

Fraud Diamond: Four Elements of Financial Report Fraud Detection – Study on Coal Producers

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ABSTRACT

The aim of this research is to examine the impact of fraud diamonds on the identification of fraudulent financial statements. Fraud diamonds, a framework used to detect fraudulent financial statements, considers various factors such as pressure (measured by ROA), opportunity (measured by Ineffective monitoring (IND)), rationalization (measured by auditor turnover (AUDCHANGE)), and capability (measured by the change of directors (DIRCHANGE)). The research sample comprised of 9 companies selected through purposive sampling. Logistic regression analysis was employed as the analytical method, with rationalization and capability serving as the independent variables, assessed through a binary variable with values 0 and 1. The findings indicate that pressure significantly influences the detection of fraudulent financial statements. Specifically, higher ROA values correspond to a lower likelihood of fraudulent financial statements. Opportunity also has an impact on the detection of fraudulent financial statements, as an increase in ineffective monitoring levels leads to a higher detection rate of financial statement fraud. On the other hand, rationalization does not affect the identification of fraudulent financial statements, suggesting that auditor turnover rate does not play a role in detection. Similarly, capability, represented by the replacement of the board of directors, does not impact the detection of fraudulent financial statements in companies.

Keywords: Capability; Fraud Diamond; Opportunity; Pressure; Rationalization

INTRODUCTION

These financial statements are part of the financial reporting process. Financial reporting is an information system that presents a series of reports that are useful for decision making (Pinnarwan et al., 2015). The report prepared in accordance with PSAK consists of several components. One of them is the statement of financial position, which provides an overview of the company's assets, liabilities, and equity. Another component is the statement of profit or loss and other comprehensive income, which compares the income and expenses for a specific period. Additionally, changes in equity are reported to reflect the performance of equity in that period. The cash flow statement illustrates the movement of cash during the period. A comprehensive understanding of the financial statements can be obtained by reviewing the detailed elements provided in the notes. By producing high-quality financial reports that adhere to standards, the company aims to instill confidence in investors and stakeholders regarding the company's performance and management, as reflected in its financial statements. Financial statements have comprehensible composition but also have a limited impact on the statements themselves. Financial statement fraud can be done through manipulation, fraud, and dishonesty (Button et al., 2009). Financial statement fraud is done intentionally to deceive financial statement users by presenting entities from engineered financial reports (Bolton & Hand, 2002). Financial Statement Fraud is an act or omission of

information used in financial statements. where the financial reports presented are not in accordance with accounting principles which can affect results that tend to be profitable for those in charge (Larum et al., 2021).

Based on the findings of a survey conducted by The Association of Certified Fraud Examiners in the Asia Pacific Region in 2019 there were 22 cases of Financial Statement Fraud (ACFE Indonesia Chapter, 2019). The total loss incurred amounted to Rp. 242,260,000,000, representing 9.2% of the total cases. It was reported that employees accounted for 31.8% of the fraud perpetrators, owners accounted for 29.4%, managers accounted for 23.4%, and others accounted for 15.1%. Among the losses resulting from fraud valued at $\leq 10,000,000$, 70% were attributed to fraudulent financial statements. According to survey results, the three main control weaknesses contributing to fraud were the absence of exemplary leadership, accounting for 27.6%; lack of internal control, accounting for 24.3%; and cases where internal control was present but disregarded, accounting for 18%. The most common channels for reporting fraud were reports, accounting for 38.9%; internal audits, accounting for 23.4%; other sources, accounting for 15.1%; and external audits, accounting for 9.6%. Therefore, the roles of internal audit and external audit are crucial in fraud prevention and control.

In the detection of financial statement fraud, the Fraud Diamond theory can be utilized. The Fraud Diamond theory is an evolved version of the Fraud Triangle theory (Eksandy & Sari, 2022; Kusumawardhany & Shanti, 2022). The Fraud Diamond element is identical to the Fraud Triangle although on a larger scale. According to Permatasari & Laila (2021) states that Capability Fraud Diamond is one of the complementary components of the Fraud Triangle. There are several theories about analytical methods to determine the potential of financial reports, one of which is the Fraud Triangle. The triangle is a factor that affects a person's ability to handle pressure, opportunity and rationalization. These three factors are used by Cressey in Sihombing & Rahardjo (2014).

The Fraud Diamond concept shares similarities with the Fraud Triangle theory but encompasses a broader perspective. According to Permatasari & Laila (2021), the capability component of the Fraud Diamond is an additional element to complement the Fraud Triangle. Various theories propose analytical methods to assess the potential of financial fraud, with the Fraud Triangle being one of them. This triangle comprises three factors: pressure, opportunity, and rationalization, which Cressey in Sihombing & Rahardjo (2014) identified as key elements for preventing financial statement fraud. In addition, Wolfe & Hermanson (2004) introduced a fourth factor, capability, which refers to the individual's ability to carry out fraudulent activities within financial statements. These four factors collectively form the Fraud Diamond. The elements of the Fraud Diamond include pressure (hindrances to committing fraud in financial statements), opportunity (the chance to engage in fraudulent activities in financial statements), rationalization (factors that deter individuals from committing fraud in financial statements), as noted by Prakoso & Setiyorini (2021) and Rengganis et al. (2019).

Pressure refers to a motivating factor that drives individuals to engage in fraudulent activities. It encompasses various aspects, including overall economic conditions and productivity. Managers may have a goal to enhance the company's profitability, focusing on certain investments that may not have been successful for individuals (Rohmatin et al., 2021). The first category is financial stability, which represents a state where the company's financial

status is secure. When financial stability is achieved, managers gain the necessary skills and motivation to fulfill their responsibilities. The second category, external pressure, indicates that a company can utilize specific perspectives from investment analysis and management to generate favorable performance and favorable deals for crucial stakeholders such as investors and creditors (Pamungkas et al., 2018). The third category, personal financial needs, refers to specific requirements that arise when an individual's needs are met through their employment efforts. The fourth category, financial targets, refers to the company's budget for a specific period. Managers aim to attain a certain level of profitability (ROA) to receive bonuses, which may lead them to commit fraud in pursuit of this objective (Larum et al., 2021).

Opportunity, as stated by Nerew et al. (2021), can arise due to weak internal controls within an organization, abuse of authority, accounting rules, and ineffective monitoring. Complying with SAS No. 99 (AICPA 2002), certain conditions can act as deterrents to fraud. The nature of the industry relates to the presence of risks faced by companies operating in specific sectors that involve significant estimations and considerations. Ineffective monitoring encompasses both the impact of effective and ineffective monitoring processes (Deviyanti & Assih, 2021). These factors can lead managers to make decisions aimed at achieving goals through earnings management. Organizational structure refers to the arrangement of a company's internal controls and the flow of vertical and horizontal relationships within the organization, providing an overview of its operational framework.

The third factor, rationalization, is described by Sudarman & Asih (2019) as the justification or mindset that individuals or groups adopt to rationalize their fraudulent actions and perceive them as justified. Rationalization serves as a means to motivate individuals to engage in fraudulent financial reporting. Understanding financial reports can align with one's ethical principles. Changing auditors is one action that must be taken by publicly listed companies to fulfill their obligations. Companies and investors rely on auditors to verify the accuracy of data provided by Public Accountant Offices (KAP) and to assess the appropriateness of the company's practices. Auditors adhere to established guidelines during this process. They express their judgment on the fairness of the financial documents, which is known as the audit opinion. The financial statements are prepared in accordance with accounting principles, albeit with some level of discretion.

The fourth factor is the concept of capability, introduced by Wolfe & Hermanson (2004), highlights the importance of an individual's competence in either enabling or hindering fraudulent activities. In instances of fraud, individuals utilize their skills to identify and exploit ongoing opportunities. Rasiman & Rachbini (2018) conducted a study on the Fraud Diamond and Fraud Detection of Financial Statements in Food and Beverage Companies listed on the Indonesia Stock Exchange. They measured the pressure variable using the indicator of financial stability, the opportunity variable based on the industry nature, the rationalization variable using auditor changes, and the capability variable using director changes, all of which impacted financial statement fraud. A survey conducted in 2019 revealed that the mining industry ranked third in terms of vulnerability to fraud (ACFE Indonesia Chapter, 2019). This research specifically focuses on analyzing the financial reports of companies within the Coal Production Industry Sub-Sector listed on the Indonesia Stock Exchange (IDX) during the period of 2018-2021. The decision to select the Coal Production Industry Sub-Sector is driven by the fact that it involves a manufactured product and possesses a more robust business process compared to other mining types, thereby increasing the potential for financial

statement fraud. Given this background, the researcher aims to examine the impact of the Fraud Diamond in detecting fraudulent financial reports within companies operating in the coal production sub-industry listed on the IDX during the 2018-2021 financial reporting period.

METHOD

The research undertaken follows a descriptive quantitative research approach, focusing on the field of financial accounting and capital markets, specifically examining the impact of pressure, opportunity, rationalization, and capability on fraudulent financial statements. The sample comprises companies operating in the coal production sub-industry that are listed on the Indonesia Stock Exchange (IDX). The sample selection utilized a purposive sampling technique, resulting in 36 samples that met the predetermined criteria. Quantitative data is utilized in this research, and the researcher applies quantitative techniques to establish the significance of independent quality variables in relation to dependent quality variables. The analysis is based on annual financial reports and current business financial reports that meet the specified criteria. Secondary data is used as the data source for this research. The secondary data is obtained from the official website of the Indonesia Stock Exchange (www.idx.co.id) and the official websites of the sampled companies. The data collection method employed is documentation, involving the collection and summarization of information from all companies within the Coal Production Sub-Industry listed on the IDX. The information is gathered primarily from online sources, with the Indonesia Stock Exchange (IDX) website being the main resource. The data analysis method used in this research encompasses descriptive statistical analysis, complemented by inferential analysis conducted using SPSS.

RESULT AND ANALYSIS

Descriptive statistics

The data provided illustrates the minimum, maximum, and mean values of fraud detection variables, including pressure, opportunity, rationalization, and capability, within companies operating in the Coal Production Sub-Industry listed on the Indonesia Stock Exchange between the years 2018 and 2021.

Table 1. Descriptive Statistics

	N	Minimum	Maximum	Means	std. Deviation
Pressure	36	.02	.52	1.78	1.317
Opportunity	36	.25	1.00	6.14	2.566
Rationalization	36	0	1	.39	.494
Capability	36	0	1	.25	.439
Restat	36	0	1	.33	.478
Valid N (listwise)	36				

Source: Data Processed by Author (2023)

Based on the presented table, the observations made during the research indicate that Pressure in the Coal Production Sub-Industry Companies has a minimum value of 0.2% (set by PT ADRO in 2021) and a maximum value of 0.52% (set by PT BYAN in the same year), with

a ratio of 1.78%. This suggests that the companies within the sub-industry were able to generate profits during the initial year.

In relation to Opportunities, the level of ineffective monitoring within coal production sub-industry companies listed on the Indonesia Stock Exchange between 2018 and 2021 ranged from a minimum of 0.25% to a maximum of 1%. This suggests that these companies lack the necessary mechanisms to detect or prevent fraud, creating an environment where managers have the potential to engage in fraudulent activities.

The average rationalization, measured by Auditor Turnover (AUDCHANGE), among coal production sub-industry companies listed on the Indonesia Stock Exchange from 2018 to 2021 is 0.39. The rationalization variable ranges from a minimum value of 0 to a maximum value of 1, indicating that these companies did not undergo changes in their external auditors during the audit period.

Regarding Capability, represented by the Change of the Board of Directors (DIRCHANGE), the coal production sub-industry companies listed on the Indonesia Stock Exchange show a minimum value of 0 and a maximum value of 1. The capability ratio for the period from 2018 to 2021 is 0.25, indicating that there were no changes in the composition of the Board of Directors for the listed companies within the coal production sub-industry.

In terms of Financial Statement Fraud, measured by restatement or adjustment of financial statements, the coal production sub-industry companies listed on the Indonesia Stock Exchange had a minimum value of 0 and a maximum value of 1. The average detection value for financial statement fraud from 2018 to 2021 is 0.33, suggesting that these companies listed on the Indonesian stock exchange are not involved in fraudulent financial reporting.

Classification Matrix

Table 2 below presents the classification matrix, which demonstrates the predictive capability of the regression model in identifying the likelihood of detecting fraudulent financial statements within the Coal Production Sub-Industry Companies listed on the Indonesia Stock Exchange.

Table 2. Classification Matrix

Observed			Predicted		
			RESTATE (Y)		Percent Correct
			No Restatement of Financial Statements Happened	Restatement of Financial Statements Occurs	
Step 0	RESTATE (Y)	No Restatement of Financial Statements Happened	24	0	100.0
		Restatement of Financial Statements Occurs	12	0	.0
Overall Percentage					66.7

a. Constant is included in the model.

b. The cut value is .500

Source: Data Processed by Author (2023)

The Classification Table is a 2 x 2 contingency table that should occur or is also called the frequency of occurrence. Based on the empirical data of the dependent variable, the number of samples included in the dependent variable category did not make a restatement of the financial statements in more than 24 cases. Meanwhile, there were 12 cases of restatement of financial statements. The number of samples is 36 cases so that the overall percentage value before the independent variables is included in the model is: $24/36 = 66.7\%$.

Logistic Regression Test Results

The logistic regression model formed can be presented in table 3 below:

Table 3. Logistic Regression Test Results

	z	B	SE	Wald	df	Sig.	Exp(B)
Step 1 ^a	X ₁	-6.895	4.797	2.066	1	.151	.001
	X ₂	6.329	2.650	5.704	1	.017	.002
	X ₃	.110	.921	.014	1	.905	.896
	X ₄	1.219	1.177	1.073	1	.300	3.384
	Constant	3.039	1.857	2.678	1	.102	20.875

a. Variable(s) entered on step 1: X₁, X₂, X₃, X₄.

Source: Data Processed by Author (2023)

The results of the logistic regression test from the table above, the logistic regression equation obtained is as follows:

$$Y = 3.039 - 6.895X_1 + 6.329X_2 + 0.110X_3 + 1.219X_4$$

Pressure

The Wald value for pressure is 2.066 (sig. 0.151). The significance value of 0.151 is lower than the significance level of 0.05 (5%). Therefore, the hypothesis is accepted, indicating that the pressure variable has a significant impact on the detection of financial statement fraud. The negative sign (-) of the pressure variable suggests that higher pressure, as measured by ROA, decreases the likelihood of committing fraudulent financial statements. The odds ratio value of 0.001 indicates that high pressure reduces the probability of companies engaging in financial statement fraud by at least 0.001 times compared to companies experiencing lower pressure. Thus, the first hypothesis is supported by statistical testing.

The negative effect of pressure, as measured by ROA, on fraud detection in financial statements aligns with the findings of Permatasari & Laila (2021), which demonstrate the negative impact of pressure on financial statement fraud detection. This implies that higher ROA may indicate a possibility of financial statement fraud. Therefore, the company's stability is gradually achieved through managerial activities rather than fraud or manipulation by management for personal gain. Companies should focus on improving operational quality, implementing effective processes, treating employees ethically, and considering other factors to achieve their predetermined goals. As operational quality improves, management will face no difficulties in meeting increased profitability targets. These findings are consistent with the research conducted by Rasiman & Rachbini (2018), which suggests that pressure is a factor that can be used to detect fraud in financial reports. However, these findings contradict the previous research by Deviyanti & Assih (2021), which states that pressure has no effect on the detection of fraudulent financial statements.

Opportunity

The Wald value for opportunity is 5.074 (sig. 0.017). The significance value of 0.017 is lower than the significance level of 0.05 (5%). Therefore, the hypothesis is accepted, indicating that the opportunity variable has a significant effect on the detection of financial statement fraud. The positive sign (+) of the IND variable suggests that an increase in IND is associated with a higher likelihood of committing financial statement fraud. The odds ratio value of 0.002 indicates that companies with more opportunities are 0.002 times more likely to engage in financial statement fraud compared to companies without such opportunities. Thus, the second hypothesis is supported by statistical testing.

Opportunity, as measured by ineffective monitoring, positively affects the detection of financial statement fraud. This implies that higher levels of ineffective monitoring contribute to a higher likelihood of detecting financial statement fraud. Higher fraud occurrence is a result of the shortcomings in the independent audit committee's performance in fulfilling their duties. An ideal governance system for any company would be more effective with a more independent audit committee. These findings align with the previous research by Handayani & Priyastiwī (2019), which indicates that opportunity influences the possibility of financial statement fraud. However, these findings do not align with the findings of previous research conducted by Eksandy & Sari (2022).

Rationalization

The Wald value for rationalization is 0.014 (sig. 0.905). The significance value of 0.905 is greater than the significance level of 0.05 (5%). Therefore, the hypothesis is rejected, indicating that the rationalization variable has no effect on fraudulent financial statements. The positive sign (+) of the rationalization variable suggests that companies that frequently change their external auditors have a tendency to commit fraudulent financial statements. The odds ratio value of 0.896 indicates that companies replacing their external auditors more frequently during the two-year audit period have a higher tendency to engage in financial statement fraud compared to companies that do not replace their external auditors during the same period. Thus, the third hypothesis is not supported by statistical testing.

Rationalization, as measured by auditor change (AUDCHANGE), has no effect on the detection of financial statement fraud. The statistical analysis in this study indicates that the turnover of a company's external auditor does not impact the detection of fraudulent financial statements. Although some companies frequently change their external auditors, it does not imply any influence on the financial statements involving fraud. These findings align with the research conducted by Rohmatin et al. (2021), suggesting that the turnover of a company's external auditor does not affect the likelihood of fraudulent financial reporting. This is because management tends to support well-performing external auditors, and as long as no fraud is committed against the auditors, the company continues its operations without rationalization, which is not just a reflection of corporate bias. However, these findings contradict the previous research by Rasiman & Rachbini (2018), which suggests that rationalization is a factor that can be used to detect fraudulent financial statements.

Capability

The Wald value for capability is 1.073 (sig. 0.300). The significance value of 0.300 is greater than the significance level of 0.05 (5%). Therefore, the hypothesis is rejected, indicating that

the capability variable has no effect on fraudulent financial statements. The positive sign (+) of the capability variable suggests that companies that change directors or CEOs have a tendency to commit fraudulent financial statements. The odds ratio value of 3.384 indicates that companies replacing the board of directors are 3.384 times more likely to engage in financial statement fraud compared to companies that do not replace the board of directors. Thus, the fourth hypothesis is not supported by statistical testing.

Capability, as measured by the change of directors (DIRCHANGE), has no effect on the detection of fraud in the company's financial statements. This implies that changing directors does not impact the detection of fraud in the company's financial statements. The occurrence of director changes, which may occasionally happen in a company, is not related to financial reports containing fraud. Fraud is not likely to occur due to the director's position but is influenced by other factors. Moreover, successful director replacements can lead to improved company performance and prevention of undesirable events. These findings align with previous research by Sudarman & Asih (2019), which suggests that capability has no effect on detecting financial statement fraud. However, these findings are consistent with the findings of previous studies by Nerew et al. (2021), which indicate that capability is a factor that can be used to detect fraudulent financial statements.

CONCLUSION

In this research, the impact of the Fraud Diamond on detecting financial statement fraud in coal production sub-industry companies listed on the Indonesia Stock Exchange between 2018 and 2021 is investigated. A purposive sampling method was utilized, resulting in a sample of 9 companies observed over a period of 4 years, amounting to a total of 36 data points. Logistic regression analysis was applied as the analytical approach for this study. The discussion of the findings reveals that pressure and opportunity significantly influence the detection of financial statement fraud, whereas rationalization and capability do not demonstrate a discernible impact on detecting fraudulent financial reporting.

In terms of pressure, as measured by return on assets (ROA), the study reveals that higher ROA values are associated with a decreased likelihood of engaging in fraudulent financial reporting. This suggests that the company's financial stability primarily stems from genuine management performance rather than fraudulent activities aimed at presenting favorable financial statements. On the other hand, the element of opportunity, as indicated by ineffective monitoring through an independent audit committee, demonstrates that a higher ratio of ineffective monitoring leads to an increased probability of detecting financial statement fraud.

In contrast, the element of rationalization, measured by auditor change (AUDCHANGE), presents statistical evidence that the turnover of an external auditor does not impact the likelihood of fraudulent financial reporting. This finding implies that the company's management is accustomed to working with auditors who consistently deliver satisfactory performance. Therefore, even in cases where there is a change in auditors, fraudulent activities are unlikely to occur, as rationalization is not a common occurrence within the company. Similarly, the fourth element, capability, measured by changes in directors (DIRCHANGE), indicates that the frequency of director turnover does not influence the detection of fraudulent

financial statements. Thus, factors other than the directors' capability are likely to play a more significant role in the possibility of fraudulent activities.

This study focuses on four elements based on previous research, which has indicated their significant effects on fraud detection. The obtained results hope to inspire future researchers to expand on the Fraud Diamond framework by considering five elements (the fraud pentagon) through the inclusion of arrogance or even six elements (the fraud hexagon) by adding elements of ego and collusion.

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