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**THE RELATIONSHIP BETWEEN FRAUD PENTAGO, AUDIT QUALITY, AND FINANCIAL PERFORMANCE WITH THE RISK OF FINANCIAL STATEMENT FRAUD: AN EMPIRICAL STUDY ON PT INDOFARMA**

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**Abstract**

This study aims to analyze the effect of Fraud Pentagon, Audit Quality, and Financial Performance on the risk of financial statement fraud at PT Indofarma Tbk during the period 2020-2023. The method used is a quantitative approach with a linear regression model, as well as fraud detection through the Beneish M-Score and evaluation of risk factors using the Fraud Pentagon Model. The results showed that the Beneish M-Score value was consistently above the -2.22 threshold, indicating the potential for earnings manipulation throughout the observation period, with the highest peak in 2022. In addition, the Fraud Pentagon Score increased significantly in 2023, mainly influenced by the pressure (1.00000) and competence (0.94069) factors, which are the main indicators of increased fraud risk. Although the regression test results show that the effect of the three variables is not statistically significant ( $p\text{-value} > 0.05$ ), the Fraud Pentagon has the highest practical contribution ( $R^2 = 0.302$ ) in explaining the variation of report manipulation. This finding confirms the importance of monitoring financial pressure and perpetrator competence in the early detection of fraud. This study recommends strengthening corporate governance, increasing auditor independence, and managing financial pressure as more effective fraud prevention strategies.

**Keywords:** Fraud Pentagon, Audit Quality, Financial Performance, Beneish M-Score, Financial Statement Manipulation

## INTRODUCTION

Financial statement fraud cases are a serious concern in various industry sectors due to their significant impact on stakeholders. The Association of Certified Fraud Examiners (ACFE) reports that although these cases are rare compared to other types of fraud, the losses are much greater, on average reaching USD 954,000 per case (Amalia, 2024; Andriani et al., 2022; Annafi & Yudowati, 2021; Kadek et al., 2020; Khomariah & Khomsiyah, 2023). The Fraud Pentagon Theory developed by Crowe Howarth adds two new elements, namely competence and arrogance, to previous concepts such as pressure, opportunity, and rationalization (Novarina & Triyanto, 2022). This theory is effective in detecting factors that cause financial statement fraud (Ivandi & Sitorus, 2019), especially in companies facing financial pressure or specific targets (Luhri et al., 2021).

Good audit quality is proven to reduce the risk of fraud. The external auditor is tasked with providing an independent opinion regarding the fairness of the financial statements, which plays an important role in preventing data manipulation (Khomariah & Khomsiyah, 2023; Luhri et al., 2021). In addition, poor financial performance is often the main trigger for fraud to improve the company's image in the eyes of shareholders (Dewi & Yuliati, 2022; Salmahabi Alliandra Putri et al., 2024). In Indonesia, major cases such as PT Kimia Farma and Garuda Indonesia highlight the importance of good corporate governance. (Asmaranti et al., 2023; Kadek et al., 2020; Sahla & Ardianto, 2023). This study aims to analyze the relationship between Fraud Pentagon Theory, audit quality, and financial performance on the risk of financial statement fraud, with a focus on PT Indofarma.

## REVIEW OF LITERATURE

### Fraud Pentagon Theory

The Fraud Pentagon Theory introduced by Marks adds two new elements, namely competence and arrogance, to the Fraud Triangle which previously only consisted of pressure, opportunity, and rationalization. Elements of competence and arrogance as the main factors that encourage individuals to commit fraud. Weaknesses in the internal control system create opportunities for individuals to commit fraud without being detected, supported by moral justifications (rationalization) that make these actions feel acceptable. Individuals with strategic positions or special skills (competence) and an attitude of superiority (arrogance) have a higher tendency to manipulate financial statements, especially when internal controls are weak (Beasley et al., 2000; Lou & Wang, 2011; Murphy & Dacin, 2011; Wolfe & Hermanson, 2004).

H1: Fraud Pentagon has a positive influence on financial statement fraud.

### Audit Quality

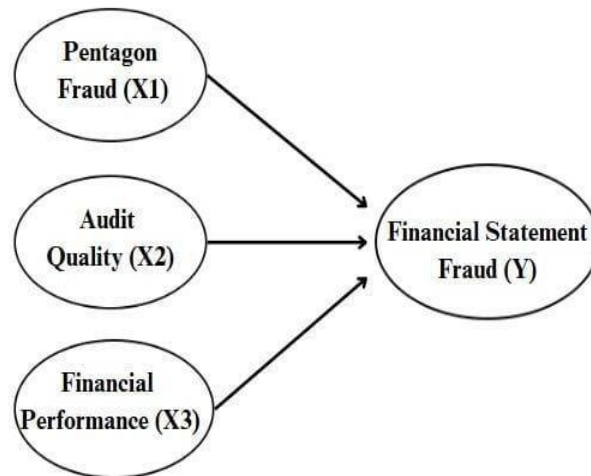
High audit quality is a crucial factor in preventing and detecting fraud in financial statements. DeAngelo defines audit quality as the probability of an auditor finding violations in the client's accounting system and reporting them objectively. Auditors who have a high reputation and a strong level of independence are able to provide more effective supervision than auditors with limited experience (Beasley et al., 2000). This is reinforced by the findings, which show that highly reputable auditors have a better ability to identify indications of fraud (Yousefi Nejad et al., 2024).

H2: This is reinforced by the findings, which show that highly reputable auditors have a better ability to identify indications of fraud.

### Financial Performance

The company's financial performance is often an indicator of the potential for fraud. (Skousen et al., 2009) found that financial pressure can encourage management to manipulate financial statements. A recent study by (Chen dan Li, 2023) added that companies with low liquidity and high leverage have a greater tendency to commit fraud.

H3: Financial performance has a significant influence on financial statement fraud.



**Figure 1.**  
**Research Framework**

Thus, an in-depth understanding of the elements of the Fraud Pentagon, combined with audit quality evaluation and financial performance analysis, can provide comprehensive insights into detecting and preventing financial statement fraud.

## RESEARCH METHOD

This research uses a quantitative approach with descriptive and causal designs. The descriptive design aims to provide an overview of the phenomenon of financial statement fraud, while the causal design is used to test the relationship between the Fraud Pentagon, audit quality, and financial performance on financial statement fraud (DeAngelo, 1981; Marks, 2012).

The data used is secondary data obtained from financial reports, annual reports, and corporate sustainability reports accessed through the official IDX website or the company's website. This data includes the Fraud Pentagon, audit quality, financial performance, and financial statement fraud (Beasley et al., 2000; Cressey's, 1953; Wang & Wang, 2022). In the table below are the variables used in this study.

**Table 1.**  
**Definition of Research Variables**

<b>Variable</b>	<b>Definition</b>
Financial Reporting Fraud	Measured using the Beneish M-Score model, which detects report manipulation based on financial ratio analysis (Skousen et al., 2009).
Fraud Pentagon - Pressure	Measured through leverage ratios.
Fraud Pentagon - Opportunity	Measured through internal controls.
Fraud Pentagon - Rationalization	Measured through non-operating expenses.
Fraud Pentagon - Competence	Measured through managerial position or experience.
Fraud Pentagon - Arrogance	Measured through regulatory compliance.
Audit Quality	Measured using auditor reputation indicators (Big 4 or non-Big 4).
Financial Performance	Measured through profitability (ROA), liquidity (CR), and solvency (DER) ratios.

**Data Collection and Processing**

Data collection is done by documenting annual and financial reports downloaded from the IDX website. The data is organized in tabular format using Microsoft Excel to facilitate analysis. The data was analyzed using multiple linear regression. The regression model used in this study is:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

The dependent variable in this study is Y, which represents financial statement fraud. The independent variables consist of X1 (Fraud Pentagon), X2 (Audit Quality), and X3 (Financial Performance). The constant in the regression model is denoted by  $\alpha$ , which indicates a fixed value when all independent variables are zero. The regression coefficient of each independent variable is denoted by  $\beta_1$ ,  $\beta_2$ , and  $\beta_3$ , which represents the magnitude of the influence of the independent variable on the dependent variable. Meanwhile,  $\varepsilon$  symbolizes the error term, which is the residual value that reflects the influence of other factors not included in the regression model.

**RESULTS AND DISCUSSION**

This section presents research findings based on the analysis of the Fraud Pentagon, Audit Quality, and Financial Performance on the risk of fraud in the financial statements of PT Indofarma Tbk during the period 2020-2023. The analysis was conducted using the Beneish M-Score approach to detect indications of financial statement manipulation and the Fraud Pentagon Model to evaluate factors that contribute to potential fraud.

### Indications of Financial Statement Manipulation

Beneish M-Score is used to identify the possibility of earnings manipulation based on eight financial ratios (Beneish, 1999). The calculation results summarized in Table 1 show that PT Indofarma Tbk has an M-Score value that is consistently greater than the threshold of -2.22, which indicates the potential for financial statement manipulation.

**Table 2.**  
**Beneish M-Score PT Indofarma Tbk (2020–2023)**

Year	Beneish M-Score	Manipulation Indicator
2020	4,48084	Yes
2021	2,98953	Yes
2022	5,26996	Yes
2023	4,29859	Yes

The fluctuation of the M-Score value shows an unstable trend, with the highest peak in 2022 (5.26996), which indicates a high potential for earnings manipulation. The decrease in 2021 and 2023 indicates the presence of other variables that may affect the company's accounting practices, and to understand more deeply the factors that affect the Beneish M-Score value, Table 2 displays the results of the calculation of financial ratios used in the Beneish model.

**Table 3.**  
**Financial Ratios of PT Indofarma Tbk (2020–2023)**

Ratio	Year			
	2020	2021	2022	2023
Days Sales in Receivables Index (DSRI)	2,0121	0,40171	1,34725	0,67514
Gross Margin Index (GMI)	0,62496	1,23762	5,20677	0,39498
Asset Quality Index (AQI)	1,47221	1,78711	0,61186	0,23043
Sales Growth Index (SGI)	1,26223	1,68752	0,33863	0,53408
Depreciation Index (DEPI)	0,69796	0,06125	1,16563	1,10013
Sales, General and Administrative Expenses Index (SGAI)	1,08512	0,5973	2,68526	1,825
Leverage Index (LVGI)	1,179	0,99801	1,26275	1,71686
Total Accruals to Total Assets (TATA)	-0,0272	-0,016	0,02606	0,32532
Return On Assets (ROA)	1,8E-05	0,03013	0,09945	0,58081
Current Ratio (CR)	1,0595	0,74054	1,14089	4,53898
Debt To Equity Ratio (DER)	2,98148	2,16331	2,6459	2,33104

From the table, it can be seen that the Gross Margin Index (GMI) increased dramatically in 2022 (5.2067), which could indicate pressure to increase profit margins unnaturally. In addition, the Sales Growth Index (SGI) decreased significantly from 2021 to 2022, which could indicate manipulation to maintain growth rates.

### Evaluation of Fraud Risk Factors

The Fraud Pentagon Model (Marks, 2012) was used to evaluate the five main elements that contribute to fraud: pressure, opportunity, rationalization, competence, and arrogance. The calculation results are shown in Table 2, which shows an increase in the Fraud Pentagon Score from 2020 (0.37193) to 2023 (0.70574).

**Table 4.**  
**Fraud Pentagon Score PT Indofarma Tbk (2020–2023)**

Ratio	Year			
	2020	2021	2022	2023
Pressure	0,25178	0	0,36828	1
Opportunity	0,79771	1	0,24503	0
Rationalization	0	0,03151	0,15097	1
Competence	0,57653	0	1	0,94069
Arrogance	0,23363	0	1	0,58799
Fraud Pentagon Score	0,37193	0,2063	0,55286	0,70574

The increase in Fraud Pentagon Score is mainly influenced by pressure (1,00000) and competence (0.54123) in 2023, which indicates that external pressure and the ability of individuals to commit fraud are increasing.

**Statistical Test**

Based on the partial regression result in Table 5, it is known that all independent variables do not have a statistically significant effect on the dependent variable, Beneish M-score ( $p\text{-value} > 0.05$ ).

**Table 5.**  
**Partial Regression Statistical Test Result**

(a)

**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
Pressure	4	0,000	1,000	0,40502	0,425392
Opportunity	4	0,000	1,000	0,51069	0,466614
Rationalization	4	0,000	1,000	0,29562	0,474067
Competence	4	0,000	1,000	0,62930	0,459415
Arrogance	4	0,000	1,000	0,45541	0,436172
FPScore	4	0,206	0,706	0,45921	0,216891
DSRI	4	0,402	2,012	1,10905	0,721310
GMI	4	0,395	5,207	1,86608	2,255337
AQI	4	0,230	1,787	1,02540	0,726368
SIG	4	0,339	1,688	0,95562	0,629301
DEPI	4	0,061	1,166	0,75624	0,507369
SGAI	4	0,597	2,685	1,54817	0,910711
LVGI	4	0,998	1,717	1,28915	0,305793
TATA	4	-0,027	0,325	0,07705	0,167093
ROA	4	0,000	0,581	0,17760	0,272009
CR	4	0,741	4,539	1,86998	1,787703
DER	4	2,163	2,981	2,53043	0,361159
BMScore	4	2,990	5,270	4,25973	0,945933
AuditQuality	4	0,000	1,000	0,75000	0,500000

Valid N (listwise) 4

(b)					
Model	Variable X	Variable Y	R Square	Coefficient B	Sig. (p-value)
I	Fraud Pentagon Score		0,302083	2.878	0,236111
II	Audit Quality	Beneish M-Score	0.001	-0.052	0,675694
III	Financial Performance		0.012	0,265278	0,618056

Model 1 shows that the Fraud Pentagon Score has an R Square of 0.302, which means it is able to explain 30.2% of the variation in financial statement manipulation scores. Although the significance value is 0.236 (above 0.05), the practical contribution is considerable, especially considering the increasing trend of fraud scores that align with the manipulation scores in the annual data. Models II and III, which examine the effect of Audit Quality and Financial Performance (ROA) on Beneish M-Score, respectively, show very small R Square values of 0.001 and 0.012, and significance values of 0.676 and 0.618, respectively. This indicates that both variables do not have a meaningful contribution either statistically or practically in explaining the potential manipulation of financial statements in this case.

Overall, although statistically insignificant, the Fraud Pentagon Score still shows potential that is worth taking into account in detecting early indications of fraud, especially in the context of companies under pressure such as the PT Indofarma case.

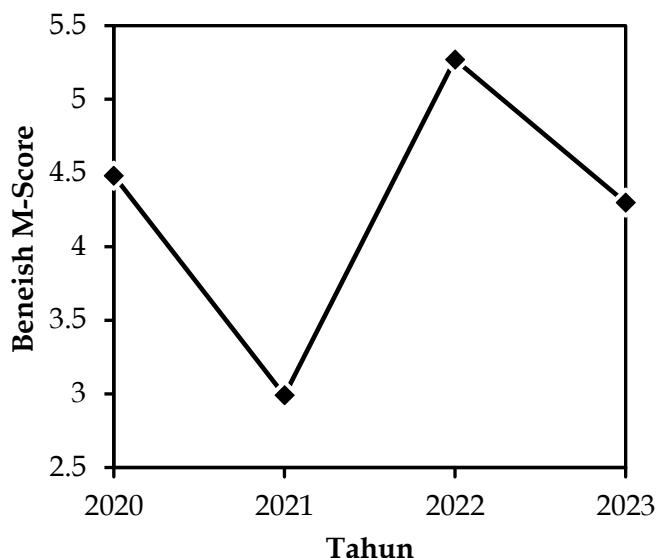
### Discussion

The following are the results of the discussion of the results of the research that has been carried out by covering several points as follows:

#### Evaluation of the Beneish M-Score on the Risk of Financial Statement Manipulation

The results of the Beneish M-Score calculation show that PT Indofarma Tbk has a value that is consistently above the -2.22 threshold (Table 1), which indicates a strong potential for earnings manipulation (Beneish, 1999).

The Beneish M-Score value of PT Indofarma Tbk from 2020 to 2023 is consistently above the threshold of -2,22, which indicate the potential for earnings manipulation. The highest value was recorded in 2022 (5.26996), which is in line with the surge in Gross Margin Index (GMI) of 5.2067. Figure 2 shows the trend of Beneish M-Score changes during the study period.



**Figure 2.**

**Tren Beneish M-Score PT Indofarma Tbk (2020–2023)**

The sharp increase in GMI may reflect the pressure to maintain profitability, especially in the post-pandemic transition period. This is in line with the study of Dechow et al. (2011), which states that companies with high external pressure tend to aggressively increase profit margins, including through manipulative practices and conversely, the decline in M-Score in 2021 and 2023 can be attributed to changes in accounting strategies, different market pressures, or the influence of stricter external supervision.

**Analysis of Fraud Pentagon Factors in Fraud Risk**

To understand the causes of the increase in financial statement communication, the Fraud Pentagon Score is used as an evaluation tool. Based on Table 3, there is an increase in the Fraud Pentagon Score from 0.37193 in 2020 to 0.70574 in 2023, and of the five factors analyzed, pressure and competence are the two dominant factors driving the risk of accidents.

**1. Pressure (Financial pressure) increased significantly in 2023**

The pressure value increased from 0.36838 in 2022 to 1 in 2023, which indicates that companies are facing high financial pressure, and this increase can be caused by the intense competition in the post-pandemic pharmaceutical industry, which results in companies feeling the need to present more favorable financial statements (Chen et al., 2021).

**2. Competence (Ability to Commit Fraud) Also Increases**

The competence value reached 0,94069 in 2023, which indicates that individuals within the company have high expertise to commit fraud. This is in line with research which states that the greater the competence of individuals in accounting and financial (Skousen et al., 2009).

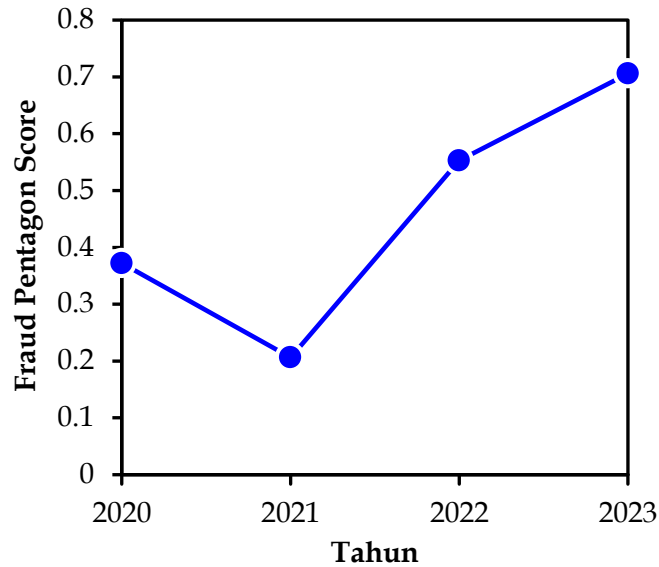
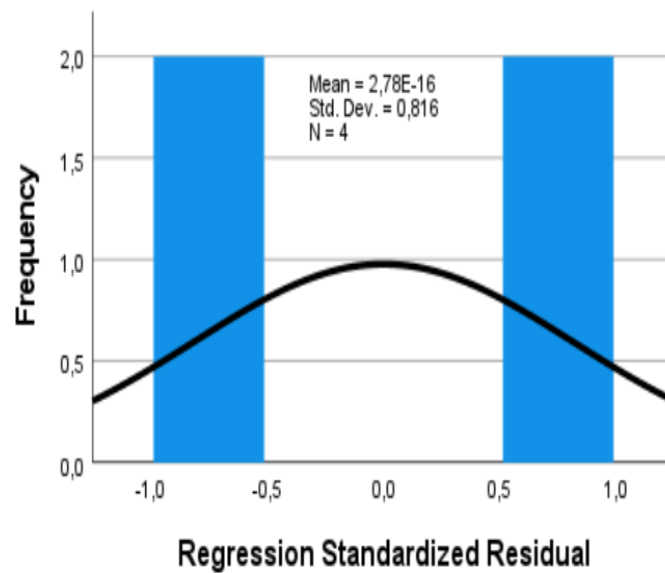


Figure 3. Comparison of Fraud Pentagon PT Indofarma Tbk (2020–2023)

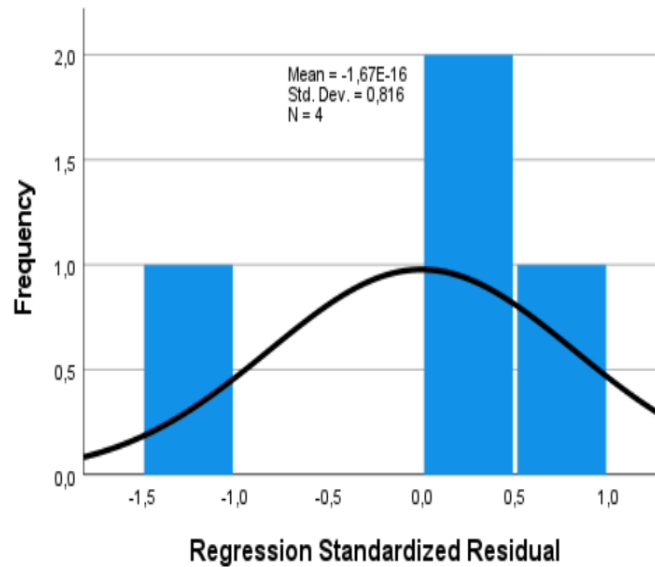
In addition to these two factors, the Arrogance value also shows a contribution that cannot be ignored (0,58799 pada 2023), although not as high as the two main factors. This indicates the potential for superiority or resistance to regulation in the organizational structure.

#### Correlation of Statistical Test and Fraud Practices

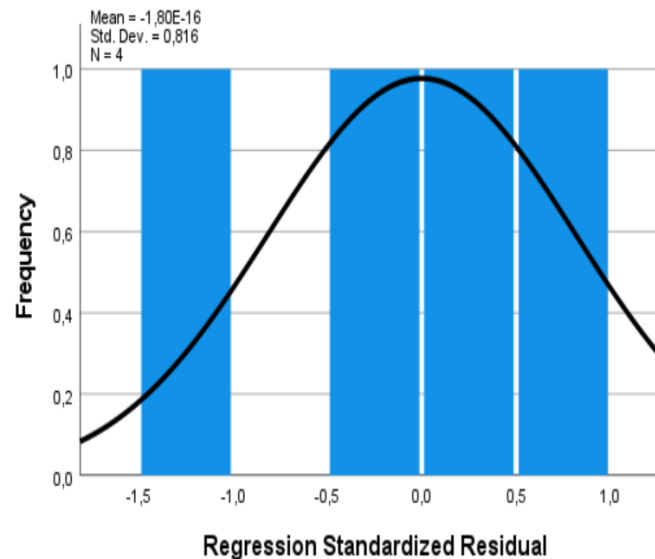
The relationship or correlation that arises between the research variables based on the result of partial regression modeling, which is visualized in Figure 4 below.



(a)



(b)



(c)

**Figure 4.**

**Relationship of Statistical Tests with Conceptual Framework**

In Figure 4. Stating that although the linear regression results did not show a statistically significant relationship ( $p\text{-value} > 0,05$ ), the first model to test the influence of Fraud Pentagon on Beneish M-Score had an  $R^2$  value of 0,302. This means that the 30,2% variation in financial statement manipulation scores can be explained by Pentagon Fraud factors.

The variable of Audit Quality and Financial Performance (ROA) shows a very low contribution, both in terms of  $R^2$  and significance value. This reflects that in the context of PT Indofarma, audit quality and financial performance are not enough to contain potential fraud if internal pressure and fraudster competence are high.

This condition is consistent with the fact that PT Indofarma is facing a legal investigation for alleged manipulation of financial statements, thus further emphasizing the importance of the Fraud Pentagon-based approach as a practical indicator in detecting and preventing fraud.

## CONCLUSION

This study analyzed the relationship between the Fraud Pentagon, Audit Quality, and Financial Performance on the risk of financial statement fraud at PT Indofarma Tbk during the period 2020–2023. The findings based on the Beneish M-Score and Fraud Pentagon Score revealed consistent indications of financial statement manipulation, with all values exceeding the threshold of -2.22. The most notable case occurred in 2022, when the M-Score reached 5.26996, which coincided with a sharp increase in the Gross Margin Index, suggesting significant potential for earnings management. The Fraud Pentagon Score also exhibited a rising trend, peaking in 2023 at 0.70574. Among the five elements, pressure and competence emerged as the most influential factors, underscoring the critical role of financial pressure and internal managerial capacity in driving fraud risk, while arrogance contributed to a lesser extent.

Although linear regression analysis did not show statistical significance ( $p\text{-value} > 0.05$ ), the model using the Fraud Pentagon Score explained 30.2% of the variation in the risk of financial statement manipulation ( $R^2 = 0.302$ ), demonstrating a meaningful functional relationship. In contrast, Audit Quality and Financial Performance were not found to exert strong effects, either statistically or practically, implying that external oversight alone is insufficient when internal pressure and managerial competence strongly influence fraudulent behavior. These findings affirm the relevance of the Fraud Pentagon framework as an effective early evaluation tool for detecting potential financial statement fraud, particularly in companies operating under high financial pressure such as PT Indofarma.

## RECOMMENDATION

The results of this study suggest several strategies to mitigate the risk of financial statement fraud. Strengthening corporate governance is essential, especially through tighter internal monitoring mechanisms and the establishment of a whistleblowing system to prevent manipulative practices. Enhancing audit quality is equally important, which can be achieved by increasing the independence of external auditors, ensuring greater transparency, and employing forensic audit techniques to uncover complex fraud schemes. Furthermore, managing financial stress through healthier corporate financial strategies is critical, particularly by reducing reliance on excessive leverage that often generates the pressure to engage in earnings manipulation.

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