

Analysis Of The Fraud Pentagon Factors In Influencing Financial Statement Fraud: Digital Maturity As A Moderating Variable

Analisis Faktor *Fraud Pentagon* Dalam Memengaruhi Kecurangan Laporan Keuangan: Digital Maturity Sebagai Pemoderator

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ABSTRACT

This study examines the effect of the fraud pentagon framework on financial statement fraud by incorporating digital maturity as a moderating variable. The research analyses banking companies listed on the Bursa Efek Indonesia during the 2022-2024 period. A purposive sampling technique was applied in selecting the sample, resulting in 35 companies as the units of analysis. Hypothesis testing was conducted using regression analysis. The empirical findings indicate that arrogance measured by the number of CEO photographs disclosed in annual reports, has a statistically significant effect on financial statement fraud. In contrast, pressure, opportunity, rationalization, and competence do not demonstrate a significant relationship with financial statement fraud. Furthermore, digital maturity is not proven to significantly moderate the relationship between the elements of the fraud pentagon and financial statement fraud.

Keywords : Digital Maturity, Fraudulent Financial Statement, Fraud Pentagon

ABSTRAK

Studi ini menelaah dampak kerangka *fraud pentagon* pada manipulasi laporan finansial dengan menjadikan *digital maturity* sebagai variabel pemoderator. Riset ini mengkaji korporasi perbankan yang tercatat pada BEI sepanjang kurun waktu 2022-2024. Metode *purposive sampling* diterapkan dalam proses seleksi sampel, sehingga didapatkan 35 korporasi sebagai unit kajian. Uji hipotesis dijalankan melalui analisis regresi. Temuan empiris memperlihatkan bahwa arogansi, yang direpresentasikan lewat banyaknya foto CEO pada laporan tahunan, memiliki dampak bermakna secara statistik pada manipulasi laporan finansial. Di lain pihak, tekanan, peluang, rasionalisasi, serta kompetensi tidak memperlihatkan keterkaitan bermakna terhadap manipulasi laporan finansial. Lebih jauh, *digital maturity* tidak teruji secara bermakna dalam memoderasi keterkaitan antara komponen *fraud pentagon* dan manipulasi laporan finansial.

Kata kunci: Digital Maturity, Fraud Pentagon, Kecurangan Laporan Keuangan

1. Introduction

Financial statements function as a fundamental instrument for evaluating an entity's performance and financial position. They also serve as an essential means of communication for external parties (Jatmiko et al., 2020). Furthermore, financial statements represent a company's reputation and value in the eyes of stakeholders, thereby playing an important role in the economic decision-making process.

The strategic role of financial statements encourages companies to present financial reports that reflect positive performance in order to maintain stakeholders' perceptions. Such conditions increase the tendency of some corporations to engage in manipulation in financial reporting by presenting engineered financial data for certain purposes (Handayani et al., 2023). Fraud is defined as a deviant act intentionally carried out through deception and dishonesty to obtain personal benefits at the expense of other parties (Fernando & Pangaribuan, 2023). According to the results of the Indonesia Fraud Survey 2025, fraud

remains a serious threat to organizational integrity in both the public and private sectors in Indonesia (ACFE, 2025). Along with the increasing complexity of modus operandi and the capabilities of perpetrators, fraudulent practices have generated increasingly significant impacts in weakening economic stability. In addition, instability in a company's financial condition increases the likelihood of fraudulent behavior (Megawati & Murwaningsari, 2021).

Fraud is commonly categorized into three main types, namely asset misappropriation, corruption, and financial statement fraud. Among these three types, based on the Report to the Nations, financial statement fraud accounts for a smaller proportion of cases compared to other types; however, it results in the largest financial losses, with a median loss of \$766,000 per case (ACFE, 2024). Furthermore, within the Asia–Pacific region, Indonesia ranks third in terms of the number of fraud cases. Based on industry classification, globally, the banking and financial services sector recorded the highest number of fraud cases in 2024, totaling 305 cases. The Indonesia Fraud Survey 2025 also reveals that the banking and financial services industry is among the top three sectors with the highest fraud cases in Indonesia. This is supported by a fraud case at PT Bank Maybank Indonesia Tbk (BNII) amounting to IDR 30 billion, which resulted from the abuse of authority by an internal party (Rakhmayanti, 2025). This case reflects weaknesses in internal control and the presence of opportunity, competence, and arrogance factors that enabled the perpetrator to commit the fraud.

If fraudulent activities are allowed to persist over a long period, their impact can be highly detrimental to a company. Historical evidence indicates that financial statement fraud in companies is generally revealed only at a relatively late stage (Andrew et al., 2022). In addition to violating compliance with applicable laws and regulations, fraud also has the potential to damage a company's reputation and integrity, which are built upon stakeholders' trust (Agency, 2024). On the other hand, fraudulent activities typically occur gradually and systematically; therefore, when they are eventually uncovered, the company may face significant financial losses.

Manipulative behavior can essentially be triggered by various factors. In 2011, Horwarth developed the concept of the fraud triangle into the fraud pentagon. The components of the fraud pentagon theory consist of elements that are considered to trigger fraudulent behavior, namely pressure, opportunity, rationalization, competence, and arrogance (Horwarth, 2011). The utilization of technology can have a positive impact on fraud prevention efforts (Syahronny & Dewayanto, 2024), while other studies suggest that companies with higher levels of digitalization tend to experience lower levels of fraud and possess better fraud detection capabilities (Xu et al., 2024). Considering that the banking sector is characterized by a high level of transactional complexity, the implementation of digital technology becomes crucial in mitigating fraud risk (Martiar, 2021). Nevertheless, the presence of digital technology does not automatically eliminate the risk of fraud; rather, it may alter the patterns and mechanisms through which fraudulent activities occur. The level of a company's digital maturity determines the extent to which technology is implemented in an integrated and effective manner and oriented toward strengthening internal control systems, rather than merely representing symbolic technological adoption.

Previous studies have predominantly focused on examining the impact of fraud pentagon components on financial statement fraud. However, research that incorporates technological advancement or digitalization as a moderating variable in this relationship remains relatively limited. Based on this gap, the present study aims to examine the influence of fraud pentagon components on financial statement fraud by positioning digital maturity as a moderating variable. This study is expected to provide theoretical contributions as well as empirical evidence regarding the application of the fraud pentagon framework and its implications for financial statement fraud, particularly in the banking sector.

Based on the variables examined in this study, the research problem is formulated: How do the elements of the fraud pentagon influence financial statement fraud, with digital maturity acting as a moderating variable.

2. Literature Review and Hypothesis

Agency Theory

This study employs Agency Theory as the grand theory. Agency theory is a conceptual framework that explains the contractual relationship between the principal (the owners of the corporation) and the agent (management), to whom decision-making authority and the responsibility for managing the organization are delegated. In this relationship, the principal delegates decision-making authority to the agent to act in the best interests of the principal. Differences in interests and information asymmetry may lead to agency conflicts. Agency theory emphasizes the importance of aligning the interests of the principal and the agent (Hendrawaty, 2017).

Management bears the responsibility to improve corporate performance in order to maximize the wealth of the owners. The success of management in achieving performance targets is generally accompanied by rewards or specific incentives (Arwani, 2024). Such conditions may encourage management to manipulate financial statements to portray the company's performance more favorably, which ultimately facilitates the fulfillment of their personal interests.

Fraud Pentagon Theory

The fraud pentagon concept is an evolution of the fraud triangle, which was later expanded into the fraud diamond and subsequently refined into the fraud pentagon in 2011 by Crowe through the addition of one component, namely arrogance. This refinement is based on the view that fraud is not solely driven by pressure, opportunity, and rationalization, but is also influenced by an individual's capability to execute the act as well as a sense of superiority that encourages the abuse of authority. Thus, the fraud pentagon consists of five main components: pressure, opportunity, rationalization, competence, and arrogance.

The competence component represents an individual's capability to understand organizational processes and exploit weaknesses in the internal control system in order to carry out fraudulent activities, while arrogance reflects an individual's sense of superiority and greed that leads them to believe they are immune to corporate controls and regulations (Ferina et al., 2023; Rahmatika, 2020).

This framework enables investigators to examine both the structural weaknesses within an organization and the psychological aspects as well as interpersonal dynamics that may trigger fraudulent behavior (Pangaribuan, 2026). Therefore, the fraud pentagon concept provides an appropriate framework for understanding the determinants of financial statement fraud, particularly in a managerial context.

Financial Statement Fraud

Financial statement manipulation refers to the intentional act of providing inaccurate or misleading information carried out by management. Such actions are generally intended to create an image of the company's performance and financial condition that appears better than the actual reality (Pangaribuan, 2024). Financial statement manipulation constitutes an intentional material misstatement that has the potential to harm investors and creditors (Herianti et al., 2023).

In line with this perspective, financial statement manipulation is carried out to conceal the company's actual financial condition through accounting engineering practices (Suryandari & Endiana, 2019). Therefore, it can be concluded that financial statement manipulation is an

intentional managerial action that leads to material misstatements and negatively affects decision-making processes.

Digital Maturity

Digital maturity reflects the level of an entity's digital advancement in adopting, integrating, and strategically optimizing the implementation of technology within its business processes. Digital maturity is not solely related to the application of technology, but also depends on the readiness of human resources and the effectiveness of organizational governance in responding to digital transformation (Yilmaz, 2023).

In the context of the banking sector, digital maturity plays an important role in strengthening internal control systems, enhancing transparency, and improving technology-based monitoring mechanisms. Organizations with a high level of digital maturity tend to have more integrated reporting systems and strong digital audit trails, thereby reducing the likelihood of financial statement fraud (Wagner et al., 2023).

In identifying the level of digital maturity in the banking sector, there are eight determining factors: IT governance, IT architecture, IT risk management, cyber resilience and security, technology adoption, data management, collaboration, and consumer protection (OJK, 2023). These factors reflect banks' readiness to manage operational risks and fraud more effectively through the utilization of digital technology.

The Effect of Pressure on Financial Statement Fraud

The element of pressure is a factor that encourages management to engage in financial statement fraud, particularly when management is under pressure to achieve certain targets. From the perspective of agency theory, pressure arises due to the conflict of interest between principals and agents, where management is required to demonstrate optimal financial performance in order to meet the expectations of the owners.

In this study, the pressure component is represented by the financial target, which is measured using Return on Assets (ROA). ROA indicates a company's ability to generate profits from the assets it manages. Ambitious financial targets can create significant pressure on management, potentially encouraging earnings management practices that are classified as financial statement manipulation (Adhania et al., 2024; Fadhilah et al., 2024). Several studies have found that financial targets have a significant effect on financial statement manipulation (Meihendri et al., 2023; Rosim & Etty Murwaningsari, 2023). However, other studies have reported that financial targets do not have an effect on financial statement manipulation (Aprilia et al., 2022). These inconsistent findings indicate that financial targets remain relevant for further investigation.

H1: Pressure has a significant effect on financial statement fraud.

The Effect of Opportunity on Financial Statement Fraud

The representation of the opportunity component in the fraud pentagon is reflected through ineffective monitoring. Referring to SAS No. 99, weak corporate oversight functions can create opportunities for fraudulent practices to occur (Andriani et al., 2022). From the perspective of agency theory, ineffective monitoring can exacerbate information asymmetry between principals and agents, thereby providing management with greater opportunities to engage in manipulative actions (Ghaisani & Supatmi, 2023).

Several previous studies have demonstrated a significant effect of weak monitoring on financial statement manipulation practices (Ikhsan, 2025; Musfi & Soemantri, 2024). Conversely, other studies have revealed that this variable does not have a significant effect on financial statement fraud (Gita et al., 2025). These inconsistent findings indicate that the ineffective monitoring variable still requires further in-depth investigation.

H2: Opportunity has a significant effect on financial statement fraud.

The Effect of Rationalization on Financial Statement Fraud

The rationalization component reflects how management legitimizes or justifies the fraudulent behavior it commits. The proxy used to measure rationalization in this study is auditor change. If a company frequently changes its auditor, this may indicate a management strategy to reduce the effectiveness of external oversight, which ultimately increases the risk of financial statement manipulation (Dewi & Yuliati, 2022). This auditor change is carried out so that the replacement auditor does not have the opportunity to detect fraudulent practices, allowing financial data manipulation to continue without consistent examination (Oktaviany & Reskino, 2023).

Previous studies confirm that auditor changes have a significant effect on financial statement fraud (Ginting & Daljono, 2023). However, other studies show that the auditor change variable does not have a significant effect on financial statement manipulation (Lionardi & Suhartono, 2022). These inconsistent findings indicate that the auditor change variable still deserves further investigation.

H3: Rationalization has a significant effect on financial statement fraud.

The Effect of Competence on Financial Statement Fraud

The proxy for the competence element is represented by a change in directors. Although the rotation of the board of directors is a common phenomenon in corporate dynamics, changes in the composition of the board may disrupt governance stability and the orientation of strategic decision-making within the organization. In the fraud pentagon framework, competence refers to the capability, authority, and managerial insight that can be misused to facilitate fraudulent actions. Therefore, changes in directors may trigger conflicts of interest and create opportunities for financial statement manipulation (Rachman et al., 2023).

Previous research indicates that changes in directors have an effect on financial statement fraud (Ghaisani & Supatmi, 2023). However, other studies conclude that this variable does not have an effect on financial statement manipulation (Setyono et al., 2023). These differing findings indicate that the change in directors variable remains relevant for further comprehensive investigation.

H4: Competence has a significant effect on financial statement fraud.

The Effect of Arogance on Financial Statement Fraud

The arrogance element is measured by the frequency of the CEO's photographs appearing in the company's annual report. Arrogance represents superiority, dominance of power, and excessive self-confidence, leading individuals to believe that they are not bound by regulations or internal control mechanisms. The intensity of a CEO's visibility, reflected in the number of photographs in the annual report, can signal narcissistic characteristics and an ambition to dominate power, which may potentially encourage fraudulent practices (Rohmatin et al., 2021).

Previous studies have found that the frequency of CEO photographs has an effect on financial statement manipulation (Novarina & Triyanto, 2022). On the other hand, other research has shown that this variable does not have a significant effect on financial statement fraud (Maharani & Napisah, 2024). These inconsistent findings indicate that the frequency of CEO photographs still needs to be examined more thoroughly.

H5: Arrogance has a significant effect on financial statement fraud.

Digital Maturity in Moderating the Effect of the Fraud Pentagon on Financial Statement Fraud

Digital maturity reflects the level of an organization’s maturity in utilizing digital technology in an integrated manner to support business processes, internal control, and decision-making. A high level of digital maturity contributes positively to banking performance and effectiveness (Safajoo et al., 2024; von Solms & Langerman, 2021). In the context of fraud control, digital maturity has the potential to strengthen monitoring systems, enhance data transparency, and reduce the opportunities for financial statement fraud.

Although previous studies have examined the fraud pentagon and digital maturity separately, research that integrates digital maturity as a moderating variable in the relationship between the fraud pentagon and financial statement fraud remains limited. Therefore, this study positions digital maturity as a moderating variable to examine its role in weakening or strengthening the influence of the fraud pentagon elements on financial statement fraud.

H6: Digital maturity significantly moderates the effect of pressure on financial statement fraud.

H7: Digital maturity significantly moderates the effect of opportunity on financial statement fraud.

H8: Digital maturity significantly moderates the effect of rationalization on financial statement fraud.

H9: Digital maturity significantly moderates the effect of competence on financial statement fraud.

H10: Digital maturity significantly moderates the effect of arrogance on financial statement fraud.

Conceptual Framework

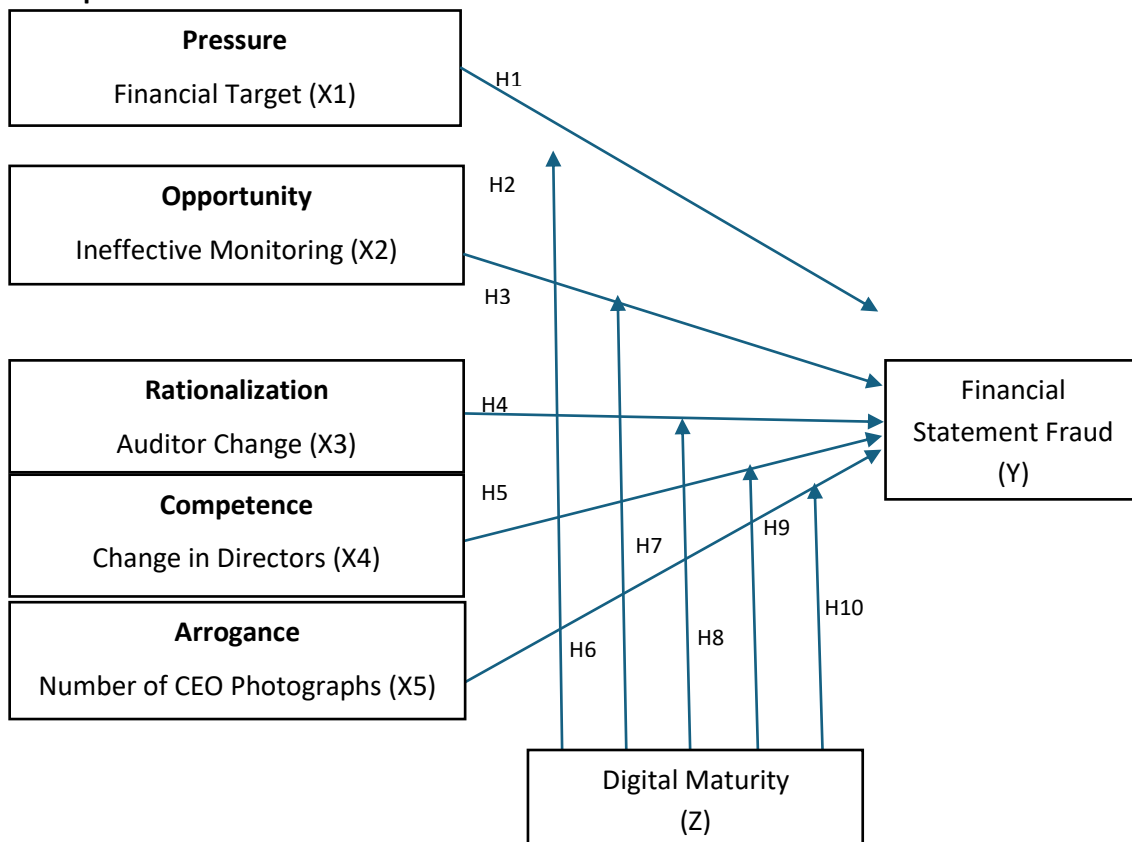


Figure 1. Conceptual Framework

3. Research Methods

This study employs a quantitative research approach with a correlational design to examine the relationship between the fraud pentagon factors and financial statement fraud, as well as the role of digital maturity as a moderating variable that may strengthen or weaken the relationship between these variables. The study uses secondary data in the form of annual reports and financial statements of banking companies obtained from the Indonesia Stock Exchange website (<https://www.idx.co.id/id>) and the official websites of the respective companies. The research population consists of banking institutions listed on the Indonesia Stock Exchange during the 2022–2024 period. The sample was selected using a purposive sampling technique based on predetermined criteria.

Table 1. Sample Selection

No.	Sample Criteria	Amount
1	Banking companies listed on the Indonesia Stock Exchange during 2022–2024	47
2	Banking companies that did not use Indonesian Rupiah (IDR) in their annual reports during 2022–2024	(1)
3	Banking companies that experienced losses in at least one period during 2022–2024	(7)
4	Companies that did not publish annual reports in at least one period during 2022–2024	(2)
5	Companies that did not present complete data in the annual reports for 2022–2024	(2)
Sample companies that met the criteria		35
Total Research Data (35 Companies × 3 Years)		105

Out of the total 47 banking institutions listed on the Indonesia Stock Exchange (IDX), 35 institutions met the sample selection criteria presented in Table 1, resulting in 105 observation data units ready for analysis.

This study employs five proxy variables as independent variables, namely financial targets, ineffective monitoring, auditor changes, changes in directors, and the frequency of CEO photographs. The dependent variable used is financial statement fraud, while digital maturity acts as the moderating variable. The operational definitions and measurements of each variable are presented in the following table:

Table 2. Operational Definition and Measurement of Variables

Variable	Operational Definition	Measurement
Financial Statement Fraud (F-score)	Financial statement fraud refers to the intentional manipulation of financial information by management to present the company's performance in a manner that does not reflect its actual condition.	$F\text{-Score} = \text{Accrual Quality} + \text{Financial Performance}$ $\text{Accrual Quality (RSST)} = \frac{\Delta WC + \Delta NCO + \Delta FIN}{\text{Average Total Assets}}$ $\text{Financial Performance} = \text{Change in Receivables} + \text{Change in Cash Sales} + \text{Change in Earnings}$ <p><i>An F-score > 1 indicates a high likelihood of financial statement fraud, whereas an F-score < 1 indicates a low likelihood of financial statement fraud.</i> (Adi & Viriany, 2025; Tinambunan & Januarti, 2022)</p>
Pressure	Financial targets represent managerial pressure	$ROA = \frac{\text{Net Income}}{\text{Total Assets}}$

(ROA)	to achieve a certain level of profitability that reflects the company's financial performance.	(Inayah & Chariri, 2024)
Opportunity (BDOU)	Ineffective monitoring reflects weak monitoring mechanisms that create opportunities for financial statement fraud to occur.	$BDOU = \frac{\text{Number of Independent Commissioners}}{\text{Total Number of Board of Commissioners}}$ (Deliana et al., 2022)
Rationalization (ACHANGE)	Auditor changes indicate a condition that management can use to justify or conceal financial statement fraud practices.	Dummy Variable Code 1 for companies that experienced an auditor change Code 0 for companies that did not experience an auditor change (Khamainy et al., 2022)
Competence (DCHANGE)	Changes in directors reflect shifts in managerial authority and competence that can potentially be exploited in financial statement fraud.	Dummy Variable Code 1 for companies that experienced a change in directors Code 0 for companies that did not experience a change in directors (Khamainy et al., 2022)
Arrogance (CEOPIC)	The number of CEO photographs reflects the level of dominance and arrogance of the company's leadership in the annual report.	Number of CEO Photographs in the Annual Report (Permatasari & Yulianti, 2025)
Digital Maturity	<i>Digital maturity refers to a company's level of advancement in utilizing digital technology to support internal controls and decision-making.</i>	$DM = \frac{\text{Disclosed Items}}{\text{Total Number of Items}}$ (OJK, 2023)

A quantitative approach is applied in this study using regression analysis techniques to test the hypotheses. Hypothesis testing is conducted through two regression equation formulations. The first formulation (1) is intended to examine the direct effect of the independent variables on financial statement manipulation, while the second formulation (2) is designed to explore the role of digital maturity as a moderating variable through moderation regression analysis. The regression model formulations are illustrated as follows:

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

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 (X_1 * Z) + \beta_7 (X_2 * Z) + \beta_8 (X_3 * Z) + \beta_9 (X_4 * Z) + \beta_{10} (X_5 * Z) + \epsilon \dots \dots \dots (2)$$

Description:

- α : Constant value
- $\beta_1 - \beta_{10}$: Regression coefficients
- Y : Financial Statement Fraud (F-score)
- X₁ : Financial Target (ROA)
- X₂ : Ineffective Monitoring (BDOU)
- X₃ : Auditor Change (ACHANGE)
- X₄ : Change in Directors (DCHANGE)
- X₅ : Number of CEO Photographs (CEOPIC)
- X₁ Z - X₅ Z : Interaction of independent variables with the moderating variable
- ϵ : Error term

Before hypothesis testing is conducted, a series of classical assumption tests are performed, including normality testing, heteroscedasticity testing, multicollinearity testing, and autocorrelation testing, to ensure the reliability of the regression model. Once all assumptions are satisfied, hypothesis testing is carried out at a 5% significance level. The entire data processing and analysis process is conducted using IBM SPSS version 31.

4. Results and Discussions

Classical Assumption Tests

Before conducting the classical assumption tests, outlier identification was performed on the data, followed by a trimming process to minimize the impact of extreme observations on the model. Handling outliers through trimming helps improve the fulfillment of the normality assumption in the regression model (Barnett & Lewis, 1984; Sihombing et al., 2023). This process resulted in a reduction of the sample size from 105 to 84 observations, which were subsequently used for testing.

Table 3. Normality Test

One-Sample Kolmogorov-Smirnov Test	
	Unstandardized Residual
N	84
Asymp. Sig. (2-tailed) ^c	.200 ^d

Source: Data processed by the author, SPSS version 31 (2026)

The results of the normality test show a value of 0.200, which exceeds the 0.05 significance level. This finding confirms that the residuals in this study are normally distributed, indicating that the normality assumption has been satisfied.

Table 4. Multicollinearity Test

	Variable	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.009	.140		.067	.947		
	ROA	.002	.016	.014	.119	.905	.744	1.345
	BDOU	.249	.147	.178	1.692	.095	.973	1.028
	ACHANGE	.021	.049	.045	.424	.673	.941	1.063
	DCHANGE	.007	.038	.020	.177	.860	.863	1.158
	CEOPIC	.062	.024	.269	2.529	.013	.950	1.053

Variable	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
DIGITAL MATURITY	-.331	.121	-.312	-2.726	.008	.820	1.219

Source: Data processed by the author, SPSS version 31 (2026)

In the multicollinearity test, all independent and moderating variables showed Tolerance values > 0.10 and VIF values < 10. These findings indicate the absence of high correlations among the independent variables in the regression model, confirming that the research model is free from multicollinearity issues.

Table 5. Heteroscedasticity Test

Variable	B	Std. Error	Beta	t	Sig.
1 (Constant)	.258	1.036		.249	.805
ROA	-.024	.122	-.034	-.194	.847
BDOU	.912	1.107	.123	.824	.414
ACHANGE	-.089	.351	-.039	-.253	.802
DCHANGE	.183	.263	.107	.698	.489
CEOPIC	.143	.191	.116	.751	.457
DIGITAL MATURITY	-.290	.843	-.059	-.344	.732

Source: Data processed by the author, SPSS version 31 (2026)

Heteroscedasticity testing was conducted using the Glejser test, which produced significance values for all independent and moderating variables above the 0.05 threshold (> 0.05). These findings confirm that the regression model in this study is free from heteroscedasticity.

Table 6. Autocorrelation Test

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.414 ^a	.171	.107	.153974	1.975

Source: Data processed by the author, SPSS version 31 (2026)

The results of the autocorrelation test show a Durbin-Watson (DW) value of 1.975, with the criteria being $dU < DW < 4 - dU$. Based on these criteria, it is obtained that $1.800 < 1.975 < 2.199$. Therefore, it can be concluded that the regression model is free from autocorrelation, and the residual independence assumption has been satisfied.

Descriptive Statistical Analysis

The descriptive statistics show an average ROA of 1.687 with relatively high variation, while BDOU and CEOPIC exhibit moderate variation. The mean F-score of 0.031 indicates that, in general, the sample companies are below the fraud indication threshold (F-score < 1). The maximum F-score value of 0.633 also does not exceed this threshold, suggesting that no companies engaged in financial statement fraud during the study period. Although there is variation with both positive and negative values, all observations remain within the range indicating no fraud. Digital maturity has an average value of 0.869, reflecting a relatively high level of digital maturity among the sample companies.

Table 7. Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation
ROA	84	.040	4.760	1.68714	1.222188
BDOOUT	84	.250	1.000	.55086	.116411
CEOPIC	84	1.000	4.000	2.61905	.709739
F-SCORE	84	-.299	.633	.03190	.162922
DIGITAL MATURITY	4	.375	1.000	.86905	.153896

Source: Data processed by the author, SPSS version 31 (2026)

Table 8 presents the frequency distribution of the dummy variables in this study. A total of 85.7% of the sample did not experience an auditor change, while only 14.3% underwent an auditor change. The low frequency of auditor changes indicates stable audit relationships within the banking industry under strict regulatory supervision. This condition suggests that rationalization, as represented by auditor changes, is relatively insignificant in the research sample.

Meanwhile, changes in directors occurred in 66.7% of the sample, reflecting relatively high managerial dynamics. This indicates that changes in directors represent competence, where individuals' capabilities may be leveraged to exploit opportunities for committing fraud.

Table 8. Descriptive Statistics: Frequency

Variable	N	Dummy	Frequency	%
ACHANGE	84	.000	72	85.7%
		1.000	12	14.3%
DCHANGE	84	.000	28	33.3%
		1.000	56	66.7%

Source: Data processed by the author, SPSS version 31 (2026)

Hypothesis Testing Results

In the multiple regression analysis, the coefficient of determination shows an Adjusted R² value of 0.033, indicating that the independent variables namely pressure, opportunity, rationalization, competence, and arrogance explain 3.3% of the variation in the dependent variable. The remaining 96.7% of the variation is influenced by factors beyond the scope of this research model.

Table 9. Coefficient of Determination Analysis

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.302 ^a	.091	.033	.160198

Source: Data processed by the author, SPSS version 31 (2026)

The simultaneous test (F-test) shows a significance value of 0.179 (> 0.05). This result indicates that the combined ability of all independent variables to explain the variation in financial statement fraud is still relatively weak in this research model.

Table 10. Simultaneous Test (F-test)

ANOVA ^a						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.201	5	.040	1.569	.179 ^b
	Residual	2.002	78	.026		
	Total	2.203	83			

Source: Data processed by the author, SPSS version 31 (2026)

A summary of the partial (t-test) results for each variable in the regression model is presented in the following table:

Table 11. Partial Test (t-test)

	Variabel	B	Std. Error	Beta	t	Sig.
1	(Constant)	-.223	.115		-1.943	.056
	ROA	-.015	.015	-.109	-.943	.349
	BDOU	.247	.153	.176	1.612	.111
	ACHANGE	.037	.051	.081	.729	.468
	DCHANGE	-.001	.040	-.004	-.031	.975
	CEOPIC	.053	.025	.232	2.111	.038

Source: Data processed by the author, SPSS version 31 (2026)

Referring to the multiple linear regression output presented in Table 11, the regression model for this study is formulated as follows:

$$F\text{-score} = -0.223 - 0.015ROA + 0.247BDOU + 0.037ACHANGE + 0.001DCHANGE + 0.053CEOPIC + \epsilon \dots \dots \dots (3)$$

After conducting the multiple linear regression analysis, the next stage is moderation regression analysis, which aims to examine the interaction between the moderating variable and the independent variables on the dependent variable. As shown in Table 12, the Adjusted R² value is 0.083, indicating an increase in the model’s explanatory power compared to the previous stage (from 3.3% to 8.3%). This means that the independent variables interacted with the moderating variable are able to explain 8.3% of the variation in the dependent variable, while the remaining 91.7% is determined by factors outside the scope of the model. However, this increase in explanatory power does not automatically confirm the presence of a moderating effect, as the moderation function depends on the significance of the interaction coefficients.

Table 12. Coefficient of Determination Analysis

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.452 ^a	.205	.083	.156002

Source: Data processed by the author, SPSS version 31 (2026)

Next, the simultaneous test (F-test) produced a significance value of 0.094 (> 0.05). This finding indicates that, collectively, the independent variables, the moderating variable, and all interaction terms do not have a significant effect on financial statement fraud.

Table 13. Simultaneous Test (F-test)

ANOVA ^a						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.451	11	.041	1.684	.094 ^b
	Residual	1.752	72	.024		
	Total	2.203	83			

Source: Data processed by the author, SPSS version 31 (2026)

The results of the moderation interaction analysis are presented in the following table:

Table 14. Moderation Interaction Test

	Variable	B	Std. Error	Beta	t	Sig.
1	(Constant)	-.218	.564		-.387	.700
	DIGITAL MATURITY	-.099	.674	-.093	-.146	.884
	ROA	-.104	.125	-.780	-.835	.407
	BDOUT	.585	.967	.418	.606	.547
	ACHANGE	.079	.255	.170	.309	.758
	DCHANGE	.291	.250	.846	1.165	.248
	CEOPIC	.050	.167	.218	.300	.765
	ROA*DIGITAL MATURITY	.114	.135	.834	.844	.402
	BDOUT*DIGITAL MATURITY	-.395	1.085	-.328	-.364	.717
	ACHANGE*DIGITAL MATURITY	-.044	.288	-.083	-.154	.878
	DCHANGE*DIGITAL MATURITY	-.320	.278	-.836	-1.152	.253
	CEOPIC*DIGITAL MATURITY	.025	.191	.119	.128	.898

Source: Data processed by the author, SPSS version 31 (2026)

Referring to the moderation regression output presented in Table 14, the regression model for this study is formulated as follows:

$$F - score = -0.218 - 0.104ROA + 0.585BDOUT + 0.079ACHANGE + 0.291DCHANGE + 0.050CEOPIC + 0.114(ROA * DM) - 0.395(BDOUT * DM) - 0.044(ACHANGE * DM) - 0.320(DCHANGE * DM) + 0.025(CEOPIC * DM) + \epsilon$$

The Effect of Pressure on Financial Statement Fraud

The pressure variable, represented by financial targets using the ROA indicator, shows a significance value of 0.349 (> 0.05), indicating that pressure does not have a significant effect on financial statement manipulation. Therefore, the first hypothesis (H1) is rejected. Although the fraud pentagon framework assumes that performance pressure increases the risk of fraud, this finding suggests that pressure does not automatically trigger manipulative behavior. This result aligns with previous studies that found no significant effect of financial targets on financial statement fraud (Aprilia et al., 2022).

The Effect of Opportunity on Financial Statement Fraud

The opportunity variable, represented by ineffective monitoring using the BDOU indicator, shows a significance value of 0.111 (> 0.05), indicating that ineffective monitoring also does not have a significant effect on financial statement manipulation. Therefore, the second hypothesis (H2) is rejected. Although the coefficient shows a positive direction, this finding demonstrates that weak monitoring has not been statistically validated as a driver of fraudulent practices, meaning that the opportunity factor alone is insufficient to trigger financial statement fraud. This result is consistent with previous studies that found no significant effect of ineffective monitoring on financial statement fraud (Santoso et al., 2025).

The Effect of Rationalization on Financial Statement Fraud

The rationalization variable, represented by auditor changes using the ACHANGE indicator, shows a significance value of 0.468 (> 0.05), indicating that it does not have a significant effect on financial statement manipulation. Consequently, the third hypothesis (H3) is rejected. This finding suggests that auditor rotation does not automatically represent managerial justification for conducting financial statement manipulation. This result is consistent with previous studies that found no significant effect of rationalization on financial statement fraud (Lionardi & Suhartono, 2022).

The Effect of Competence on Financial Statement Fraud

The competence variable, represented by changes in the board of directors, shows a significance value of 0.975 (> 0.05), indicating no effect on financial statement manipulation. Therefore, the fourth hypothesis (H4) is rejected. This finding suggests that changes in the composition of the board of directors do not necessarily reflect the capability to commit fraud. This result aligns with previous studies that found no significant effect of competence on financial statement fraud (Setyono et al., 2023).

The Effect of Arrogance on Financial Statement Fraud

Unlike the other variables, arrogance, represented by the frequency of CEO photographs, shows a significance value of 0.038 (< 0.05), indicating a positive and significant effect on financial statement manipulation. Therefore, the fifth hypothesis (H5) is accepted. This finding supports the fraud pentagon assumption that a leader's sense of superiority and dominance can increase the likelihood of financial statement fraud. The result is consistent with previous studies that found a significant effect of arrogance on financial statement fraud (Novarina & Triyanto, 2022).

Digital Maturity in Moderating The Effect of Pressure on Financial Statement Fraud

The results suggest that in corporations with higher levels of digital maturity, pressure represented by financial targets tends to reduce the occurrence of financial statement fraud. However, this tendency does not show sufficient statistical significance.

Digital Maturity in Moderating the Effect of Opportunity on Financial Statement Fraud

The research findings suggest that in corporations with a higher level of digital maturity, the impact of opportunity, represented by weak oversight that allows manipulation in financial reporting, tends to decrease. This finding indicates that more integrated digital systems have the potential to strengthen internal control functions while simultaneously reducing opportunities for fraud. However, this tendency has not yet shown sufficient statistical significance.

Digital Maturity in Moderating the Effect of Rationalization on Financial Statement Fraud

The research findings suggest that in corporations with a higher level of digital maturity, the impact of rationalization, represented by auditor turnover, on the manipulation of financial reporting tends to weaken. This may be interpreted to mean that with more advanced digital systems, auditor turnover tends to be more regulatory in nature and does not directly create justification for fraudulent actions. In other words, digital maturity has the potential to mitigate the effect of rationalization on the risk of fraud. However, this tendency has not yet demonstrated sufficient statistical significance.

Digital Maturity in Moderating the Effect of Competence on Financial Statement Fraud

The research findings suggest that in corporations with a high level of digital maturity, the impact of competence, represented by the rotation of directors, on the manipulation of financial reporting tends to weaken. More advanced digital systems are able to limit the ability of individuals to misuse their capabilities in carrying out fraudulent activities. The presence of digital maturity has the potential to act as a barrier to fraud arising from individual capabilities. Nevertheless, these findings have not yet demonstrated sufficient statistical significance.

Digital Maturity in Moderating the Effect of Arrogance on Financial Statement Fraud

The research findings indicate that prior to considering the level of digital maturity, arrogance, represented by the frequency of CEO photographs, has a significant effect on the manipulation of financial reporting. Corporations with a higher level of digitalization tend to limit the space for individual dominance in influencing the occurrence of financial reporting fraud. However, this tendency has not yet demonstrated sufficient statistical significance.

5. Conclusion and Recommendations

This study examines the impact of the fraud pentagon factors on financial statement fraud, with digital maturity serving as a moderating variable in the banking sector listed on the Indonesia Stock Exchange during the 2022–2024 period. The results show that pressure, opportunity, rationalization, and competence do not have a significant effect on the manipulation of financial reporting. In contrast, arrogance, represented by the frequency of CEO photographs in the annual report, is found to have a significant positive effect. On the other hand, digital maturity tends to weaken the relationship between the elements of the fraud pentagon and financial statement fraud, although the effect is not statistically significant.

The contribution of this study lies in the empirical examination of the role of digital maturity within the fraud pentagon framework in the context of the Indonesian banking industry, which remains limited in the existing literature. These findings enrich the discussion on the integration of governance aspects and digital transformation in the analysis of financial statement fraud risk.

This study has limitations related to the model's ability to explain variations in financial statement fraud. Therefore, future research is recommended to consider alternative data collection methods, such as interviews or questionnaires, and to employ more comprehensive measurements of digital maturity in order to obtain deeper insights and more reliable results.

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