Detecting Financial Statement Fraud With a New Fraud Diamond Model

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Abstrak

Dampak serius dari kecurangan laporan keuangan (FSF), khususnya pada perusahaan besar, tetap menjadi tantangan besar secara global, yang sering kali muncul akibat lemahnya pengendalian internal dan tekanan pada karyawan untuk mencapai target keuangan. Penelitian ini mengeksplorasi penerapan New Fraud Diamond Model pada kecurangan laporan keuangan (FSF) di perusahaan energi yang terdaftar di Bursa Efek Indonesia (BEI) dari tahun 2019 hingga 2023. Sampel terdiri dari 238 perusahaan yang dipilih melalui metode purposive sampling. Hasil penelitian menunjukkan bahwa stabilitas keuangan dan target keuangan berpengaruh positif terhadap FSF, sedangkan pengawasan yang efektif berpengaruh negatif. Variabel lainnya tidak menunjukkan pengaruh yang signifikan. Temuan ini memberikan implikasi praktis bagi regulator dan perusahaan untuk memperkuat mekanisme tata kelola, meningkatkan efektivitas pengawasan, dan menyelaraskan target keuangan dengan tujuan jangka panjang guna memitigasi risiko kecurangan, sehingga meningkatkan akuntabilitas perusahaan dan stabilitas pasar keuangan secara keseluruhan.

Kata Kunci: *Kecurangan Laporan Keuangan, Model Fraud Diamond Baru, Manajemen Laba, Energi, Deteksi Kecurangan.*

Abstract

The severe impact of financial statement fraud (FSF), particularly in large corporations, remains a significant challenge globally, often arising due to weak internal controls and the pressure on employees to meet financial targets. This study explores the applicability of the New Fraud Diamond Model on financial statement fraud (FSF) in energy companies listed on the Indonesian Stock Exchange (IDX) from 2019 until 2023. The sample comprises 238 companies selected through purposive sampling. The research results indicate that financial stability and financial targets positively influence FSF, while effective monitoring has a negative effect. Other variables show no significant impact. The findings provide practical implications for regulators and companies to strengthen governance mechanisms, enhance monitoring effectiveness, and align financial targets with long-term goals to mitigate fraud risks, thereby improving overall corporate accountability and financial market stability.

Keywords: Financial Statement Fraud, New Fraud Diamond Model, Earnings Management, Energy, Fraud Detection

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INTRODUCTION

Financial statement fraud, here in after abbreviated as FSF, it has become one of the most significant problems for the entire global business community. FSF is defined by the Association of Certified Fraud Examiners (ACFE) as a scheme involving an employee deliberately causing a misstatement or omission of crucial information in the organization's financial reports. According to ACFE (2024) FSF only occurs in 5% but has the biggest median loss USD 766.000 per case compared to corruption and asset misappropriation, underscores their severe consequences. The implications of such cases are multifaceted, affecting not only the targeted organization but also stakeholders, investors, and the broader economy. Data from the same report highlights industry-specific trends, showing that the energy sector experiences a median loss of USD 152,000, which is significantly lower than the mining sector's USD 550,000 but higher than the healthcare sector's USD 100,000. Despite this, the energy sector is particularly vulnerable to FSF due to its complex financial structures, large transaction volumes, and significant exposure to external pressures, such as regulatory changes and global energy market fluctuations. FSF can happen when a company's assets are overstated, while revenues, losses, expenses and liabilities are understated (Omukaga, 2020). The prevalence of FSF can be attributed to several factors, including the opportunity presented by inadequate internal controls and the pressure employees may face to meet financial targets. A recent example highlighting the severe consequences of FSF is the scandal involving PT Timah, one of Indonesia's largest state-owned enterprises in the mining sector. In September 2024, PT Timah was implicated in a massive fraud case, resulting in financial losses amounting to IDR 271 trillion (approximately USD 17 billion) (Indonesian Corruption Watch, 2024). The fraudulent activities involved deliberate misrepresentation of financial statements, which led to an inflated perception of the company's profitability and financial stability. This scandal not only rocked the Indonesian financial markets, but also underscored the need for more robust fraud detection mechanisms.

The energy sector in Indonesia was chosen as the focus of this study because it serves as one of the main pillars of Indonesia's economy, significantly contributing to the Gross Domestic Product (GDP) and state revenue through the export of commodities such as oil, gas, and coal. Energy companies tend to be sustainable; data from the IDX shows that 58% have been established for more than 10 years, and 72% have been established for more than 6 years. According to ACFE (2024), companies that have been in operation for 6-10 years experience a median loss of USD 200,000, while those that have operated for more than 10 years face a median loss of USD 250,000. The energy industry has a complex structure involving lengthy production, distribution, and financial chains, making it more susceptible to financial statement manipulation, earnings management, and fraudulent activities. The high value of transactions and contracts in this sector increases the potential for practices that violate good corporate governance.

Traditional fraud detection models, such as the Fraud Triangle proposed by Cressey (1953), focus on the elements of pressure, opportunity, and rationalization. However, these models may not fully capture the complexities of FSF in today's dynamic corporate environments. As fraud schemes become increasingly sophisticated, there is a growing need for more comprehensive frameworks to detect and prevent FSF effectively. However, this model was later expanded into the Fraud Diamond by Wolfe & Hermanson (2004) who introduced a fourth element: capability. This addition highlights that certain individuals possess the necessary skills, position, and authority to execute complex fraud schemes that others might not be capable of pulling off. Building on this, Gbegi & Adebisi (2013) proposed further enhancements to the Fraud Diamond model by introducing a focus on personal integrity rather than merely rationalization. They argue that integrity plays a critical role in determining whether individuals, even when facing pressure and presented with opportunities, will ultimately commit fraud. By integrating integrity into the analysis, this perspective expands the traditional focus on rationalization, addressing the ethical and moral considerations that are increasingly relevant in evaluating fraud risk.

Previous studies have revealed mixed findings regarding the factors influencing financial statement fraud (FSF). Research by (Fathmaningrum & Anggarani, 2021; Syahria, 2019) identified financial stability as a significant driver of FSF. In contrast research by (Khamainy, Ali, & Setiawan, 2022; Ratmono, Darsono, & Cahyonowati, 2020) reported no significant relationship between financial stability and FSF, highlighting inconsistencies in its predictive power. Similarly, external pressure has been a debated variable. While Biduri & Tjahjadi (2024) finds that external pressure has a effect on FSF however, earlier research by (Fathmaningrum & Anggarani, 2021; Khamainy et al., 2022; Ratmono et al., 2020) argued otherwise, suggesting that external pressure might not always serve as a reliable predictor. Besides financial stability and external pressure, financial target also considered influence on FSF. Those statement has been supported with the research conducted by Ratmono et al. (2020) points out financial target has an effect on FSF. However, research conducted by Khamainy et al. (2022) indicate financial target had no effect on FSF. Regarding opportunity, the nature of the industry and effective monitoring have been studied as proxies. Research by (Khamainy et al., 2022; Sari, Mahardika, Suryandari, & Raharja, 2022) established that the nature of the industry influences FSF, although research conducted by (Fathmaningrum & Anggarani, 2021) did not find similar evidence. Research conducted by Khamainy et al. (2022) concludes effective monitoring has a effect on FSF contrastly with research conducted by Muhandisah & Anisykurlillah (2016) reported no such effect, suggesting that the role of monitoring might depend on how governance structures are implemented. The variable change of directors has also sparked varied conclusions. Previous research conducted by (Nur Triyanto, Aulia Nur Fajri, & Wahyuni, 2023; Omukaga, 2020; Santoso & Surenggono, 2018) finds that change of directors influences FSF. Conversely, research by (Fathmaningrum & Anggarani, 2021; Khamainy et al., 2022; Sari et al., 2022) suggested that changes in directors might not be a reliable indicator of fraudulent activity.

Earnings management is a factor frequently linked to FSF, has also been debated. Previous research conducted by Khamainy et al. (2022) observed no significant relationship between earnings management and FSF. Beyond earnings management, historical sales performance and earnings growth can also serve as indicators of personal integrity. Companies with a consistent history of strong sales and earnings growth are often perceived as having higher managerial integrity, as they are less likely to resort to unethical financial practices. Previous research conducted by (Khamainy et al., 2022; Ramírez-Orellana, Martínez-Romero, & Mariño-Garrido, 2017) emphasized the role of sales history in influencing FSF. However, earnings growth, as noted by Khamainy et al. (2022) was not found to have a significant effect on FSF, further underscoring the nuanced nature of these relationships.

This research is a replication of previous research developed by Khamainy et al. (2022), the research limited their analysis to manufacturing companies, leaving a gap in understanding FSF in other sectors, such as energy, which has unique structural complexities, significant transaction values, and heightened susceptibility to fraud. The new fraud diamond theory, although promising, remains underdeveloped. Further empirical testing is necessary to refine and validate its application in diverse industrial contexts. By focusing on the energy sector—a pivotal industry for Indonesia's economy—this study aims to contribute uniquely by examining FSF within an industry characterized by complex operational structures and high financial stakes. Moreover, it extends the theoretical application of the new fraud diamond model, providing insights into its robustness and applicability across different industrial landscapes. This research also aims to bridge the empirical gap left by previous studies by investigating whether variables deemed insignificant by Khamainy et al. (2022) might yield different results when applied to the energy sector.

LITERATURE REVIEW

Agency Theory

Agency theory proposed by Jensen & Meckling (1976), explains the relationship between the principal and the agent, where the principal entrusts the agent with the authority to manage the company. This theory highlights conflicts that arise due to differing interests between the agent and the principal. These conflicts emerge because the agent seeks personal welfare by maximizing their performance-based earnings, while the principal focuses on improving financial performance, namely achieving high returns on investments. This situation is referred to as information asymmetry, a concept that describes a condition where the agent possesses more information about the company's operations than the principal. Information asymmetry creates an opportunity for management to conceal information unknown to the principal, enabling them to deceive the principal through acts such as financial statement fraud.

New Fraud Diamond Theory

New fraud diamond theory were popularized by Gbegi & Adebisi (2013) as an develop from fraud diamond (Wolfe & Hermanson, 2004). While the original model expanded on Cressey's Fraud Triangle by adding a fourth element capability to explain why individuals commit fraud, Gbegi & Adebisi (2013) argue that this framework is still limited in addressing the complexities of fraud. Their model critiques the original by highlighting the limitations of observing two critical elements of the Fraud Diamond: incentive/pressure and rationalization, which are often internal and thus not easily detectable. They suggest that the original model overlooks significant factors, such as the influence of national value systems and socio-cultural pressures, which play a crucial role in motivating fraudulent behaviour. To address these gaps, Gbegi & Adebisi (2013) propose the *New Fraud Diamond Model*, which includes additional dimensions beyond individual capabilities, emphasizing factors like national value systems, money, ideology, coercion, and ego (NAVSMICE). They argue that this expanded model is more effective for forensic accountants when assessing fraud risk in settings with distinct socio-cultural influences.

Financial Statement Fraud

According to SAS No. 99 AICPA (2002), one of the conditions that leads to fraud in financial statements is pressure. When a company has low total assets, management faces pressure because its performance appears to be declining. This pressure can cause management to reduce the flow of investment funds in the following year (Ratmono et al., 2020). Research highlights the importance of understanding the motivations behind FSF. Pressure, opportunity, and rationalization, as outlined in the Fraud Triangle framework, are key conditions that facilitate fraudulent activities. Companies in industries with volatile markets or subjective accounting judgments are especially vulnerable. Furthermore, effective governance mechanisms, such as robust internal controls and ethical leadership, are essential in mitigating these risks. Studies suggest that fraud prevention strategies, including heightened fraud awareness and whistleblowing systems, significantly reduce the occurrence of FSF by addressing the underlying pressures and opportunities (Mandal & S., 2023).

Hypothesis Development

Financial Stability and Financial Statement Fraud

Financial stability is one of the critical pressures that can lead to fraudulent financial reporting (FSF). Companies experiencing financial instability often face intense pressure to present favourable performance to stakeholders, leading management to manipulate financial reports. This aligns with Agency Theory, which explains that managers, driven by self-interest, may engage in fraudulent practices to maintain investor confidence, meet debt covenants, or secure their job security. Under the NAVSMICE framework, financial stability influences fraud through Money (M) and National Value

System (NAVS). Financial instability creates a financial need or pressure (Money), driving management to manipulate financial reports. Moreover, in environments where societal norms (NAVS) tolerate wealth obtained by any means, such pressures are exacerbated, making fraud more likely as a socially acceptable strategy to maintain appearances. Research conducted by (Fathmaningrum & Anggarani, 2021) found a positive correlation between financial instability and FSF, as firms under financial distress often resort to unethical actions to mask poor performance. However, contrasting findings by (Khamainy et al., 2022; Ratmono et al., 2020) suggest that robust governance structures may mitigate this relationship, highlighting the need for further research.

H_1: Financial stability has a positive effect on financial statement fraud.

External Pressure and Financial Statement Fraud

External pressure, defined as the organizational strain to meet financial targets or investor expectations, is positively associated with financial statement fraud (FSF). This pressure, arising from challenging financial conditions or market competition, motivates managers to engage in unethical reporting to maintain the facade of stability and success. External pressure aligns with the Ego (E) and Money (M) components. Managers may feel the need to maintain their reputation (Ego) by meeting external performance expectations. Additionally, financial targets imposed by creditors or market conditions can create a monetary strain (Money), pushing management toward fraudulent practices to appear solvent and successful. Research conducted by (Biduri & Tjahjadi, 2024) affirms this relationship, showing external pressure significantly influences FSF, underlining the role of organizational and economic contexts in fraud incidents.

H_2: External Pressure has a positive effect on Financial Statement Fraud.

Financial Target and Financial Statement Fraud

Financial targets, representing the pressure companies face to meet specific performance goals such as profit or revenue growth, are a key factor in the occurrence of financial statement fraud. When these targets are difficult to achieve, management may manipulate financial statements to appear more favourable to investors, creditors, or other stakeholders. The connection to NAVSMICE emerges through Ego (E) and Money (M). Unrealistic financial targets pressure managers to deliver results that satisfy stakeholders. This pressure activates Ego as managers strive to protect their image and position while also addressing monetary demands linked to operational goals and performance bonuses. Previous studies have shown that organizations under significant pressure to meet financial expectations often resort to fraud, such as overstating earnings or inflating revenue, to maintain a positive image and secure necessary financing. Research conducted by Ratmono et al. (2020) which state that there is an influence between financial target and FSF.

H_3: Financial Target has a positive effect on financial statement fraud.

Nature of Industry and Financial Statement Fraud

The nature of industry can significantly impact the effect of financial statement fraud (FSF). Industries characterized by high competition, volatile market conditions, or those that rely heavily on subjective accounting judgments may create opportunities for management to manipulate financial reports. Industry characteristics tie into National Value System (NAVS) and Coercion (C) within NAVSMICE. High competition and reliance on subjective accounting judgments create opportunities for fraud, particularly in societies where NAVS prioritizes results over ethical conduct. Additionally, coercion may arise in the form of market pressures or investor demands to meet industry benchmarks. A particularly challenging industry environment, such as a downturn or financial instability, may pressure management to overstate performance, leading to FSF. Research conducted by (Anisykurlillah, Ardiansah, & Nurrahmasari, 2023; Khamainy et al., 2022; Sari et al., 2022) which state that there is an influence between nature of industry and FSF.

H_4: Nature of Industry has a positive effect on financial statement fraud.

Effective Monitoring and Financial Statement Fraud

Effective monitoring is crucial in preventing financial statement fraud (FSF). Strong oversight mechanisms, such as active audit committees and robust governance, reduce the likelihood of fraudulent activities. Independent audits, compliance checks, and transparent financial reporting deter fraudulent behavior by increasing the chances of detecting manipulations. These mechanisms align closely with *Agency Theory*, which emphasizes the inherent conflict of interest between principals (owners) and agents (managers). Effective monitoring mitigates this conflict by ensuring that managers act in the best interests of the owners, rather than pursuing personal gain through fraudulent practices. Effective monitoring aligns with Ideology (I) and National Value System (NAVS). A strong governance framework reflects an ethical Ideology that prioritizes accountability and transparency. Similarly, robust monitoring systems challenge societal norms (NAVS) that might otherwise condone fraudulent behavior, thereby deterring fraud. Research conducted by Khamainy et al. (2022) effective monitoring, particularly in companies with rigorous governance and audit processes, can significantly lower the risk of FSF, as it creates an environment of accountability and transparency.

H_5: Effective monitoring has a negative effect on financial statement fraud.

Earnings Management and Financial Statement Fraud

Earnings management refers management's discretion in preparing financial statements to achieve specific objectives, such as manipulating stock prices, meeting analyst expectations, or minimizing the consequences of poor performance, is a common practice. Managers have better access to the true financial position of the company than the owners, creates opportunities for manipulative practices interests of the owners. Earnings management connects to Money (M) and Ideology (I). Managers manipulate earnings to achieve financial rewards (Money), such as securing loans or improving stock prices. Weak Ideology within a company where ethical considerations are secondary to financial outcomes provides a rationale for such practices, creating an environment conducive to fraud. When management manipulates earnings to present a more favourable financial position, it can lead to the distortion of financial statements, creating opportunities for fraudulent reporting. Research conducted by Md Nasir, Ali, Razzaque, & Ahmed (2018) earnings management has more aggressive in FSF as organizations attempt to manipulate their financial performance to meet unrealistic targets or external expectations.

H_6: Earnings management has a positive effect on financial statement fraud.

History of Sales and Financial Statement Fraud

The history of sales has been identified as a significant factor influencing FSF. Companies with fluctuating or declining sales may face pressure to present a more favourable financial position, leading to potential manipulation of financial reports. In such situations, managers may prioritize short-term actions, such as manipulating financial reports, to meet immediate performance targets or protect their own positions, even if these actions conflict with the long-term interests of the owners. A fluctuating sales history connects with Money (M) and Ego (E) in NAVSMICE. Declining sales increase monetary pressure (Money) to maintain operational viability, while managers may manipulate financial statements to preserve their Ego and reputation amidst poor performance metrics. Research conducted Khamainy et al. (2022) affirms that a history of sales is positively linked to FSF, suggesting that sales performance history can be a strong predictor of fraudulent behaviour.

H_7: History of sales has a positive effect on financial statement fraud

Earnings Growth and Financial Statement Fraud

Under pressure to meet earnings growth targets, companies may resort to financial statement fraud (FSF) as a way to meet expectations and present a more favorable financial position to stakeholders. This behavior aligns with Agency Theory, which posits that managers, acting as agents, may prioritize personal interests—such as preserving reputation or securing financial rewards—over ethical

reporting and the interests of principals (owners). The pressure to achieve consistent earnings growth is further tied to Ego (E) and Money (M) within the NAVSMICE framework, as managers face reputational concerns (Ego) and monetary pressures tied to stakeholder expectations or market valuations. Studies by Demetriades & Owusu-Agyei (2022) and Md Nasir et al. (2018) support this view, indicating that companies struggling to meet growth expectations are more likely to manipulate earnings. Regulatory bodies like the International Federation of Accountants (IFAC) have similarly highlighted that financial target pressures can heighten the risk of fraud, underscoring the importance of strong governance and monitoring systems to mitigate such behavior

H_8: Earnings growth has a positive effect on financial statement fraud.

Change of Directors and Financial Statement Fraud

The change of directors in a company can influence financial statement fraud (FSF), as it often results in shifts in governance practices and operational strategies. When a company undergoes changes in its leadership, there may be pressures to deliver improved financial results to secure the new director's position or meet external expectations. This pressure may prompt management to manipulate financial reports. Leadership changes are linked to Coercion (C) and Ego (E) in NAVSMICE. New directors may face coercion from stakeholders demanding immediate results, while their own Ego drives them to showcase positive outcomes quickly. This environment creates incentives to engage in fraudulent practices to present improved financial performance. Research by Nasir, Ali, & Ahmed (2019) shows that FSF firms tend to increase governance mechanisms, such as the proportion of independent directors and audit committee activity, after the detection of fraud.

H_9: Change of directors has a positive effect on financial statement fraud.

RESEARCH METHODS

This study employs a quantitative research method to analyze data from energy companies listed on the Indonesia Stock Exchange (IDX) between 2019 and 2023. The quantitative approach was chosen because it provides objective results through standardized measurements and allows for testing relationships between variables using statistical analyses such as regression (Wahyudin, 2015). The data were sourced from the IDX website, official company websites, and the Bloomberg database. Initially, data were collected from 359 companies. After applying selection criteria, such as excluding companies that were not continuously listed or did not have fully audited annual reports during the study period, 121 companies were excluded. As a result, the final dataset consisted of 238 companies that met the requirements for analysis. This study uses panel data regression because this approach integrates time-series and cross-sectional data, providing deeper, more accurate analysis and capturing the dynamic changes between variables over time (Ghozali & Ratmono, 2018).

Table 1. Sampling Criteria

No	Criteria	2019	2020	2021	2022	2023	Total
1	Energy sector companies listed on the IDX in the period 2019-2023	64	66	71	75	83	359
2	Energy sector companies that did not issue complete annual report period 2019-2023	26	22	15	15	8	86
3	Data related to research variables are not completely available in annual report 2019-2023	3	7	4	6	15	35
	Total unit of analysis	35	37	52	54	60	238

Source: Author, 2024

The dependent variable for the analysis is FSF, which is proxied by the F-score, a measure of financial reporting quality. The regression model used to test the research hypothesis is as follows:

$$\text{FRAUD} = \alpha + \beta_1\text{ACHANGE} + \beta_2\text{DER} + \beta_3\text{ROA} + \beta_4\text{RECEIVABLE} + \beta_5\text{IND} + \beta_6\text{DACC} + \beta_7\text{SG} + \beta_8\text{EG} + \beta_9\text{DCHANGE} + \varepsilon$$

Table 2. Operational Variable

Variable	Variable Measurement	Source
Financial Statement Fraud	F-Score = Accrual Quality + Financial Performance	(Dechow, Ge, Larson, & Sloan, 2011)
Financial Stability	$\text{ACHANGE} = \frac{\text{Total Asset}_t - \text{Total Asset}_{t-1}}{\text{Total Asset}_{t-1}}$	(Khamainy et al., 2022; Skousen, Smith, & Wright, 2009)
External Pressure	$\text{DER} = \frac{\text{Total Debt}}{\text{Total Equity}}$	(Khamainy et al., 2022)
Financial Target	$\text{ROA} = \frac{\text{Net Income}}{\text{Total Assets}}$	(Khamainy et al., 2022; Skousen et al., 2009)
Nature of Industry	$\text{Receivable} = \frac{\text{Accounts Receivable}_t - \text{Accounts Receivable}_{t-1}}{\text{Sales}_t - \text{Sales}_{t-1}}$	(Khamainy et al., 2022; Skousen et al., 2009)
Effective Monitoring	$\text{IND} = \frac{\text{Number of Independent Audit Committee Members}}{\text{Total Number of Audit Committee Members}}$	(Khamainy et al., 2022; Skousen et al., 2009)
Earnings Management	$\text{DACC}_{it} = \frac{\text{TACC}_{it}}{\text{TA}_{it-1}} - \text{NDACC}_{it}$	(Jones, 1991; Khamainy et al., 2022)
History of Sales	$\text{Sales Growth} = \frac{\text{Sales}_{it} - \text{Sales}_{i(t-1)}}{\text{Sales}_{i(t-1)}}$	(Khamainy et al., 2022)
Earnings Growth	$\text{Earnings Growth} = \frac{\text{Operating Profit}_t - \text{Operating Profit}_{t-1}}{\text{Operating Profit}_{t-1}}$	(Khamainy et al., 2022)
Change of Directors	DCHANGE = If the company's board of directors changed during the research period, the corresponding value was coded as 1; otherwise, it was coded as 0.	(Khamainy et al., 2022)

Source: Author, 2024

RESULTS AND DISCUSSION

Table 3. Descriptive Statistic

Description	N	Min	Max	Mean	Std. Dev
Fraud	238	-0.741684	2.967626	0.840094	0.670238
Financial Stability	238	-0.532019	5.464553	0.162667	0.496293
External Pressure	238	0.000000	109.6100	1.299118	7.174987
Financial Target	238	-3.572085	1.751544	-0.335778	1.100652
Nature of Industry	238	-1.155269	0.628929	-0.008518	0.130820
Effective Monitoring	238	0.000000	0.500000	0.317507	0.059823
Earnings Management	238	-2.354605	5.497264	1.527376	1.818588
History of Sales	238	-0.988981	1526.660	8.261658	99.19521
Earnings Growth	238	-58.44619	284.6773	1.613463	19.46484
Change of Director	238	0.000000	1.000000	0.693277	0.462105

Sources: Output eviews 12, 2024

Descriptive statistics provide a detailed overview of the data, including the mean, standard deviation, maximum and minimum values of each variable.

Table 4. Chow Test

Effect Test	Statistic	d.f	Prob
Cross-section F	1.847972	(78,150)	0.0007
Cross-section Chi-Square	160.275573	78	0.0000

Sources: Output eviews 12, 2024

In table 4, the chow test results show that the prob chi square value is 0.0000 < 0.05, meaning that the fixed effect model (FEM) was chosen as the best model. Then proceed with conducting the hausman test.

Table 5. Hausman Test

Test Sumary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob
Cross-section random	12.139820	9	0.2055

Sources: Output eviews 12, 2024

In table 5, the results of the Hausman test show that the cross-section prob value is 0.2055 > 0.05, meaning that the random effect model (REM) was chosen as the best model. Then proceed with conducting the Lagrange Multiplier (LM) test.

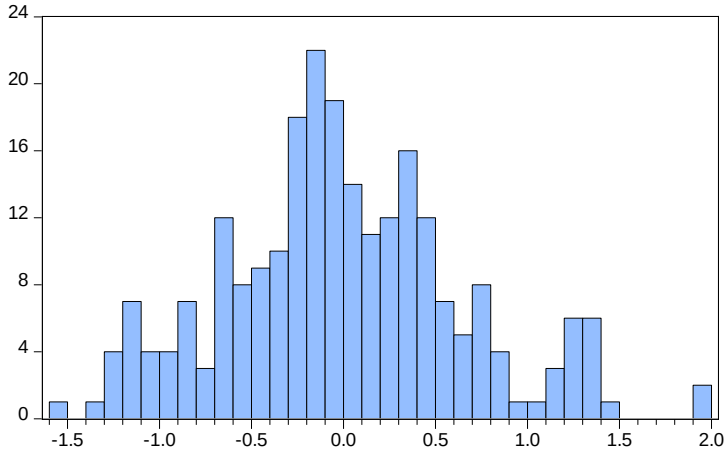
Table 6. Lagrange Multiplier Test

Null (No. rand. Effect Alternative	Cross-section One-sided	Period One-sided	Both
Breusch-Pagan	13.36408	1.545336	14.90942
	(0.0003)	(0.2138)	(0.0001)
Honda	3.655692	-1.243115	1.705949
	(0.0001)	(0.8931)	(0.0440)
King-Wu	3.655692	-1.243115	-0.389587
	(0.0001)	(0.8931)	(0.6516)
GHM	--	--	13.36408
	--	--	(0.0004)

Sources: Output eviews 12, 2024

Table 6 LM test results show that the Breusch-Pagan cross-section value is 0.0003 < 0.05, meaning that the random effect model (REM) was chosen as the best model to be used in panel data regression testing.

Table 7. Normality Test



Series: Standardized Residuals
Sample 2019 2023
Observations 238

Mean	-0.005733
Median	-0.073509
Maximum	1.953776
Minimum	-1.575461
Std. Dev.	0.647236
Skewness	0.292190
Kurtosis	3.131616
Jarque-Bera	3.558333
Probability	0.168779

Sources: Output eviews 12, 2024

Based on the results of the normality test, it shows that the prob value is 0.168779 > 0.05, meaning that the data used in this study is normally distributed.

Table 8. Heteroskedasticity test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Fraud	0.477317	0.149870	3.184874	0.0017
Financial Stability	-0.001903	0.055146	-0.034508	0.9725
External Pressure	-0.002164	0.003748	-0.577245	0.5643
Financial Target	-0.027404	0.025231	-1.086144	0.2786
Nature of Industry	0.164030	0.203655	0.805432	0.4214
Effective Monitoring	0.248056	0.459781	0.539508	0.5901
Earnings Management	-0.014176	0.014885	-0.952359	0.3419
History of Sales	-0.000339	0.000269	-1.256812	0.2101
Earnings Growth	-0.001382	0.001377	-1.003564	0.3167
Change of Director	-0.047036	0.058947	-0.797939	0.4257

Sources: Output eviews 12, 2024

The heteroscedasticity test in this study uses the Glejser test, where the results show that the independent variable has no effect on the absolute residual regression of the panel data regression model, this is evidenced by the prob value > 0.05. So that the panel data regression model in this study is free from heteroscedasticity problems.

Table 9. Multicollinearity test

	Financial Stability	External Pressure	Financial Target	Nature of Industry	Effective Monitoring	Earnings Management	History of Sales	Earnings Growth	Change of Director
Financial Stability	1.000000	0.074892	-0.195568	0.083614	-0.020803	-0.048211	-0.033776	0.012878	0.033476
External Pressure	0.074892	1.000000	-0.056013	0.013531	-0.078651	0.084442	-0.011948	0.003553	0.039894
Financial Target	-0.195568	-0.056013	1.000000	0.036524	0.085887	0.023463	-0.050650	-0.035398	0.066215
Nature of Industry	0.083614	0.013531	0.036524	1.000000	-0.021495	-0.009350	0.003143	-0.037651	0.013711
Effective Monitoring	-0.020803	-0.078651	0.085887	-0.021495	1.000000	0.125572	-0.010551	0.015453	0.122889
Earnings Management	-0.048211	0.084442	0.023463	-0.009350	0.125572	1.000000	-0.059581	-0.079325	0.038062
History of Sales	-0.033776	-0.011948	-0.050650	0.003143	-0.010551	-0.059581	1.000000	0.014759	0.045992
Earnings Growth	0.012878	0.003553	-0.035398	-0.037651	0.015453	-0.079325	0.014759	1.000000	-0.087311
Change of Director	0.033476	0.039894	0.066215	0.013711	0.122889	0.038062	0.045992	-0.087311	1.000000

Sources: Output eviews 12, 2024

Based on the table, the multicollinearity test results test results show a low correlation value. All independent variables used in this study have values that are smaller or less than 0.8. So this shows that the independent variables are not correlated with each other and are free from multicollinearity problems.

Table 10. Test coefficient of determination

R-squared	0.072333	Mean dependent var	0.601466
Adjusted R-Squared	0.035714	S.D. dependent var	0.596041
S.E. of regression	0.583891	Sum squared resid	77.73183
F-Statistic	1.975309	Durbin-Watson stat	1.598467
Prob (F-statistic)	0.043104		

Sources: Output eviews 12, 2024

Based on the panel data regression model in this study, the Adjusted R^2 squared value is 0.035714, meaning that the independent variables in this study are able to explain the dependent variable by 3.57% while 96.43% will be explained by other variables outside the research model.

Table 11. Hypothesis test summary

Hypothesis	Coefficient	Prob	Results
H1: Financial stability has a positive effect on financial statement fraud	0.248624	0.0034***	Accepted
H2: External pressure has a positive effect on financial statement fraud	-0.002117	0.7080	Rejected
H3: Financial target has a positive effect on financial statement fraud	0.080204	0.0697*	Accepted
H4: Nature of industry has a positive effect on financial statement fraud	0.081207	0.7907	Rejected
H5: Effective monitoring has a negative effect on financial statement fraud	-1.384874	0.0810*	Accepted
H6: Earnings management has a positive effect on financial statement fraud	-0.000518	0.9818	Rejected
H7: History of sales has a positive effect on financial statement fraud	0.000142	0.7362	Rejected
H8: Earnings growth has a positive effect on financial statement fraud	-0.001414	0.5042	Rejected
H9: Change of director has a positive effect on financial statement fraud	-0.041099	0.6741	Rejected

***significant at 1%, **significant at 5%, *significant at 10%

Sources: Output eviews 12, 2024

Based on the results of the panel data regression test using the REM model. Table 11 shows that hypothesis 1 financial stability has a positive effect on financial statement fraud is **accepted** with prob 0.0034 < 0.01, hypothesis 3 financial target has a positive effect on financial statement fraud is **accepted** with prob 0.0697 > 0.1, and hypothesis 5 effective monitoring has a negative effect on financial statement fraud is **accepted** with prob 0.0810 < 0.1. However, the variables of external pressure, nature of industry, earnings management, history of sales, earnings growth and change of director have no effect on financial statement fraud.

DISCUSSION

Financial stability has a positive effect on financial statement fraud

The results indicate that financial stability significantly influences FSF. This might be because the pressure felt by management when financial stability is threatened is mitigated by good supervision mechanisms. These findings are consistent with the study conducted by (Fathmaningrum & Anggarani, 2021; Syahria, 2019), which demonstrated that companies experiencing financial instability are more prone to fraudulent practices to maintain a positive financial image and meet stakeholder expectations. However, these findings are not consistent with the research by Khamainy et al. (2022), which suggests that financial instability does not necessarily lead to increased fraud, particularly in environments with robust governance systems.

External pressure has a positive effect on financial statement fraud

The findings indicate that external pressure does not significantly influence the occurrence of FSF. This could be due to the companies in the sample having good oversight mechanisms from creditors over their financial management. These findings are consistent with the studies conducted by (Fathmaningrum & Anggarani, 2021; Khamainy et al., 2022; Ratmono et al., 2020) which highlight that robust governance frameworks and creditor-imposed monitoring mechanisms can reduce the likelihood of FSF, even in the presence of high external pressure. However, the results diverge from the findings of Biduri & Tjahjadi (2024), which argue that external pressure significantly contributes to FSF, particularly in companies struggling to meet financial targets or facing intense market competition.

Financial target has a positive effect on financial statement fraud

The findings indicate that financial targets positively influence FSF, indicating that companies facing pressure to achieve certain financial performance metrics, such as profitability targets, may resort to manipulating financial statements to meet these expectations. This finding aligns with the study conducted by Ratmono et al. (2020), which highlights that financial targets, particularly profitability measures like ROA, can create significant pressure on management, driving them to engage in unethical reporting practices. However, this result contrasts with the findings of Demetriades & Owusu-Agyei (2022; Khamainy et al., 2022), which suggest that financial targets do not significantly influence fraudulent reporting in environments with strong governance structures and ethical frameworks. These insights suggest that strengthening monitoring systems and aligning internal controls with local regulatory contexts can reduce FSF. Policymakers can use these findings to enhance transparency and accountability, while practitioners can integrate financial stability metrics into fraud prevention strategies to improve oversight and resilience.

Nature of industry has a positive effect on financial statement fraud

The results indicate that the nature of the industry, as measured by accounts receivable, does not have a significant impact on FSF. This suggests that the level of accounts receivable, as a characteristic of industry operations, may not directly create pressure or opportunities for FSF in the sampled companies. These findings are consistent with the study by Fathmaningrum & Anggarani (2021), which concludes that industry characteristics, such as accounts receivable levels, do not inherently lead to fraud unless combined with other factors like poor governance or weak internal controls. However, the results differ from the findings of (Khamainy et al., 2022; Sari et al., 2022), which suggest that the nature of the industry significantly impacts FSF. These studies argue that industries reliant on subjective accounting estimates or with inherently high receivable balances are more prone to fraud due to the flexibility in revenue recognition policies and the pressure to maintain liquidity. These findings contribute to the New Fraud Diamond Model by suggesting that opportunity created by industry characteristics may only lead to fraud when accompanied by weak internal controls. Practically, this highlights the importance of strengthening governance and internal control systems in industries with high accounts receivable to mitigate fraud risks.

Effective monitoring has a negative effect on financial statement fraud

The findings indicate that effective monitoring reduces the likelihood of FSF. This result suggests that effective monitoring negatively affects FSF, meaning that stronger governance mechanisms, such as active independent audit committees and robust oversight systems, reduce the likelihood of fraudulent reporting. These findings are consistent with the research conducted by Khamainy et al. (2022), which highlights the importance of effective monitoring in mitigating fraud. Khamainy emphasizes that companies with rigorous internal control systems and independent supervisory bodies are better equipped to detect and deter fraudulent behavior. However, this result contrasts with the findings of Sitoresmi, Fakhruddin, Fitriati, & Setyadi (2024), which suggest that effective monitoring does not significantly impact financial statement fraud in certain contexts. These results emphasize the importance of robust monitoring systems in limiting the ability of individuals to exploit weaknesses in governance and controls. By strengthening internal oversight, organizations can reduce opportunities for fraud and enhance accountability, particularly in high-risk industries. This finding highlights the practical value of effective monitoring in creating a more transparent and fraud-resistant organizational culture.

Earnings management has a positive effect on financial statement fraud

The findings suggest that earnings management does not influence financial statement fraud FSF in this research. The non-significant effect of earnings management on fraud indicates that companies in the sample might not heavily depend on earnings manipulation as a strategy. This finding is consistent with the study conducted by Khamainy et al. (2022), which also concluded that earnings management does not necessarily lead to FSF, particularly in organizations with strong governance structures and ethical cultures. These findings emphasize the need for organizations to prioritize governance practices and ethical standards to mitigate risks associated with earnings manipulation. By fostering a culture of accountability and implementing robust oversight mechanisms, companies can reduce the likelihood of both earnings management and FSF.

History of sales has a positive effect on financial statement fraud

The hypothesis testing results show that the history of sales is not significant. This suggests that company growth, measured by revenue changes, does not significantly influence FSF in this study. The insignificance of growth suggests that companies experiencing rapid expansion do not necessarily engage in fraudulent behavior. However, this finding contradicts the study conducted by Khamainy et al. (2022), which posits that a history of fluctuating or declining sales significantly impacts FSF. These results highlight the importance of contextual factors in understanding the relationship between sales history and FSF. They emphasize the need for organizations to focus on strengthening internal controls and governance frameworks to mitigate fraud risks, regardless of sales performance trends.

Earnings growth has a positive effect on financial statement fraud

The findings suggest that earnings growth does not significantly affect FSF. This might be due to inconsistent fluctuations in earnings growth or the presence of monitoring mechanisms that limit opportunities for manipulation. The lack of a significant effect of earnings growth on financial statement fraud could stem from inconsistent earnings trends in the sample. Companies with irregular earnings growth may rely more on operational adjustments rather than manipulation to stabilize performance. Moreover, this result might highlight the importance of contextual factors, such as industry-specific challenges or macroeconomic conditions, which moderate the relationship between earnings growth and fraudulent behavior. This finding allign with the research conducted by Khamainy et al. (2022), which similarly concluded that earnings growth had no effect on FSF. This suggests that in environments with strong governance and effective monitoring, earnings growth alone may not be a sufficient trigger for fraudulent behavior.

Change of director has a positive effect on financial statement fraud

The findings suggest that changes in directors do not significantly affect FSF. Director changes might not strongly influence strategic decision-making processes related to financial reporting in the short term. The absence of a significant relationship between director changes and FSF suggests that new directors may not immediately impact financial reporting practices. This finding aligns with the studies conducted by (Fathmaningrum & Anggarani, 2021; Khamainy et al., 2022; Sari et al., 2022), which similarly concluded that changes in directors do not necessarily influence the likelihood of FSF. However, the result contrasts with the findings of (Nur Triyanto et al., 2023; Omukaga, 2020), who suggest that director changes significantly impact financial statement fraud. This discrepancy may reflect differences in industry characteristics, governance structures, or the timing of director changes, emphasizing the importance of contextual factors in understanding the relationship between leadership changes and FSF.

CONCLUSION

This study identifies key factors influencing financial statement fraud (FSF), including financial stability, financial targets, and effective monitoring. Financial instability and performance targets create pressure on management, leading to potential fraud, especially without strong governance. Effective monitoring significantly reduces FSF, supporting previous research by (Khamainy et al., 2022). However, external pressure, history of sales, earnings growth, and changes in directors did not significantly impact FSF in this study, suggesting that strong internal controls mitigate these factors. These findings align with Agency Theory and the New Fraud Diamond Model, emphasizing the role of pressure and opportunity in fraud. The study highlights the importance of robust governance to prevent FSF and encourages future research on cultural and regulatory influences in different contexts.

SUGGESTION

1. Practical suggestions: Companies should strengthen effective monitoring by enhancing the independence and competence of audit committees and aligning financial targets with long-term goals to reduce fraud risks. Regulators should establish clearer governance guidelines emphasizing transparency and accountability. Firms in financially unstable industries must adopt robust risk management frameworks to detect and mitigate fraud.
2. Theoretical suggestions: Future research should focus on high-risk industries, such as energy, banking, and mining, to explore fraud dynamics in sectors with complex financial operations and regulatory pressures. This addresses the limitation of this study, which is confined to a specific industry. Qualitative methods, such as case studies or interviews, could also better capture nuanced variables like external pressure and director changes. While not feasible in this study due to resource constraints, these approaches can provide deeper insights into organizational and behavioral drivers of fraud, enhancing the applicability of findings in varied contexts.

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