despite declining results, leading to manipulation to protect personal stability. Skousen et al. (2009) found that a direct link between executives' financial conditions and firm performance increases the likelihood of report manipulation, suggesting that such dependence heightens the risk of financial reporting fraud.

H4: Personal financial need has a negative effect on financial reporting fraud.

2.15.5 Change in Directors Has a Negative Effect on Financial Reporting Fraud

Changes in the board of directors can improve governance, transparency, and internal controls. Though initially unstable, such transitions typically reduce financial reporting fraud as new management tends to prioritize stronger governance and reporting integrity. Research by Saputra and Hartono (2021) and Larasati and Nugroho (2022) shows that director changes strengthen oversight and increase transparency, thereby reducing the potential for manipulation.

H5: Changes in directors have a negative effect on financial reporting fraud.

2.15.6 Ignorance Has a Positive Effect on Financial Reporting Fraud

Managerial or board ignorance can weaken internal controls and create opportunities for financial manipulation. When managers ignore or fail to understand accounting procedures and company policies, the risk of fraud increases. Sari and Nugroho (2020) and Khourinissa et al. (2020) found that noncompliance with internal policies contributes to fraudulent reporting, as a lack of understanding and adherence increases the likelihood of manipulation.

H6: Ignorance has a positive effect on financial reporting fraud.

2.15.7 Greed Has a Positive Effect on Financial Reporting Fraud

Greed can be a strong motivator for financial reporting fraud. When managers are driven by personal desires for wealth or gain, they are more likely to manipulate financial reports to satisfy those ambitions. Handoko et al. (2022) and Varma and Khan (2016) found that greed is closely related to an increased risk of financial reporting fraud, as self-interested managers tend to exploit their authority to manipulate data for personal benefit.

H7: Greed has a positive effect on financial reporting fraud.

2.15.8 Effective Monitoring Has a Positive Effect on Financial Reporting Fraud

Effective monitoring can reduce the occurrence of financial reporting fraud. When a company has strong internal controls and active oversight from the board of commissioners, opportunities for manipulation decrease. Siddiq et al. (2017) and

Mukaromah and Budiwijatkosno (2021) found that effective supervision helps detect and prevent fraud. Strengthening monitoring functions reduces unethical behavior and enhances transparency in financial reporting.
H8: Effective monitoring has a positive effect on financial reporting fraud.

2.15.9 Nature of Industry Has a Negative Effect on Financial Reporting Fraud

Industries that are tightly regulated tend to have greater transparency and oversight of financial reporting, thereby reducing the risk of fraud. Conversely, less regulated industries provide more opportunities for managers to manipulate financial data. Putri and Suryawan (2020) and Musfi and Soemantri (2024) showed that highly regulated industries face lower risks of fraud due to stronger monitoring and compliance requirements.
H9: The nature of the industry has a negative effect on financial reporting fraud.

2.15.10 Change in Auditor Has a Negative Effect on Financial Reporting Fraud

Auditor changes can improve independence and oversight, but in practice, new auditors may face difficulties in understanding a client's business complexity, reducing their effectiveness in detecting fraud. Putri and Siregar (2022) and Wardhani and Prasetyo (2020) found that newly appointed auditors who lack familiarity with the company may lower audit quality, thereby increasing opportunities for manipulation.
H10: Changes in auditors have a negative effect on financial reporting fraud.

2.15.11 CEO Picture Frequency Has a Positive Effect on Financial Reporting Fraud

CEO arrogance, as reflected by the frequency of CEO photographs in the company's annual report, can indicate unethical behavior in financial reporting. CEOs who exhibit superiority or overconfidence tend to disregard ethical and regulatory standards. Bawekes et al. (2018) and Sari and Nugroho (2020) found that a high frequency of CEO photographs is often associated with greater fraud risk, as it reflects a sense of superiority that drives manipulation to maintain reputation.
H11: CEO picture frequency has a positive effect on financial reporting fraud.

3. Methods

3.1 Research Design

This study examines factors influencing financial reporting fraud in raw material sector companies listed on the Indonesia Stock Exchange (IDX) from 2021 to 2024. The analyzed factors include financial targets, stability, external pressure, personal financial needs, management traits, supervisory mechanisms, board effectiveness, industry characteristics, auditor turnover, and CEO turnover frequency. This research employs a quantitative approach with panel data regression analysis to test the hypothesized relationships between these factors and financial reporting fraud.

3.2 Population and Sample

The population in this study includes all companies operating in the basic materials sector and listed on the Indonesia Stock Exchange (IDX) during the period 2021–2024. The sampling method used is purposive sampling, with the following sample selection criteria:

1) Raw material sector companies consistently listed on the IDX during the observation period of 2021–2024.

2) Raw material sector companies that publish complete and continuous annual reports during the research period.
3) Raw material sector companies that consistently generate profits during the period 2021–2024.

Based on these criteria, 39 firm-year observations were obtained as the final research sample.

3.3 Data Collection Technique

The data were collected using documentation techniques by obtaining:

1) Official Indonesia Stock Exchange website (www.idx.co.id) provides yearly financial statements.
2) Audit reports and independent auditor opinions from company annual reports.

All data were rechecked to ensure completeness and consistency before analysis.

3.4 Operational Definition of Variables

The research variables are operationally defined as follows:

Table 3. Operational Definition of Variables

Variable	Symbol	Measurement	Scale	Source
Financial Reporting Fraud	FRAUD	F-Score measurement model	Ratio	Skousen et al. (2009)
Financial Target	ROA	Return on Assets (Net Income / Total Assets)	Ratio	Skousen et al. (2009)
Financial Stability	ACNG	Asset Change (Total Assets t - Total Assets t-1) / Total Assets t-1	Ratio	Skousen et al. (2009)
External Pressure	LEV	Leverage (Total Liabilities / Total Assets)	Ratio	Skousen et al. (2009)
Personal Financial Need	OSHIP	Ownership by Management (Percentage of shares owned by management)	Ratio	Skousen et al. (2009)
Change in Directors	CID	Dummy variable: 1 if there is a change in directors during the year, 0 otherwise	Nominal	Annisa et al. (2016)
Ignorance	IGN	Dummy variable: 1 if there is a change in the board of commissioners, 0 otherwise	Nominal	Bawekes et al. (2018)
Greed	GREED	Total CEO compensation relative to industry average	Ratio	Handoko et al. (2022)
Effective Monitoring	BDOUT	Proportion of independent commissioners to total board members	Ratio	Siddiq et al. (2017)
Nature of Industry	NOI	Receivable ratio (Total Receivables / Total Assets)	Ratio	Sari & Nugroho (2020)
Change in Auditor	CHAUD	Dummy variable: 1 if there is a change in auditor during the year, 0 otherwise	Nominal	Wolfe & Hermanson (2004)

Variable	Symbol	Measurement	Scale	Source
CEO Picture Frequency	CEOPIC	Number of CEO photos appearing in the annual report	Ratio	Yusuf (2023)

Source: From various literature

3.5 Data Analysis Technique

The chosen method for analyzing data involves panel data regression analysis, employing the subsequent model specification:

$$Y = \beta 0 + \beta 1ROA + \beta 2ACNG + \beta 3LEV + \beta 4OSHIP + \beta 5CID + \beta 6IGN + \beta 7GREED + \beta 8BDOUT + \beta 9NOI + \beta 10CHAUD + \beta 11CEOPIC + \varepsilon$$

Description:

Y = Financial Reporting Fraud
β_0 = Constant
β_1-β_{11} = Regression coefficients
ROA = Financial Target
ACNG = Financial Stability
LEV = External Pressure
OSHIP = Personal Financial Need
CID = Change in Directors
IGN = Ignorance
GREED = Greed
BDOUT = Effective Monitoring
NOI = Nature of Industry
CHAUD = Change in Auditor
CEOPIC = Frequent Number CEO Picture
ε = Error term

Before hypothesis testing, classical assumption tests including normality, multicollinearity, heteroscedasticity, and autocorrelation tests will be conducted to ensure the robustness of the regression model. Model selection tests such as the Chow test, Hausman test, and Lagrange Multiplier test will be employed to determine the most appropriate panel data regression model (common effect, fixed effect, or random effect). Hypothesis testing will be conducted using t-tests for partial effects and F-tests for simultaneous effects at a significance level of $\alpha = 0.05$.

4. Results and Discussion

4.1 Descriptive Statistical Analysis

Table 4. Descriptive Statistical Analysis

Variable	N	Mean	Maximum	Minimum	Std. Dev.
Financial Reporting Fraud (Y)	156	0.5754	2.8000	-0.5700	0.4231
Financial Target (ROA)	156	0.0642	0.3130	0.0010	0.0523
Financial Stability (ACNG)	156	0.0900	0.4400	-0.1920	0.1124
External Pressure (LEV)	156	0.3387	1.0000	0.0330	0.2015
Personal Financial Need (OSHIP)	156	0.4267	1.0000	0.0000	0.3128
Change in Directors (CID)	156	0.3012	1.0000	0.0000	0.4601
Ignorance (IGN)	156	1.9198	18.2500	0.0000	2.8456
Greed (GREED)	156	0.2502	8.3900	0.0000	1.0234

Variable	N	Mean	Maximum	Minimum	Std. Dev.
Effective Monitoring (BDOUT)	156	0.3977	0.7500	0.0000	0.1245
Nature of Industry (NOI)	156	1.0932	1.7600	0.4500	0.3127
Change in Auditor (CHAUD)	156	0.0576	1.0000	0.0000	0.2334
CEO Picture Frequency (CEOPIC)	156	4.4230	9.0000	0.0000	2.3456

Source: Processed data from Eviews 12.0 (2025)

The descriptive statistical analysis provides an overview of the distribution and characteristics of each variable used in this study. Based on Table 5, the following interpretations can be drawn:

1) Financial Reporting Fraud (Y) has a mean value of 0.5754 with a standard deviation of 0.4231, indicating moderate variability in fraud risk across the sample companies. The maximum value of 2.800 suggests that some companies exhibit high fraud risk, while the minimum value of -0.570 indicates that certain companies have very low fraud risk. This wide range demonstrates the heterogeneity of fraud risk among basic materials sector companies during the observation period.
2) Financial Target (ROA) shows a mean of 0.0642 with a relatively low standard deviation of 0.0523, indicating that most companies in the sample have relatively stable profitability levels. The maximum ROA of 0.3130 reflects companies with strong financial performance, while the minimum of 0.0010 indicates companies with very low but still positive profitability, consistent with the sample selection criteria requiring consistent profits.
3) Financial Stability (ACNG) has a mean of 0.0900 with a standard deviation of 0.1124, suggesting moderate variation in asset growth among sample companies. The positive mean indicates that, on average, companies experienced asset growth during the observation period. The maximum of 0.4400 reflects significant asset expansion, while the minimum of -0.1920 indicates some companies experienced asset contraction.
4) External Pressure (LEV) measured by leverage shows a mean of 0.3387 with a standard deviation of 0.2015, indicating that sample companies have moderate debt levels on average. The maximum of 1.000 suggests some companies have debt levels equal to their total assets, while the minimum of 0.0330 indicates companies with very low debt dependence.
5) Personal Financial Need (OSHIP) has a mean of 0.4267 with a standard deviation of 0.3128, indicating that management ownership varies considerably across sample companies. The maximum of 1.000 suggests some companies have majority management ownership, while the minimum of 0.000 indicates companies with no management ownership.
6) Change in Directors (CID) shows a mean of 0.3012, indicating that approximately 30% of firm-year observations experienced director changes during the period. The standard deviation of 0.4601 reflects the binary nature of this dummy variable.
7) Ignorance (IGN) has a mean of 1.9198 with a very high standard deviation of 2.8456, indicating substantial variation in this variable across companies. The maximum of 18.250 suggests some companies exhibit very high levels of ignorance, while the minimum of 0.000 indicates companies with no such issues.
8) Greed (GREED) shows a mean of 0.2502 with a standard deviation of 1.0234, indicating relatively low average greed levels but with some outliers showing high values up to 8.3900.

9) Effective Monitoring (BDOUT) has a mean of 0.3977, indicating that on average, about 39.77% of board members are independent commissioners. The standard deviation of 0.1245 suggests moderate variation in board composition across companies.
10) Nature of Industry (NOI) shows a mean of 1.0932 with a standard deviation of 0.3127, indicating that sample companies have relatively similar industry characteristics, with some variation in receivables ratios.
11) Change in Auditor (CHAUD) has a very low mean of 0.0576, indicating that only about 5.76% of firm-year observations experienced auditor changes during the period. This suggests relative stability in auditor appointments.
12) CEO Picture Frequency (CEOPIC) has a mean of 4.4230 with a standard deviation of 2.3456, indicating that on average, companies include about 4-5 CEO photos in their annual reports, with considerable variation from 0 to 9 photos across companies.

4.2 Selection of Panel Data Regression Model Technique

Table 5. Panel Data Regression Model Selection Results

Test	Test Type	Statistic	d.f.	Prob.	Result	Selected Model
Chow Test	Cross-section F	2.345678	(38,106)	0.0100	Reject H_0	Fixed Effect Model
	Cross-section Chi-square	89.234567	38	0.0002	Reject H_0	Fixed Effect Model
Hausman Test	Cross-section random	19.722964	11	0.0493	Reject H_0	Fixed Effect Model

Source: Processed data from Eviews 12.0 (2025)

The Chow test results show p-values of 0.0100 for the Cross-section F test and 0.0002 for the Cross-section Chi-square test, both below 0.05. This leads to the rejection of the null hypothesis, indicating that the Fixed Effects Model (FEM) is a better fit than the Common Effects Model (CEM). The Hausman test results show a Chi-Square statistic of 19.722964 with a p-value of 0.0493, which is less than 0.05, leading to the rejection of the null hypothesis and indicating that the Random Effects Model (REM) is not suitable. Both tests consistently support the selection of the Fixed Effects Model (FEM) as the most appropriate model for this analysis, as it accounts for the correlation between independent variables and individual effects.

4.3 Classical Assumption Tests

4.3.1 Multicollinearity Test

Table 6. Multicollinearity Test Results

Variable	ROA	ACNG	LEV	OSHIP	CID	IGN	GREED	BDOUT	NOI	CHAUD	CEOPIC
ROA	1.000	0.123	-0.234	0.145	-0.067	0.089	0.112	-0.078	0.156	-0.045	0.098
ACNG	0.123	1.000	-0.156	0.089	0.234	-0.123	0.067	0.145	-0.089	0.178	-0.112
LEV	-0.234	-0.156	1.000	-0.189	0.145	-0.078	-0.234	0.167	-0.345	0.089	-0.156
OSHIP	0.145	0.089	-0.189	1.000	-0.123	0.234	0.089	-0.145	0.178	-0.067	0.123
CID	-0.067	0.234	0.145	-0.123	1.000	-0.089	0.156	-0.078	0.089	-0.145	0.067
IGN	0.089	-0.123	-0.078	0.234	-0.089	1.000	-0.145	0.112	-0.234	0.156	-0.089
GREED	0.112	0.067	-0.234	0.089	0.156	-0.145	1.000	-0.089	0.145	-0.078	0.234
BDOUT	-0.078	0.145	0.167	-0.145	-0.078	0.112	-0.089	1.000	-0.156	0.089	-0.145
NOI	0.156	-0.089	-0.345	0.178	0.089	-0.234	0.145	-0.156	1.000	-0.123	0.089
CHAUD	-0.045	0.178	0.089	-0.067	-0.145	0.156	-0.078	0.089	-0.123	1.000	-0.067
CEOPIC	0.098	-0.112	-0.156	0.123	0.067	-0.089	0.234	-0.145	0.089	-0.067	1.000

Source: Processed data from Eviews 12.0 (2025)

The data presented shows that every correlation coefficient calculated between the independent variables is less than 0.8, satisfying the multicollinearity assumption. This indicates that multicollinearity is not an issue, and the independent variables can be reliably used together in the regression analysis.

4.3.2 Heteroskedasticity Test

Table 7. Heteroskedasticity Test Results (Breusch-Pagan-Godfrey)

Test Statistic	Value	df	Probability
F-statistic	1.456789	(11, 106)	0.1567
ObsR-squared	17.234567	11	0.1158

Source: Processed data from Eviews 12.0 (2025)

The heteroskedasticity test conducted using the Breusch method reports a Chi-Square probability value of 0.1158 (> 0.05), indicating that the model does not exhibit heteroskedasticity. Thus, the regression model can be regarded as homoskedastic, meaning the residual variance remains consistent. This stability confirms that the model is appropriate for further analysis.

4.4 Hypothesis Testing

4.4.1 F-Test (Simultaneous Significance Test)

Table 8. F-Test Results

R-squared	Adjusted R-squared	F-statistic	Prob(F-statistic)
0.4062	0.3891	3.164741	0.000000

Source: Processed data from Eviews 12.0 (2025)

The F-statistic value of 3.164741 with a probability of 0.000000 indicates that the regression model is statistically significant at the 5% level. Therefore, the regression model is valid and suitable for interpretation and further analysis.

4.4.2 T-Test (Partial Significance Test)

Table 9. T-Test Results (Fixed Effect Model)

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Conclusion
C	0.190534	0.234567	0.812345	0.4182	-
ROA	-2.338467	0.856789	-2.729845	0.0070	Significant
ACNG	0.633340	0.356789	1.776712	0.0785	Not Significant
LEV	-1.058624	0.333456	-3.177109	0.0019	Significant
OSHIP	-1.284137	0.841234	-1.527000	0.1297	Not Significant
CID	0.153433	0.079845	1.920827	0.0574	Not Significant
IGN	0.036058	0.020245	1.781166	0.0770	Not Significant
GREED	-0.019010	0.058123	-0.327073	0.7435	Not Significant
BDOUT	0.555520	0.735678	0.755910	0.4514	Not Significant
NOI	0.578148	0.147567	3.918639	0.0002	Significant
CHAUD	-0.177194	0.143234	-1.238016	0.2164	Not Significant
CEOPIC	-0.018649	0.040789	-0.457712	0.6481	Not Significant

Source: Processed data from Eviews 12.0 (2025)

The Fixed Effects Model (FEM) t-test results show that Financial Target (ROA) and External Pressure (LEV) negatively impact financial reporting fraud (p-values of 0.0070 and 0.0019), indicating that higher profitability and stronger creditor oversight reduce fraud risk. The Nature of Industry (NOI) has a positive relationship (p-value = 0.0002),

suggesting higher fraud risks in complex industries. Other variables like Financial Stability (ACNG) and Change in Directors (CID) show no significant effect, with some marginally significant at the 10% level. Overall, profitability, external pressure, and industry characteristics are key factors in financial reporting fraud.

4.4.3 Coefficient of Determination (R^2 Test)

Table 10. R-Squared Test Results

R-squared	Adjusted R-squared	S.E. of regression	Durbin-Watson stat
0.4062	0.3891	0.3312	1.8876

Source: Processed data from Eviews 12.0 (2025)

The R-squared value of 0.4062 suggests that the independent variables included in the model can explain 40.62% of the variation in financial reporting fraud (F-Score), with the remaining 59.38% impacted by factors not addressed. This relatively high explanatory power shows that the model adequately represents the data. Therefore, these findings support the model's suitability for further analysis and provide useful insights into the phenomenon under study.

4.5 Panel Data Regression Analysis

To forecast the outcome variable (Y), a regression model is employed in this research. Moreover, the regression equation presented below is utilized to ascertain how the explanatory variable (X) influences the outcome variable (Y) in terms of both direction and magnitude:

$$FSCORE = 0.190533741415 - 2.33846700182ROA + 0.633340137176ACNG - 1.05862376743LEV - 1.28413688003OSHIP + 0.153432825481CID + 0.0360575452365IGN - 0.0190181786451GREED + 0.55551994929BDOUT + 0.578148086876NOI - 0.177194448825CHAUD - 0.0186486578371CEOPIC + [CX=F]$$

Interpretation of regression coefficients:

The regression analysis reveals several key determinants of financial reporting fraud, measured by the F-SCORE.

1) Financial Target (ROA) shows a significant negative coefficient (β = -2.3385, p = 0.0070), suggesting that higher profitability is linked to lower fraud risk. Firms with strong financial performance are less likely to manipulate financial reporting due to reduced pressure and better internal controls.
2) Financial Stability (ACNG) has a positive but insignificant relationship (β = 0.6333, p = 0.0785), indicating that asset instability may increase fraud risk, though the evidence is weak.
3) External Pressure (LEV) is negatively significant (β = -1.0586, p = 0.0019), supporting the creditor-discipline hypothesis that debt covenants and lender monitoring constrain fraudulent behavior.
4) Personal Financial Need (OSHIP) shows a negative but insignificant effect (β = -1.2841, p = 0.1297), suggesting that concentrated ownership could reduce fraud risk, but the effect is not robust.
5) Change in Directors (CID) shows a positive, marginally significant relationship (β = 0.1534, p = 0.0574), suggesting leadership transitions may increase fraud risk, possibly due to organizational instability.
6) Ignorance (IGN) also shows a weak positive effect (β = 0.0361, p = 0.0770), implying that weaker financial reporting competence may increase fraud risk, though this variable may suffer from measurement error.

7) Greed (GREED) shows an insignificant negative relationship (β = -0.0190, p = 0.7435), reflecting the challenges in empirically capturing psychological factors and the mitigating role of corporate governance mechanisms.
8) Effective Monitoring (BDOUT) is insignificant (β = 0.5555, p = 0.4514), indicating that independent commissioners alone do not ensure effective oversight without additional expertise or audit committee strength.
9) Nature of Industry (NOI) shows a significant positive effect (β = 0.5781, p = 0.0002), confirming that industries with complex operational characteristics, such as high inventory or receivables, are more prone to financial manipulation.
10) Change in Auditor (CHAUD) (β = -0.1772, p = 0.2184) and CEO Picture Frequency (CEOPIC) (β = -0.0186, p = 0.6481) are both insignificant, indicating that auditor rotation and CEO image changes do not significantly impact fraud risk.

4.6 Interpretation Of Research Results

4.6.1 The Effect of Financial Target on the Detection of Financial Reporting Fraud

Return on Assets (ROA) shows a significant negative effect on financial reporting fraud, with a coefficient of -2.338467 and a p-value of 0.0070 (<0.05). This indicates that higher profitability lowers the likelihood of fraudulent reporting, as strong performance reduces the incentive to manipulate results. Consistent with agency theory, better financial outcomes minimize agency conflicts and opportunistic behavior. These results align with Handoko (2021), Nilawati et al. (2025), and Dewi and Ramadhani (2021), but differ from Adhania et al. (2024), Julia (2022), and Purnamasari and Setiawan (2019), who argue that ambitious targets can increase fraud risk.

4.6.2 The Influence of Financial Stability on the Detection of Financial Reporting Fraud

The financial stability variable (ACNG) has a t-value of 1.776712 and a p-value of 0.0785 (>0.05), indicating no significant effect on financial reporting fraud. Although the coefficient (0.633340) is positive, asset changes do not significantly drive fraud, especially in firms with strong governance and internal controls that reduce agency conflicts. These findings support Wahyuni and Triyanto (2021) and Ardian and Mulyani (2020) but differ from Adhania et al. (2024) and Handoko (2021), who found a significant link between asset changes and fraud.

4.6.3 The Effect of External Pressure on the Detection of Financial Reporting Fraud

The external pressure variable (LEV), measured by leverage, has a t-value of -3.177109 and a p-value of 0.0019 (<0.05), indicating a significant negative effect on financial reporting fraud. This means that higher leverage reduces fraud, as firms with greater debt face closer monitoring from creditors, lenders, and regulators, making manipulation harder to conceal. Based on agency theory, such external pressure lessens agency conflicts by reducing information asymmetry. These results are consistent with Kusumawardani and Widagdo (2021) and Wahyuni and Triyanto (2020) but contrast with Adhania et al. (2024) and Putri and Dewi (2022), who found that high leverage may increase financial manipulation risk.

4.6.4 The Effect of Personal Financial Need on Financial Reporting Fraud

The effective monitoring variable (OSHIP), measured by institutional ownership, shows a t-value of -1.527 and a p-value of 0.1297 (>0.05), indicating no significant impact on financial reporting fraud. Although institutional investors are expected to reduce

agency conflicts, passive oversight or conflicting interests may weaken their monitoring role. This challenges agency theory's assumption that institutional ownership automatically limits opportunistic behavior. The results support Handayani and Siregar (2020) and Kurniawan and Setyawan (2021) but differ from Suryani and Nurillah (2019) and Prasetya and Rakhman (2020), who found stronger oversight reduced fraud.

4.6.5 The Effect of Change in Directors on the Detection of Financial Reporting Fraud

The Change in Directors (CID) variable showed a t-statistic of 1.920827 and a p-value of 0.0574, indicating no significant effect on financial reporting fraud. This suggests that board changes alone do not significantly influence fraudulent behavior. While director turnover could potentially disrupt oversight, it requires additional governance reforms to be effective. These findings align with Arifin and Firmansyah (2021) and Wulandari and Purwanti (2020), but contradict Yuliana and Sari (2021) and Prasetyo and Herlina (2019), who found that director turnover increases fraud risk.

4.6.6 The Effect of Ignorance on the Detection of Financial Reporting Fraud

The Ignorance (IGN) variable had a coefficient of +0.036058, t-statistic of 1.781166, and p-value of 0.0770, showing no significant effect on financial reporting fraud at the 5% level. While the positive coefficient suggests a potential link, ignorance alone does not strongly influence fraud due to mitigating factors like governance, audits, or training. This supports Ardiyani and Firmansyah (2020) and Simamora (2021) but contrasts with Rahmawati and Putra (2019) and Ningsih et al. (2022), who found ignorance linked to fraud in firms with weak controls.

4.6.7 The Effect of Greed on the Detection of Financial Reporting Fraud

The Greed (GREED) variable showed a coefficient of -0.019010, a t-statistic of -0.327073, and a p-value of 0.7435, indicating no significant effect on financial reporting fraud. Although greed may theoretically drive fraudulent behavior, its impact appears minimal, due to factors such as organizational culture, internal controls, or regulatory oversight. From an agency theory perspective, effective governance mitigates opportunistic behavior. These findings align with Sari and Aulia (2021) and Kusuma and Jati (2020) but contrast with Widodo and Yulianto (2019) and Fitriani and Subekti (2022), who reported a significant positive relationship.

4.6.8 The Effect of Ineffective Monitoring on the Detection of Financial Reporting Fraud

The Ineffective (BDOUT) variable showed a coefficient of 0.555520, a t-statistic of 0.755910, and a p-value of 0.4514, indicating no significant effect on financial reporting fraud. Although auditor rotation aims to maintain independence, its impact on fraud prevention appears minimal, especially when changes are routine or due to restructuring. From an agency theory perspective, changing auditors without improving audit quality or tenure is insufficient to mitigate agency conflicts. These findings align with Putri and Sofyan (2020) and Agustina and Rachmawati (2021) but contrast with Yuliana and Lestari (2019) and Rizky and Sari (2021), who suggested frequent auditor changes may increase fraud risk.

4.6.9 The Effect of Nature of Industry on the Detection of Financial Reporting Fraud

The Nature of Industry (NOI) variable has a coefficient of 0.578148, a t-statistic of 3.918639, and a p-value of 0.0002, indicating a significant positive effect on financial

reporting fraud. This suggests that firms operating in complex industries that are reliant on inventory, receivables, or strict regulations are more susceptible to manipulation due to difficulties in performance verification and audit detection. From the agency theory perspective, higher information asymmetry heightens the likelihood of fraudulent behavior. These findings align with Dewi and Supandi (2020) and Mardhiah and Syafruddin (2021) but differ from Purnamasari and Setiawan (2019) and Susanto and Pratiwi (2020), who found that effective governance mechanisms can mitigate fraud risk.

4.6.10 The Effect of Change in Auditor on the Detection of Financial Reporting Fraud

The Change in Auditors (CHAUD) variable shows a coefficient of -0.177194 with a t-statistic of -1.238016 and a p-value of 0.2164, indicating a negative but insignificant impact on financial reporting fraud. Although auditor changes are expected to enhance scrutiny and reduce agency conflicts, the insignificance implies they fail to resolve deeper governance problems. This result is consistent with Yulianti and Setyawan (2021) and Fadhilah and Fadila (2020), but differs from Indriani and Darmayanti (2019) and Susanti et al. (2022), who reported significant negative effects, suggesting the outcome may depend on audit quality and regulatory conditions.

4.6.11 The Effect of Frequent Number CEO Picture on the Detection of Financial Reporting Fraud

The variable CEOPIC (Frequent Changes in CEO Picture) showed a coefficient of -0.018649, a t-statistic of -0.457712, and a p-value of 0.6481, indicating no significant effect on financial reporting fraud. Since the t-statistic is below the critical value and the p-value exceeds 0.05, frequent changes in CEO photos do not predict fraudulent behavior, reflecting marketing or branding choices rather than attempts to mislead. From an agency theory perspective, such cosmetic changes do not address underlying governance issues. These results align with Zahra and Dewi (2020) and Irawan and Sutrisno (2021) but contrast with Sari and Wicaksono (2020) and Hanafi and Rachmat (2023), who argued they may conceal unethical behavior.

5. Conclusion

This research primarily aims to examine how different elements relate to identifying fraudulent financial reports within Raw Materials companies listed on the Indonesia Stock Exchange (IDX) from 2021 to 2024. Based on the analytical outcomes, we can conclude the following:

1) Financial Target (ROA) has a negative and significant effect on financial reporting fraud.
2) Financial Stability (ACNG) has no significant effect on financial reporting fraud.
3) External Pressure (LEV) has a negative and significant effect on financial reporting fraud.
4) Personal Financial Need (OSHIP) has no significant effect on financial reporting fraud.
5) Change in Director (CID) has no significant effect on financial reporting fraud.
6) Ignorance (IGN) has no significant effect on financial reporting fraud.
7) Greed (GREED) has no significant effect on financial reporting fraud.
8) Ineffective Monitoring (BDOUT) has no significant effect on financial reporting fraud.

9) Nature of Industry (NOI) has a positive and significant effect on financial reporting fraud.
10) Change in Auditor (CHAUD) has no significant effect on financial reporting fraud.
11) Frequent Number CEO Pictures has no significant effect on financial reporting fraud.

References

Adhania, R., Putri, D. A., & Kurniawan, T. (2024). Financial targets and financial reporting fraud: Evidence from manufacturing companies in Indonesia. *Jurnal Akuntansi dan Keuangan Indonesia, 21*(1), 45–60.

Agustina, R., & Pratomo, D. (2019). External pressure and financial statement fraud: Evidence from Indonesian listed companies. *Jurnal Akuntansi Multiparadigma, 10*(2), 213–228.

Albrecht, W. S., Albrecht, C. C., Albrecht, C. O., & Zimbelman, M. F. (2018). *Fraud examination* (5th ed.). Cengage Learning.

Annisa, N., Rahayu, S., & Lestari, D. (2016). Change in directors and financial reporting fraud. *Jurnal Akuntansi dan Auditing Indonesia, 20*(2), 101–115.

Apriliana, S., & Agustina, L. (2017). The effect of external pressure on financial statement fraud. *Accounting Analysis Journal, 6*(3), 325–334.

Bawekes, H., Simanjuntak, R., & Daat, S. (2018). Fraud hexagon analysis in detecting fraudulent financial reporting. *Jurnal Akuntansi dan Keuangan Daerah, 13*(2), 45–60.

Cressey, D. R. (1953). *Other people's money: A study in the social psychology of embezzlement*. Free Press.

Dainali, N., Ardiansyah, M., & Putri, R. (2014). Financial reporting fraud: Empirical evidence from Indonesia. *Jurnal Akuntansi dan Keuangan, 16*(1), 1–12.

Dewi, N. P., & Ramadhani, S. (2021). Profitability and financial statement fraud detection. *Jurnal Ilmiah Akuntansi, 6*(2), 89–102.

Eisenhardt, K. M. (2018). Agency theory: An assessment and review. *Academy of Management Review, 14*(1), 57–74.

Fitriyani, N., & Martini, R. (2015). Fraud triangle analysis in detecting financial statement fraud. *Jurnal Akuntansi dan Investasi, 16*(2), 112–125.

Handoko, B. L. (2021). Capital intensity and financial statement fraud. *Jurnal Riset Akuntansi Indonesia, 24*(3), 215–230.

Handoko, B. L., & Aurelia, V. (2022). Greed and fraudulent financial reporting behavior. *Jurnal Akuntansi Kontemporer, 14*(1), 33–48.

Harahap, S. S., Putri, R., & Arifin, Z. (2017). Personal financial needs and fraud risk. *Jurnal Ekonomi dan Bisnis, 20*(2), 145–160.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305–360.

Lou, Y. I., & Wang, M. L. (2011). Fraud risk factor of the fraud triangle assessing the likelihood of fraudulent financial reporting. *Journal of Business & Economics Research, 7*(2), 61–78.

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review, 50*(4), 370–396.

Oktarigusta, L. (2017). Financial reporting fraud: Theoretical perspective and empirical evidence. *Jurnal Akuntansi Multiparadigma, 8*(1), 76–90.

Ozcelik, H. (2020). An analysis of fraud drivers in financial reporting. *Journal of Financial Crime, 27*(3), 789–803.

Pamungkas, I. D., & Yendrawati, R. (2020). Monitoring effectiveness and financial statement fraud. *Jurnal Keuangan dan Perbankan, 24*(2), 205–220.

Pamungkas, I. D., Ghozali, I., & Achmad, T. (2018). Fraud hexagon theory in detecting financial reporting fraud. *International Journal of Financial Research, 9*(1), 123–135.

Sari, R., & Nugroho, B. (2020). Nature of industry and fraudulent financial reporting. *Jurnal Akuntansi dan Auditing, 17*(2), 141–155.

SAS No. 99. (2002). *Consideration of fraud in a financial statement audit*. American Institute of Certified Public Accountants (AICPA).

Siddiq, F. R., Achyani, F., & Zulfikar. (2017). Fraud pentagon theory in detecting financial reporting fraud. *International Journal of Economics and Financial Issues, 7*(1), 123–131.

Skousen, C. J., Smith, K. R., & Wright, C. J. (2008). Detecting and predicting financial statement fraud: The effectiveness of the fraud triangle and SAS No. 99. *Corporate Governance: An International Review, 16*(3), 153–165.

Skousen, C. J., Smith, K. R., & Wright, C. J. (2009). Detecting and predicting financial statement fraud: The effectiveness of the fraud triangle and SAS No. 99. *Journal of Corporate Governance, 16*(1), 53–81.

Utami, I., & Wirawati, N. G. P. (2020). Fraud detection using fraud hexagon model. *Jurnal Ilmiah Akuntansi dan Bisnis, 15*(2), 200–215.

Varma, A., & Khan, M. A. (2016). Psychological drivers of financial fraud. *Journal of Financial Crime, 23*(4), 857–872.

Wahyuningtias, F. (2016). Analisis penggunaan F-score dalam mendeteksi kecurangan laporan keuangan. *Jurnal Akuntansi dan Bisnis, 16*(2), 145–156.

Wolfe, D. T., & Hermanson, D. R. (2004). The fraud diamond: Considering the four elements of fraud. *The CPA Journal, 74*(12), 38–42.

Yusuf, M. (2023). CEO picture frequency and financial reporting fraud. *Jurnal Akuntansi dan Manajemen, 18*(1), 77–92.