



(RESEARCH ARTICLE)



## Detecting fraud of financial reports through fraud hexagon theory and financial distress elements

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### Abstract

The purpose of this study is to prevent fraud by detecting financial reports listed on the Indonesia Stock Exchange (IDX). The fraud detection tools used in this study are elements of the Fraud Hexagon Theory and Financial Distress. The fraud hexagon elements consist of Stimulus, Capability, Collusion, Opportunity, Rationalization, and Ego which are supporting variables in detecting fraudulent financial statements. The population of this study is all State-Owned Enterprises listed on the IDX for the 2017-2021 period. Purposive sampling technique was used to determine the research sample and obtained a sample of 100 observations. The research method used is multiple linear regression analysis method. The results of the study show that stimulus, capability, collusion, opportunity, rationalization, ego and financial distress simultaneously influence financial statement fraud. Partially, stimulus, collusion, and ego effect detecting fraudulent financial statements, while capability, opportunity, rationalization, and financial distress have no effect on detecting fraudulent financial statements. This research has implications for the government as a regulator, or parties who use information in financial statements as a material consideration in assessing the opportunities for fraudulent acts to occur in company financial reports.

**Keywords:** F-Score; Fraud Hexagon Theory; Financial Distress; Z-Score

### 1. Introduction

Financial reports are the final output in the accounting process which is very important and is an important part of financial reporting, this is because financial reports can influence the decision making of management, investors, creditors and other parties with an interest in a company (Agusputri & Sofie, 2019).

Fraudulent financial reporting is an attempt made intentionally by company management to trick and mislead users of financial statements, by presenting and manipulating the material value of financial reports. This is usually motivated by an interest in company finances so that the company's financial condition looks attractive to users of financial statements (Kurnia & Anis, 2017).

On average, financial statement manipulation is carried out by changing loss conditions into profits which will later change the company's condition which is actually bad to look good and cause enormous losses for both investors and the country. This is usually done by management due to corruption or financial difficulties. The state of a company that is in financial trouble is called financial distress, this is a big warning for companies to increase efforts and pay more attention to avoid bankruptcy. Companies experiencing financial distress can create new problems, namely accounting irregularities, including committing acts of fraud.

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Early detection of fraudulent acts in financial reports is a must that must be prioritized. The detection of financial statements carried out in this study aims to get the first step in anticipating and acting against companies that are indicated to be committing fraud so that cases of fraud do not harm stakeholders and the state.

This study uses the elements in the fraud hexagon as a basis for examining the effect on fraudulent financial reporting because this theory is a refinement of the pentagon fraud theory put forward by Georgios L Vousinas in 2019 which consists of six factors that cause fraud, namely Stimulus, Capability, Collusion, Opportunity, Rationalization (rationalization), and Ego. The stimulus element provides information that fraud occurs because of a certain stimulus or pressure, both financial and non-financial, capability, namely the ability that allows fraud to occur, collusion, which is an element that shows cooperation carried out by one person to commit fraud, opportunity explains that fraud is caused by an opportunity. or gaps due to weak internal supervision and control, rationalization, namely fraud that occurs because of the perpetrator's self-righteousness and finally, ego, namely one's attitude of superiority. Besides the 6 factors mentioned above, this study adds a new variable test, namely financial distress.

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## 2. Literature review and hypothesis development

The first element in detecting fraud is pressure. Pressure is a condition to commit fraud (Cressey, 1953). These circumstances can be internal and external factors in influencing individuals to commit fraud. In a company, it must have a financial target (financial target) to be achieved, namely in the form of profit. The board of directors sets financial targets in the form of profitability and sales where this often causes management to feel pressured to meet these expectations. If management can meet these targets, then management can get a bonus from the board of directors which is in line with the exposure of agency theory. These various pressures can encourage someone to practice fraud (Skousen et al., 2009).

The results of previous research explain that individuals in fulfilling their personal interests will commit fraud to get out of this pressure. The results of this study are supported by the results of the research by Septriani & Desi Handayani (2018), Andrew, Candy, (2022) and Kusumosari & Solikhah (2021) which provide results indicating that financial targets have an effect on detecting fraud in financial reports.

### H1: Stimulus effect detecting Fraud Financial Statements

Capability is a person's ability to commit fraud which can be proxied by a change of directors. Change of directors can be an indication of fraud being committed in the company. Agency theory by Jensen & Meckling (2012) states that in an organization, there is a relationship between stakeholders (principals) and managers (agents) who have their own interests. Management as a party authorized to make decisions in business activities has more capability than the principal. The capabilities possessed by agents can be used by management to commit fraud for personal gain, one of which is the change of directors.

Changes in directors which are often filled with conflicts of interest can be used to cover up previous frauds, with the excuse of improving directors to become more competent. Changes in directors can result in initial performance that is not optimal because it takes time to adapt, resulting in command-and-control instability within the company. This command instability is exploited by management, who are considered to have the ability and have a personal interest in formulating a strategy and determining the right time to commit fraud. Wolfe & Hermanson (2004) argues that changes in directors can cause stress periods which have an impact on increasing opportunities for fraud. The conclusion is that a person's position in an organization can provide the ability to create and take advantage of opportunities to commit fraud. Theoretically it is also explained that the ability or competence to commit fraud arises because of self-interest to gain many benefits for oneself (self-interest).

This is supported by research by Septriani & Desi Handayani (2018), Preicilia et al. (2022) and Nadziliyah & Primasari (2022) which gives the result that changing directors plays a role in detecting financial statement fraud.

### H2: Capability effect detecting Fraud Financial Statements

The agency theory developed by (Jensen & Meckling, 2012) states that in an organization there is a relationship between stakeholders (principals) and managers (agents), each of whom has an interest and creates a conflict of interest. The management who is authorized to manage the company can take advantage of this authority to achieve its own prosperity by committing fraud, one of which is collusion. Collusion is an agreement between two or more people for unfavorable purposes, such as deceiving third parties of their rights (Vousinas, 2019). Collusion within a company can

occur in various activities, one of which is the company's involvement in government projects. Collusion is an additional element as a trigger for fraud (Vousinas, 2019).

The above is supported by the results of research by Handoko (2021) and Sari & Nugroho (2021) which produce research that cooperation with government projects has an influence on detecting financial statement fraud.

### H3: Collusion effect detecting Financial Statement Fraud

The next element is opportunity which is an opportunity to commit fraud. One of these opportunities can arise when there is weak supervision. This is in line with agency theory where agents as company controllers tend to have more overall information about the company than the principal. This can lead to information asymmetry, because one party has more information than the other party (Scott, 2000).

According to SAS No. 99, ineffective monitoring is a condition where there is no effective oversight within a company or does not have a supervisory unit for a company that effectively monitors performance within the company. This happened as a result of ineffective oversight in financial reporting and internal control caused by management domination by one party.

It can also be concluded that ineffectiveness in the supervisory function is caused by a lack of internal control which can open opportunities for someone to carry out financial manipulation. According to (Rachmawati & Marsono, 2014) weak internal controls, indiscipline, weaknesses in accessing information, no audit mechanism, and apathy are opportunities that make someone commit fraud.

This is reinforced by the results of research from Kusumosari & Solikhah (2021), Wilantari et al. (2020) shows that ineffective monitoring has an effect on fraudulent financial reporting.

### H4: Opportunity effect detecting Fraud Financial Statements

Agency theory by Jensen & Meckling (2012) states that in a company there is a relationship between the shareholders (principal) and the management (agent) arising from a contract where the principal orders the agent to do something by delegating his decision-making authority to management side. Agency theory assumes that the agent has more information about the company than the principal. This can cause agents to justify and assume all forms of decisions and activities to be carried out are rational decisions. One form of justification for fraud committed is to take advantage of the change of the company's external auditor.

The auditor is one of the important supervisors in financial reports. The change of auditors in this study proxies elements of rationalization. The auditor is also a source of information in knowing where there are companies that commit acts of fraud. Auditor changes that are often carried out by a company indicate that the company is committing fraud. A company can change the auditor to reduce the possibility of detecting fraudulent financial statements by the auditor (Lou & Wang, 2011). Thus, a change in auditors can increase the tendency for fraudulent financial reporting within the company by rationalizing misstatements that are considered immaterial but have been curated. This is supported by the research results of Septriani & Desi Handayani (2018), Cipta & Nurbaiti (2022) which show that change in auditors effect financial statement fraud.

### H5: Rationalization effect detecting Fraud Financial Statements

The next element is ego. Ego or arrogance is an attitude of superiority that arises from the belief that internal controls and rules do not apply to them and will not be detected in committing fraud (Imtikhani & Sukirman, 2021). The agency theory developed by Jensen & Meckling (2012) states that in a company there is a relationship between the shareholders (principal) and management (agent) arising from an employment contract where the principal delegates his authority to the agent. This delegation of authority creates information asymmetry between management and principals and can lead to feelings of superiority among management. Arrogant feelings can also appear in the Main Director who has multiple positions or is called CEO Duality.

Several studies have studied how the influence of the duality of the position held by the CEO can affect the occurrence of fraudulent financial statements in a company. Like the results of research from Kusumosari & Solikhah (2021) in the Scientific Journal of Financial Accounting where CEO duality has an influence on financial statement fraud.

CEOs who have multiple positions are assumed to feel egotistical or arrogant because they feel smart and powerful because they feel capable of carrying out more than one responsibility both inside and outside the company. Good company performance should not have anything to do with the dual position of directors. This dual position allows for an increase in fraud. For example, from multiple positions this encourages someone to commit collusion and even sacrifice the interests of shareholders. In addition, the performance of members of the board of directors can be disrupted because they are too busy and not thorough. The above statement is supported by research conducted by Dechow et al., (1996) which shows that fraud related to earnings manipulation is dominated by management and multiple positions held by CEOs.

H6: Ego effect detecting Fraud Financial Statements

The effect of financial distress on financial statement fraud

Agency theory by Jensen & Meckling (2012) states that there is a relationship between the stakeholder (principal) and the manager (agent) who have their own interests. Principals who demand that agents run the company well and expect positive performance results. When the company continues to be in good condition and shows positive performance, the principal has an obligation to provide bonuses to the agent.

Management as a party authorized to make decisions in business activities has more capability than the principal. The capability possessed by the agent can be used by the management to commit fraud to obtain benefits that benefit him and the company, one of which is by manipulating financial reports when the company's condition is not in good condition, one of which is financial distress.

Financial distress experienced by a company occurs when the company fails to meet payment schedules or when cash flow projects indicate the company is experiencing a decline. Companies experiencing financial distress will lead to bankruptcy. Financial distress experienced by the company will be a driving factor for company management to improve the company's financial condition or even manipulate financial reports. 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, expense and liability accounts (Utami & Pusparini, 2019).

This statement is supported by the results of research from Andrew, Candy (2022), Utami & Pusparini (2019) which shows that financial distress has an influence on detecting financial statement fraud.

H7: Financial Distress effect detecting Fraud Financial Statements

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### 3. Material and method

The location of this research is the State-Owned Enterprises (SOEs) listed on the Indonesia Stock Exchange (IDX). The choice of this location was based on the phenomenon of fraud that occurred in several state-owned companies in Indonesia, as experienced by PT Garuda Indonesia (Persero) Tbk and PT Asuransi Jiwasraya (Persero) Tbk.

The research was conducted from January to May 2023. The observation period was carried out from 2017 to 2021 using a non-participant observation approach. For 2022 it was not included in the study because the companies listed on the IDX had not yet reported and published annual financial reports for the 2022 financial year. All required documents were downloaded via the internet in February 2023. The population in this study is all state-owned companies listed on the IDX for the 2017-2021 period. The sample in this study is a state-owned company listed on the IDX in the 2017-2021 period which fits the sample selection criteria in this study.

The data analysis method used in this study is multiple linear regression, so that the effect of the independent variable on the dependent variable can be seen. Hypothesis testing is carried out by using multiple regression statistical analysis, which consists of adjusted R square to see the percentage effect of the independent variables included in the study on the dependent variable, F test to test the hypothesis between more than one independent variable on one dependent variable, and t test to test hypothesis between one independent variable to one dependent variable, and the t test to test the hypothesis between one independent variable to one dependent variable.

## 4. Result and discussion

### 4.1. Simultaneous Test (Test F)

The F test aims to determine the effect of the independent variables stimulus, capability, collusion, opportunity, rationalization, ego and financial distress together on the dependent variable financial statement fraud. The F test is carried out by comparing the significance value of  $\alpha$  with 0.05. If the significance value is greater than 0.05 then the independent variables simultaneously have no effect on the dependent variable, conversely if the significance value is less than 0.05 then the independent variables simultaneously have an effect on the dependent variable. The results of the F test can be seen in Table 1 below

**Table 1** F-Test

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.713	7	0.388	6.145	0.000 <sup>b</sup>
	Residual	5.803	92	0.063		
	Total	8.516	99			
a. Dependent Variable: Y						
b. Predictors: (Constant), X7, X6, X2, X5, X1, X4, X3						

Secondary Data, 2023

Based on Table 1 the significance value is  $0.000 < 0.05$  so that the independent variables stimulus, capability, collusion, opportunity, rationalization, ego and financial distress jointly affect the dependent variable financial statements fraud in BUMN companies listed on the Stock Exchange Indonesia for the 2017-2021 period.

### 4.2. Determination Coefficient Test (R<sup>2</sup>)

The coefficient of determination test in linear regression is a basis for the ability of the independent variables to explain the variance. The coefficient of determination uses R Square. The results of the coefficient of determination test can be seen in Table 5.8 below:

**Table 2** Determination Coefficient

Model	R	R Square	Adjusted R Square
1	0.564 <sup>a</sup>	0.319	0.267

Secondary Data, 2023

It can be seen in Table 5.8 above that the value of the coefficient of determination (adjusted R<sup>2</sup>) is 0.267, which means that the variation in the ups and downs of financial statements fraud, 26.7% is influenced by stimulus, capability, collusion, opportunity, rationalization, ego and financial distress while the remaining 73.3% is influenced by other factors not examined in this study.

### 4.3. Multiple Linear Regression Analysis

Based on the data obtained to determine the pattern of the independent variables in this study, multiple linear regression equations were compiled. Multiple linear regression in this study is used to determine the effect of independent variables consisting of stimulus, capability, collusion, opportunity, rationalization, ego, financial distress on the dependent variable, namely financial statements fraud. This regression analysis will be used to determine the direction of the causal relationship between the independent variable and the dependent variable. The results of multiple linear regression can be seen in Table 3.

**Table 3** Multiple Linear Regression Results

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-0.357	0.121		-2.946	0.004
	X1_Stimulus	0.837	0.353	0.212	2.369	0.020
	X2_Capability	0.031	0.073	0.037	0.420	0.676
	X3_Collusion	0.148	0.055	0.247	2.682	0.009
	X4_Opportunity	0.372	0.224	0.148	1.666	0.099
	X5_Rationalization	-0.032	0.063	-0.045	-0.513	0.609
	X6_Ego	0.226	0.058	0.348	3.879	0.000
	X7_FinDistress	0.011	0.009	0.110	1.226	0.223
a. Dependent Variable: Y						

Secondary Data, 2023

Based on Table 3 above, a multiple linear regression equation can be made as follows:

$$FS_{\text{Fraud}} = -0.357 + 0.837\text{Stimulus} + 0.031\text{Capability} + 0.148\text{Collusion} + 0.372\text{Opportunity} - 0.032\text{Rationalization} + 0.226\text{Ego} + 0.011\text{Fin.Disstress}$$

The regression equation regarding the effect of stimulus, capability, collusion, opportunity, rationalization, ego, financial distress on the dependent variable, namely fraudulent financial statements in state-owned companies listed on the Indonesia Stock Exchange can be explained as follows:

- The constant coefficient value is -0.357 which means that if the seven independent variables namely stimulus, capability, collusion, opportunity, rationalization, ego and financial distress are considered constant or do not change, then financial statement fraud is -0.357.
- The stimulus coefficient value is 0.837 with a positive value. This shows that every increase in stimulus by 1 unit means that financial statement fraud also increases by 0.837 assuming other variables are constant.
- The capability coefficient value is 0.031 with a positive value. This shows that for every 1 unit increase in capability, it means that financial statement fraud will increase by 0.031 assuming other variables are constant.
- The collusion coefficient is 0.148 with a positive value. This shows that every increase in collusion by 1 unit means that financial statement fraud will increase by 0.148 assuming other variables are constant.
- The opportunity coefficient value is 0.372 with a positive value. This shows that every increase in opportunity by 1 unit means that financial statement fraud will increase by 0.372 assuming other variables are constant.
- The rationalization coefficient value is -0.032 with a negative value. This shows that for every 1 unit decrease in rationalization, it means that financial statement fraud will decrease by -0.032 assuming other variables are constant.
- The ego coefficient value is 0.226 with a positive value. This shows that every increase in ego by 1 unit means that financial statement fraud will increase by 0.226 assuming other variables are constant.
- The financial distress coefficient is 0.011 with a positive value. This shows that every increase in financial distress by 1 unit means that financial statement fraud will increase by 0.011 assuming other variables are constant.

#### 4.3.1. The Effect of Stimulus in Detecting Fraud Financial Statements

Based on the results of multiple linear regression analysis in Table 3, the t value is 2,396 with a significance value of 0.020. This figure indicates that the significance value is  $0.020 < 0.05$ , which means that the stimulus has a positive effect on detecting fraudulent financial statements, so that the first hypothesis which states that stimulus has an effect on detecting financial statement fraud is accepted.

#### *4.3.2. The Effect of Capability in Detecting Fraud Financial Statements*

Based on the results of multiple linear regression analysis in Table 3, the t value is 0.420 with a significance value of 0.676. This figure indicates that the significance value is  $0.676 > 0.05$ , which means that capability has no effect on detecting fraudulent financial statements, so the second hypothesis which states that capability effect on detecting fraudulent financial statements is rejected.

#### *4.3.3. The Effect of Collusion in Detecting Fraud Financial Statements*

Based on the results of multiple linear regression analysis in Table 3, the t count is 2.682 with a significance value of 0.009. This figure indicates that the significance value is  $0.009 < 0.05$ , which means that collusion effect on detecting fraudulent financial statements, so that the third hypothesis which states that collusion effect on detecting fraudulent financial statements is accepted.

#### *4.3.4. The Effect of Opportunity in Detecting Fraud Financial Statements*

Based on the results of multiple linear regression analysis in Table 3, the t count is 1.666 with a significance value of 0.099. This figure indicates that the significance value is  $0.099 > 0.05$ , which means that opportunity has no effect in detecting fraudulent financial statements, so that the fourth hypothesis which states that opportunity has an effect on detecting fraudulent financial statements is rejected.

#### *4.3.5. The Effect of Rationalization in Detecting Fraud Financial Statements*

Based on the results of multiple linear regression analysis in Table 3, the t count is -0.513 with a significance value of 0.609. This figure indicates that the significance value is  $0.609 > 0.05$ , which means that rationalization has no effect on detecting fraudulent financial statements, so that the fifth hypothesis which states that rationalization has an effect on detecting fraudulent financial statements is rejected.

#### *4.3.6. The Effect of Ego in Detecting Fraud Financial Statements*

Based on the results of multiple linear regression analysis in Table 3, the t count is 3.879 with a significance value of 0.000. This figure indicates that the significance value is  $0.000 < 0.05$ , which means that ego has an influence in detecting fraudulent financial statements, so that the sixth hypothesis which states that ego has an influence in detecting fraudulent financial statements is accepted.

#### *4.3.7. The Effect of Financial Distress in Detecting Fraud Financial Statements*

Based on the results of multiple linear regression in Table 3, the t count is 1.226 with a significance value of 0.223. This figure indicates that the significance value is  $0.223 > 0.05$ , which means that financial distress has no effect on detecting fraudulent financial statements, so that the seventh hypothesis which states that fraudulent financial statements have an effect on detecting fraudulent financial statements is rejected.

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## **5. Conclusion**

- Stimulus has a positive effect on detecting fraudulent financial statements. This shows that the stimulus is proxied by the financial target. The higher the financial target set by the company will increase the possibility of fraud.
- Capability has no effect on detecting fraudulent financial statements. This proves that capability which is proxied by a change of directors is not proven to increase the possibility of fraudulent financial statements.
- Collusion has a positive effect on detecting fraudulent financial statements. This shows that the proxied collusion with the project is with the government. The more projects with the government will increase the possibility of fraud.
- Opportunity has no effect on detecting fraudulent financial statements. This shows that opportunity proxied by ineffective monitoring is not proven to increase the likelihood of fraudulent financial statements occurring.
- Rationalization has no effect on detecting fraudulent financial statements. This shows that rationalization proxied by a change in auditor is not proven to increase the possibility of fraudulent financial statements.
- The ego effect on detecting fraudulent financial statements. This shows that the ego is proxied by CEO Duality. The higher the CEO Duality that occurs will increase the possibility of fraud.
- Financial distress has no effect on detecting fraudulent financial statements. This shows that financial distress proxied by the Z-Score is not proven to increase the likelihood of fraudulent financial statements.

### *Managerial Implication*

Theoretically, this study draws conclusions about how the effect of fraud hexagon theory and financial distress is in detecting fraudulent financial statements. The results of this study can provide broader insights regarding the fraud hexagon theory, financial distress and also fraudulent financial statements. This research also supports the agency theory where the theory describes the existence of information asymmetry that occurs between management (agents) and the principal which raises concern for the principal about the tendency for opportunistic actions carried out by management, one of which is manipulating financial reports.

Practically, this research can be used as a consideration for companies in preventing fraudulent financial statements by using elements of fraud hexagon theory and financial distress. This research can also be a consideration for shareholders who have an interest in being able to detect whether the financial statements of a company, especially in State-Owned Enterprises, contain indications of fraud. In addition, this research can be used as a reference for other researchers who will conduct further research.

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### **Compliance with ethical standards**

#### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

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