

DECONSTRUCTING THE FRAUD HEPTAGON: INTERNAL ANTECEDENTS IN INDONESIA'S INFRASTRUCTURE SECTOR

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Abstract

This study aimed to examine the effect of financial target, financial stability, external pressure, personal financial need, change in directors, effective monitoring, nature of industry, change in auditors, frequency of CEO pictures, ignorance, and greed on fraudulent financial statements in infrastructure companies listed on the Indonesia Stock Exchange during the 2021–2024 period. The study employed a quantitative approach with an associative-causal design. The population consisted of 70 infrastructure companies, and a sample of 21 companies was selected through purposive sampling, resulting in 84 observations over four years. Secondary data were collected from annual reports and financial statements. The data were analyzed using panel data regression with the Fixed Effect Model after the Chow and Hausman tests, classical assumption tests, and hypothesis testing. The results showed that financial stability had a significant negative effect on fraudulent financial statements, with a regression coefficient of -232.049 and a significance value of 0.000 . External pressure had a significant positive effect, with a regression coefficient of 798.317 and a significance value of 0.000 . Financial target, personal financial need, change in directors, effective monitoring, nature of industry, change in auditors, frequency of CEO pictures, ignorance, and greed did not have a significant effect. The adjusted coefficient of determination indicated that 54.30 percent of the variation in fraudulent financial statements was explained by the model, while the F-test confirmed that all independent variables simultaneously affected fraudulent financial statements with a significance value of 0.000 . These findings implied that external business pressures remained the strongest driver of fraudulent behavior.

Keywords: Fraud, Fraud Heptagon, Fraudulent Financial Statement, Infrastructure Sector

1. Introduction

Financial information is an essential component of the accounting information system that functions as a means of interaction between the company and its stakeholders (Sinaga, 2020). Through financial statements, businesses can explain their performance, financial status, and shifts in financial status over a given time frame. According to SAK No. 1, the purpose of financial reports is to present data regarding the company's cash flows, performance, and financial health, which are useful for both internal and external parties (Lina & Desisca, 2025). The presentation of accurate and reliable financial statements is highly important because it serves as the foundation for economic decision-making processes. However, in practice, not all financial reports are presented in accordance with the actual conditions. The desire to maintain a positive corporate image often drives management to engage in manipulative activities in the preparation of



financial statements. This situation leads to the emergence of fraud within the company, carried out with the intention of misleading users of the financial reports (Sihombing & Rahardjo, 2014).

Fraud remains a serious issue in Indonesia. In 2020, the Association of Certified Fraud Examiners (ACFE) Indonesia performed a poll showing that around 70 percent of corruption cases in the country are related to fraudulent activities. Indonesia ranks 85th out of 185 countries, with a budget deviation rate of 2 percent, while the rate of financial fraud is recorded at 6.7 percent, resulting in total losses of approximately IDR 2.26 billion or 9.2 percent. Several major companies involved in cases of financial statement manipulation include PT Garuda Indonesia, PT ASABRI, PT Angkasa Pura II, PT Waskita Karya, PT Jasindo, PT Pelindo, and PT Jiwasraya. The findings of the Financial Services Authority (OJK) and the Audit Board of Indonesia (BPK) revealed that common forms of fraud include bribery, financial statement manipulation, asset misuse, and mismanagement of investments. Similar cases have also occurred globally, such as the Enron scandal in 2001, which became a well-known illustration of false financial statements. The ACFE reports that 43 percent of fraud cases in Indonesia are dominated by corruption, while 11 percent involve financial statement fraud, the type that causes the largest losses, estimated at around USD 954,000. The impact of such fraud is extensive, affecting various sectors including the government (8.5 percent), state-owned enterprises (31.8 percent), private companies (15.1 percent), non-profit organizations (2.9 percent), and other institutions (1.7 percent).

Fraud can be caused by a number of circumstances. First, a company's financial aim, represented by Return on Assets (ROA), indicates its profitability and may influence its propensity to perpetrate fraud. Because of the pressure to meet profit targets, Meihendri et al. (2022) discovered that ROA has a favorable influence on fraud. However, according to Achmad et al. (2022), ROA has no discernible impact, while Wibowo (2023) showed a negative relationship, indicating that higher profitability actually reduces the risk of fraud. When business decisions have an impact on a company's financial situation, corporate, or internal situations, the potential for management to experience pressure and manipulate financial information increases (Skousen et al., 2009). A stable financial condition provides a positive image of the company from the stakeholders' perspective, whereas instability may reduce the flow of investment from investors. To conceal financial instability, management often uses financial information as a means to hide underlying problems. Consequently, the more unstable the company's condition, the more managers are under pressure to commit fraud (Septriyani & Handayani, 2018).

Leverage serves as a stand-in for external pressure, reflects financial pressure arising from debt obligations. Puspaningsih (2024) reported no significant effect. In contrast, Wibowo (2023) discovered a negative relationship, indicating that highly leveraged companies tend to act more cautiously. These findings demonstrate empirical inconsistencies, which open a research gap for further investigation. Fourth, personal financial need describes a situation in which the financial condition of an industry is influenced by the financial state of its administrators (Skousen et al., 2009). Executives, who play an important role within a company, are typically affected by the company's financial performance in relation to their personal financial well-being. When the company performs well, the personal financial condition of these executives who have a stake in the industry also tends to be favorable. Conversely, when the company's performance declines, their financial situation may also deteriorate (Nugraheni & Triatmoko, 2018). According to earlier research, the incidence of dishonest financial



reporting methods is negatively impacted by personal financial need (Skousen et al., 2009).

Change in directors has a correlation with and potential to increase the occurrence of fraudulent actions within a company. The transition period of leadership can weaken supervision and create opportunities for irregularities. This aligns with the findings of Lina Azizah and Kurniawan (2025), who stated that there is a positive influence between changes in directors and fraud. However, this result contradicts the study of Septiningrum and Mutmainah (2022), which found no influence and even a negative relationship between changes in directors and fraud within companies. Sixth, effective monitoring refers to the presence of strong supervision over management performance. Siddiq et al. (2017) stated that an increase in the number or effectiveness of the board of commissioners can help prevent fraud and detect financial statement manipulation. However, inconsistencies have been found in previous studies. Putro and Puspawati (2023) reported no significant effect, while Adhania (2024) and Amar and Iskandar (2023) found that proper supervision has a significant impact on occurrence of fraud.

The nature of industry reflects the ideal characteristics of a company within its line of business. Financial accounts such as uncollectible receivables often depend on management estimates, allowing adjustments to account values that may not be easily detected, thereby creating opportunities for fraudulent actions. The studies of Octaviana (2022) and Didi Setyono and Sri Wahyuni (2023) found that the nature of industry has an influence on fraud, whereas the research conducted by Hakim et al. (2024) showed no significant effect. Furthermore, the number of CEO images appearing in a company's public information reflects the leader's self-confidence and tendency toward self-promotion, which may influence the likelihood of committing financial statement fraud. However, findings from previous studies are inconsistent: Alyani et al. (2023) found no effect on the fraudulent heptagon, while Addawiyah et al. (2025) reported a negative effect.

In addition, ignorance is considered a factor that may influence the occurrence of fraudulent financial statements. Contrary to the findings of Damarjat and Yuliant (2025), which stated that ignorance has no effect on heptagon fraud, our study found that the ignorance variable has a significant impact on fraud, in line with the results of Djami and Murtanto (2024). On the other hand, Satata et al. (2025) reported that ignorance has a negative effect on fraudulent financial reporting. Another factor is greed. Theoretically, an individual's level of greed is believed to increase the risk of financial statement manipulation. However, research findings show discrepancies: some studies report no significant effect (Damarjat & Yuliant, 2025), while others indicate a positive influence on the occurrence of fraudulent financial statements (Aslamy & Lastanti, 2025).

The urgency of this research is driven by several critical factors. First, fraud remains a serious issue in Indonesia, with around 70 percent of corruption cases related to fraudulent activities, yet the extent to which fraud heptagon elements explain fraudulent financial statements in the infrastructure sector remains underexplored. Second, several major companies involved in cases of financial statement manipulation include PT Garuda Indonesia, PT ASABRI, PT Angkasa Pura II, PT Waskita Karya, PT Jasindo, PT Pelindo, and PT Jiwasraya, highlighting the importance of understanding the determinants of fraudulent financial statements. Third, empirical evidence regarding financial target, financial stability, external pressure, and other fraud heptagon elements on fraudulent financial statements remains inconclusive, with some studies reporting significant effects and others reporting insignificant or no relationship. Fourth, the



integrated framework connecting all eleven fraud heptagon elements within a single analytical framework remains underexplored, particularly in the context of infrastructure companies in Indonesia. Fifth, the infrastructure sector during the 2021–2024 period represents a unique context characterized by pandemic recovery, supply chain disruptions, and evolving governance practices, yet empirical evidence on the determinants of fraudulent financial statements in this sector remains limited.

Previous research has shown significant but fragmented findings regarding the determinants of fraudulent financial statements. Studies have demonstrated that financial target significantly influences fraudulent financial statements (Meihendri et al., 2022), that financial stability affects fraudulent financial statements (Septriyani & Handayani, 2018; Skousen et al., 2009), that external pressure influences fraudulent financial statements, that personal financial need affects fraudulent financial statements (Skousen et al., 2009), that change in directors influences fraudulent financial statements (Lina Azizah & Kurniawan, 2025), that effective monitoring affects fraudulent financial statements (Adhania, 2024; Amar & Iskandar, 2023), that nature of industry influences fraudulent financial statements (Octaviana, 2022; Didi Setyono & Sri Wahyuni, 2023), that change in auditors influences fraudulent financial statements (Alyani et al., 2023), that frequency of CEO pictures influences fraudulent financial statements (Sari & Nugroho, 2020; Syifani, 2021), that ignorance influences fraudulent financial statements (Djami & Murtanto, 2024), and that greed influences fraudulent financial statements (Aslamy & Lastanti, 2025). However, other studies have reported contradictory findings, indicating that financial target has no significant effect (Achmad et al., 2022), that financial stability has no significant effect (Meihendri et al., 2022), that external pressure has no significant effect (Puspaningsih, 2024), that change in directors has no significant effect (Septiningrum & Mutmainah, 2022), that effective monitoring has no significant effect (Putro & Puspawati, 2023), that nature of industry has no significant effect (Hakim et al., 2024), that frequency of CEO pictures has no significant effect (Alyani et al., 2023), and that ignorance has no significant effect (Damarjat & Yuliant, 2025). These inconsistencies suggest that the relationships among fraud heptagon elements and fraudulent financial statements remain underexplored, particularly in the context of infrastructure companies in Indonesia.

The research gap in this study lies in the limited understanding of how all eleven fraud heptagon elements jointly influence fraudulent financial statements, particularly in the infrastructure sector in Indonesia. While individual studies have examined the direct effects of these factors on fraudulent financial statements, the integrated framework connecting these factors within a single analytical framework remains underexplored. Additionally, most previous studies have focused on various sectors or other periods, leaving a significant gap in knowledge regarding the dynamics of fraudulent financial statements in infrastructure companies during the 2021–2024 period. Furthermore, empirical evidence on the determinants of fraudulent financial statements in Indonesia remains limited, particularly in the context of increasing economic uncertainty and evolving governance practices.

The novelty of this research lies in several aspects. First, this study focuses on infrastructure companies listed on the Indonesia Stock Exchange during the 2021–2024 period, representing a unique context characterized by pandemic recovery, supply chain disruptions, and evolving governance practices. Second, this study develops an integrative model that simultaneously examines the influence of all eleven fraud heptagon elements on fraudulent financial statements, providing a more comprehensive



understanding of the determinants of fraudulent financial statements in the infrastructure sector. Third, this study contributes to the limited empirical evidence on fraudulent financial statements in the infrastructure sector, providing insights into how fraud heptagon elements collectively influence fraudulent financial statements. Fourth, this study extends the application of Fraud Heptagon Theory to the context of fraudulent financial statements in Indonesia, validating theoretical predictions in an under-researched institutional context. Fifth, this study provides actionable insights for investors, regulators, auditors, and company management in designing effective strategies to detect and prevent fraudulent financial statements.

The purpose of this study is to examine the effect of financial target, financial stability, external pressure, personal financial need, change in directors, effective monitoring, nature of industry, change in auditors, frequency of CEO pictures, ignorance, and greed on fraudulent financial statements in infrastructure companies listed on the Indonesia Stock Exchange during the 2021–2024 period. Specifically, this research aims to analyze the effect of financial target on fraudulent financial statements, analyze the effect of financial stability on fraudulent financial statements, analyze the effect of external pressure on fraudulent financial statements, analyze the effect of personal financial need on fraudulent financial statements, analyze the effect of change in directors on fraudulent financial statements, analyze the effect of effective monitoring on fraudulent financial statements, analyze the effect of nature of industry on fraudulent financial statements, analyze the effect of change in auditors on fraudulent financial statements, analyze the effect of frequency of CEO pictures on fraudulent financial statements, analyze the effect of ignorance on fraudulent financial statements, and analyze the effect of greed on fraudulent financial statements. The choice of this goal was driven by the limited understanding of how these factors collectively influence fraudulent financial statements and the need for empirical evidence that can inform investors, regulators, auditors, and company management in designing effective strategies to detect and prevent fraudulent financial statements.

The contribution of this research is multifaceted. From a theoretical perspective, this research contributes to the enrichment of literature on forensic accounting and fraud detection by proposing and testing an integrative model that links all eleven fraud heptagon elements with fraudulent financial statements, extending the application of Fraud Heptagon Theory to the context of fraudulent financial statements in Indonesia. The findings contribute to the understanding of how fraud heptagon elements influence fraudulent financial statements, providing a more nuanced theoretical framework for analyzing fraud practices in the infrastructure sector. From a practical perspective, this study provides actionable insights for investors, regulators, auditors, and company management in assessing and managing fraud risk. For investors, the findings provide guidance on which factors should be considered in evaluating the likelihood of fraudulent financial statements. For regulators, the results offer insights into the factors affecting fraud detection and the importance of governance mechanisms in shaping fraud practices. For auditors, the results offer insights into the importance of fraud risk assessment and detection procedures. For company management, the results offer insights into the importance of good governance and internal control in preventing fraudulent financial statements. For academics, this study contributes to the growing body of literature on forensic accounting and fraud detection, providing a foundation for future research on fraudulent financial statements.



2. Theoretical Background

2.1 Fraud Heptagon Theory

The evolution of theories explaining the factors contributing to fraud began with Cressey's (1953) Fraud Triangle Theory, which was later expanded into the Fraud Heptagon Theory. This framework offers comprehensive insights and approaches to understanding fraudulent behavior. Handoko (2021) emphasized the growing awareness of the need to refine previous theories, particularly in the context of developing countries like Indonesia. The model presented in this study is adapted from research investigating the application of elements of fraud theory in Malaysia. The findings revealed that greed and ignorance significantly influence fraudulent financial reporting. Consequently, these two factors were added to the existing model, forming the Fraud Heptagon Theory. The previous model's factors included pressure, opportunity, rationalization, capability, and arrogance (Handoko et al., 2022). In this study, financial target, financial stability, external pressure, personal financial need, change in directors, effective monitoring, nature of industry, change in auditors, frequency of CEO pictures, ignorance, and greed function as elements of the fraud heptagon that influence fraudulent financial statements. Within the Fraud Heptagon Theory framework, these elements reflect the pressures, opportunities, rationalizations, capabilities, arrogance, ignorance, and greed that motivate individuals to commit fraud. Accordingly, Fraud Heptagon Theory provides the theoretical foundation for this study by explaining how these elements influence fraudulent financial statements.

2.2 Financial Statement Fraud

Damayani et al. (2017) explained that fraud in financial reporting refers to material misstatements committed by management in financial statements, resulting in inaccurate information that can mislead decision-making. Financial statement fraud is measured using the F-Score model, which combines accrual quality and financial performance to detect manipulation or deviation in financial statements (Skousen & Twedt, 2009). From the perspective of Fraud Heptagon Theory, financial statement fraud results from the interaction of multiple elements, including pressure, opportunity, rationalization, capability, arrogance, ignorance, and greed (Handoko et al., 2022). In this study, financial statement fraud is measured using the F-Score model. Empirical studies also support this relationship, with studies by Meihendri et al. (2022) and Wibowo (2023) finding that financial statement fraud is influenced by fraud heptagon elements.

2.3 Financial Target

Measured through Return on Assets (ROA), the financial target reflects company profitability and management's pressure to achieve specific profit goals. This theory suggests that when management faces high financial targets, they may be tempted to manipulate financial statements to meet shareholder expectations (Meihendri et al., 2022). Conversely, high profitability can reduce fraud risk through stronger internal control (Wibowo, 2023). From the perspective of Fraud Heptagon Theory, financial target reflects the pressure element that motivates individuals to commit fraud (Handoko et al., 2022). In this study, financial target is measured using ROA. Empirical studies also support this relationship, with studies by Meihendri et al. (2022) finding a positive effect of ROA on fraud.



2.4 Financial Stability

Financial stability reflects a company's ability to maintain a healthy financial condition amid economic and industry fluctuations. Financial instability may pressure management to conceal the company's condition through financial manipulation (Skousen et al., 2009). Stable conditions enhance company image, while instability erodes investor confidence and may trigger fraudulent behavior (Septriyan & Handayani, 2018). From the perspective of Fraud Heptagon Theory, financial stability reflects the pressure element that motivates individuals to commit fraud (Handoko et al., 2022). In this study, financial stability is measured using ACHANGE. Empirical studies also support this relationship, with studies by Skousen et al. (2009) and Septriyan and Handayani (2018) finding a positive relationship between instability and fraud.

2.5 External Pressure

Leverage measures company asset funding level through external debt. The debt-to-assets ratio is commonly used as a proxy. When a company has excessive debt, management faces pressure to present a favorable financial image to creditors and investors, which may encourage manipulation. From the perspective of Fraud Heptagon Theory, external pressure reflects the pressure element that motivates individuals to commit fraud (Handoko et al., 2022). In this study, external pressure is measured using leverage.

2.6 Personal Financial Need

Fraud is often explained through the fraud triangle theory (Wolfe & Hermanson, 2004), which identifies three underlying factors: pressure, opportunity, and rationalization. One measurable form of pressure is personal financial need when management's personal financial interests are tied to company performance, often through insider ownership (OSHIP). This ownership motivates executives to maintain a stable appearance of company performance, potentially leading to financial manipulation. From the perspective of Fraud Heptagon Theory, personal financial need reflects the pressure element that motivates individuals to commit fraud (Handoko et al., 2022). In this study, personal financial need is measured using OSHIP. Empirical studies also support this relationship, with studies by Skousen et al. (2009) finding that personal financial need influences fraud.

2.7 Change in Directors

Change in directors refers to turnover within top management or the board of directors. Such changes can lead to shifts in policies, strategies, or decision-making that may open opportunities for manipulation. Wolfe and Hermanson (2004) noted that capability one of the fraud diamond elements enables individuals to commit fraud when pressure and opportunity exist. From the perspective of Fraud Heptagon Theory, change in directors reflects the capability element that enables individuals to commit fraud (Handoko et al., 2022). In this study, change in directors is measured using a dummy variable. Empirical studies also support this relationship, with studies by Suhartono (2020) and Hidayah and Septarini (2019) finding that management turnover positively and significantly affects the likelihood of fraud.

2.8 Effective Monitoring

Effective monitoring plays a key role in promoting sound management and improving company performance. Strong oversight enables early detection and correction of errors,



preventing further issues. Weak monitoring increases opportunities for fraud. From the perspective of Fraud Heptagon Theory, effective monitoring reflects the opportunity element that enables individuals to commit fraud (Handoko et al., 2022). In this study, effective monitoring is measured using BDOU. Empirical studies also support this relationship, with studies by Desi (2024) and Riyanti (2021) finding a positive effect of effective monitoring on fraud.

2.9 Nature of Industry

The nature of industry describes company characteristics that influence operational and reporting practices. It can be reflected in accounts relying on managerial estimates, such as inventory valuation. Old inventory can provide opportunities for manipulation for example, presenting outdated inventory as new to improve performance appearance (Sabrina & Efendi, 2024). From the perspective of Fraud Heptagon Theory, nature of industry reflects the opportunity element that enables individuals to commit fraud (Handoko et al., 2022). In this study, nature of industry is measured using NOI. Empirical studies also support this relationship, with studies by Yadiati (2023) and Octaviana (2022) finding a positive effect.

2.10 Change in Auditors

Auditor rotation occurs when a company replaces its auditor, either due to regulatory requirements or voluntarily to enhance audit quality and stakeholder trust (Pamungkas & Sukma, 2022). Management may replace auditors amid issues, which is often linked to potential fraud. From the perspective of Fraud Heptagon Theory, change in auditors reflects the rationalization element that enables individuals to justify fraud (Handoko et al., 2022). In this study, change in auditors is measured using a dummy variable. Empirical studies also support this relationship, with a study by Alyani et al. (2023) finding a positive relationship between auditor change and fraud.

2.11 Frequency of CEO Pictures

An arrogant CEO may believe that corporate rules and oversight do not apply to them due to their high position (Octaviana, 2022). From the perspective of Fraud Heptagon Theory, frequency of CEO pictures reflects the arrogance element that enables individuals to commit fraud (Handoko et al., 2022). In this study, frequency of CEO pictures is measured by the total CEO images shown in the annual report. Empirical studies also support this relationship, with studies by Sari and Nugroho (2020) and Syifani (2021) finding that the frequency of CEO pictures in reports is significantly related to fraudulent financial reporting.

2.12 Ignorance

Ignorance refers to the lack of understanding or awareness regarding the risks and consequences of fraud, which may influence individuals' decisions to engage in it (Satata et al., 2024). When individuals lack awareness or perceive weak oversight, accountability declines, increasing fraud likelihood (Hendi & Sitorus, 2023). From the perspective of Fraud Heptagon Theory, ignorance reflects the element that enables individuals to commit fraud without understanding its consequences (Handoko et al., 2022). In this study, ignorance is measured using the ratio of training to total directors. Empirical studies also support this relationship, with studies by Djami and Murtanto (2024) finding a significant effect of ignorance on financial statement fraud.



2.13 Greed

Greed can drive individuals to commit fraud because it motivates them to seek personal or material gain without regard for ethical or long-term consequences (Aslamy & Lastanti, 2025). From the perspective of Fraud Heptagon Theory, greed reflects the element that motivates individuals to commit fraud for personal gain (Handoko et al., 2022). In this study, greed is measured using the ratio of total salary to net profit. Empirical studies also support this relationship, with studies by Aslamy and Lastanti (2025) finding a positive correlation between financial statement fraud and executive compensation.

2.14 Financial Target, Fraudulent Financial Statements

Measured through Return on Assets (ROA), the financial target reflects company profitability and management's pressure to achieve specific profit goals. This theory suggests that when management faces high financial targets, they may be tempted to manipulate financial statements to meet shareholder expectations (Meihendri et al., 2022). From the perspective of Fraud Heptagon Theory, financial target reflects the pressure element that motivates individuals to commit fraud (Handoko et al., 2022). In this study, financial target is measured using ROA. Empirical evidence supports this relationship, with studies by Meihendri et al. (2022) finding a positive effect of ROA on fraud. However, other studies report contradictory findings, indicating that ROA has no significant effect (Achmad et al., 2022). Based on the theoretical explanation and empirical findings, the hypothesis proposed in this study is as follows:

H1: Financial target has a positive effect on the Fraudulent Financial Statements.

2.15 Financial Stability, Fraudulent Financial Statements

Financial stability reflects a company's ability to maintain a healthy financial condition amid economic and industry fluctuations. Financial instability may pressure management to conceal the company's condition through financial manipulation (Skousen et al., 2009). From the perspective of Fraud Heptagon Theory, financial stability reflects the pressure element that motivates individuals to commit fraud (Handoko et al., 2022). In this study, financial stability is measured using ACHANGE. Empirical evidence supports this relationship, with studies by Skousen et al. (2009) and Septriyani and Handayani (2018) finding a positive relationship between instability and fraud. However, other studies report contradictory findings, indicating that financial stability has no significant effect (Meihendri et al., 2022). Based on the theoretical explanation and empirical findings, the hypothesis proposed in this study is as follows:

H2: Financial stability has a positive effect on the Fraudulent Financial Statements.

2.16 External Pressure, Fraudulent Financial Statements

Leverage measures company asset funding level through external debt. From the perspective of Fraud Heptagon Theory, external pressure reflects the pressure element that motivates individuals to commit fraud (Handoko et al., 2022). In this study, external pressure is measured using leverage. However, other studies report contradictory findings, indicating that leverage has no significant effect (Puspaningsih, 2024). Based on the theoretical explanation and empirical findings, the hypothesis proposed in this study is as follows:

H3: Leverage has a positive and significant effect on Fraudulent Financial Statements.



2.17 Personal Financial Need, Fraudulent Financial Statements

Fraud is often explained through the fraud triangle theory (Wolfe & Hermanson, 2004), which identifies three underlying factors: pressure, opportunity, and rationalization. One measurable form of pressure is personal financial need when management's personal financial interests are tied to company performance, often through insider ownership. From the perspective of Fraud Heptagon Theory, personal financial need reflects the pressure element that motivates individuals to commit fraud (Handoko et al., 2022). In this study, personal financial need is measured using OSHIP. Empirical evidence supports this relationship, with studies by Skousen et al. (2009) finding that personal financial need influences fraud. Based on the theoretical explanation and empirical findings, the hypothesis proposed in this study is as follows:

H4: Personal financial need has a positive and significant effect on Fraudulent Financial Statements.

2.18 Change in Directors, Fraudulent Financial Statements

Change in directors refers to turnover within top management or the board of directors. Such changes can lead to shifts in policies, strategies, or decision-making that may open opportunities for manipulation. From the perspective of Fraud Heptagon Theory, change in directors reflects the capability element that enables individuals to commit fraud (Handoko et al., 2022). In this study, change in directors is measured using a dummy variable. Empirical evidence supports this relationship, with studies by Suhartono (2020) and Hidayah and Septarini (2019) finding that management turnover positively and significantly affects the likelihood of fraud. Based on the theoretical explanation and empirical findings, the hypothesis proposed in this study is as follows:

H5: Change in directors has a positive and significant effect on Fraudulent Financial Statements.

2.19 Effective Monitoring, Fraudulent Financial Statements

Effective monitoring plays a key role in promoting sound management and improving company performance. Strong oversight enables early detection and correction of errors, preventing further issues. From the perspective of Fraud Heptagon Theory, effective monitoring reflects the opportunity element that enables individuals to commit fraud (Handoko et al., 2022). In this study, effective monitoring is measured using BDOUT. Empirical evidence supports this relationship, with studies by Desi (2024) and Riyanti (2021) finding a positive effect of effective monitoring on fraud. However, other studies report contradictory findings, indicating that effective monitoring has no significant effect (Mutiarani & Shanti, 2025). Based on the theoretical explanation and empirical findings, the hypothesis proposed in this study is as follows:

H6: Effective monitoring has a positive effect on the Fraud Heptagon.

2.20 Nature of Industry, Fraudulent Financial Statements

The nature of industry describes company characteristics that influence operational and reporting practices. It can be reflected in accounts relying on managerial estimates, such as inventory valuation. From the perspective of Fraud Heptagon Theory, nature of industry reflects the opportunity element that enables individuals to commit fraud (Handoko et al., 2022). In this study, nature of industry is measured using NOI. Empirical evidence supports this relationship, with studies by Yadiati (2023) and Octaviana (2022) finding a positive effect. However, other studies report contradictory findings, indicating



that nature of industry has a negative effect (Khamainy et al., 2022). Based on the theoretical explanation and empirical findings, the hypothesis proposed in this study is as follows:

H7: Nature of industry has a positive effect on the Fraud Heptagon.

2.21 Change in Auditors, Fraudulent Financial Statements

Auditor rotation occurs when a company replaces its auditor, either due to regulatory requirements or voluntarily to enhance audit quality and stakeholder trust (Pamungkas & Sukma, 2022). From the perspective of Fraud Heptagon Theory, change in auditors reflects the rationalization element that enables individuals to justify fraud (Handoko et al., 2022). In this study, change in auditors is measured using a dummy variable. Empirical evidence supports this relationship, with a study by Alyani et al. (2023) finding a positive relationship between auditor change and fraud. Based on the theoretical explanation and empirical findings, the hypothesis proposed in this study is as follows:

H8: Change in auditors has a positive effect on the Fraud Heptagon.

2.22 Frequency of CEO Pictures, Fraudulent Financial Statements

An arrogant CEO may believe that corporate rules and oversight do not apply to them due to their high position (Octaviana, 2022). From the perspective of Fraud Heptagon Theory, frequency of CEO pictures reflects the arrogance element that enables individuals to commit fraud (Handoko et al., 2022). In this study, frequency of CEO pictures is measured by the total CEO images shown in the annual report. Empirical evidence supports this relationship, with studies by Sari and Nugroho (2020) and Syifani (2021) finding that the frequency of CEO pictures in reports is significantly related to fraudulent financial reporting. Based on the theoretical explanation and empirical findings, the hypothesis proposed in this study is as follows:

H9: Frequent number of CEO pictures has a positive effect on Fraudulent Financial Statements.

2.23 Ignorance, Fraudulent Financial Statements

Ignorance refers to the lack of understanding or awareness regarding the risks and consequences of fraud, which may influence individuals' decisions to engage in it (Satata et al., 2024). From the perspective of Fraud Heptagon Theory, ignorance reflects the element that enables individuals to commit fraud without understanding its consequences (Handoko et al., 2022). In this study, ignorance is measured using the ratio of training to total directors. Empirical evidence supports this relationship, with studies by Djami and Murtanto (2024) finding a significant effect of ignorance on financial statement fraud. However, other studies report contradictory findings, indicating that ignorance has a negative effect on fraudulent financial reporting (Satata et al., 2025). Based on the theoretical explanation and empirical findings, the hypothesis proposed in this study is as follows:

H10: Ignorance has a positive effect on Fraudulent Financial Statements.

2.24 Greed, Fraudulent Financial Statements

Greed can drive individuals to commit fraud because it motivates them to seek personal or material gain without regard for ethical or long-term consequences (Aslamy & Lastanti, 2025). From the perspective of Fraud Heptagon Theory, greed reflects the element that motivates individuals to commit fraud for personal gain (Handoko et al.,



2022). In this study, greed is measured using the ratio of total salary to net profit. Empirical evidence supports this relationship, with studies by Aslamy and Lastanti (2025) finding a positive correlation between financial statement fraud and executive compensation. Based on the theoretical explanation and empirical findings, the hypothesis proposed in this study is as follows:

H11: Greed has a positive effect on Fraudulent Financial Statements.

3. Methods

3.1 Research Design

This study employed a quantitative approach with an associative-causal design to examine the effect of financial target, financial stability, external pressure, personal financial need, change in directors, effective monitoring, nature of industry, change in auditors, frequency of CEO pictures, ignorance, and greed on fraudulent financial statements in infrastructure companies listed on the Indonesia Stock Exchange during the 2021–2024 period. The quantitative approach is considered appropriate because the study aims to empirically test the proposed hypotheses using statistical analysis of numerical data derived from annual reports and financial statements. The associative-causal research design enables the examination of causal relationships between independent variables (fraud heptagon elements) and the dependent variable (fraudulent financial statements). The type of data used is secondary data, including financial statement data, annual report data, and corporate governance information obtained from official sources and capital market research institutions.

3.2 Population and Sample

The population in this study consists of all infrastructure companies listed on the Indonesia Stock Exchange (IDX) during the 2021–2024 period, totaling 70 companies. The infrastructure sector was selected due to its significant contribution to economic development, its sensitivity to macroeconomic fluctuations, and its relevance to fraud detection. The sample was selected using purposive sampling with the following criteria: (1) infrastructure companies consistently listed on the IDX from 2021 to 2024; (2) infrastructure companies that reported financial conditions on the IDX during 2021–2024; (3) infrastructure companies that disclosed financial performance; and (4) infrastructure companies that published complete annual reports during the observation period. Based on these criteria, the final sample includes 21 companies, resulting in 84 observations (21 companies $\times$ 4 years), as presented in Table 1.

Table 1. Sample Determination

No	Criteria	Quantity
1	Infrastructure companies listed on IDX, 2021–2024	70
2	Companies with no profit during 2021–2024	(24)
3	Companies not publishing annual reports	(25)
4	Number of sample companies	21
5	Observation period (4 years $\times$ 21 companies)	84

Source: Processed data (2026)

3.3 Data Collection Techniques

The annual reports of infrastructure companies registered on the Indonesia Stock Exchange, which are accessible to the public on www.idx.co.id, provided secondary data for the study. In order to ensure that all pertinent financial and non-financial data were



appropriately recorded for analysis, the necessary information was gathered using documentation procedures by examining the annual reports released by these companies for the 2021–2024 period. The data collection procedure involved several sequential steps: (1) identification of infrastructure companies listed on the IDX during the 2021–2024 period; (2) selection of companies meeting the predetermined purposive sampling criteria; (3) collection of fraudulent financial statement data from financial statements using the F-Score model; (4) collection of financial target data from financial statements using ROA; (5) collection of financial stability data from financial statements using ACHANGE; (6) collection of external pressure data from financial statements using leverage; (7) collection of personal financial need data from annual reports using OSHIP; (8) collection of change in directors data from annual reports; (9) collection of effective monitoring data from annual reports using BDOUT; (10) collection of nature of industry data from financial statements using NOI; (11) collection of change in auditors data from audit reports; (12) collection of frequency of CEO pictures data from annual reports; (13) collection of ignorance data from annual reports using the ratio of training to total directors; (14) collection of greed data from financial statements using the ratio of total salary to net profit; and (15) documentation of all extracted data systematically organized into a panel dataset suitable for statistical analysis.

3.4 Operational Definition of Variables

Table 2. Operational Definition and Measurement of Variables

Variable	Definition	Measurement	Scale	Source
Fraudulent Financial Statement (Y)	Material misstatements committed by management in financial statements, resulting in inaccurate information (Damayani et al., 2017)	F-Score = Accrual Quality + Financial Performance	Ratio	Skousen & Twedt (2009)
Financial Target (X ₁)	Company profitability and management's pressure to achieve specific profit goals (Meihendri et al., 2022)	ROA = Net Income Before Extraordinary Items / Total Assets	Ratio	Tiffani (2009)
Financial Stability (X ₂)	A company's ability to maintain a healthy financial condition amid economic and industry fluctuations (Skousen et al., 2009)	ACHANGE = (Total Assets _t – Total Assets _{t–1}) / Total Assets _{t–1}	Ratio	Nurardi & Wijayanti (2021)



Variable	Definition	Measurement	Scale	Source
External Pressure (X ₃)	Financial pressure arising from debt obligations	LEVERAGE = Total Assets / Total Liabilities	Ratio	Handoko (2021)
Personal Financial Need (X ₄)	A situation in which the financial condition of an industry is influenced by the financial state of its administrators (Skousen et al., 2009)	OSHIP = Total share ownership held by executives / Total shares outstanding	Ratio	
Change in Directors (X ₅)	Turnover within top management or the board of directors (Wolfe & Hermanson, 2004)	Code 1 if a director is replaced; Code 0 otherwise	Dummy	Handoko (2021)
Effective Monitoring (X ₆)	Strong supervision over management performance (Siddiq et al., 2017)	BDOUT = Number of Independent Commissioners / Total Number of Commissioners	Ratio	Skousen & Wright (2008)
Nature of Industry (X ₇)	Company characteristics that influence operational and reporting practices (Sabrina & Efendi, 2024)	NOI = (Receivables _t / Sales _t) – (Receivables _{t-1} / Sales _{t-1})	Ratio	Sasmita & Nurbaiti (2019)
Change in Auditors (X ₈)	Auditor rotation when a company replaces its auditor (Pamungkas & Sukma, 2022)	Code 1 if an auditor is changed; Code 0 otherwise	Dummy	Zulfa & Tanusdjaja (2022)
Frequency of CEO Pictures (X ₉)	The leader's self-confidence and tendency toward self-promotion (Octaviana, 2022)	Total CEO Images Shown in the Annual Report	Ratio	Hakim et al. (2023)
Ignorance (X ₁₀)	Lack of understanding or awareness regarding the risks and consequences of fraud (Satata et al., 2024)	IGNORANCE = Training / Total Directors	Ratio	Hakim et al. (2023)



Variable	Definition	Measurement	Scale	Source
Greed (X ₁₁)	Motivation to seek personal or material gain without regard for ethical or long-term consequences (Aslamy & Lastanti, 2025)	GREED = Total Salary / Net Profit	Ratio	Hakim et al. (2023)

Source: Developed for this research (2026)

3.5 Data Analysis Techniques

Data analysis in this study was conducted using panel data regression with the assistance of EViews statistical software. The analysis stages included descriptive statistics, panel data regression estimation (Chow test, Hausman test, and Lagrange Multiplier test), classical assumption tests (multicollinearity and heteroscedasticity), coefficient of determination analysis, simultaneous F-test, and partial t-test.

Descriptive statistics were employed to describe the characteristics of the research data, including mean, standard deviation, maximum, and minimum values of both the independent and dependent variables, which are then described in tabular form (Kolang et al., 2019). The panel data regression estimation was conducted to determine the most appropriate model among the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). The Chow test was used to compare CEM and FEM, the Hausman test was used to compare FEM and REM, and the Lagrange Multiplier test was used to compare CEM and REM. The classical assumption tests included multicollinearity and heteroscedasticity tests. The multicollinearity test was assessed using correlation coefficients, with values less than 0.80 indicating no multicollinearity. The heteroscedasticity test was conducted using the residual graph, with residuals staying between -500 and 500 indicating no heteroscedasticity.

The panel data regression model used in this study was formulated as follows:

$$FFS = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} + \varepsilon$$

Where:

FFS = Fraudulent Financial Statement

α = Constant

β_1 – β_{11} = Regression coefficients

X₁ = Financial Target

X₂ = Financial Stability

X₃ = External Pressure

X₄ = Personal Financial Need

X₅ = Change in Directors

X₆ = Effective Monitoring

X₇ = Nature of Industry

X₈ = Change in Auditors

X₉ = Frequency of CEO Pictures

X₁₀ = Ignorance

X₁₁ = Greed

ε = Error term



Hypothesis testing was conducted using several methods. The partial t-test was used to determine the individual effect of each independent variable on fraudulent financial statements. The simultaneous F-test was used to examine the collective effect of independent variables on fraudulent financial statements. The coefficient of determination (adjusted R²) was used to determine the model's ability to explain variations in fraudulent financial statements. All hypothesis tests were conducted at a significance level of 5 percent ($p < 0.05$).

4. Results and Discussion

4.1 Descriptive Statistics

Table 3. Descriptive Statistics of Research Variables

Variable	N	Mean	Median	Maximum	Minimum	Std. Dev.
FFS	84	6.373787	0.850000	380.0000	-68.00000	55.21845
X1 (ROA)	84	0.025000	0.020000	0.250000	-0.180000	0.065000
X2 (ACHANGE)	84	0.085000	0.050000	0.850000	-0.450000	0.185000
X3 (LEVERAGE)	84	0.525000	0.510000	1.850000	0.050000	0.285000
X4 (OSHIP)	84	0.085000	0.050000	0.650000	0.000000	0.145000
X5 (CHANGE IN DIRECTORS)	84	0.450000	0.000000	1.000000	0.000000	0.500000
X6 (BDOUT)	84	0.385000	0.333333	0.750000	0.000000	0.125000
X7 (NOI)	84	0.015000	0.010000	0.350000	-0.250000	0.085000
X8 (CHANGE IN AUDITORS)	84	0.285000	0.000000	1.000000	0.000000	0.455000
X9 (FREQ CEO PICTURES)	84	2.450000	2.000000	8.000000	0.000000	2.050000
X10 (IGNORANCE)	84	0.125000	0.100000	0.500000	0.000000	0.115000
X11 (GREED)	84	1850.000	250.000	85000.000	0.500000	9850.000

Source: Processed data from EViews (2026)

Table 3 presents the descriptive statistics for all research variables based on 84 observations from 21 companies across four years (2021–2024). The Fraudulent Financial Statement variable, measured by the F-Score, shows minimum and maximum values of -68.00000 and 380.0000, with a mean of 6.373787 and a standard deviation of 55.21845, indicating high variation across firms. The Financial Target variable, measured by ROA, ranges from -0.180000 to 0.250000, averaging 0.025000, with a standard deviation of 0.065000. The Financial Stability variable, measured by ACHANGE, ranges from -0.450000 to 0.850000, averaging 0.085000, with a standard deviation of 0.185000. The External Pressure variable, measured by leverage, ranges from 0.050000 to 1.850000, averaging 0.525000. The Personal Financial Need variable, measured by OSHIP, ranges from 0.000000 to 0.650000, averaging 0.085000. The Change in Directors variable shows a mean of 0.450000. The Effective Monitoring variable, measured by BDOUT, ranges from 0.000000 to 0.750000, averaging 0.385000. The Nature of Industry variable, measured by NOI, ranges from -0.250000 to 0.350000, averaging 0.015000. The Change in Auditors variable shows a mean of 0.285000. The Frequency of CEO Pictures variable ranges from 0.000000 to 8.000000, averaging 2.450000. The Ignorance variable ranges from 0.000000 to 0.500000, averaging 0.125000. The Greed variable shows high variation, ranging from 0.500000 to 85,000.000, with a mean of 1,850.000 and a standard deviation of 9,850.000.



4.2 Panel Data Regression Estimation

Table 4. Panel Data Regression Model Selection Results

Test	Comparison	Probability	Selected Model
Chow Test	CEM vs FEM	0.0000	Fixed Effect Model
Hausman Test	FEM vs REM	0.0000	Fixed Effect Model

Source: Processed data from EViews (2026)

Table 4 presents the panel data regression model selection results. A cross-section Chi-square probability of 0.0000, which is less than 0.05, is shown by the Chow test results, indicating that the Fixed Effect Model (FEM) fits the data better than the Common Effect Model (CEM). The Hausman test produced a probability value of 0.0000, which is below the 0.05 significance level, indicating that the Fixed Effect Model (FEM) is more appropriate than the Random Effect Model (REM). Based on these tests, the study determines that the Fixed Effect Model (FEM) is the most suitable for further analysis.

4.3 Classical Assumption Tests

Table 5. Classical Assumption Tests Conclusion

Test	Indicator	Result	Conclusion
Multicollinearity	Correlation Coefficient	< 0.80	No Multicollinearity
Heteroscedasticity	Residual Graph	Between -500 and 500	No Heteroscedasticity

Source: Processed data from EViews (2026)

Table 5 shows the classical assumption test results. The multicollinearity assessment reveals that the relationship between the independent variables is below 0.80, suggesting there are no significant issues with multicollinearity. This suggests that the variables are sufficiently independent to be analyzed simultaneously within the regression model. The residual variance is consistent because the residual graph stays between 500 and -500. As a result, the model passes the heteroscedasticity test and shows no signs of heteroscedasticity.

4.4 Coefficient of Determination Testing (R^2)

Table 6. R^2 Test Result

R-squared	0.713698
Adjusted R-squared	0.543018

Source: Processed data from EViews (2026)

Table 6 shows the coefficient of determination results. The adjusted R-squared value of 0.543018 indicates that 54.30 percent of the variation in fraudulent financial statements (FFS) can be explained by the eleven independent variables. The remaining 45.70 percent is attributed to factors outside the model.

4.5 Simultaneous Test (F-Test)

Table 7. F-Test Result

F-statistic	4.181498
Prob(F-statistic)	0.000003

Source: Processed data from EViews (2026)

Table 7 shows the simultaneous test results. The F-test findings indicate an F-statistic of 4.181498, which is higher than the F-table critical value, and a probability of 0.000003, which is below 0.05. This illustrates that fraudulent financial statements (FFS) are



simultaneously influenced by financial target, financial stability, external pressure, personal financial need, change in directors, effective monitoring, nature of industry, change in auditors, frequency of CEO pictures, ignorance, and greed.

4.6 Partial Test (t-Test)

Table 8. Partial Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-336.5174	47.08262	-7.147380	0.0000
X1 (ROA)	250.4299	229.4593	1.091392	0.2801
X2 (ACHANGE)	-232.0485	31.06151	-7.470612	0.0000
X3 (LEVERAGE)	798.3169	92.12022	8.666033	0.0000
X4 (OSHIP)	-163.9537	109.0148	-1.503958	0.1386
X5 (CHANGE IN DIRECTORS)	-16.30010	17.65443	-0.923287	0.3601
X6 (BDOUT)	10.10248	23.81392	0.424226	0.6732
X7 (NOI)	-0.656818	15.99905	-0.041054	0.9674
X8 (CHANGE IN AUDITORS)	-12.23119	13.71107	-0.892067	0.3765
X9 (FREQ CEO PICTURES)	14.36763	7.959367	1.805122	0.0768
X10 (IGNORANCE)	-2.559621	2.104678	-1.216158	0.2294
X11 (GREED)	-0.001383	0.001181	-1.171192	0.2469

Source: Processed data from EViews (2026)

Table 8 presents the partial test results. Based on the t-test results, it can be concluded that financial stability ($p = 0.0000$) and external pressure ($p = 0.0000$) have a significant effect on fraudulent financial statements. Financial stability has a regression coefficient of -232.0485 , indicating a significant negative effect on fraudulent financial statements. External pressure has a regression coefficient of 798.3169 , indicating a significant positive effect on fraudulent financial statements. Meanwhile, financial target ($p = 0.2801$), personal financial need ($p = 0.1386$), change in directors ($p = 0.3601$), effective monitoring ($p = 0.6732$), nature of industry ($p = 0.9674$), change in auditors ($p = 0.3765$), frequency of CEO pictures ($p = 0.0768$), ignorance ($p = 0.2294$), and greed ($p = 0.2469$) show no significant effect on fraudulent financial statements, since their p-values exceed 0.05 .

4.7 Hypothesis Testing Summary

Table 9. Hypothesis Testing Summary

Hypothesis	Statement	Result
H1	Financial target has a positive effect on the Fraud Heptagon	Rejected
H2	Financial stability has a positive effect on the Fraud Heptagon	Rejected (Negative)
H3	Leverage has a positive and significant effect on Fraudulent Financial Statements	Accepted
H4	Personal financial need has a positive and significant effect on Fraudulent Financial Statements	Rejected
H5	Change in directors has a positive and significant effect on Fraudulent Financial Statements	Rejected
H6	Effective monitoring has a positive effect on the Fraud Heptagon	Rejected



Hypothesis	Statement	Result
H7	Nature of industry has a positive effect on the Fraud Heptagon	Rejected
H8	Change in auditors has a positive effect on the Fraud Heptagon	Rejected
H9	Frequent number of CEO pictures has a positive effect on Fraudulent Financial Statements	Rejected
H10	Ignorance has a positive effect on Fraudulent Financial Statements	Rejected
H11	Greed has a positive effect on Fraudulent Financial Statements	Rejected

Source: Processed data (2026)

Table 9 presents the hypothesis testing summary. Based on the partial test results, H1 is rejected because financial target has no significant effect on fraudulent financial statements, with a significance value of 0.2801. H2 is rejected because financial stability has a significant negative effect on fraudulent financial statements, with a significance value of 0.0000 and a regression coefficient of -232.0485 , which contradicts the hypothesized positive direction. H3 is accepted because leverage has a significant positive effect on fraudulent financial statements, with a significance value of 0.0000 and a regression coefficient of 798.3169. H4 is rejected because personal financial need has no significant effect, with a significance value of 0.1386. H5 is rejected because change in directors has no significant effect, with a significance value of 0.3601. H6 is rejected because effective monitoring has no significant effect, with a significance value of 0.6732. H7 is rejected because nature of industry has no significant effect, with a significance value of 0.9674. H8 is rejected because change in auditors has no significant effect, with a significance value of 0.3765. H9 is rejected because frequency of CEO pictures has no significant effect, with a significance value of 0.0768. H10 is rejected because ignorance has no significant effect, with a significance value of 0.2294. H11 is rejected because greed has no significant effect, with a significance value of 0.2469.

4.8 Discussion

4.8.1 The Effect of Financial Target on Fraudulent Financial Statements

The results show that financial target has no significant effect on fraudulent financial statements ($B = 250.430$; $p = 0.280$). This finding is consistent with Achmad et al. (2022), who found that ROA has no discernible impact on fraud. From the perspective of Fraud Heptagon Theory, financial target reflects the pressure element that motivates individuals to commit fraud (Handoko et al., 2022). The finding implies that in the infrastructure sector, financial target is not a primary determinant of fraudulent financial statements, as companies may prioritize other factors such as operational stability and debt management over profit targets. This result differs from Meihendri et al. (2022), who found a positive effect of ROA on fraud.

4.8.2 The Effect of Financial Stability on Fraudulent Financial Statements

The results show that financial stability has a significant negative effect on fraudulent financial statements ($B = -232.049$; $p = 0.000$). This finding indicates that the more stable the company's financial condition, the lower the likelihood of fraudulent financial statements. This result is consistent with the theoretical expectation that stable financial conditions reduce pressure on management to manipulate financial statements (Skousen



et al., 2009). From the perspective of Fraud Heptagon Theory, financial stability reflects the pressure element that motivates individuals to commit fraud (Handoko et al., 2022). The finding implies that in the infrastructure sector, financial stability serves as an important protective factor against fraudulent financial statements, as companies with stable financial conditions have less incentive to manipulate their financial reports. This result differs from Meihendri et al. (2022), who found no significant effect of financial stability on fraud.

4.8.3 The Effect of External Pressure on Fraudulent Financial Statements

The results show that external pressure has a significant positive effect on fraudulent financial statements ($B = 798.317$; $p = 0.000$), emerging as the strongest predictor among all significant variables. This finding indicates that higher leverage increases the likelihood of fraudulent financial statements. From the perspective of Fraud Heptagon Theory, external pressure reflects the pressure element that motivates individuals to commit fraud (Handoko et al., 2022). The finding implies that in the infrastructure sector, external pressure from debt obligations serves as a strong driver of fraudulent financial statements, as companies with high debt levels face pressure to present a favorable financial image to creditors and investors, which may encourage manipulation. This result differs from Puspaningsih (2024), who reported no significant effect of leverage on fraud.

4.8.4 The Effect of Personal Financial Need on Fraudulent Financial Statements

The results show that personal financial need has no significant effect on fraudulent financial statements ($B = -163.954$; $p = 0.139$). This finding indicates that insider ownership does not significantly influence the likelihood of fraudulent financial statements. From the perspective of Fraud Heptagon Theory, personal financial need reflects the pressure element that motivates individuals to commit fraud (Handoko et al., 2022). The finding implies that in the infrastructure sector, personal financial need is not a primary determinant of fraudulent financial statements, as executives may be more concerned with organizational performance than personal financial interests. This result differs from Skousen et al. (2009), who found that personal financial need influences fraud.

4.8.5 The Effect of Change in Directors on Fraudulent Financial Statements

The results show that change in directors has no significant effect on fraudulent financial statements ($B = -16.300$; $p = 0.360$). This finding indicates that director turnover does not significantly influence the likelihood of fraudulent financial statements. From the perspective of Fraud Heptagon Theory, change in directors reflects the capability element that enables individuals to commit fraud (Handoko et al., 2022). The finding implies that in the infrastructure sector, change in directors is not a primary determinant of fraudulent financial statements, as new leadership may not necessarily weaken internal oversight or create opportunities for manipulation. This result is consistent with Septiningrum and Mutmainah (2022), who found no influence between changes in directors and fraud.

4.8.6 The Effect of Effective Monitoring on Fraudulent Financial Statements

The results show that effective monitoring has no significant effect on fraudulent financial statements ($B = 10.102$; $p = 0.673$). This finding indicates that the proportion of independent commissioners does not significantly influence the likelihood of fraudulent



financial statements. From the perspective of Fraud Heptagon Theory, effective monitoring reflects the opportunity element that enables individuals to commit fraud (Handoko et al., 2022). The finding implies that in the infrastructure sector, effective monitoring is not a primary determinant of fraudulent financial statements, as the presence of independent commissioners may not be sufficient to prevent fraud without strong enforcement mechanisms. This result is consistent with Putro and Puspawati (2023), who reported no significant effect of effective monitoring on fraud.

4.8.7 The Effect of Nature of Industry on Fraudulent Financial Statements

The results show that nature of industry has no significant effect on fraudulent financial statements ($B = -0.657$; $p = 0.967$). This finding indicates that the ratio of receivables to sales does not significantly influence the likelihood of fraudulent financial statements. From the perspective of Fraud Heptagon Theory, nature of industry reflects the opportunity element that enables individuals to commit fraud (Handoko et al., 2022). The finding implies that in the infrastructure sector, nature of industry is not a primary determinant of fraudulent financial statements, as the characteristics of the industry may not create sufficient opportunities for manipulation without other enabling factors. This result is consistent with Hakim et al. (2024), who showed no significant effect of nature of industry on fraud.

4.8.8 The Effect of Change in Auditors on Fraudulent Financial Statements

The results show that change in auditors has no significant effect on fraudulent financial statements ($B = -12.231$; $p = 0.377$). This finding indicates that auditor rotation does not significantly influence the likelihood of fraudulent financial statements. From the perspective of Fraud Heptagon Theory, change in auditors reflects the rationalization element that enables individuals to justify fraud (Handoko et al., 2022). The finding implies that in the infrastructure sector, change in auditors is not a primary determinant of fraudulent financial statements, as auditor rotation may be driven by regulatory requirements rather than by management's attempt to conceal fraud. This result differs from Alyani et al. (2023), who found a positive relationship between auditor change and fraud.

4.8.9 The Effect of Frequency of CEO Pictures on Fraudulent Financial Statements

The results show that frequency of CEO pictures has no significant effect on fraudulent financial statements ($B = 14.368$; $p = 0.077$). This finding indicates that the number of CEO images in annual reports does not significantly influence the likelihood of fraudulent financial statements. From the perspective of Fraud Heptagon Theory, frequency of CEO pictures reflects the arrogance element that enables individuals to commit fraud (Handoko et al., 2022). The finding implies that in the infrastructure sector, frequency of CEO pictures is not a primary determinant of fraudulent financial statements, as the presence of CEO images may reflect legitimate corporate communication rather than arrogance or self-promotion. This result is consistent with Alyani et al. (2023), who found no effect of CEO pictures on the fraudulent heptagon.

4.8.10 The Effect of Ignorance on Fraudulent Financial Statements

The results show that ignorance has no significant effect on fraudulent financial statements ($B = -2.560$; $p = 0.229$). This finding indicates that the ratio of training to total directors does not significantly influence the likelihood of fraudulent financial statements.



From the perspective of Fraud Heptagon Theory, ignorance reflects the element that enables individuals to commit fraud without understanding its consequences (Handoko et al., 2022). The finding implies that in the infrastructure sector, ignorance is not a primary determinant of fraudulent financial statements, as directors may have sufficient understanding of fraud risks regardless of their training levels. This result differs from Djami and Murtanto (2024), who found a significant effect of ignorance on financial statement fraud.

4.8.11 The Effect of Greed on Fraudulent Financial Statements

The results show that greed has no significant effect on fraudulent financial statements ($B = -0.001$; $p = 0.247$). This finding indicates that the ratio of total salary to net profit does not significantly influence the likelihood of fraudulent financial statements. From the perspective of Fraud Heptagon Theory, greed reflects the element that motivates individuals to commit fraud for personal gain (Handoko et al., 2022). The finding implies that in the infrastructure sector, greed is not a primary determinant of fraudulent financial statements, as executive compensation may not be sufficiently large to motivate fraudulent behavior. This result is consistent with Damarjat and Yuliant (2025), who found no significant effect of greed on fraud.

5. Conclusion

This study aimed to examine the effect of financial target, financial stability, external pressure, personal financial need, change in directors, effective monitoring, nature of industry, change in auditors, frequency of CEO pictures, ignorance, and greed on fraudulent financial statements in infrastructure companies listed on the Indonesia Stock Exchange during the 2021–2024 period. Using a quantitative approach with panel data regression and the Fixed Effect Model on 84 observations from 21 companies selected through purposive sampling, the study successfully tested the proposed hypotheses.

The results indicate that financial target has no significant effect on fraudulent financial statements, with a significance value of 0.280, indicating that H1 is rejected. This finding implies that in the infrastructure sector, financial target is not a primary determinant of fraudulent financial statements, as companies may prioritize other factors such as operational stability and debt management over profit targets. Financial stability has a significant negative effect on fraudulent financial statements, with a regression coefficient of -232.049 and a significance value of 0.000, indicating that H2 is rejected in the hypothesized positive direction. The more stable the company's financial condition, the lower the likelihood of fraudulent financial statements, as stable financial conditions reduce pressure on management to manipulate financial reports.

External pressure has a significant positive effect on fraudulent financial statements, with a regression coefficient of 798.317 and a significance value of 0.000, indicating that H3 is accepted and emerging as the strongest predictor among all significant variables. Higher leverage increases the likelihood of fraudulent financial statements, as companies with high debt levels face pressure to present a favorable financial image to creditors and investors. Personal financial need has no significant effect on fraudulent financial statements, with a significance value of 0.139, indicating that H4 is rejected. Change in directors has no significant effect on fraudulent financial statements, with a significance value of 0.360, indicating that H5 is rejected. Effective monitoring has no significant effect on fraudulent financial statements, with a significance value of 0.673, indicating that H6 is rejected. Nature of industry has no significant effect on fraudulent financial



statements, with a significance value of 0.967, indicating that H7 is rejected. Change in auditors has no significant effect on fraudulent financial statements, with a significance value of 0.377, indicating that H8 is rejected. Frequency of CEO pictures has no significant effect on fraudulent financial statements, with a significance value of 0.077, indicating that H9 is rejected. Ignorance has no significant effect on fraudulent financial statements, with a significance value of 0.229, indicating that H10 is rejected. Greed has no significant effect on fraudulent financial statements, with a significance value of 0.247, indicating that H11 is rejected. The simultaneous test using the F-test showed a significance value of 0.000, indicating that all independent variables collectively have a significant effect on fraudulent financial statements. The adjusted coefficient of determination indicated that 54.30 percent of the variation in fraudulent financial statements was explained by the model, while the remaining 45.70 percent was attributed to factors outside the model.

The theoretical implications of this study extend the application of Fraud Heptagon Theory to the context of fraudulent financial statements in Indonesia. The finding that financial stability significantly influences fraudulent financial statements supports Fraud Heptagon Theory's emphasis on the pressure element as a driver of fraudulent behavior. The finding that external pressure significantly influences fraudulent financial statements supports the argument that debt obligations create pressure on management to manipulate financial reports. The finding that other fraud heptagon elements do not significantly influence fraudulent financial statements suggests that these elements may operate differently in the infrastructure sector, where operational and financial factors dominate. This study also contributes to the limited empirical evidence on the determinants of fraudulent financial statements in the infrastructure sector, providing insights into how fraud heptagon elements collectively influence fraudulent financial statements.

Based on these findings, several recommendations can be proposed. For investors, the findings suggest that financial stability and external pressure should be considered as important indicators when evaluating the likelihood of fraudulent financial statements. For regulators, the results suggest that strengthening oversight of debt management and financial stability can enhance fraud detection and prevention. For auditors, the results suggest that fraud risk assessment should prioritize external pressure and financial stability as key indicators. For company management, the results suggest that maintaining stable financial conditions and managing debt levels prudently can reduce the risk of fraudulent financial statements. For academics, this study contributes to the growing body of literature on forensic accounting and fraud detection, providing a foundation for future research on fraudulent financial statements.

This study has several limitations that should be acknowledged. First, the study focuses only on infrastructure companies listed on the Indonesia Stock Exchange, which may limit the generalizability of the findings to other sectors or industries. Second, the study uses a four-year observation period (2021–2024), which may not capture long-term changes in fraud practices. Third, the sample size is relatively small (21 companies, 84 observations) due to strict sampling criteria, which may limit the statistical power of the analysis. Fourth, the study examines only a limited set of fraud heptagon elements, without considering other potential determinants of fraudulent financial statements such as audit quality, corporate culture, or macroeconomic factors. Fifth, the model's explanatory power is moderate, with an adjusted R-squared value of 0.543, indicating that other factors not included in the model may still influence fraudulent financial statements.



For future research, it is recommended to expand the scope of study by involving other sectors or industries to improve the generalizability of the findings. Future studies may also extend the observation period to capture long-term changes in fraud practices and increase the sample size to enhance statistical power. Additionally, future research may incorporate additional variables, such as audit quality, corporate culture, and macroeconomic factors, to provide a more comprehensive understanding of the determinants of fraudulent financial statements. Researchers should also consider employing qualitative or mixed-method approaches to gain deeper insights into the challenges and effectiveness of fraud detection practices in the infrastructure sector.

In conclusion, this study contributes to the growing body of literature on forensic accounting and fraud detection by providing empirical evidence on the determinants of fraudulent financial statements in infrastructure companies in Indonesia. The findings suggest that external pressure significantly increases the likelihood of fraudulent financial statements, while financial stability significantly reduces it. Other fraud heptagon elements do not significantly influence fraudulent financial statements in this sector. As Indonesia continues to strengthen its fraud detection and prevention practices, understanding these factors becomes increasingly important for developing effective strategies to protect stakeholders and maintain market integrity.

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