

DETERMINANTS OF FRAUD RISK: EVIDENCE FROM THE FRAUD HEPTAGON FRAMEWORK IN THE INDUSTRIAL SECTOR

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Abstract

This study, which is based on the Fraud Heptagon Theory, looks at how the risk of financial statement fraud in industrial sector companies listed on the Indonesia Stock Exchange (IDX) between 2021 and 2024 is affected by Financial Target, External Pressure, Ineffective Monitoring, Change in Auditor, Change in Director, CEO Picture Frequency, Greed, and Ignorance. The study employs a quantitative methodology to analyze secondary data from annual reports and financial statements using panel data regression using the Common Effect Model (CEM). The results show that all factors have a significant simultaneous impact on financial statement fraud. Ineffective monitoring has a major detrimental influence on financial statement fraud, while ignorance has a beneficial impact. There are no noticeable repercussions from financial targets, outside pressure, director and auditor changes, CEO picture frequency, or greed. The study concludes that the primary reasons of dishonest business activities are still insufficient oversight and a lack of understanding of corporate governance.

Keywords: Fraud Heptagon Theory, Financial Statement Fraud, Corporate Governance, Monitoring, Ignorance.

1. Introduction

Fraud poses a significant threat to every organization due to its serious consequences. It often occurs within companies with the intent to protect the company's reputation, increase profits, or achieve other objectives. Today's corporations operate in a complex, multidimensional international business environment. A company's performance can be reflected through its financial statements, which serve as a key tool for providing essential information about the company's condition to support management decision-making (Reskino & Anggoe Megawati, 2023). In essence, financial statements function as a means of communication between a company and external parties, providing information about the company's activities and financial condition over a specific period (Lutfiani et al., 2023). Through these statements, financial performance can be properly assessed and evaluated. However, the pressure to present strong financial performance often drives some companies to create the impression that their financial reports are in good condition. Various strategies are employed to maintain an appealing appearance, potentially misleading stakeholders who rely on these financial statements (Oktaviany & Reskino, 2023).

One of the most striking phenomena is the high variability in the recorded values for each code from year to year. For instance, PT Arwana Citramulya Tbk exhibited significant fluctuations declining from 0.51 in 2021 to -0.38 in 2022, then rising again to 0.42 and 0.70 in subsequent years. Similarly, PT Modern International Tbk consistently reported large negative values, reaching as low as -3.66 in 2022, indicating persistent or

highly severe issues. If PT Arwana Citramulya Tbk experienced substantial financial distress such as declining revenues or liquidity problems during certain periods, this could have increased the incentive for individuals within the company to commit fraud to meet targets or gain personal benefits. The increase in values during 2021 and 2024 might be linked to times when such pressures intensified, potentially involving individuals with specialized expertise capable of exploiting weaknesses in the company's systems.

An increase in positive values may indicate the presence of highly skilled individuals or groups operating within the company. A weak organizational ethical culture or a lack of enforcement against violations can foster rationalization among potential fraud perpetrators. When individuals believe that their actions will not lead to serious consequences, the likelihood of fraudulent behavior tends to rise. The drastic year-to-year fluctuations in value may reflect significant financial pressures, which, regarding the Fraud Triangle Hypothesis (Cressey, 1953), represent one of the key factors driving fraudulent behavior, can trigger fraudulent behavior. Furthermore, when individuals within a company possess specialized skills and identify opportunities arising from weak internal control systems, the likelihood of fraud increases significantly (Wolfe & Hermanson, 2004). The case of PT Modern International Tbk is particularly noteworthy because it differs from other entities, which generally fluctuate between positive and negative values or remain mostly positive. The large and consistent negative values likely reflect deep-rooted and ongoing issues related to fraud or significant financial losses. These recurring and extreme negative figures indicate that PT Modern International Tbk may be experiencing structural and systemic weaknesses within its internal control systems.

Such weaknesses may involve the absence of critical or essential controls, such as inadequate segregation of duties, insufficient authorization of key transactions, or the failure to perform regular reconciliations. Weak corporate governance serves as a fundamental source of various fraud-related issues. An ineffective Board of Directors or Audit Committee, combined with poor oversight, allows fraudulent activities to persist without proper resolution. The recurring and significant negative values may further indicate deficiencies in internal controls, including a lack of proper task segregation, insufficient approval processes for major transactions, or failure to conduct periodic reconciliations.

The occurrence of fraud cases highlights the urgent need for preventive measures to mitigate potentially fraudulent activities. Auditors play a crucial role in implementing these preventive actions particularly through effective fraud detection which can help companies identify vulnerabilities early and prevent fraudulent behavior from occurring (Wulandari et al., 2025). One form of prevention that can be implemented is the application of the Fraud Heptagon Theory as an early detection mechanism. One preventive measure that can be implemented is the application of the Heptagon Fraud Theory as an early detection approach. According to Yusof, (2016), this theory explains that fraud can occur due to seven key factors: , viewed through Financial Target and external pressures; opportunity, examined through ineffective monitoring; rationalization, assessed through changes in auditors; capability, reflected by changes in directors; arrogance, indicated by the number of CEO photographs; ignorance, represented by insufficient corporate governance training; and greed, evaluated through executive directors' remuneration..

The urgency of this study lies in the need to understand the impact of applying the Heptagon Fraud Theory in detecting financial statement fraud, considering the increasing

complexity and evolving methods of fraud in the modern era. This research is expected to provide new insights for stakeholders in making informed economic decisions and to serve as a reference for future researchers in exploring the factors that influence the occurrence of financial statement fraud. Additionally, it aims to enhance companies' understanding of potential fraud risks by analyzing the underlying aspects that trigger fraudulent behavior.

In carrying out their duties, managers are required to deliver optimal performance to achieve predetermined financial targets. Return on Assets (ROA) is one of the profitability ratios used to measure a company's overall ability to utilize its total assets for operational purposes and generate profit from those assets. A company's financial targets represent specific goals to be achieved within a given period, designed to ensure that the organization remains on track toward growth and sustainability covering aspects like increasing income, enhancing profits, managing expenses, and optimizing cash flow. This discovery aligns with the results of a study conducted by (Firman & Murtanto, 2024). However, it contrasts with the research of (Faidah & Suwarti, 2018). Meanwhile, a study by Damayani et al., (2019) concluded that financial targets do not significantly the falsification of financial statement.

Although external pressure is generally classified as a type of stressor that may lead to fraud, under certain conditions it can actually have a positive effect on fraud prevention. This can occur when external pressures encourage companies to enhance transparency and ethical behavior, strengthen control systems and governance, and act more cautiously to protect their reputation. Therefore, external pressure is not always a trigger for fraudulent behavior; instead, it can serve as a catalyst for systemic improvement particularly within organizations that uphold strong integrity and effective oversight. This finding aligns with the view of Christian & Visakha, (2021) who stated that external pressure negatively influences fraudulent financial reporting. In contrast, Firman & Murtanto, (2024) found that external pressure positively influences the likelihood of deception involving financial statements. Meanwhile, Ulfah et al., (2017) reported that outside influences do not greatly impact financial statement fraud.

The third factor, ineffective monitoring, is identified as a positive contributor to fraud involving financial statements within the Fraud Pentagon Theory's background. Weak oversight functions create broad opportunities for fraud perpetrators to manipulate financial data due to low detection levels, a weak compliance culture, and control systems that exist only as formalities. Consequently, companies with poor internal and external monitoring face significantly higher risks of fraud, particularly systemic and concealed forms. Fraud opportunities arise when the structure of control and supervision within an entity deteriorates, thereby increasing the likelihood of fraudulent acts (Akbar et al., 2021). Individuals can exploit management weaknesses in various ways especially in financial reporting, which is primarily the responsibility of management (Diyanty, 2022). Based on the Heptagon Fraud Theory, inadequate supervision enhances the possibility of financial statement manipulation. As stated by (Permatasari & Suhendro, 2025), fraud is more likely to occur when a company's internal control system fails to function effectively. On the other hand, Damayani et al., (2019) discovered that poor oversight does not have a major impact on financial statement fraud.

Regular, systematic, and governance-based auditor rotation can help reduce opportunities for financial statement fraud. Thus, auditor rotation is not merely an administrative requirement it serves as a strategic tool to improve transparency, accountability, and investor trust in corporate financial information. This finding aligns

with Christian & Visakha, (2021) who reported that auditor rotation negatively affects financial statement fraud. However, some companies change auditors deliberately to avoid fraud detection (Kiki Elita Septiningrum, 2022). Conversely, research by Nurbaiti & Hanafiah (2017) revealed that shifts in leadership do not considerably impact fraud in financial reports.

Capability is another crucial factor influencing financial statement fraud. When individuals particularly within management—hold high authority, possess deep knowledge of financial systems, demonstrate strong confidence, and exhibit technical and social competence, they are more capable of initiating, executing, and concealing fraudulent acts, even under robust internal control systems. However, changes in directors may reduce performance effectiveness as time is needed to adapt to the new leadership style Ulhaq & Trisnawati, (2023). From an agency theory perspective, such changes may reflect a strategic attempt to appoint individuals more permissive toward opportunistic managerial actions. Under these conditions, director turnover may become a strategy to deceive stakeholders and sustain fraudulent practices (Desi, 2024). In contrast, studies by Oktavia et al., (2022) dan Lastanti & Umar, (2022) found that capability does not significantly influence fraud.

Individuals exhibiting arrogance tend to believe they can commit fraud without restraint or fear of consequences, often to preserve their self-image (Aprillia Kartika Apsari, 2021). The number of CEO photographs in financial reports is often used as a proxy for arrogance. From an agency theory standpoint, a dominant CEO may limit oversight mechanisms, thereby increasing the risk of financial statement fraud that harms stakeholders. The more frequently a CEO's image appears in reports, the greater their influence in disregarding internal policies, which may extend to tolerating or engaging in fraudulent acts (Handayani et al., 2023).

Greed is generally defined as an excessive and insatiable desire to acquire or retain more than what is considered reasonable or fair (Yusof, 2016). In efforts to present a stronger financial position, management may manipulate reports to benefit themselves, leading to personal financial gains. This argument is aided by earlier studies carried out by Pamungkas et al., (2024) and Davidson, (2022) who found that greed has a positive relationship with financial statement fraud (FFR). However, Yusof, (2016) argued that executive remuneration does not always influence FFR, as auditors often regard this indicator as too general and not directly tied to fraudulent behavior. Perpetrators rarely associate their misconduct with compensation, suggesting that fraud may occur independently of remuneration levels.

The sixth factor, ignorance, refers to a lack of understanding or awareness regarding the risks and consequences of fraudulent behavior, which influences an individual's decision to commit fraud. Perpetrators choose to ignore relevant information, leading to dishonest conduct (Putri et al., 2024). (Handoko et al., 2022) found that ignorance positively affects financial statement fraud. However, studies by Putri et al., (2024) dan Pamungkas & Irwandi, (2024) reported that training attended by directors may not directly focus on fraud prevention, limiting its effectiveness in reducing fraudulent tendencies.

2. Theoretical Background

2.1 Agency Theory

Agency theory explains the relationship between the principal (owner) and the agent (manager), which forms the foundation of business activities within an organization (Jensen & Meckling, 1976). As the principal, the owner delegates authority to the agent

(management) to carry out operational activities with the goal of maximizing company value and profit. However, agents often have personal interests aimed at improving their own welfare. Agents are responsible for preparing key financial statements that accurately reflect the company's condition. When agents focus on increasing compensation based on performance, while principals seek to maximize their investment returns, a conflict of interest arises between the two parties. This divergence creates pressure on management, potentially leading agents to act contrary to the principal's interests such as manipulating financial statements or engaging in other fraudulent activities. Conflicts of interest may also emerge from the clash between the principal's goal of achieving high investment returns and the agent's desire for greater compensation based on their performance (Puspitasari & Suhartono, 2024). This study uses a descriptive quantitative methodology with the goal of elucidating the degree of influence or the relationship between numerical parameters. The risk of financial statement fraud is the dependent variable in this study, as framed by the Fraud Heptagon Theory, while the independent variables encompass the factors representing the elements of that theory.

2.2 Fraud Heptagon Theory

The Fraud Heptagon Theory expands upon previous fraud theories by incorporating seven elements that drive fraudulent behavior: pressure, opportunity, rationalization, capability, arrogance, ignorance, and greed (Yusof, 2016). This comprehensive framework provides a more holistic understanding of the factors contributing to financial statement fraud compared to earlier models such as the Fraud Triangle (Cressey, 1953) and Fraud Diamond (Wolfe & Hermanson, 2004). The Fraud Heptagon Theory recognizes that fraud is not merely a result of opportunity and pressure but also involves individual characteristics, behavioral tendencies, and organizational factors that collectively create an environment conducive to fraudulent activities. In the context of financial reporting, this theory helps explain how various internal and external factors interact to influence management's decision to engage in fraudulent practices.

2.3 Definition and Measurement of Variables

2.3.1 Fraudulent Financial Reporting

According to Ulfah et al. (2017), financial statement fraud is defined as the deliberate falsification or omission of specific details in financial reports with the goal of deceiving such reports' users. Such fraud may take the form of numerical manipulation, concealment of material facts, or the presentation of data that does not reflect the company's actual condition. To detect indications of financial statement fraud, this study employs the F-Score model as a measurement tool. This model is considered one of the most accurate methods for assessing the possibility of fraudulent financial statements (Ak et al., 2013). The F-Score value is identified using a dummy variable, defined as follows: a value of 1 is assigned to companies suspected of committing financial statement fraud ($F\text{-Score} > 1.00$), and a value of 0 is assigned to companies not suspected of committing financial statement fraud ($F\text{-Score} < 1.00$). According to Verawaty (2022), the Fraud Score (F-Score) model is calculated by summing two main components: accrual quality, which reflects the extent to which accrual figures in financial statements represent the company's true economic condition, and financial performance, which indicates the company's ability to generate profits and maintain financial stability.

2.3.2 Financial Target

Damayani et al. (2019) state that the greatest pressure experienced by individuals often stems from academic competition—such as the pressure to graduate, competition among students to achieve high grades, excessive workloads, and insufficient study time. Similarly, Harahap et al. (2017) explain that pressure is a driving factor that can lead individuals to engage in fraudulent behavior. Such pressure can arise from various aspects of life, including both financial and non-financial demands, such as lifestyle expectations, economic pressures, and social obligations. One of the main drivers behind a company's or management's decision to manipulate its financial statements is a decline in financial prospects (Arens et al., 2012). The ACHANGE proxy is used in this study to gauge financial stability, which reflects changes in total assets as an indicator of the company's financial condition and performance stability. Based on the theoretical explanation, the following hypothesis is proposed:

H1: Financial target has a positive effect on fraudulent financial reporting.

2.3.3 External Pressure

External pressure refers to the excessive stress experienced by managers in fulfilling obligations to third parties. To maintain market competitiveness, companies often require additional funding from external sources. In this study, external pressure is measured using the Debt to Assets Ratio (DAR) as a proxy to show how much of an organization's total assets are financed by borrowing. This ratio reflects the company's level of dependence on external financing. The more debt a company has, the more pressure its management experiences to fulfill its financial responsibilities. Such conditions can increase the likelihood of financial statement fraud, as management may be tempted to manipulate financial reports to present a healthier financial position to creditors and investors (Yossi Septriani & Desi Handayani, 2021). Therefore, the leverage ratio (LEV), which is the ratio of total debt to total assets, is used to evaluate external pressure. A high leverage ratio indicates a large amount of debt, suggesting that the company is heavily indebted. This situation can create difficulties in debt repayment, exerting financial pressure on management (Minh et al., 2019). Based on the theoretical explanation, the following hypothesis is proposed:

H2: External pressure has a positive effect on fraudulent financial reporting.

2.3.4 Ineffective Monitoring

Ineffective monitoring refers to a condition in which the supervision and monitoring of a company's activities are not carried out effectively. Fraud cannot occur without opportunity, and such opportunities often arise due to weak oversight and internal controls. This weakness can create a loophole for management to manipulate financial statements (Fransisca & Suhartono, 2025). Therefore, the ratio of independent commissioners (BDOUT) is used as a proxy to measure the effectiveness of monitoring mechanisms. The board of commissioners plays a crucial role in ensuring that the company's strategy is properly implemented, providing insights into management performance in operating the company, and guaranteeing corporate accountability (Solikhin & Parasetya, 2023). Based on the theoretical explanation, the following hypothesis is proposed:

H3: Ineffective monitoring has a positive effect on fraudulent financial reporting.

2.3.5 Change in Auditor

Change in auditor can occur either voluntarily or mandatorily. A voluntary auditor change happens when both parties—management and the auditor—mutually agree to the change without regulatory compulsion, while a mandatory change is carried out in compliance with government regulations (Putra et al., 2024). The change in auditor is important to ensure that the audit assessment conducted by public accountants remains objective and unbiased in evaluating the company's financial statements (Jalil et al., 2024). Change in auditor is measured using a dummy variable, where companies that experienced a change in auditor between 2021–2024 are assigned a value of "1." Conversely, companies that did not experience a change in auditor during the same period are assigned a value of "0." Based on the theoretical explanation, the following hypothesis is proposed:

H4: Change in auditor has a positive effect on fraudulent financial reporting.

2.3.6 Change in Director

It is unlikely that an individual without specific capabilities could commit fraud without collaborating with insiders—those who possess the ability to work within and manipulate the system. In the context of change in director, a company's performance does not necessarily improve, as the new directors may not perform as effectively as their predecessors (Wolfe & Hermanson, 2004). Furthermore, change in director can serve as a strategy to eliminate traces of fraudulent activity, allowing perpetrators to remain undetected and maintain a sense of security (Indriaty & Thomas, 2023). Change in director is measured using a dummy variable, where companies that experienced a change in directors during any period between 2021–2024 are assigned a value of "1." Conversely, companies that did not experience a change in directors during the same period are assigned a value of "0." Based on the theoretical explanation, the following hypothesis is proposed:

H5: Change in director has a positive effect on fraudulent financial reporting.

2.3.7 Frequency of CEO Picture

When a company's annual report has a number of CEO photos, it may be seen as a sign of the CEO's conceit (Bawekes et al., 2018). In order to maintain their position and reduce the possibility of losing it, a CEO frequently displays their power and prestige. As a result, such haughty conduct might increase the possibility of financial statement fraud (Hioda & Urumsah, 2025). The quantity of CEO images is measured using a dummy variable, where companies that display 0–10 CEO photos in their annual reports are assigned a value of "0." Conversely, companies that display 11–20 CEO photos in their annual reports are assigned a value of "1." Based on the theoretical explanation, the following hypothesis is proposed:

H6: Frequency of CEO picture has a positive effect on fraudulent financial reporting.

2.3.8 Greed

The existence of remuneration serves as a motivation for top management to optimize their performance, as the amount of compensation received is proportional to the results achieved—in other words, it depends on meeting specific performance targets (Nasution, 2019). The remuneration of directors is expected to enhance the effectiveness and efficiency of the board of commissioners' supervision over the company's financial reporting (Candra et al., 2024). However, according to the Fraud Triangle Theory,

remuneration can also act as an incentive for the board of directors to commit financial statement fraud. High remuneration offered to top management may create an opportunity for them to manipulate financial statements such as inflating revenues to increase their own compensation (Yusof, 2016). Based on the theoretical explanation, the following hypothesis is proposed:

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

2.3.9 Ignorance

Corporate governance refers to the measures taken by a company to establish mutually beneficial relationships among stakeholders by enhancing the company's value through the financial security of its owners (Djami, 2024). However, directors may sometimes believe that no laws or internal controls can effectively restrict their actions. Such an indifferent attitude toward regulations can encourage fraudulent financial reporting practices (Pamungkas & Irwandi, 2024). Therefore, the role of the board of directors is expected to minimize ignorance regarding corporate governance principles (Putri et al., 2024). Based on the theoretical explanation, the following hypothesis is proposed:

H8: Ignorance has a positive effect on fraudulent financial reporting.

3. Methods

3.1 Research Design

This research utilizes a quantitative methodology that focuses on examining numerical information collected from existing resources and analyzed using statistical tools. By applying this method, the data produced can yield conclusions that can be applied to a larger group. The quantitative approach is considered appropriate because the study aims to empirically test the proposed hypotheses using statistical analysis of numerical data derived from financial statements and annual reports. The explanatory research design enables the examination of causal relationships between independent variables (Financial Target, External Pressure, Ineffective Monitoring, Change in Auditor, Change in Director, Frequency of CEO Picture, Greed, and Ignorance) and the dependent variable (Fraudulent Financial Reporting).

3.2 Population and Sample

The secondary data utilized in this study comprises financial records and yearly summaries from firms listed on the Indonesia Stock Exchange (IDX). These data were obtained from the official websites of the respective companies. The study focuses on businesses in the industrial sector between 2021 and 2024.

A sample is a subset of the population that possesses specific characteristics or conditions, making it the subject of investigation. This study's sample selection is centered on industrial sector companies during the 2021–2024 period, employing the purposive sampling approach, which selects samples according to certain standards pertinent to the study's goals. The standards used to choose the study's sample are as follows:

- 1) Businesses in the industrial sector that were listed between 2021 and 2024 on the Indonesia Stock Exchange (IDX).
- 2) Businesses in the industrial sector that regularly release comprehensive financial statements for the 2021–2024 period.
- 3) Businesses in the industrial sector that made money between 2021 and 2024.

Based on these criteria, the final sample includes industrial sector companies observed over four years, resulting in a balanced panel dataset suitable for logistic regression analysis.

3.3 Data Collection Techniques

Secondary data were collected from financial statements and annual reports of industrial sector companies listed on the Indonesia Stock Exchange during 2021–2024, obtained from the official IDX website (www.idx.co.id) and company websites. The data collection procedure involved several sequential steps: (1) identification of industrial sector companies listed on the IDX during the 2021–2024 period; (2) selection of companies meeting the predetermined purposive sampling criteria; (3) extraction of financial data from audited annual financial statements, including information required for calculating the F-Score, financial target, external pressure, ineffective monitoring, change in auditor, change in director, frequency of CEO picture, greed, and ignorance; and (4) documentation of all extracted data systematically organized for statistical analysis. The secondary data sources employed in this research are considered reliable as they represent official publications from the Indonesia Stock Exchange and audited financial reports.

3.4 Operational Definition of Variables

Table 1. Operational Definition and Measurement of Variables

Variable	Type	Definition	Measurement	Scale	References
Fraudulent Financial Reporting (Y)	Dependent	Deliberate falsification or omission of details in financial reports to deceive users	F-Score: Value 1 = F-Score > 1.00 (suspected fraud); Value 0 = F-Score < 1.00 (not suspected)	Dummy	Ak et al. (2013); Verawaty (2022); Ulfah et al. (2017)
Financial Target (X ₁)	Independent	Pressure from declining financial prospects and asset stability	$ACHANGE = \frac{\text{Total Assets } t - \text{Total Assets } t-1}{\text{Total Assets } t-1}$	Ratio	Arens et al. (2012); Damayani et al. (2019)
External Pressure (X ₂)	Independent	Excessive stress in fulfilling obligations to third parties	$DAR = \frac{\text{Total Debt}}{\text{Total Assets}}$	Ratio	Yossi Septriani & Desi Handayani (2021); Minh et al. (2019)
Ineffective Monitoring (X ₃)	Independent	Weak supervision and internal controls creating opportunities for fraud	$BDOUT = \frac{\text{Independent Commissioners}}{\text{Total Commissioners}}$	Ratio	Fransisca & Suhartono (2025); Solikhin & Parasetya (2023)
Change in Auditor (X ₄)	Independent	Auditor switching to maintain	Dummy: 1 = change in auditor; 0 = no	Dummy	Putra et al. (2024); Jalil et al. (2024)

Variable	Type	Definition	Measurement	Scale	References
		objectivity and independence	change in auditor		
Change in Director (X ₅)	Independent	Changes in board composition to eliminate fraud traces	Dummy: 1 = change in director; 0 = no change in director	Dummy	Wolfe & Hermanson (2004); Indriaty & Thomas (2023)
Frequency of CEO Picture (X ₆)	Independent	CEO arrogance reflected through number of photos in annual reports	Dummy: 0 = 0-10 photos; 1 = 11-20 photos	Dummy	Bawekes et al. (2018); Hioda & Urumsah (2025)
Greed (X ₇)	Independent	Excessive material ambition driving fraudulent behavior	GREED = Directors' Remuneration / Net Income	Ratio	Yusof (2016); Nasution (2019)
Ignorance (X ₈)	Independent	Indifferent attitude toward regulations and corporate governance	INEDU = Number of Governance Training / Total Directors	Ratio	Djami (2024); Pamungkas & Irwandi (2024); Putri et al. (2024)

Source: Developed for this research (2026)

3.5 Data Analysis Techniques

Data analysis in this study is conducted using logistic regression analysis with the assistance of statistical software. The analysis stages include descriptive statistical analysis, panel data regression estimation, model selection, logistic regression analysis, and hypothesis testing.

Descriptive statistical analysis is conducted to provide a broad summary of the features of the study's data, including the mean, standard deviation, maximum value, and minimum value (Basuki, 2021). This analysis is employed to understand the distribution and tendencies of the data before conducting further statistical testing.

To investigate the connection between independent and dependent variables, panel data regression analysis is utilized across multiple entities (companies) over a specific period of time (Basuki, 2021). This method allows researchers to combine time series data and cross-sectional data, resulting in a more comprehensive and accurate analysis. The selection of the appropriate panel data regression model is carried out through three main stages: the Chow Test to compare whether the Common Effect Model (CEM) or Fixed Effect Model (FEM) is the better model to use; the Hausman Test to determine whether the best model is FEM or Random Effect Model (REM); and the Lagrange Multiplier (LM) Test to confirm whether REM is more appropriate than CEM.

This study employs a logistic regression model, a statistical analysis method used to describe a dependent variable that is a dummy variable, consisting of only two categories. The logistic regression model used in this research is formulated as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \varepsilon$$

Where:

- Y = Fraudulent Financial Reporting
- α = Constant
- β_1 – β_8 = Regression coefficients
- X_1 = Financial Target
- X_2 = External Pressure
- X_3 = Ineffective Monitoring
- X_4 = Change in Auditor
- X_5 = Change in Director
- X_6 = Frequency of CEO Picture
- X_7 = Greed
- X_8 = Ignorance
- ε = Error

Hypothesis testing is conducted using the t-test to determine the partial effect of each independent variable on the dependent variable, the F-test to examine the overall model significance, and the Coefficient of Determination (R^2) to measure the extent to which the independent variables explain variations in the dependent variable. The hypothesis is accepted if the probability value (p-value) is less than the significance level of 5% ($p < 0.05$).

4. Results and Discussion

4.1 Results

4.1.1 Sample Selection and Criteria

The sample selection process was conducted using purposive sampling based on predetermined criteria to ensure that the data used align with the research objectives.

Table 2. Sample Selection Results

Description	Total Data
Population: Businesses in the industrial sector listed on the Indonesia Stock Exchange (IDX)	67
Companies newly established consecutively from 2021 to 2024	(20)
Companies that did not submit financial reports to 2021–2024 on the Indonesia Stock Exchange (IDX)	(4)
Companies that experienced losses	(24)
Companies that did not submit financial reports from 2021 to 2024	(2)
Research Sample	17
Total sample ($n \times$ research period) (4 years)	68

Source: Author's data processing (2025)

Table 2 shows that from a population of 67 industrial sector companies listed on the Indonesia Stock Exchange, 17 companies met the predetermined criteria. The final sample consists of 17 companies observed over a four-year period (2021–2024), resulting in 68 total observations (17 companies $\times$ 4 years).

4.1.2 Descriptive Statistical Analysis

Table 3. Descriptive Statistical Analysis Results

Variable	Mean	Median	Maximum	Minimum	Std. Dev.	Observations
FFS (Y)	0.163429	-0.069754	2.240700	-3.662200	0.782498	68
ROA (X ₁)	0.105885	0.075553	0.514307	0.002688	0.088856	68
LEV (X ₂)	0.480999	0.373773	2.727479	0.000421	0.554538	68
BDOU (X ₃)	0.413382	0.400000	0.670000	0.040000	0.117367	68
CIA (X ₄)	0.235294	0.000000	1.000000	0.000000	0.427336	68
CID (X ₅)	0.176471	0.000000	1.000000	0.000000	0.384054	68
CEOPIC (X ₆)	3.970588	2.000000	36.000000	0.000000	5.037088	68
GREED (X ₇)	0.143432	0.089779	1.212508	0.000000	0.222747	68
ICGC (X ₈)	8.250000	6.500000	46.000000	2.000000	8.590823	68

Source: Data processed using EViews version 12 (2025)

Table 3 presents the descriptive statistical analysis for all variables examined in this study. Based on the table above, the total number of observations analyzed is 68 data points, derived from 17 businesses in the infrastructure sector during the 2021–2024 period. The descriptive statistical values include the mean, median, maximum, minimum, and standard deviation for each research variable, which are explained as follows:

- 1) Financial Statement Fraud (FFS) has a maximum value of 2.240700 and minimum value of –3.662200, indicating a wide variation in the level of potential financial statement fraud among companies. The standard deviation of 0.782498 and the mean of 0.163429 indicate a significant level of data dispersion around the mean.
- 2) Financial Target (ROA) has a maximum of 0.514307 and a minimum of 0.002688, with a mean value of 0.105885 and standard deviation of 0.088856, indicating that financial target achievement across companies is relatively low and shows limited fluctuation.
- 3) External Pressure (LEV) has a maximum value of 2.727479 and minimum of 0.000421, with a standard deviation of 0.554538 and a mean of 0.480999, demonstrating a relatively wide range of external pressure levels, as reflected by the large variation in leverage ratios.
- 4) Ineffective Monitoring (BDOU) has a maximum value of 0.670000, minimum of 0.040000, mean of 0.413382, and standard deviation of 0.117367, indicating that the effectiveness of independent board oversight tends to be consistent across companies, with minor variations.
- 5) Change in Auditor (CIA) has a mean of 0.235294 and a maximum and minimum of 1.000000 and 0.000000, respectively, with a standard deviation of 0.427336, indicating that approximately 23.5% of companies changed their auditors during the research period.
- 6) Change in Director (CID) has a mean of 0.176471 with a maximum and minimum of 1.000000 and 0.000000, respectively, and a standard deviation of 0.384054, suggesting that around 17.6% of companies experienced changes in their directors, reflecting potential managerial dynamics.
- 7) CEO Picture Frequency (CEOPIC) has a maximum of 36.000000 and a minimum of 0.000000, with a mean of 3.970588 and standard deviation of 5.037088, indicating significant variation in the frequency of CEO photos in annual reports, potentially reflecting differing levels of managerial narcissism or self-image portrayal.

- 8) Greed has a mean of 0.143432 and a maximum and minimum of 1.212508 and 0.000000, respectively, with a standard deviation of 0.222747, showing that the overall level of managerial greed, as measured by compensation ratios, is relatively moderate.
- 9) Ineffective Corporate Governance (ICGC) has a maximum value of 46.000000 and minimum value of 2.000000, with a standard deviation of 8.590823 and a mean of 8.250000, indicating significant disparities in the effectiveness of corporate governance across companies, suggesting varying levels of compliance and oversight structures.

4.1.3 Selection of Panel Data Regression Technique

The selection of the appropriate panel data regression model was conducted through three stages: the Chow Test, Hausman Test, and Lagrange Multiplier (LM) Test. The results of these tests are summarized in Table 4.

Table 4. Panel Data Model Selection Results

Test	Testing	Statistic	Prob.	Conclusion
Chow Test	CEM vs FEM	Cross-section F = 1.854387	0.0492	CEM
		Cross-section Chi-square = 33.520116	0.0274	
Hausman Test	REM vs FEM	Cross-section random = 10.336640	0.1497	REM
LM Test	CEM vs REM	Breusch-Pagan = 0.122490	0.7265	CEM

Source: Data processed using EViews version 12 (2025)

Based on the results of the three tests, the Chow Test yielded a cross-section Chi-square probability value of 0.0274, which is greater than 0.05, indicating that the Common Effect Model (CEM) is preferred over the Fixed Effect Model (FEM). The Hausman Test produced a cross-section random probability value of 0.1497, which is greater than 0.05, indicating that the Random Effect Model (REM) is preferred over the FEM. The Lagrange Multiplier Test resulted in a cross-section Chi-square probability value of 0.7265, which is greater than 0.05, indicating that the CEM is preferred over the REM. Consequently, the most appropriate model to be used in this study is the Common Effect Model (CEM).

4.1.4 Classical Assumption Test

Table 7. Multicollinearity Test Results

Variable	FFS	ROA	LEV	BDOUT	CIA	CID	CEOPIC	GREED	ICGC
FFS	1.0000								
ROA	0.2359	1.0000							
LEV	0.6241	0.3052	1.0000						
BDOUT	0.1013	0.2184	0.1349	1.0000					
CIA	0.1241	0.0512	0.1897	0.0101	1.0000				
CID	0.1883	0.2012	0.1148	0.0788	0.0160	1.0000			
CEOPIC	0.0693	0.3167	0.1556	0.0522	0.0521	0.1995	1.0000		
GREED	0.0666	0.1643	0.0558	0.0297	0.1235	0.0758	0.1803	1.0000	
ICGC	0.3129	0.2965	0.2014	0.1257	0.0914	0.1426	0.2267	0.1884	1.0000

Source: Data processed using EViews version 12 (2025)

The correlation analysis shows that the relationship between each independent variable and the dependent variable (Fraud Heptagon / FFS) varies in strength. The correlation between Financial Target (ROA) and FFS is 0.2359, External Pressure (LEV) and FFS is 0.6241, Ineffective Monitoring (BDOUT) and FFS is 0.1013, Change in Auditor (CIA) and FFS is 0.1241, Change in Director (CID) and FFS is 0.1883, Frequency of CEO's Picture Appearance (CEOPIC) and FFS is 0.0693, Greed and FFS is 0.0666, and Ignorance (ICGC) and FFS is 0.3129. In addition, the correlations among independent variables are all below 0.8, such as ROA and LEV (0.3052), ROA and BDOUT (0.2184), LEV and BDOUT (0.1349), CIA and CID (0.0160), CEOPIC and GREED (0.1803), and ICGC and GREED (0.1884). These numbers show that the independent variables do not have a significant linear connection, implying that the model is free from multicollinearity issues. Therefore, all independent variables can be included simultaneously in the regression analysis without causing estimation bias.

Table 8. Heteroskedasticity Test Results

Test	Statistic	Prob.
F-statistic	1.369837	0.1889
ObsR-squared	34.896168	0.2529

Source: Data processed using EViews version 12 (2025)

The outcomes of the heteroskedasticity test show a Prob. F(42,25) value of 0.1889 and a Prob. Chi-Square(42) value of 0.2529. Both values are greater than 0.05, indicating that there is no heteroskedasticity present in the model. Therefore, the regression model satisfies the homoskedasticity assumption, meaning that the residual variance is constant or uniform across observations.

4.1.5 Hypothesis Testing

Table 9. F-Test Results

Test	Statistic	Prob.
F-statistic	4.328175	0.000008

Source: Data processed using EViews version 12 (2025)

Based on the results of the F-test (simultaneous test), the Prob (F-statistic) value is 0.000008, which is smaller than 0.05. This indicates that the regression model is simultaneously significant. In other words, all independent variables—Financial Target (X1), External Pressure (X2), Ineffective Monitoring (X3), Change in Auditor (X4), Change in Director (X5), Frequency of CEO's Picture Appearance (X6), Greed (X7), and Ignorance (X8)—collectively have a significant effect on the dependent variable Fraud Heptagon (Y).

Table 10. Coefficient of Determination (R²) Results

R-squared	Adjusted R-squared
0.383245	0.283257

Source: Data processed using EViews version 12 (2025)

The R-squared value of 0.3832 indicates that 38.32% of the dependent variable's fluctuation (Fraud Heptagon) can be explained by the independent variables included in the regression model. Meanwhile, the remaining 61.68% (100% - 38.32%) is explained by other factors outside the model that were not examined or included in this regression analysis.

Table 11. T-Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Result
C	-0.339117	0.217714	-1.557619	0.1252	
ROA (X ₁)	-0.088490	1.138516	-0.077723	0.9384	H1 Rejected
LEV (X ₂)	1.027897	0.171092	6.007989	0.0000	H2 Accepted
BDOUT (X ₃)	0.003028	0.662830	0.004569	0.9962	H3 Rejected
CIA (X ₄)	-0.220124	0.193603	-1.136985	0.2593	H4 Rejected
CID (X ₅)	-0.055445	0.198855	-0.278822	0.7809	H5 Rejected
CEOPIC (X ₆)	0.001400	0.018113	0.077308	0.9382	H6 Rejected
GREED (X ₇)	-0.132983	0.365668	-0.363670	0.7173	H7 Rejected
ICGC (X ₈)	0.034608	0.014816	2.335977	0.0230	H8 Accepted

Source: Data processed using EViews version 12 (2025)

Based on the t-test results presented in Table 11, the following conclusions can be drawn:

- 1) Financial Target (X₁): The probability value (p-value) for X₁ is 0.9384. Since $0.9384 > 0.05$, X₁ does not have a statistically significant partial effect on Fraud Heptagon (Y). This indicates that the company's financial target, as measured by return on assets (ROA), does not significantly influence the likelihood of financial statement fraud within the context of the Fraud Heptagon model. Therefore, H₁ is rejected.
- 2) External Pressure (X₂): The probability value (p-value) for X₂ is 0.0000. Since $0.0000 < 0.05$, it can be concluded that X₂ has a statistically significant partial effect on Fraud Heptagon (Y) at the 5% significance level. This indicates that external pressure, as measured by leverage, significantly influences the likelihood of financial statement fraud. Therefore, H₂ is accepted.
- 3) Ineffective Monitoring (X₃): The probability value (p-value) for X₃ is 0.9962. Since $0.9962 > 0.05$, X₃ does not have a statistically significant partial effect on Fraud Heptagon (Y). This suggests that the level of ineffective monitoring, as proxied by the proportion of independent commissioners, does not significantly influence the likelihood of financial statement fraud within the observed companies. Therefore, H₃ is rejected.
- 4) Change in Auditor (X₄): The probability value (p-value) for X₄ is 0.2593. Since $0.2593 > 0.05$, X₄ does not have a statistically significant partial effect on Fraud Heptagon (Y). This indicates that the occurrence of auditor changes does not significantly affect the likelihood of financial statement fraud among the companies analyzed. Therefore, H₄ is rejected.
- 5) Change in Director (X₅): The probability value (p-value) for X₅ is 0.7809. Since $0.7809 > 0.05$, X₅ does not have a statistically significant partial effect on Fraud Heptagon (Y). This suggests that changes in company directors do not significantly influence the likelihood of financial statement fraud within the observed period. Therefore, H₅ is rejected.
- 6) Frequency of CEO Image Appearance (X₆): The probability value (p-value) for X₆ is 0.9382. Since $0.9382 > 0.05$, X₆ does not have a statistically significant partial effect on Fraud Heptagon (Y). This indicates that the frequency of the CEO's image appearance in annual reports does not significantly influence the likelihood of financial statement fraud. Therefore, H₆ is rejected.
- 7) Greed (X₇): The probability value (p-value) for X₇ is 0.7173. Since $0.7173 > 0.05$, X₇ does not have a statistically significant partial effect on Fraud Heptagon (Y). This finding suggests that the level of executive remuneration, as a proxy for greed, does

not significantly influence the likelihood of financial statement fraud. Therefore, H7 is rejected.

- 8) Ignorance (X8): The probability value (p-value) for X8 is 0.0230. Since $0.0230 < 0.05$, it can be concluded that X8 has a statistically significant partial effect on Fraud Heptagon (Y) at the 5% significance level. This indicates that ignorance, represented by insufficient corporate governance understanding or practices, significantly influences the likelihood of financial statement fraud. Therefore, H8 is accepted.

4.2 Discussion

4.2.1 The Effect of Financial Target on Fraudulent Financial Reporting

Based on the t-test results, the Financial Target variable (X1) has a probability value of 0.9384, which is greater than the significance level of 0.05. Therefore, the null hypothesis is accepted, and the alternative hypothesis (H1) is rejected. This indicates that financial targets, as measured by return on assets (ROA), do not have a significant effect on fraudulent financial reporting in industrial sector companies listed on the Indonesia Stock Exchange during the 2021–2024 period.

This finding suggests that the pressure to achieve financial targets does not necessarily drive management to engage in financial statement fraud. One possible explanation is that companies in the industrial sector may have established adequate internal control systems and monitoring mechanisms that prevent management from manipulating financial statements, even when facing pressure to meet performance targets. Additionally, the relatively low mean ROA value of 0.105885 indicates that financial target achievement across companies is relatively low and shows limited fluctuation, which may not create sufficient pressure for management to commit fraud.

This result is consistent with previous studies that found no significant relationship between financial targets and financial statement fraud (Permatasari & Suhendro, 2025; Sukmana et al., 2025). However, it contradicts studies that found financial targets positively influence fraud (Putri & Susilo, 2025; Puspita & Jannah, 2025). The inconsistency may be due to differences in research contexts, measurement approaches, and sample characteristics.

4.2.2 The Effect of External Pressure on Fraudulent Financial Reporting

The t-test results show that the External Pressure variable (X2) has a probability value of 0.0000, which is less than the significance level of 0.05. Therefore, the null hypothesis is rejected, and the alternative hypothesis (H2) is accepted. This indicates that external pressure, as measured by the debt-to-assets ratio (LEV), has a positive and significant effect on fraudulent financial reporting.

This finding suggests that companies with higher leverage ratios face greater pressure to fulfill their financial obligations to creditors and investors. When a company has a high level of debt, management experiences stress to maintain the company's financial performance and comply with debt covenants. This pressure may create an incentive for management to manipulate financial statements to present a healthier financial position, thereby reducing the risk of loan defaults and maintaining the company's reputation among creditors and investors.

The significant positive effect of external pressure is consistent with agency theory, which explains that conflicts of interest between principals and agents can lead to opportunistic behavior when agents face pressure to meet financial obligations (Jensen & Meckling, 1976). This finding also aligns with previous research by Yossi Septriani and

Desi Handayani (2021) and Minh et al. (2019), who found that high leverage ratios increase the likelihood of financial statement fraud. The strong correlation between LEV and FFS (0.6241) further supports the importance of external pressure as a significant determinant of fraudulent financial reporting.

4.2.3 The Effect of Ineffective Monitoring on Fraudulent Financial Reporting

Based on the t-test results, the Ineffective Monitoring variable (X3) has a probability value of 0.9962, which is greater than the significance level of 0.05. Therefore, the null hypothesis is accepted, and the alternative hypothesis (H3) is rejected. This indicates that ineffective monitoring, as measured by the ratio of independent commissioners (BDOUT), does not have a significant effect on fraudulent financial reporting.

This finding suggests that the proportion of independent commissioners on the board does not significantly influence the likelihood of financial statement fraud in industrial sector companies. One possible explanation is that independent commissioners may not always function effectively as monitoring mechanisms in practice. While the ratio of independent commissioners in the sampled companies shows a relatively consistent pattern (mean of 0.413382), the presence of independent commissioners does not guarantee effective oversight, as their independence and competence may vary across companies.

This result contradicts the Fraud Heptagon theory, which posits that ineffective monitoring creates opportunities for fraud (Fransisca & Suhartono, 2025). However, it is consistent with studies that found no significant relationship between independent commissioner ratios and financial statement fraud (Permatasari & Suhendro, 2025). The weak correlation between BDOUT and FFS (0.1013) further suggests that board independence alone is insufficient to prevent fraudulent reporting, and other monitoring mechanisms may be more effective.

4.2.4 The Effect of Change in Auditor on Fraudulent Financial Reporting

The t-test results show that the Change in Auditor variable (X4) has a probability value of 0.2593, which is greater than the significance level of 0.05. Therefore, the null hypothesis is accepted, and the alternative hypothesis (H4) is rejected. This indicates that changes in auditors do not have a significant effect on fraudulent financial reporting.

This finding suggests that auditor switching does not significantly influence the likelihood of financial statement fraud in industrial sector companies. One possible explanation is that auditor changes in the sampled companies may be primarily driven by regulatory requirements or routine rotation policies rather than by management's desire to conceal fraudulent activities. The mean value of 0.235294 indicates that only approximately 23.5% of companies changed their auditors during the research period, suggesting that auditor changes are not a widespread practice among the sampled companies.

This finding is consistent with research by Damarjati and Yulianti (2025) and Permatasari and Suhendro (2025), who found no significant relationship between auditor changes and financial statement fraud. It contradicts studies that found auditor switching as an indicator of rationalization in fraud (Mudamakin et al., 2026). The relatively weak correlation between CIA and FFS (0.1241) indicates that auditor changes alone are not a reliable indicator of fraudulent reporting behavior.

4.2.5 The Effect of Change in Director on Fraudulent Financial Reporting

Based on the t-test results, the Change in Director variable (X5) has a probability value of 0.7809, which is greater than the significance level of 0.05. Therefore, the null hypothesis is accepted, and the alternative hypothesis (H5) is rejected. This indicates that changes in directors do not have a significant effect on fraudulent financial reporting.

This finding suggests that management turnover does not significantly influence the likelihood of financial statement fraud. One possible explanation is that director changes in the sampled companies may be part of normal organizational succession processes rather than attempts to eliminate traces of fraudulent activities. The mean value of 0.176471 indicates that only approximately 17.6% of companies experienced director changes during the research period.

This result is consistent with studies that found no significant relationship between changes in directors and financial statement fraud (Permatasari & Suhendro, 2025). However, it contradicts the theoretical expectation that changes in directors can serve as a strategy to eliminate fraud traces (Indriaty & Thomas, 2023). The weak correlation between CID and FFS (0.1883) suggests that director changes alone are not a strong predictor of fraudulent reporting behavior.

4.2.6 The Effect of Frequency of CEO Picture on Fraudulent Financial Reporting

The t-test results show that the Frequency of CEO Picture variable (X6) has a probability value of 0.9382, which is greater than the significance level of 0.05. Therefore, the null hypothesis is accepted, and the alternative hypothesis (H6) is rejected. This indicates that the frequency of CEO image appearance in annual reports does not have a significant effect on fraudulent financial reporting.

This finding suggests that CEO narcissism, as proxied by the number of photos in annual reports, does not significantly influence the likelihood of financial statement fraud. One possible explanation is that the frequency of CEO photos may reflect company culture or reporting style rather than managerial arrogance. Additionally, the significant variation in CEOPIC values (mean of 3.970588, standard deviation of 5.037088) suggests that photo frequency varies widely across companies, but this variation does not systematically relate to fraud risk.

This result contradicts studies that found CEO narcissism increases fraud risk (Hioda & Urumsah, 2025; Bawekes et al., 2018). The weak correlation between CEOPIC and FFS (0.0693) further indicates that CEO photo frequency is not a reliable indicator of fraudulent reporting behavior. This may be due to the Indonesian context, where CEO photo frequency may not carry the same connotations of arrogance as in other cultural settings.

4.2.7 The Effect of Greed on Fraudulent Financial Reporting

Based on the t-test results, the Greed variable (X7) has a probability value of 0.7173, which is greater than the significance level of 0.05. Therefore, the null hypothesis is accepted, and the alternative hypothesis (H7) is rejected. This indicates that managerial greed, as measured by the remuneration ratio, does not have a significant effect on fraudulent financial reporting.

This finding suggests that compensation levels do not significantly influence the likelihood of financial statement fraud. One possible explanation is that competitive compensation may serve as a moral control instrument that aligns agent interests with principal welfare, as suggested by Permatasari and Suhendro (2025). The relatively low

mean value of 0.143432 for the Greed variable indicates that overall, managerial compensation ratios among the sampled companies are moderate.

This finding is consistent with studies that found no significant relationship between greed and financial statement fraud (Permatasari & Suhendro, 2025; Djami & Murtanto, 2024; Pamungkas & Irwandi, 2024). The weak correlation between GREED and FFS (0.0666) suggests that compensation ratios alone are not a strong predictor of fraudulent reporting behavior. However, it contradicts studies that found greed as a significant fraud driver (Hakim et al., 2026; Pamungkas et al., 2024).

4.2.8 The Effect of Ignorance on Fraudulent Financial Reporting

The t-test results show that the Ignorance variable (X8) has a probability value of 0.0230, which is less than the significance level of 0.05. Therefore, the null hypothesis is rejected, and the alternative hypothesis (H8) is accepted. This indicates that ignorance, as measured by insufficient corporate governance courses, has a positive and significant effect on fraudulent financial reporting.

This finding suggests that companies with lower levels of corporate governance understanding or practices are more likely to engage in financial statement fraud. The significant variation in ICGC values (mean of 8.250000, standard deviation of 8.590823) indicates substantial disparities in governance quality across companies, which may explain differences in fraud risk. This result is consistent with the Fraud Heptagon theory, which posits that ignorance of governance principles creates opportunities for fraudulent behavior (Yusof, 2016).

The significant positive effect of ignorance aligns with previous research by Hakim et al. (2026), Djami and Murtanto (2024), and Pamungkas and Irwandi (2024), who found that ignorance contributes to financial statement fraud. The correlation between ICGC and FFS (0.3129) suggests a moderate positive relationship between governance deficiencies and fraud risk. This finding underscores the importance of strengthening corporate governance practices and increasing awareness of governance principles to prevent fraudulent financial reporting.

5. Conclusion

This study examines the influence of Fraud Heptagon elements—Financial Target, External Pressure, Ineffective Monitoring, Change in Auditor, Change in Director, Frequency of CEO Image Appearance, Greed, and Ignorance—on fraudulent financial reporting in industrial sector companies listed on the Indonesia Stock Exchange during the 2021–2024 period. Using panel data regression with the Common Effect Model (CEM) on 17 industrial sector companies with 68 observations, the results show that External Pressure has a positive and significant effect on fraudulent financial reporting, indicating that companies with higher leverage levels face greater pressure to fulfill financial obligations, which may drive management to manipulate financial statements. Ignorance also has a positive and significant effect on fraudulent financial reporting, suggesting that insufficient understanding and implementation of corporate governance principles increase the likelihood of financial statement fraud. In contrast, Financial Target, Ineffective Monitoring, Change in Auditor, Change in Director, Frequency of CEO Image Appearance, and Greed do not significantly influence fraudulent financial reporting. The coefficient of determination (R^2) value of 0.3832 indicates that all independent variables collectively explain 38.32% of the variation in fraudulent financial

reporting, while the remaining 61.68% is influenced by other factors outside the research model.

The theoretical implications extend Agency Theory and the Fraud Heptagon framework to the context of financial statement fraud prevention in the Indonesian industrial sector. The positive effect of External Pressure supports Agency Theory by confirming that financial pressures from debt obligations drive agent opportunistic behavior. The significant effect of Ignorance reinforces the Fraud Heptagon theory, demonstrating that limited understanding of corporate governance practices creates opportunities for fraudulent behavior. The non-significant effects of Financial Target, Ineffective Monitoring, Change in Auditor, Change in Director, Frequency of CEO Image Appearance, and Greed challenge several theoretical assumptions, suggesting that these elements may not be reliable predictors of fraud in the Indonesian industrial sector context, potentially due to cultural differences, regulatory enforcement, and varying organizational characteristics.

From a practical perspective, industrial sector companies should strengthen internal control systems and monitor leverage levels to mitigate external pressure that may encourage fraudulent reporting. Companies should invest in corporate governance training and development programs to reduce ignorance and enhance understanding of governance principles, ethical practices, and fraud prevention mechanisms. Regulators, particularly the Financial Services Authority (OJK) and the Indonesia Stock Exchange (IDX), should strengthen supervision of companies with high leverage levels and improve corporate governance disclosure requirements and monitoring mechanisms to detect potential fraud risks. Investors should consider both leverage levels and corporate governance quality when assessing investment decisions, particularly in companies with complex financial structures.

This study has several limitations. First, the analysis is limited to the industrial sector, restricting generalizability to other sectors such as finance, mining, or services. Second, the four-year observation period (2021–2024) may not capture longer-term trends and patterns in fraud behavior. Third, the study excludes other potential determinants of financial statement fraud such as profitability, liquidity, company size, or macroeconomic conditions. Fourth, the proxies used for Fraud Heptagon elements may not fully capture the complexity of these constructs. Fifth, the relatively low R-squared value (38.32%) indicates that other factors outside the model significantly influence fraudulent financial reporting.

Future research should broaden the scope to other sectors or cross-sector comparisons to test the generalizability of findings. Future studies should integrate additional variables such as profitability, liquidity, company size, ownership structure, and macroeconomic conditions. Employing longer observation periods could capture long-term trends and patterns in financial statement fraud behavior. Future research should examine other moderating variables such as internal control effectiveness, corporate governance quality, regulatory environment, and organizational culture. Utilizing qualitative approaches such as case studies, interviews, or content analysis could provide richer insights into the mechanisms through which Fraud Heptagon dimensions influence financial statement fraud. Finally, future studies could develop more comprehensive measurement approaches for Fraud Heptagon constructs beyond the proxies used in this study to capture the multidimensional nature of these constructs more accurately.

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