Utilizing the diamond fraud theory perspective to analyze financial statement fraud

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ABSTRACT

This study aims to test the influence of elements of the fraud diamond theory, including pressure, opportunity, rationalization, and capability, on financial statement fraud. The population in this study were companies in the banking sub-sector listed on the Indonesia Stock Exchange for the period 2020-2022. The sample was selected using a purposive sampling method with four criteria, which resulted in 40 companies with 3 years of observation, so 120 samples were obtained that were worthy of observation. This study uses multiple regression analysis using the SPSS program. In this study, the pressure variable is measured using ROA, opportunity using ineffective monitoring, and rationalization using the total accrual ratio. In contrast, the capability variable is measured using the change of directors. The dependent variable is financial statement fraud measured using earnings management. The study's results indicate that pressure and rationalization have a positive and significant influence on financial reporting fraud in banking sub-sector companies listed on the IDX. On the other hand, opportunities and capabilities do not show a significant influence on financial reporting fraud in these companies.

Keywords: financial statement fraud, fraud diamond theory, banking sector, fraud detection.

1. Introduction

Fraud is increasingly sophisticated and challenging to detect, primarily due to advancements in technology. This complexity poses significant threats to the growth and sustainability of businesses. Misappropriation of assets and fraudulent activities against financial statements, often perpetrated by management, undermine investor confidence and can lead to substantial economic repercussions globally. The ramifications of financial statement fraud extend beyond immediate financial losses; they erode trust in markets and can paralyze economic entities worldwide, as highlighted by various studies [1], [2]. Furthermore, negative media coverage surrounding fraudulent practices severely impacts the integrity of the audit profession and regulatory bodies, creating a ripple effect that affects investors, company owners, regulators, auditors, and society as a whole [3], [4].

A 2022 survey by the Association of Certified Fraud Examiners (ACFE) revealed that while instances of financial statement manipulation are relatively rare, they can result in staggering losses—up to $593,000 per incident. Notably, the banking and financial services sectors reported the highest incidence of fraud, accounting for 22.30% of detected cases [5]. The liquidity of most assets in this sector makes it more vulnerable to manipulation [6]. The practice of financial statement manipulation also occurs in the Indonesian banking sector, attracting public attention, such as the case of *PT SNP Finance*, which caused a loss of IDR 14 trillion in 2018, *Bank Bukopin*, which reduced net profit by IDR 896.44 billion in 2016, and *Bank Tabungan Negara (BTN)* which was involved in the sale of non-performing loans and providing loans worth IDR 300 billion [7].

To understand the mechanics behind these fraudulent activities, the fraud diamond theory proposed by Wolfe and Hermanson offers valuable insights. This theory builds on Donald R. Cressey's fraud triangle and identifies four critical factors that contribute to fraud: opportunity, pressure, rationalization, and capability [8], and workplace financial statement fraud can only occur if the perpetrator has sufficient opportunity, pressure, rationalization, and ability to commit fraud [9].

Previous studies by [1] used variables in the fraud diamond theory to test the causes of fraud in financial reporting: pressure, opportunity, rationalization, and capability. His research showed that pressure significantly positively affected fraudulent financial reporting, while opportunity, rationalization, and capability hurt fraudulent financial reporting [1] The research results by [10]; showed different results; it turned out that all variables in the fraud diamond theory did not significantly affect fraudulent financial reporting. The results of other studies by [11], [12], and [13] showed that all variables in the fraud diamond theory had a significant negative effect on financial statement fraud.

Given the current landscape of financial reporting fraud—particularly within the banking sector—and the discrepancies in prior research findings, this study aims to investigate how elements of the fraud diamond theory influence tendencies toward financial reporting fraud among companies listed on the Indonesia Stock Exchange from 2020 to 2022.

Agency Theory

Agency theory by Jensen and Meckling (1976) is often used in research on aspects of fraudulent behavior [4]. This theory assumes the existence of an agency principles relationship between shareholders and management. The interests of the company and shareholders are often not aligned with the personal interests of top managers. According to Davis et al. (1997), cited by [4], agency theory assumes that management is usually motivated by personal interests and self-preservation, so management (agents) will commit fraud because it is best for individual and short-term interests.

The Influence of Pressure on Financial Statement Fraud

Pressure is a significant factor contributing to unethical behavior. Individuals may engage in fraudulent acts due to various pressures, which can be either financial or non-financial in nature. Even a perception of pressure can trigger such behavior, as perpetrators may feel compelled to act unethically, regardless of the truthfulness of that pressure [14], [4]. Previous studies have

shown that financial statement fraud is significantly positively influenced by pressure [1], [10], and [9]. However, the results of these studies differ from those conducted by [11] and [12], which show that pressure has a significant negative effect on financial statement fraud. Research hypothesis:

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

The Influence of Opportunities on Financial Statements Fraud

Fraud occurs when opportunities arise, as individuals often exploit available circumstances to engage in fraudulent behavior [15]. Such opportunities typically stem from inadequate controls or governance systems that enable individuals to perpetrate fraud [14]. The perpetrator's perception and belief heavily influence the likelihood of fraud; generally, the lower the perceived risk of being apprehended, the more probable it is that fraud will occur [16]. Research conducted by sources [10], [1], and [11] indicates that opportunities for fraudulent activity negatively impact the integrity of financial statements. Conversely, findings from research [13], reveal that opportunities can significantly contribute to financial statement fraud. Additionally, a study by [12] concludes that opportunities do not considerably affect fraudulent financial statements. The hypothesis put forward is:

H2. Opportunity has a significant negative effect on fraudulent financial reporting.

The Influence of Rationalization on Financial Statements Fraud

Rationalization is a concept suggesting that individuals committing unethical acts often create morally acceptable justifications beforehand. This means they differentiate between immoral actions and criminal activities. If a person is unable to justify dishonest behavior, they are less likely to engage in fraud [14]. Rationalization serves as a justification for fraudulent behavior stemming from a lack of personal integrity or moral reasoning among employees [17]. Research indicates that rationalization significantly contributes to the occurrence of fraudulent financial statements [12]. However, some studies show that rationalization has a negative impact on fraudulent financial statements [1], while other research indicates that it has no significant effect at all [13]. The hypothesis proposed in this study:

H3. Rationalization has a significant positive effect on fraudulent financial statements.

The Effect of Capability on Financial Statements Fraud

Capability refers to the combination of characteristics, skills, and abilities necessary to commit fraud [14]. According to research, high-level fraud cannot occur without individuals possessing significant expertise [1]. Moreover, it is believed that only those with substantial capability can recognize existing opportunities, pinpoint their vulnerabilities, and strategize effectively for committing fraud [4]. A study indicates that capability has a significant influence on fraudulent financial statements [11]. However, other research presents contrasting findings, suggesting that capability may not significantly impact fraud in financial statements [10]. Additionally, studies show that capability negatively affects financial statement fraud [12], [13]. The hypothesis becomes:

H4. Capability has a significant positive effect on fraudulent financial statements.

2. Method

Research design

This study uses a quantitative method in the form of an associative method that uses secondary data with a population of banking sub-sector companies listed on the Indonesia Stock Exchange (IDX) in 2020-2022. The objects of the study are elements of the internal control system, namely pressure (X1), opportunity (X2), rationalization (X3), and capability (X4) as independent variables. The dependent variable is financial statement fraud (Y).

Data collection instruments.

The data in this study were collected using the documentation method, namely by viewing and recording financial statements and annual reports of banking subsector companies listed on the Indonesia Stock Exchange from 2020 to 2022.

Participants/sample

The population in this study is the banking sub-sector companies listed on the Indonesia Stock Exchange (IDX) in 2020-2022, with the purposive sampling method used. The research sample can be seen in Table 1.

Table 1. Research Sample Calculation

No	Descriptions	Amount
1	Banking Companies Listed on the Indonesia Stock Exchange during the 2020-2022 period.	47
2	Companies that do not present their annual financial reports on the IDX website during the 2020-2022 period.	(1)
3	Banking companies that do not present their financial reports in Indonesian Rupiah (IDR).	(0)
4	Companies that only have complete data required for some observation year.	(6)
	Number of companies based on criteria.	40
	The total sample is based on the observation year for the 2020-2022.period.	120

Source: Processed secondary data, year 2024

Data analysis

In this research, several stages of data analysis were used, including Descriptive Statistical Analysis, Classic Assumption Test consisting of Normality Test, Multicollinearity Test, Heteroscedasticity Test, and Auto Correlation Test, followed by Multiple Linear Regression Test, Coefficient of Determination Test (R2), Test Model Feasibility (F Test) and t-Test.

Operational definition of variable Financial Statement Fraud

Financial statement fraud or accounting fraud is any intentional act or omission that results in materially misleading financial statements [18]. Earning management is used as an indicator to measure the level of financial statement fraud, using the discretionary accruals modified Jones model formula. The formula used is:

$$DACCit = TACCit / TAit\text{-}1 - NDACit$$

Description:
TACCit = total accrual of company i for year t.
TAit-1 = total asset of the company i for year t-1.
DAC-t-1 = discretionary accrual of the company i for year t.
NDACit = non-discretionary accrual of the company i for year

Pressure

Pressure is a factor that causes unethical behavior because pressure to carry out such attitudes can be financial or non-financial pressure and may not be real but can be felt [4]. Pressure is measured using financial targets measured by ROA [1]:

$$\frac{Earning\ After\ Tax\ and\ Interest\ (EAT)}{Total\ Assets}$$

Opportunity

Opportunity indicates the use of available circumstances to commit fraud created by ineffective control or governance systems. Opportunity is measured using effective monitoring and the ratio of the board of commissioner members (BDOUT) [14]; [1]:

$$BDOUT = \frac{Number\ of\ Independent\ Commissioners}{Total\ Board\ of\ Commissioners}$$

Rationalization

Rationalization is a concept that shows the justification of immoral actions and dishonest actions when he is involved in fraud [14]; [19]; [17]. Rationalization is measured using the total accrual ratio (TATA) [20]:

$$TATA = \frac{(Net\ Income - Cash\ Flow\ Operational)}{Total\ Assets}$$

Capability

Capability is a condition of having the nature or skills and abilities needed by someone to commit fraud where position, intelligence, ego, coercion, trickery, and pressure are supporting elements of capability. Capability is measured by the occurrence of a change of directors (DECHANGE) [14]; [12]. DCHANGE is measured by a dummy variable, namely: 1 if there is a change of directors, and 0 if there is no change of directors.

3. Results and Discussion

Descriptive Statistics Test

The results of the outlier data test showed that eight outlier data had been identified and removed from the analyzed data, so the number of observation units decreased from 120 to 112.

The data presented in Table 2 indicates that the pressure variable (ROA) has highest value of 8.41 and a lowest value of -18.70, resulting in an average of 4.50 and a standard deviation of 24.44. This suggests that the data shows significant variation or heterogeneity. The opportunity value (BDOUT) ranges from a maximum of 1 to a minimum of 0.25, with an average of 0.58 and a standard deviation of 10.37, indicating increasing variability or heterogeneity in the data. For the rationalization value (TATA), the highest recorded value is 0.57 and the lowest is -0.47, leading to an average of -0.57 and a standard deviation of 0.13. This also suggests a notable degree of variation or heterogeneity in the data. In contrast, the capability value (DCHANGE) has a highest value of 1 and a lowest of 0, with an average of 0.26 and a standard deviation of 0.44. This data appears to be more consistent or homogeneous. Finally, the financial statement fraud value (DACCit) ranges from a high of 0.49 to a low of -0.70, with an average of -0.18 and a standard deviation of 0.16, indicating that this data is also characterized by notable variability or heterogeneity.

Normality Test

The results of the normality test show the Asymp. Sig. (2-tailed) value is 0.000 less than 0.05. These results indicate that the data is not normally distributed, so the normality test uses the Monte Carlo method. The test results show the Sig. (2-tailed) value is 0.249, greater than 0.05, so it can be concluded that the research data is normally distributed.

Multicollinearity Test

Multicollinearity test results indicate that the tolerance value of the independent variable is more than 10% or 0.1, and the VIF value is less than 10. So, this model can be interpreted as having no symptoms of multicollinearity and can be used.

Heteroscedasticity Test

The results of the heteroscedasticity test show that the significance value of each variable, namely pressure, opportunity, rationalization, capability, and financial statement fraud, is above 0.05, which means that there is no heteroscedasticity so the research can continue.

Autocorrelation Test

The autocorrelation test shows a DW value of 2.005. This value is compared to the critical value in the Durbin-Watson table for a significance level of 5%, with a sample size of 112 (n)

and a number of independent variables of 4 (k = 4). Statistical analysis shows that the DW value is between the upper limit (dU) of 1.7664 and the lower limit (4-dU = 2.2336), which is 1.7664 <2.005 <2.2336. The test results conclude that there is no evidence of autocorrelation in this model.

Multiple Linear Regression Analysis

Table 3. Results of Multiple Linear Regression Analysis
Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	164.13	240.692		.682	.497
	ROA (X1)	.009	.002	.138	4.920	.000
	BDOUT (X2)	-5.041	4.026	-.034	-1.252	.213
	TATA (X3)	1.125	.031	.954	36.819	.000
	DCHANGE (X4)	99.269	96.300	.028	1.031	.305

Source: Processed secondary data, year 2024

Referring to Table 3, multiple equations are obtained:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$$

$$Y = 164.13 + 0.009 X_1 - 5.041 X_2 + 1.125 X_3 + 99.269 X_4$$

α The constant coefficient of 164.126 means that if the variables of pressure, opportunity, rationalization, and capability are perceived as 0, then financial report fraud will increase at a constant value of 164.126.

β_1 The pressure regression coefficient is 0.009, meaning that a 1 unit increase in ROA will increase the occurrence of fraud on financial statements by 0.009 units.

β_2 The value of the opportunity regression coefficient is -5.041, meaning that there is an increase in Ineffective monitoring or more effective monitoring by 1 unit, which will reduce the occurrence of fraud on financial statements by 5.041 units.

β_3 The value of the rationalization regression coefficient is 1.125, meaning that if the total accrual increases by 1 unit, it will increase the occurrence of fraud on financial statements by 1.125 units.

β_4 The value of the capability regression coefficient is 92.269, meaning that if there is an increase in the change of directors by 1 unit, it will increase the occurrence of fraud on financial statements by 99.269 units.

Determination Coefficient Test (R2)

The results of the determination coefficient test (R2) show that the adjusted R2 coefficient is 0.926 or 92.6 percent. This means that pressure, opportunity, rationalization, and capability together are 92.6 percent able to influence financial statement fraud, while 7.4 percent is due to other external factors

Model Feasibility Test (F Test)

The results of the model feasibility test (F-test) indicate an F coefficient value of 346.064, an F table value of 2.69, and a significance value of 0.000, which is less than the threshold of 0.05. These findings suggest that the model is viable for use and confirms that the independent

variables—pressure, opportunity, rationalization, and capability—together significantly influence the dependent variable of financial statement fraud.

Hypothesis Testing

The test results presented in Table 3 indicate that the pressure variable has a t-coefficient of 4.920, which exceeds the t-table value of 1.982. The significance level is 0.000, which is below 0.05, leading to the acceptance of H1. In contrast, the opportunity variable exhibits a t-coefficient of -1.252, falling short of the t-table value of 1.982, along with a significance value of 0.213, which is above 0.05, resulting in the rejection of H2. The rationalization variable, with a significance value of 0.000—also below 0.05—and a t-count of 36.819—greater than 1.982—leads to the acceptance of H3. Conversely, H4 is rejected because the capability variable shows a significance value of 0.305, exceeding 0.05, and a t-coefficient of 1.031, which is less than 1.982.

The Effect of Pressure on Financial Statement Fraud

Pressure has a substantial positive impact on financial statement fraud, leading to the acceptance of H1. This indicates that as the pressure on banking companies increases, so does the likelihood of financial statement fraud. Companies operating under high-pressure conditions tend to set ambitious financial targets, reflected in elevated ROA, which in turn places additional stress on management. The outcomes of this study align with findings from previous research [1]; [10]; and [9]. However, they contrast with the studies by [11] and [12] which suggest that pressure has a significant negative effect on financial statement fraud. Agency theory at level 1 posits that conflicts of interest between agents and principals create pressure on managers—acting as agents—to devise strategies for meeting the financial goals established by the company to satisfy the interests of the principals [21]. Furthermore, fraud diamond theory asserts that when individuals or organizations are under pressure, it heightens the likelihood of fraudulent behavior, particularly in financial reporting [8].

The Effect of Opportunity on Financial Statement Fraud

The results of the H2 hypothesis test indicate that the opportunity variable does not significantly affect financial statement fraud, leading to the rejection of the H2 hypothesis. This suggests that the level of financial statement fraud is lower in banking companies with ineffective monitoring. Companies characterized by weak monitoring typically have a low percentage of independent commissioners, specifically below 30%. This weak oversight, combined with high opportunities, allows management to create chances for committing financial statement fraud. The findings of this study align with previous research conducted by [10]; [1] and [11], which also indicates that opportunities negatively impact financial statement fraud. Conversely, these results conflict with the findings of research [13], which suggested that opportunities have a significant positive effect on financial statement fraud. Research [12] also indicates that opportunities do not significantly affect financial reporting fraud.

Information asymmetry between agents and principals provides opportunities for management to commit fraud in financial reporting for their benefit as stated in agency theory at level 1. Similarly, the fraud diamond theory suggests that opportunities can lead to fraud [20]. However, this study's findings contradict these theories.

The Effect of Rationalization on Financial Statement Fraud

H3 is accepted because rationalization significantly increases the likelihood of financial statement fraud in banking companies. Higher total accruals raise fraud risk, as management often manipulates profits to reflect better financial performance. An elevated accrual ratio suggests more profit manipulation through accrual transactions in revenue recognition. Management can overstate income and expenses based on subjective accruals, even without corresponding cash transactions, which may normalize fraudulent behavior. Research [12], shows that rationalization has a significant positive effect on financial statement fraud, which is in line with the results of this study. However, the research results by [1], contradict the results of this study because they show that rationalization results negatively affect financial

statement fraud. Different results are also shown by the study [13]; it turns out that rationalization does not significantly affect financial statement fraud.

Agency theory at level 1 suggests that issues can arise when executives or managers (agents) prioritize their personal gain over the interests of the organization in their decision-making [22]. In cases of fraud, the parties involved often seek a solution that benefits them all, ensuring that everyone is satisfied with the wrongdoing that has taken place. Additionally, the fraud diamond theory posits that financial statement fraud can occur when an individual convinces themselves that their fraudulent behavior is justified. This mindset can lead people, who may not have originally intended to commit fraud, to engage in criminal behavior because they find a rationale for their actions [8].

The Effect of Capability on Financial Report Fraud
The findings of the hypothesis test (H4) concerning the impact of capability on financial statement fraud indicated that the capability variable did not have a significant effect on financial statement fraud. As a result, the H4 hypothesis was rejected. This suggests that frequent changes in directors within banking companies do not influence management's ability to produce accurate financial reports, indicating a minimal occurrence of financial statement fraud. These results contrast with previous research conducted by [11], which found a significant effect of capability on financial report fraud. Additionally, other studies by [12] and [13] revealed a significant negative effect of capability on financial report fraud. However, the findings align with the research [10], which also concluded that capability did not significantly affect financial report fraud.

According to agency theory at level 1, the opportunities for fraud increase when management (agents) holds significant authority and capability. The new director's skills and access, which may differ from those of previous directors, can influence financial reporting policies. Furthermore, fraud diamond theory posits that financial reporting fraud is likely to occur when management possesses the ability, skills, and sufficient access to engage in fraudulent activities. [8], [20]. However, the results of this study contradict the predictions of both theories.

4. Conclusion
The results of the analysis show that financial reporting fraud in the banking sub-sector on the Indonesia Stock Exchange is mainly influenced by pressure and rationalization factors. Meanwhile, opportunity and capability factors do not have a significant influence on the likelihood of fraud. The findings of this study confirm that pressure, especially from high financial targets such as Return on Assets (ROA), increases the likelihood of fraudulent activities. Rationalization also plays an important role; a higher total accrual ratio allows management to manipulate earnings through accrual transactions, thus justifying fraudulent behavior. Conversely, opportunity and capability do not contribute significantly to financial reporting fraud. Supervision does not always create loopholes for fraud, and director changes are often intended to improve performance rather than hide errors. The appointment of more qualified leaders can help in the prevention and detection of fraudulent acts.

The theoretical implications of this study reinforce agency theory, which elucidates how conflicts of interest between agents and principals exert pressure on managers. This pressure compels them to pursue financial targets aligned with the principal's interests. However, this research challenges the fraud diamond theory, which posits that fraud necessitates capability alongside pressure, opportunity, and rationalization. The results indicate that capability is not a requisite for fraud to occur; rather, the interplay of pressure and rationalization can lead to financial statement fraud even in its absence. The significance of rationalization is underscored, as management may leverage the accrual ratio to validate manipulative practices, highlighting the need for a deeper understanding of how managers justify their actions.

This study provides empirical evidence that organizations must scrutinize their economic targets meticulously, as elevated targets can foster fraudulent financial reporting. Continuous monitoring of rationalization particularly regarding income and expense recognition based on accrual accounting principles is essential in banking institutions to facilitate early detection of potential fraud.

For future research, it is imperative to develop a more comprehensive theoretical model that explores the interactions among pressure, rationalization, and capability in the realm of financial statement fraud. Such a model could serve as a foundation for subsequent studies and practical applications, including an analysis of how fraudulent behaviors evolve over time and how factors like pressure and rationalization interact across various contexts.

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