

## DETECTING FRAUDULENT OF FINANCIAL STATEMENTS USING FRAUD S.C.O.R.E MODEL AND FINANCIAL DISTRESS

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**Abstract:** The problem of fraud in financial statements is a global problem that has crossed borders of time and country. This research was created to prevent fraud by detecting financial statements listed on the Indonesia Stock Exchange (IDX). The fraud detection tools used in this research are F-S.C.O.R.E and Financial Distress. S.C.O.R.E stands for Stimulus, Capability, Opportunity, Rationalization, and Ego, which are supporting variables in detecting fraud. The research results show that Stimulus, Capability, and Financial Distress effectively detect fraud. Fraud detection in the research concluded that companies that have strong indications of committing fraud are companies categorized in industrials in the IDX Industrial Classification.

**Keywords:** *F-Score, S.C.O.R.E, Fraud Pentagon Theory, Financial Distress, Z-Score.*

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### 1. Introduction

Reports that aim to report historical events related to company performance in the quantitative form are financial statements (Duchac *et al.*, 2007). The company's financial statements have become a responsibility and obligation to report to interested parties such as investors, governments, creditors, banks, and the wider community (Duchac *et al.*, 2007). The ideal purpose of financial reporting is to provide essential information related to the company's performance so that interested parties can take a policy, action, and decision (Dewi & Anisykurlillah, 2021). In real life, not all companies carry out financial reporting honestly or follow the actual conditions of the company. Acts of financial reporting that deviate and are not following the company's actual performance are called fraudulent of financial statements.

One of the fraudulent financial statement cases that started the 21st century and impacted the global world was the case of a company that controlled the telecommunications market in America named MCI Communication (MCI Com) in 2002 (Gottschalk, 2017). MCI Com took advantage of the weakness of applicable accounting standards and regulations by increasing the value of its assets by 11 billion USD and causing the global world, especially America, to print one of the biggest scandals in the early 21st century (Barnes, 2011).

Entering the middle of the 21st century, especially in 2009, the global world was shaken again by the case of revenue manipulation of 1,5 billion USD by a company engaged in computer services, namely Mahindra Satyam in India (Bhasin, 2013). In addition to revenue manipulation, companies also manipulate transaction accounts that attract investors' attention, such as cash flow statements (Bhasin, 2016).

In April 2020, a report called “Report to the Nations” published by the Association of Certified Fraud Examiners (ACFE) showed that financial statement fraud schemes are the least common and most costly, with USD 954,000 median loss and 10% of cases in the world. The fraudulent of financial statements are reported for 14% of cases in the Asia Pacific, 11% in Sub-Saharan Africa, 7% in government organizations, 10% in banking and financial services industry, 11% in Western Europe, 10% in Eastern Europe and Western/Central Asia, 7% in the Middle East and North Africa, 19% in Latin America and the Caribbean, and 12% in Southern Asia. The “Report to the Nations” revealed that the median velocity of financial statement fraud schemes is the greatest velocity with USD 39,800 per month.

Various cases prove that fraudulent of financial statements is a serious problem and a threat to a country (Abdullahi & Mansor, 2018). Historical events from financial fraud reports provide lessons and experience to the world that companies that commit fraud cases tend to be realized too late by stakeholders and the wider community. The delay in realizing companies that have committed fraud in financial statements has a negative impact and a bad effect on a country economically, socially, and legally (Abdullahi & Mansor, 2018).

Handling and anticipating a company before the company reaches its peak in committing fraudulent financial statements can be done by detecting its financial statements. Detection of financial statements can be done using various fraud detection methods that previous researchers have created.

The detection of financial statements carried out in this study aims to get an earlier step in anticipating and taking action against companies that have indications of committing fraud so that cases of fraud do not harm stakeholders and the state. The research gap of this study is that researcher conducted research in the conditions of the Covid-19 pandemic and combined financial statement fraud detection tools such as the F-Score (Dechow et al., 2011) and Z-Score (Altman, 1968) with the Fraud Pentagon Theory (Marks, 2012).

## **2. Theoretical Framework and Hypotheses**

### **The Evolution of Fraud Pentagon Approach**

The fraud triangle theory, established by criminologist Donald Cressey in 1950, was one of the first ideas to detect fraud using a behavioural approach from fraud perpetrators. Cressey (1953) was the first to present his fraud triangle theory. The fraud triangle idea was used and developed by numerous academics over time. Marks (2012) suggested the fraud pentagon hypothesis as the most recent development of the fraud triangle theory. Throughout Southeast Asia, there is still relatively little study or literature that analyses corporate fraud cases utilizing the fraud pentagon technique, even though incidents of corporate fraud have been probed frequently in the Asia Pacific region.

### **Stimulus to Fraud**

Companies' financial targets that tend to increase will pressure company management to achieve these targets (Supri *et al.*, 2018). The accumulated pressure on management to achieve financial targets will force management to manipulate financial statements (Sunardi & Amin, 2018). Research conducted by Setiawati and Baningrum (2018) found that companies that have a negative Return on Assets (ROA) value indicate low profits generated by the company and cause the company's performance to be bad. Setiawati and Baningrum

(2018) statement is supported by research conducted by Emalia *et al.* (2020), who found that companies with a negative ROA show that the company's performance does not reach the target that company management will manipulate financial statements to improve reporting on company performance.

H1: Fraudulent financial reporting is detected significantly negative by the stimulus

### **Capability to Fraud**

The ability of company management to manipulate financial statements can be limited through a robust supervisory system (Albrecht *et al.*, 2010). Researcher Beasley (1997) states that the presence of a board of commissioners from an external party can increase the effectiveness of management supervision in implementing fraud prevention measures. The statement given by Beasley (1997) is proven by researchers Albrecht *et al.* (2010). Researchers Albrecht *et al.* (2010) found that companies that do not have a high independent board composition increase management's ability to manipulate financial statements.

H2: Fraudulent financial reporting is detected significantly negative by capability

### **Opportunity to Fraud**

Accounts receivable in the financial statements are accounts that have a high inherent risk, so they have the potential to be manipulated (Miller *et al.*, 2012). High inherent risk can occur in accounts receivable because the value of receivables is a value that requires subjective assessment and estimation (Skousen *et al.*, 2009). Research conducted by Loebbecke *et al.* (1989) found that companies committed fraud will manipulate accounts receivable. A high ratio value in the receivables ratio indicates that the company has indications of manipulating financial statements (Skousen *et al.*, 2009).

H3: Fraudulent financial reporting is detected significantly positive by opportunity

### **Rationalization to Fraud**

Deviant behaviour and violation of norms can be justified through rationalization techniques (Sykes, 2013). Rationalization of fraudulent behaviour can occur when the auditor gives an unqualified opinion to the company on the presentation of the financial statements that have been made (Skousen *et al.*, 2009). An unqualified opinion is an opinion that states that the company is fair and has followed the applicable accounting standards in the presentation of financial statements (Francis & Krishnan, 1999), but management often uses it to justify the fraud committed (Lokanan & Sharma, 2018).

H4: Fraudulent financial reporting is detected significantly positive by rationalization

### **Ego to Fraud**

Pictures and information related to the company's achievements of the president director can increase the president director's arrogance (Utami & Pusparini, 2019). The arrogance of the president director in a company can be a fraud factor. The president director who has a high level of arrogance will assume that his abilities and status are important for the company's performance (Apriliana & Agustina, 2017). All regulations and company internal controls cannot apply to the president director committing fraud.

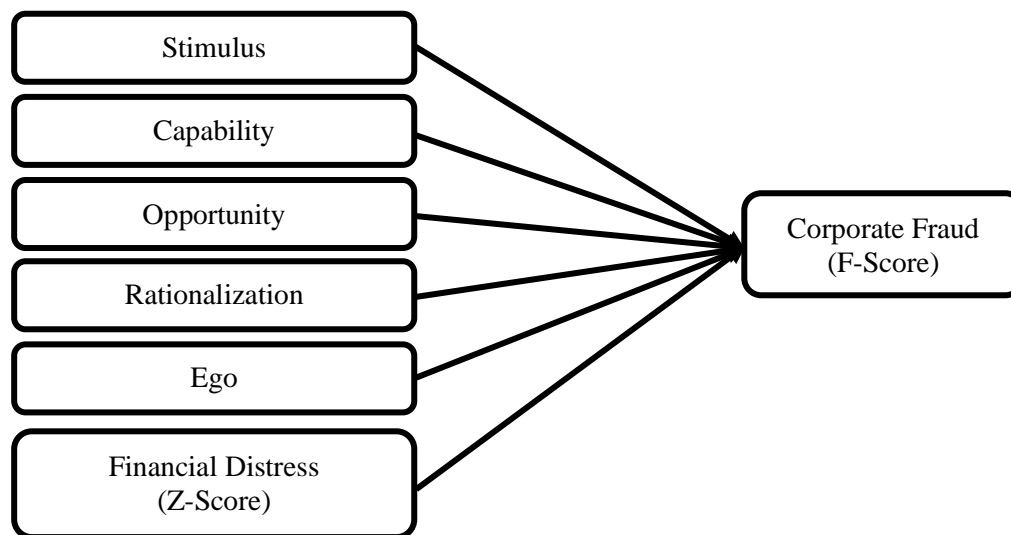
H5: Fraudulent financial reporting is detected significantly positive by ego

### Financial Distress

Financial distress experienced by a company occurs when the company fails to meet the payment schedule or when cash flow projections indicate that the company is experiencing a decline (Mohamed, 2020). Companies that experience financial distress will lead to bankruptcy. The financial distress experienced by the company will be a driving factor for company management to improve the company's financial condition or manipulate financial statements (Aviantara, 2021). Management who manipulates financial statements in a state of financial distress will try to cover up the actual condition of the company by manipulating revenue, expenses, and liabilities accounts (Utami & Pusparini, 2019).

H6: Fraudulent financial reporting is detected positively by financial distress

**Figure 1. Research Framework**



### 3. Research Method

Based on the characteristics of the research problem, this research is historical research and comparative casual research. This research is characterized by a problem in the form of a causal relationship between the variables Stimulus, Capability, Opportunity, Rationalization, Ego, and Z-Score with the fraud variable in the financial statements (Fraudulent of Financial Statement). Research on problems related to past phenomena aims to carry out the construction of past phenomena in a systematic, objective, and accurate manner that is useful for anticipating the future is historical research. Data collection for research is data on financial statements from public companies listed on the Indonesia Stock Exchange (IDX) from 2015 to 2020 (Hendriyani *et al.*, 2017).

Non-financial companies listed on the Indonesia Stock Exchange (IDX) are the population in this study. Data from 2015 to 2020 will be used in this study because the research results in the data period can reflect current conditions. Purposive sampling is a method of collecting data in this study. Sampling criteria will be taken based on predetermined criteria as follows:

1. The company used in this research is listed on the Indonesia Stock Exchange (IDX) from 2013 to 2020.

2. The companies used are not included in the finance, property, real estate, and construction sectors.
3. The use of foreign currency in financial statements will cause fluctuations in the value of the rupiah currency; therefore, the reports used are only companies that publish financial statements with rupiah currency (Abbas, 2017).
4. The company has complete data such as financial reports and annual reports that can be used to test research variables.

**Table 1. Operational Definition of Variable**

Variable	Measurement	Source
Fraudulent of Financial Statement	F-Score	Dechow <i>et al.</i> (2011)
Stimulus	Return on Asset	Annisya <i>et al.</i> (2016)
Capability	Proportion of Independent Commissioners	Akbar (2017)
Opportunity	Account Receivable Ratio	Skousen, Smith, and Wright (2009)
Rationalization	Audit Opinion	Akbar (2017)
Ego	Total picture of CEO in the annual report	Quraini and Rimawati (2018)
Financial Distress	Z-Score	Altman (1968)

Source: Processed data

#### 4. Results and Discussion

##### Descriptive Statistics

**Table 2. Descriptive Statistics**

Variable	Obs	Mean	Std. Dev.	Min	Max
F-Score	1224	0.0884	3.6582	-74.7707	82.3942
Stimulus	1224	0.0027	0.3571	-10.8894	0.9210
Capability	1224	0.3973	0.1227	0.2000	1.0000
Opportunity	1224	-0.0070	27.4409	-784.0467	395.1650
Z-Score	1224	2.8657	6.9247	-114.3809	48.5100

Source: Processed data

**Table 3. Descriptive Statistics of Dummy Variable**

Variable	Category	Frequence	Percentage
Rational	Unqualified Opinion	1210	98.86%
	Other from Unqualified Opinion	14	1.14%
	<b>Total</b>	<b>1224</b>	<b>100%</b>

Source: Processed data

**Table 4. Descriptive Statistics of Frequence**

Variable	Number of CEO Picture	Frequence	Percentage
Ego	0	64	5.23%
	1	218	17.81%
	2	256	20.92%
	3	271	22.14%
	4	163	13.32%
	5	101	8.25%
	6	57	4.66%
	7	37	3.02%
	8	16	1.31%
	9	13	1.06%
	10	5	0.41%
	11	4	0.33%
	12	3	0.25%
	13	2	0.16%
	14	2	0.16%
	16	2	0.16%
	17	2	0.16%
	18	1	0.08%
	19	2	0.16%
	20	3	0.25%
	21	1	0.08%
	23	1	0.08%
	<b>Total</b>	<b>1224</b>	<b>100.00%</b>

Source: Processed data

The data used to detect fraud in the financial statements is 1,224 data, the entire research data. There are 1,224 company data, of which there are indications of fraud being proxied through the F-Score variable. The F-Score variable with a maximum value of 82.3942 indicates that a company named PT Tirta Mahakam Resources Tbk (TIRT) has indications of committing fraud. TIRT has a type of business that manufacturing and selling of plywood and related wood products. The company with a minimum score of -74,7707 on the F-Score variable is owned by PT Jakarta Kyoei Steel Works Tbk (JKSW). The results of the F-Score from JKSW indicate that the company has a low indication of committing fraud. The type of business run by JKSW is the steel rolling industry. Overall, the companies listed on IDX have an average F-Score of 0.0884. The average value of 0.0884 shows that companies listed on IDX have low indications of committing fraud.



The mean value for the stimulus variable in the statistical data table 2 shows that the companies in this study have low performance in generating profits by managing their assets. According to Hussain *et al.* (2020), companies that have low performance in generating profits are still in the growth stage, which is especially common in listed companies.

The capability is a variable that measures the composition of independent commissioners in the company. The mean value in table 2 shows that the companies in this study have an independent commissioner composition of 40%. This 40% composition shows that the companies included in this study have complied with the Financial Services Authority (OJK) Regulation No. 33/POJK.04/2014 Article 20 concerning the Directors and Board of Commissioners in Listed Companies which states that the composition of the Independent Board of Commissioners in a listed company must be at least 30%.

The maximum and minimum values for the opportunity variable in table 2 occurred in JKSW. JKSW had a high value of the receivable ratio in 2019 and a low receivable ratio in 2020. A significant decrease in the receivable ratio value occurred due to the company had no sales in 2020.

The statistics of the rationalization variable in table 3 show that 98.86% of companies in this study received an unqualified opinion from Public Accounting Firms. A company that gets an unqualified opinion means that the company has presented financial statements by following applicable accounting standards. However, under certain conditions, not all companies are able to present financial statements by following applicable standards; therefore, in this study, there were 1.14% of companies that did not get an unqualified opinion from the Public Accounting Firms.

The statistics of the ego variable in table 4 show the frequencies pictures of the president directors presented in the company's annual report. The statistical results provided the information that, on average, the companies in this study present photos of the president director three times in the company's annual report. Companies in Indonesia will generally present pictures of the president director in the company's annual report to introduce the company to the public.

The mean value of the financial distress variable with the Z-Score measurement in table 2 shows that the companies in this study were classified in gray area. Gray area means that the company has fifty percent to be classified as a financial distress company and fifty percent as a financially healthy company.

## Multiple Linear Regression

**Table 5. Multiple Linear Regression**

F-Score	(1)	(2)	(3)	(4)	(5)	(6)
Stimulus	-1.6613*	-1.6753*	-1.7014**	-1.8917**	-1.9026**	-2.2518**
	(-2.53)	(-2.57)	(-2.66)	(-2.77)	(-2.79)	(-3.57)
Capability		-1.6181*	-1.6088*	-1.5589*	-1.5814*	-1.5298*
		(-1.97)	(-2.06)	(-2.01)	(-2.03)	(-1.99)
Opportunity			-0.0329	-0.0329	-0.0329	-0.0329
			(-0.95)	(-0.95)	(-0.95)	(-0.96)
Rational				1.8490	1.7855	0.4973
				(1.43)	(1.38)	(0.41)

Ego					0.0374*	0.0303
					(1.85)	(1.57)
Z-Score						0.0531*
						(1.79)
Constant	0.4711	1.0969*	1.0877*	-0.7466	-0.7969	0.3370
	(1.46)	(2.35)	(2.43)	(-0.57)	(-0.61)	(0.26)
Control for:						
Sector-FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	1224	1224	1224	1224	1224	1224
Adj. R-squared	0.0183	0.0204	0.0808	0.0826	0.0825	0.0878

Source: Processed data

### Stimulus

Testing the first stimulus hypothesis is proven and concludes that the stimulus variable provides a strong impetus for fraud in financial statements. The stimulus variable has a significance value of -3.57, which has a negative effect on this study. The results of this study follow the research conducted by Emalia *et al.* (2020), which proves that companies that have low performance will cause pressure on company management to manipulate financial statements. Researchers Setiawati and Baningrum (2018) state that high financial targets owned by company management will cause management to justify all means to achieve these targets. If the company's ROA value is low, this also indicates low company performance and will put intense pressure on management to manipulate financial statements (Setiawati & Baningrum, 2018).

### Capability

The test results on the second hypothesis of capability are proven with a significance value of -1.99. This concludes that the composition of the independent commissioners in the company prevents management's fraudulent actions. This research is directly proportional to the study conducted by Beasley (1997), Nanda, Salmiah, and Mulyana (2019), Rengganis *et al.* (2019), Andayani (2010), Manurung and Hardika (2015), which state that effective management supervision can minimize fraudulent practices that occur in the corporate environment. An independent board within the company can increase the effectiveness of company supervision, where commissioners who come from outside the company will increase the board's effectiveness in supervising management to prevent fraud in financial statements.

### Opportunity

The results of testing the third opportunity hypothesis are not proven with a significance value of -0.96. The results of this study occur in research that has been carried out by researchers Setiawati and Baningrum (2018), which states that the average value of changes in the company's receivables from the previous year does not affect the company's cash turnover. Researchers Yesiariani and Rahayu (2016) found that the number of trade receivables owned by the company did not reduce the amount of cash that the company could



use for its operational activities so that the ratio of changes in accounts receivable could not indicate management to commit fraudulent financial statements.

### **Rationalization**

The results of testing the fourth hypothesis of rationalization were not proven with a significance value of 0.41. The results of the fourth hypothesis have similarities with the results of researchers Suyanto (2009), Brazel, Jones, and Zimbelman (2009), which state that the unqualified opinion given by the auditor cannot be a benchmark point management rationalizes behaviour committed in fraud. Researcher Suyanto (2009) states that the audit opinion only explains the fairness in preparing financial statements. It cannot reflect the aspects that result in rationalizing management behaviour that commits fraud. From the contradictory results, researcher Suyanto (2009) provides a solution that rationalization can be detected using the method Clinard and Cressey (1954) used in direct interviews with management who are the direct perpetrators of fraud in the company.

### **Ego**

The results of testing the fifth hypothesis, namely the Ego variable, is not proven with a significance value of 1.57. This concludes that the number of pictures of the president director contained in the annual report does not indicate fraud in the company. Researchers Nanda *et al.* (2019) state that fraud detection tools using management pictures can fail if only a few companies display management pictures in a research sample.

### **Financial Distress**

The results of testing the sixth hypothesis in the form of a financial distress variable are proven with a significance value of 1.79. The hypothesis testing results follow research conducted by Utami and Pusparini (2019). They found that company management will manipulate financial statements to cover the condition of companies experiencing financial distress and report good performance in the short term, although the company's condition is in trouble.

## **5. Conclusion**

The problem of fraud in financial statements is a global problem that has crossed borders of time and country. Fraud is caused by a stimulus, capability, opportunity, rationalization, and ego factors. The fraud always creates a symbiotic relationship of parasitism on the various parties involved in the fraudulent act. This research was created to anticipate and detect fraud with the Fraud S.C.O.R.E Model and Financial Distress. The test results conclude that fraud in financial statements can be detected using the stimulus, capability, and financial distress variables. Fraud detection in the study concluded that companies that have strong indications of committing fraud are companies categorized in industrials in IDX Industrial Classification.

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