DIJEFA: Dinasti International Journal of Economics, Finance & Accounting
E-ISSN: 2721-303X
P-ISSN: 2721-3021
https://dinastipub.org/DIJEFA dinasti.info@gmail.com +62 811 7404 455
DINASTI PUBLISHER

DOI: https://doi.org/10.38035/dijefa.v6i2.4081
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Received: 21 January 2025 | **Revised:** 06 April 2025 | **Accepted:** 21 April 2025

Analysis of the Possibility of Financial Statement Fraud: S.C.C.O.R.E Model

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Abstract: Financial statement fraud is an intentional act involving the omission of material information in financial statements. This action not only harms parties relying on financial statements but also benefits the perpetrators of the fraud. This study aims to examine the determinants of financial statement fraud using the S.C.C.O.R.E model approach. A total of 396 samples of manufacturing companies' financial statements from the 2021–2023 period were analyzed using logistic regression. The results reveal that financial stability (stimulus element), changes in directors (capability element), and total accruals (rationalization element) have a positive and significant influence on financial statement fraud. Meanwhile, other proxies such as related party transactions (collusion element), oversight effectiveness (opportunity element), and CEO photo frequency (arrogance element) do not affect financial statement fraud. This study provides practical contributions for practitioners, investors, regulators, and stakeholders in identifying the causes of fraud, thereby helping to design more effective fraud detection and prevention strategies in the future.

Keywords: S.C.C.O.R.E Model, M-Score, Financial Statement Fraud.

INTRODUCTION

Financial statements serve as a communication medium that supports stakeholders in making decisions based on a company's financial information (Kusumosari & Solikhah, 2021; Novitasari & Chariri, 2018). Additionally, financial statements play a crucial role as a reference for both internal and external parties in evaluating a company's performance and as a basis for decision-making. High-quality financial statements must be transparent, complete, relevant, easy to understand, and free from fraudulent elements when published, thereby providing confidence to those who rely on the information (Biduri & Tjahjadi, 2024). To create a positive image, companies often prepare financial statements in a specific way to appear more favorable. This practice risks triggering manipulation, such as altering certain data. As a result, published financial statements do not always have good quality, as they often contain fraudulent elements carried out by companies for specific purposes (Wicaksono & Suryandari, 2021).

According to a survey conducted by the Association of Certified Fraud Examiners (ACFE, 2024), financial statement fraud has the smallest percentage of cases, at 5%. However, despite its low frequency, this type of fraud is the most damaging, with an average loss of $766,000. In Indonesia, data from the 2019 Indonesia Fraud Survey (SFI) shows that financial statement manipulation is the second-highest category of fraud in terms of losses, exceeding 10 billion rupiah or about 5% of total cases. These losses are suspected to occur because financial statement fraud cases in Indonesia are often not uncovered, given the lengthy time and limited ability to detect such fraud. This is due to the fact that financial statement fraud is often committed by internal parties within the company, making it easier for them to conceal or hide the fraud (Biduri & Tjahjadi, 2024).

Several cases that have drawn public attention regarding financial statement fraud include the alleged data manipulation by PT FKS Food Sejahtera Tbk (AISA) and the irregularities committed by PT Indofarma Tbk (INAF). Based on the investigation report by Ernst & Young Indonesia (2019), AISA is suspected of overstating accounts receivable, inventory, and fixed assets of the TPSF Group by Rp 4 trillion, sales by Rp 663 billion, and EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization) by Rp 329 billion. Meanwhile, a recent case in 2024 revealed indications of irregularities by PT Indofarma Tbk (INAF), causing state losses of Rp 371.8 billion (CNBC Indonesia, 2024). Therefore, this research focuses on financial statement fraud, as although its occurrence percentage is smaller compared to other fraud categories, its impact is significant. Moreover, cases of financial statement fraud continue to emerge over time, highlighting the importance of addressing this issue.

Detecting financial statements is a crucial step to prevent significant losses due to fraud, as even audited financial statements cannot guarantee freedom from manipulation. One model considered capable of providing a deep understanding of the causes of fraudulent actions is the S.C.C.O.R.E model or fraud hexagon (Nugroho & Diyanti, 2022). The fraud hexagon theory is used to examine the influence of its elements on the likelihood of financial statement fraud. The fraud hexagon is used because it offers a broader perspective on the reasons someone might commit fraud. The elements discussed by Vousinas in the S.C.C.O.R.E model include stimulus, capability, collusion, opportunity, rationalization, and ego. The Beneish M-Score model is used to identify the likelihood of a company committing fraud. The M-Score model is used because it has an accuracy rate of 71% in identifying companies that commit fraud (Beneish, 1999). Additionally, according to Patmawati & Rahmawati (2023), the Beneish M-Score model is more sensitive in predicting financial statement fraud compared to the F-Score model.

Many studies have discussed elements that can detect fraud, from the fraud triangle model to the fraud hexagon model. However, the results of research on the elements of the fraud hexagon in financial statement fraud have been inconsistent. For example, financial stability has been found to have a significant positive influence on financial statement fraud (Shahzadi et al., 2024; Alfarago et al., 2023), but this contradicts the findings of Yarana (2023) and Achmad et al. (2022), who found that financial stability has no effect on financial statement fraud. Changes in directors consistently influence financial statement fraud (Handoko & Salim, 2022; Jannah & Rasuli, 2021), unlike Alfarago et al. (2023), who revealed that changes in directors have no effect on financial statement fraud.

Research by Mao et al. (2022) revealed that related party transactions increase the risk of financial statement fraud. Meanwhile, Alfarago et al. (2023) and Ratmono et al. (2020) found that related party transactions do not influence financial statement fraud. The significant influence of oversight effectiveness on financial statement fraud is consistent with the research of Biduri & Tjahjadi (2024) and Demetriades & Owusu-Agyei (2022), but differs from the findings of Jannah & Rasuli (2021) and Situngkir & Triyanto (2020), who showed that oversight effectiveness has no effect on fraudulent actions. Research by Yarana (2023) stated that total accruals influence financial statement fraud, while Situngkir & Triyanto (2020) found

that total accruals have a negative influence on financial statement fraud. Research by Biduri & Tjahjadi (2024) and Achmad et al. (2022) revealed that CEO photo frequency influences financial statement fraud, while Alfarago et al. (2023) and Situngkir & Triyanto (2020) found that CEO photo frequency has no effect on financial statement fraud.

Based on the phenomena and inconsistencies in previous research findings, it is clear that further research is needed regarding the detection and prevention of financial statement fraud. This study aims to empirically test and prove the factors influencing the likelihood of financial statement fraud using the fraud hexagon model. The benefits of this research are expected to enhance academic knowledge regarding financial statement fraud through the analysis of the S.C.C.O.R.E model (fraud hexagon) and provide additional insights for financial statement users regarding the factors that drive fraudulent actions in financial statements, using the S.C.C.O.R.E model (fraud hexagon) approach. This will enable them to take necessary steps to detect the possibility of fraud.

METHODS

Population and Research Sample

The population of this study consists of manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the period 2021–2023. The sampling technique used in this study is purposive sampling, with the following criteria:

1. Manufacturing companies listed on the IDX continuously during the period 2021–2023.
2. Companies that present financial statements in Indonesian Rupiah for the period 2021–2023.
3. Companies that publish annual reports for the period 2021–2023, which are publicly available.

Measurement of Research Variables

The dependent variable in this study is financial statement fraud. Fraud in this study is measured using the Beneish M-Score model, developed by Beneish et al. (1999). The independent variables in this study are:

1. Stimulus, proxied by the variable financial stability.
2. Capability, proxied by the variable change in directors.
3. Collusion, proxied by the variable related party transactions.
4. Opportunity, proxied by the variable oversight effectiveness.
5. Rationalization, proxied by the variable total accruals.
6. Ego, proxied by the variable CEO photo frequency.

RESULTS AND DISCUSSION

This section contains data (in brief form), data analysis, and interpretation of the results. Results can be presented in tables or graphs to clarify the results verbally because sometimes the display of an illustration is more complete and informative than the display in narrative form. This section must answer the problems or research hypotheses that have been formulated previously.

Description of the Research Object

This study uses a population of manufacturing sector companies listed on the Indonesia Stock Exchange (IDX) during the period 2021–2023. Based on the sample selection criteria, a total of 132 companies were obtained as samples.

Table 1. Research Sample Distribution

NO	CRITERIA	NUMBER
1	All manufacturing companies listed on the Indonesia Stock Exchange during 2021–2023.	**223**
2	Companies using foreign currency in their financial statements during 2021–2023.	**-31**
3	Companies that did not publish complete annual financial reports on the IDX website or lacked complete data related to the variables used in the study during 2021–2023.	**-60**
Total sample used		**132**
Total data processed over a 3-year observation period (132 x 3 = 396 observation data)		**396**

Source: Processed data, author (2025)

Based on Table 1, the initial population or the number of manufacturing sector companies listed on the IDX during the period 2021–2023 was 223 companies. However, based on the purposive sampling technique with several criteria, the total data obtained over 3 years amounted to 396 observation data.

Results of Descriptive Statistical Analysis

Table 2. Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Financial Stability (X1)	396	-9.37	1.46	0.0598	**0.49987**
Related Party Transactions (X3)	396	0.00	1.11	0.1570	**0.27775**
Oversight Effectiveness (X4)	396	0.17	0.83	0.4113	**0.11031**
Total Accruals (X5)	396	-0.66	1.61	-0.0133	**0.15606**

Valid N (listwise)	396	-	-	-	-

Source: Processed data, SPSS 26 (2025)

Based on Table 2, the minimum value of financial stability is -9.37, and the maximum is 1.46. The mean is 0.0598, and the standard deviation is 0.49987, indicating that the financial stability data is quite varied because the standard deviation is higher than the mean. Related party transactions have a minimum value of 0.00, a maximum value of 1.11, a mean of 0.1570, and a standard deviation of 0.27775. The standard deviation is much higher than the mean, indicating that the data for this variable is heterogeneous. Oversight effectiveness has a minimum value of 0.17, a maximum value of 0.83, a mean of 0.4113, and a standard deviation of 0.11031, indicating that the data for this variable is less varied because the standard deviation is lower than the mean. Total accruals have a minimum value of -0.66, a maximum value of 1.61, a mean of -0.0133, and a standard deviation of 0.15606, indicating that the data for this variable is heterogeneous because the standard deviation is higher than the mean.

Table 3. Frequency Distribution

Variable	Category	Meaning	Number	%
Change in Directors	0	No change in directors	261	**65.9%**
	1	Change in directors	135	**34.1%**
CEO Photo Frequency	0	CEO photo displayed once	81	**20.5%**
	1	CEO photo displayed more than once	315	**79.5%**
Financial Statement Fraud	0	No indication of fraud	214	**54.0%**
	1	Indication of fraud	182	**46.0%**

Source: Processed data, SPSS 26 (2025)

According to the frequency distribution results shown in Table 3, the change in directors, measured using a dummy variable, shows that 34.1% of the observed samples experienced a change in directors, while the remaining 65.9% did not. This data indicates that the majority of manufacturing companies did not experience a change in directors during the observation period. The frequency distribution of the arrogance variable, measured by the frequency of CEO photos in annual reports using a dummy variable, shows that 81 samples (20.5%) had a CEO photo displayed once (coded as 0), while 315 samples (79.5%) had a CEO photo displayed more than once (coded as 1). This data indicates that the majority of manufacturing companies displayed CEO photos more than once during the observation period. The financial statement fraud variable shows that out of 396 samples, only 182 samples (46%) of manufacturing companies' financial statements indicated fraud, while the remaining 214 samples (54%) showed no indication of fraud. Based on this data, it is concluded that the majority of manufacturing companies in Indonesia during the period 2021–2023 did not indicate fraudulent actions in their financial statements.

The Influence of Financial Stability on Financial Statement Fraud

Financial stability, measured through changes in company assets, has been proven to have a positive influence on financial statement fraud. Changes in assets are used as an indicator to assess whether a company's condition is stable or not. Instability, indicated by significant fluctuations in assets, can create substantial pressure on management, as they feel responsible for maintaining the company's financial stability.

When financial stability is disrupted, it reflects management's failure to fulfill this responsibility, ultimately leading to a negative assessment of management's performance. In such situations, management may resort to various efforts to maintain their performance image, one of which is manipulating certain parts of the financial statements. These findings align with research conducted by Shahzadi et al. (2024), Alfarago et al. (2023), and Abbas & Laksito (2022), which state that financial stability positively influences financial statement fraud.

The Influence of Changes in Directors on Financial Statement Fraud

This means that changes in the board of directors can increase the risk of financial statement manipulation. As part of top management, directors have significant responsibilities in company operations and good governance.

Changes in directors are often made to improve corporate governance and reduce the risk of fraud. Therefore, if there is a change in directors, there is a possibility of financial statement fraud committed by the previous directors (Sukmadilaga et al., 2022). The process of changing directors often creates an adjustment or stress period, where suboptimal oversight by the board of commissioners can increase the potential for financial statement fraud. In such conditions, changes in the board structure can lead to a lack of coordination and control within the company, which can be exploited by certain parties to plan or commit fraud using their positions, competencies, and knowledge (Abbas & Laksito, 2022). These findings are supported by research from Handoko & Salim (2022) and Sari et al. (2022), which consistently show that changes in directors have a positive influence on financial statement fraud.

The Influence of Related Party Transactions on Financial Statement Fraud

Related parties often have the potential to collude with the company due to special relationships or the ability to reach agreements that other parties cannot. However, collusion carries significant risks, making it difficult for companies to find partners willing to participate (Maas & Yin, 2021). This high risk is one reason companies tend to avoid committing financial statement fraud through related party transactions.

On the other hand, related party transactions are often part of a company's strategy to enhance business synergy. According to Sadda & Januarti (2023), these transactions can create synergy in business operations, such as through the sale of assets to related parties or obtaining investments that can increase the company's capital. In this way, related party transactions help improve the company's financial position legally and transparently. These findings align with the results of Alfarago et al. (2023) and Ratmono et al. (2022), which state that related party transactions do not have a significant influence on financial statement fraud.

The Influence of Oversight Effectiveness on Financial Statement Fraud

Oversight effectiveness is measured using the ratio of independent commissioners to the total number of board members. POJK Regulation No. 33/PJOK.04/2014 stipulates that companies must have at least 30% independent commissioners of the total board members. If companies do not comply with this regulation, they will face sanctions from the OJK (Financial Services Authority). Based on this regulation, it is possible that the formation of the board of commissioners is often merely to fulfill regulatory obligations (mandatory) without ensuring actual effectiveness (Sadda & Januarti, 2023; Putra, 2022; Abbas & Laksito, 2022). As a result, the audit committee cannot perform its duties and responsibilities effectively, and the oversight

role remains ineffective. This research supports the findings of Sadda & Januarti (2023) and Jannah & Rasuli (2021).

The Influence of Total Accruals on Financial Statement Fraud

The accrual concept is an accounting method where management records company revenue when a transaction occurs, not when cash is received or paid. Although this accrual principle is useful in reflecting financial conditions more realistically, it is often misused for manipulation. One form of manipulation is recording revenue that has not yet been received to excessively increase profits. As a result, profits in a certain period may appear much larger than in previous periods, leading to unusual financial reporting and creating opportunities for fraud. This research aligns with the study by Yarana (2023), which reveals that total accruals have a positive influence on financial statement fraud.

The Influence of CEO Photo Frequency on Financial Statement Fraud

The presence of a CEO's photo in a company's annual report is considered a symbol of transparency and accountability. The photo provides stakeholders with information about the CEO's identity and responsibility for the company's performance during a specific period. By displaying the CEO's photo, companies aim to build public trust. Research by Alfarago et al. (2023) and Situngkir & Triyanto (2020) shows that the frequency of CEO photos does not reflect arrogance or power. This research also reveals that the display of CEO photos is not proven to be used as a way to maintain status or position. Instead, CEO photos aim to demonstrate transparency in company activities, prove the CEO's responsibility, and introduce the company's profile.

CONCLUSION

Based on the test results, this study shows that the variables of financial stability, change in directors, and total accruals have a positive influence on financial statement fraud. Conversely, the variables of related party transactions, oversight effectiveness, and CEO photo frequency do not influence financial statement fraud.

This study has limitations, as indicated by the Nagelkerke R-Square value of 49%, which suggests that 51% of other independent variables still influence financial statement fraud. Additionally, this study uses 396 sample data from the period 2021–2023. For future research, it is recommended to modify or add independent variables, such as director remuneration and Loan Loss Provision (LLP), or consider using moderation variables. Furthermore, extending the research period beyond 2021–2023 could increase the sample size, thereby improving the quality and validity of the research results.

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