Detecting Fraudulent Financial Statements with Analysis Fraud Hexagon: Evidence from State-Owned Enterprises Indonesia

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Abstract: - This research aims to test and analyze the influence of the six elements of the Hexagon Model of Fraud, which include pressure, capability, collusion, opportunity, rationalization, and ego on fraudulent financial statements. This research also tests and analyzes the role of the Audit Committee as a moderating variable on the factors determining the fraudulent financial statements in State-Owned Enterprises (BUMN) from 2019 to 2022. In measuring fraudulent financial statements, the F-Score Model uses purposive sampling as the basis for selection, resulting in 125 samples. Sample analysis was carried out using Warp PLS 8.0 with the SEM-PLS model. The research results show that none of the Hexagon Model of Fraud components directly impact the production of financial reports containing circumstances, except for financial pressure, which is still a significant proxy for pressure or stimulus. The decrease in collusion with financial reports is caused by the existence of the Audit Committee, which acts as a moderating variable. However, based on empirical evidence, the Audit Committee still needs help to moderate fraudulent financial statements effectively.

Key-Words: Fraud Hexagon; Fraudulent Financial Statement, Audit Committee, Pressure, Capability, Collusion, Opportunity, Rationalization, Ego.

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1 Introduction

A financial statement is a report that a company must publish annually as a form of responsibility to its stakeholders. So, it needs to be presented as accurately and flawlessly as possible. Accounting fraud schemes remain the least common, accounting for 9% of all cases but with a median loss of $593,000, according to the latest national fraud report published by the Association of Certified Fraud Examiners (ACFE), [1].

In Indonesia, a case of PT ASABRI (Persero) was reported on [2]. The Financial Audit Board (BPK) concluded that there was fraud in the management of PT ASABRI (Persero)'s finances and investment funds during 2012-2019 in the form of regulatory agreements, placement of investment funds in several company owners or shareholders in the form of shares and mutual funds. These stocks and mutual funds are risky and non-liquid investments that ultimately do not provide benefits for PT Asabri but provide personal help. The losses inflicted on the country amounted to around US$1.555 trillion.

According to the report, fraud is the most common form of financial statement crime because it can be done by individuals or employees against the company or organization where they work. A fraudulent financial statement is an action employees or groups take to report violations to a specific target, [3]. Fraudulent financial statements can be made because someone has intelligence in arranging company financial statements to make a profit themselves. Detecting fraud in financial reports is very important for the success of organizations, including State-Owned Enterprises (BUMN), for several special reasons, such as accurate and honest financial reports, which are very important for good decision-making. If financial reports are falsified, the information can mislead management, investors, and other parties relying on the data. Thus, detecting false financial statements is important to ensure legal compliance and maintain an organization's trust, sustainability, and reputation in the long term. This research examines whether the audit committee can serve as a moderating variable to determine the impact of fraudulent financial statements on State-Owned Enterprises in Indonesia with Fraud Hexagon Analysis. Previous research was still limited to Fraud Pentagon [4] and Fraud Diamond analysis.

In addition, the hexagon model of fraud, which is the most recent evolution of fraud theory [5], still exists. There are not many empirical results that support its progress. Fraud Hexagon model identifies six factors causing fraud. The first fraud model assumes that fraud occurred from a group. Currently, no element of collusion is considered as the cause of fraud based on an older model of fraud. Evidence for the former part needs to be included. The study is still acceptable because the Model was created by [5]. There is still little research that links collusion in financial statement fraud and audit committees in the relationship between the determinants of the fraud hexagon and financial statement fraud. So, this research aims to test and analyze the influence of the role of the six elements of the Hexagon Model of Fraud, which include pressure, capability, collusion, opportunity, rationalization, and ego on financial statement fraud. Examine and analyze the audit committee's role as a moderating variable in the Hexagon Model determinant of fraudulent financial statements of BUMN in Indonesia.

2 Literature Review

2.1 The Fraud Hexagon Model

The Fraud Hexagon Model was founded by [5] made it perfect as the sixth variable of the Fraud Hexagon Model, when people before used to use a fraud triangle theory that was stated by [6] and developed by [7] with the fraud diamond theory. [8] added a new variable of ego or arrogance, which became the fraud Pentagon theory. . The fraud Hexagon Model known as the SCCORE model cons, ists of the following:

Stimulus is a motive that reassures people headed for performing fraud. In crisis years, economic recession, pressure on registered employers to meet business goals, and cost cuts due to tight corporate budgets significantly increase the potential for fraud. Capability refers to personal traits and abilities that have a significant role wherever fraud occurs. Collusion refers to an agreement or compact between two or more persons to make a disadvantage to third parties. Fraudulent financial statements are complex to stop when employees or outside parties collude. Opportunity refers to people's ability to commit fraud. It is also provided by the individual's position and authority within the organization. Rationalization is an act that justifies the idea that fraud is the right thing to do. People need a reason to strengthen their will to commit fraud, which is acceptable to others. Ego is a person's sense of self-esteem or self-importance, ability, and approval from others towards themselves.

2.2 Pressure and Fraudulent Financial Statement

Stimulus/Pressure has a push button to trigger you to achieve your desired goal, but it has some limitations that make you not, so people might trick someone or even themselves into committing fraud, [9]. A study by [10], [11] stated that financial statements can trigger someone to commit fraud. However, there is also a study that [12] declined it. According to the description already stated before, the hypothesis can be decided as follows:

H_1: Pressure can affect fraudulent financial statements.

2.3 Opportunity and Fraudulent Financial Statement

Opportunity can be found because there is ineffective monitoring from a company to their employee. A study [13] stated that opportunity significantly affected Fraudulent financial statements in each case. However, a study that was done by [14] said otherwise. According to the description already stated before, the hypothesis can be decided as follows:

H_2: Opportunity affects fraudulent financial statements.

2.4 Rationalization and Fraudulent Financial Statement

Rationalization is an insight that justifies a behavior and makes it acceptable to others, [15]. On related party transactions, there is a blind spot with a high risk of causing fraudulent financial statements. The research from [15] agreed with that statement. Therefore [16] studies said otherwise. According to the description already stated before, the hypothesis can be decided as follows:

H_3: Rationalization can affect fraudulent financial statements.

2.5 Capability and Fraudulent Financial Statement

The capability can potentially encourage company directors to commit fraud. Directors have the proper permission to access company financial reports. An educational background can allow people to make fraudulent financial statements. Research done by [17] agrees with that statement. Research done by [17] said otherwise. According to the description already stated before, the hypothesis can be decided as follows:

H$_4$: Capability affects fraudulent financial statements.

2.6 Arrogance and Fraudulent Financial Statement

Ego or arrogance is the presence of a superior attitude or arrogance of a person who believes that internal controls cannot affect it personally, [18]. [19], already stated that a CEO wants to make their position in the company known to others so they cannot lose their position and reputation. They usually show off their position by putting photos everywhere on the company's annual report. Research done by [20] stated that more pictures of the CEO on the company's annual report can show how arrogant the CEO can be. However, research results by [21] said otherwise. According to the description already stated before, the hypothesis can be decided as follows:

H$_5$: CEO narcissism affects fraudulent financial statements.

2.7 Collusion and Fraudulent Financial Statement

Collusion is reaching an agreement between two or more employees about a business entity with a personal purpose that results in a fraudulent financial statement, [22]. On the other hand, political relations in a corporate context can provide several significant benefits. For example, companies with strong political ties can more easily borrow money from banks linked to the government or get tax breaks as incentives from the government. In addition, good political relations can also help companies win projects with the government, opening up opportunities to increase revenue and business growth.

Debates about the benefits and risks of political relationships within corporations demonstrate the complexity of this issue. Conducting more in-depth research to understand the broader essence of political relations in a business context is essential. This can help make more informed decisions about the company and ensure ethical and sustainable business practices. A study supports this statement, [22]. However, research done by [23] said otherwise. According to the description already indicated before, the hypothesis can be constructed as follows:

H$_6$: Political connections can affect fraudulent financial statements.

2.8 Fraudulent Financial Statement and Audit Committee

The Audit Committee is an integral part of the Board of Commissioners. The audit committee's task is to supervise the commission committee in the implementation of the financial information system up to the presentation of the company's financial reports. The audit committee acts as a form of supervision to ensure that the company's audit process and internal controls have been carried out effectively and minimize the occurrence of fraudulent financial statements, [24], [25]. The audit committee is expected to have the ability To reduce accounting and management errors, [26]. The audit committee is one of the actions carried out by the company for internal control processes. The existence of an audit committee in a company can reduce the potential for fraudulent financial statements. The Audit Committee is an integral part of the Board of Commissioners. The audit committee's task is to supervise the commission committee in the implementation of the financial information system up to the presentation of the company's financial reports. The audit committee acts as a form of supervision to ensure that the company's audit process and internal controls have been carried out effectively and minimize the occurrence of fraudulent financial statements, [27]. For the seventh to twelfth hypotheses, an audit committee can mitigate or reduce the occurrence of fraudulent financial statements in state-owned companies, except for the eighth hypothesis. This research argues that the audit committee can strengthen the effect of effective monitoring of fraudulent financial statements. The research that has been done by [28] with Purposive Sampling Criteria Table 1 as follows:

Table 1. Purposive Sampling Criteria

No.	Criteria	Total
1	Data of State-Owned Enterprises that are listed on the official website 2018-2022	39
2	Data of State-Owned Enterprises non-financial cluster	(5)
3	Data linking to research variables that are not entirely vacant for publication of annual report period	(9)
The sum of implementation on research data fitting to standards		25
Total Research Data used periode 2018-2022		**125**

Their moderating variable. According to the description already indicated before, the hypothesis can be constructed as follows:

H₇: The audit committee can undermine the effect of financial pressure towards fraudulent financial statements.

H₈: The audit committee can strengthen the effect of effective monitoring of fraudulent financial statements.

H₉: The audit committee can undermine the effect of related party transactions on fraudulent financial statements.

H₁₀: Audit committee can undermine the effect of CEO education (competence) on fraudulent financial statements.

H₁₁: The audit committee can undermine the effect of CEO narcissism (arrogance) towards fraudulent financial statements.

H₁₂: The audit committee can undermine the effect of political connections toward fraudulent financial statements.

3 Method

3.1 Population and Sample

The population chosen for this study is State-Owned Enterprises (BUMN) from 2018-2022 listed on the State-Owned Enterprises official website bumn, [29]. The sample chosen to collect is a result of purpose sampling. Of the 39 listed companies, only 125 samples will be used for this study because of specific criteria. Researchers will use data from secondary data earned from A State-Owned enterprise's official website on [29] to get the company list for 2018-2022 and from the company's official website to get their annual report for this study. The data will be processed on warp PLS 8.0 with SEM-PLS analysis.

3.2 Definition of Variable Operations

The independent commissioner supervises the business, assists the management, and prepares more objective financial statements. Free chiefs are parties that are not subsidiaries with controlling investors, individuals from the top managerial staff, and other leading bodies of magistrates. With an increasing number of independent commissioners, a board of commissioners can enhance the oversight of directors' performance; the ratio will be even more dispersed. [30] is calculated by the number of independent commissioners divided by the total number.

Fraudulent financial statements are chosen as a dependent variable in this study. It was measured with the Fraud Score Model (F-Score) that was referenced from a study by [31]and developed by [32]. The f-Score Model used is stated as follows:

$$F - Score = Accrual\ Quality + Financial\ Performance \quad (1)$$

Accrual activity is calculated with RSST Accrual by the formula:

$$R.S.S.T.Accrual = \frac{\Delta WC + \Delta NCO + \Delta FIN}{Average\ Total\ Asset} \quad (2)$$

Which was clarified by:

$$Working\ Capital\ (WC) = \frac{Current\ Asset}{Current\ Liability} \quad (3)$$

$$Non - Current\ Operating\ Accrual\ (NCO) = \frac{Total\ Asset}{Current\ Asset - Investment\ and\ Advances} - \frac{Total\ Liabilities}{Current\ Liabilities - Long\ Term\ Debt} \quad (4)$$

$$Financial\ Accrual\ (FIN) = \frac{\sum Investment}{\sum Liabilities} \quad (5)$$

$$Average\ Total\ Asset\ (ATS) = \frac{Beginning\ Total\ Asset + Ending\ Total\ Asset}{2} \quad (6)$$

$$Financial\ Performance = Change\ in\ Receivabl + Change\ in\ Inventories + Change\ in\ Cash\ Sales + Change\ in\ Earnings \quad (7)$$

$$Change\ in\ Receivable = \frac{\Delta Receivable}{Average\ Total\ Asset} \quad (8)$$

$$Change\ in\ Inventories = \frac{\Delta Inventories}{Average\ Total\ Asset} \quad (9)$$

$$Change\ in\ Cash\ Sales = \frac{\frac{\Delta Sales}{Sales\ (t)}}{\frac{\Delta Receivable}{Receivable\ (t)}} \quad (10)$$

$$Change\ in\ Earning = \frac{\frac{Earnings\ (t)}{Average\ Total\ Asset\ (t)}}{\frac{Earnings\ (t-1)}{Average\ Total\ Asset\ (t-1)}} \quad (11)$$

<u>Stimulus/Pressure</u>

Stimulus/pressure uses Return of Asset (ROA) as a proxy and is measured with a ratio scale. It got a reference from [33] with the formula:

$$Return\ of\ Asset = \frac{Net\ profit}{Total\ Asset} \quad (12)$$

<u>Opportunity</u>

Opportunity can be calculated with ineffective monitoring from [21] with the formula:

$$BDOUT = \frac{Number\ of\ Independence\ Commisioner}{Total\ of\ Board\ Commissioner} \quad (13)$$

Rationalization

Rationalization uses a ratio of related party transactions and total revenue as a proxy. It is stated in [34] research with a formula below:

$$RPT\ Sales = \frac{Related\ party\ transaction}{al\ revenue} \quad (14)$$

Capability

Capability is using a CEO education background as a proxy. It states with a dummy variable, code 1 for a CEO company that has already finished its master's education, and code 0 for a CEO who does not have a magister degree, [35].

Ego/Arrogance

Ego/arrogance is an attitude of superiority or arrogance in someone who believes that internal control cannot influence himself. A study that has been done by [36]stated that ego/arrogance can be measured by the number of CEO pictures on a company's annual report.

Collusion

Collusion is agreeing with two or more employees in a company with a goal of individual purpose, leading to fraudulent financial statements. Collusion has a political connection as its proxy. This proxy is measured using the ratio of the number of board members; the commissioner connects politics and government with the entire board of commissioners, [37]. The formula is stated:

$$Political\ Connection = \frac{Number\ of\ commissioners\ that\ are\ politically\ connected\ with\ governance}{Total\ board\ of\ commissioner}s \quad (15)$$

Audit Committee

As a moderation variable, the audit committee uses a ratio of the numbers of the audit committee who had financial and accounting skills with the audit committee's numbers as a proxy, [38]. It is measured with a ratio scale with the formula below:

$$KKKA = \frac{Number\ of\ the\ audit\ committee\ with\ financial\ and\ accounting\ skills}{total\ of\ the\ audit\ committee} \quad (16)$$

3.3 Data Collection Procedures

Researchers will use data from secondary data earned from A State-Owned enterprise's official website on [29] _to get the company list for 2018-2022 and from the company's official website to get their annual report for this study. The data will be processed on warp PLS 7.0 with SEM-PLS analysis. Summary of Hypothesis Testing Results are explained in Table 2 as follows:

Table 2. Summary of Hypothesis Testing Result

Hypothesis	Direction (Path)	P-value (α=5%)	Coefficient	Decision
H1=FinPress→FFS		0.039	0.206	Accepted
H2=EfMon→FFS		0.234	0.087	Declined
H3=RPTSales→FFS		0.145	0.126	Declined
H4=CEOEd→FFS		0.315	0.058	Declined
H5=Ego→FFS		0.077	0.168	Declined
H6=PolCon→FFS		0.219	-0.093	Declined
H7=FinPress*ComAUD→FFS	+	0.147	0.125	Declined
H8=Mon*ComAUD→FFS	-	<0.001	-0.364	Declined
H9=RPTSales*ComAUD→FFS	+	0.007	0.282	Declined
H10=CEOEd*ComAUD→FFS	+	<0.001	0.353	Declined
H11=Ego*ComAUD→FFS	+	0.193	0.104	Declined
H12=PolCon*ComAUD→FFS	-	<0.001	-0.432	Accepted

The result from hypothesis testing is that financial pressure as a stimulus proxy affects Fraudulent financial statements with its p-value score of 0.039 < 0.05. Other variables such as opportunity, rationalization, capability, ego, and collusion did not significantly affect fraudulent financial statements. Also, the audit committee as a moderating variable could only weaken the effect of collusion from fraudulent financial statements.

4 Result and Discussion

4.1 Result

The first hypothesis is accepted that financial pressure can affect fraudulent financial statements. It has the same result as [39] research. It happened because of economic pressure, usually a standard for awarding fees or a bonus fee for measuring management performance, which is a perfect excuse for fraudulent financial statements, [40].

Opportunities for implementing adequate supervision are essential in preventing fraud in a company's financial statements. Ethical violations and fraud opportunities can be reduced when the internal control system is well-designed and functions effectively, especially with adequate independent commissioners. Independent commissioners, as monitors not tied to company management, can provide a more objective and critical view of the company's operations and finances.

However, the effectiveness of company supervision depends on the number of independent commissioners and their quality and independence in carrying out their supervisory duties. The presence of a large number of independent commissioners but a lack of quality or independence can reduce the effectiveness of the supervision carried out. Intervention from external parties towards the independent board of commissioners can disrupt their independence and objectivity in carrying out their supervisory function. This kind of intervention can come from company management, majority shareholders, or other external parties. If an independent board of commissioners cannot operate freely and is not influenced by external interests, then the effectiveness of company supervision can be significantly affected. Companies need to ensure that the independent board of commissioners can work independently without external intervention. These steps can be taken by implementing solid policies and procedures and ensuring that independent commissioners are selected based on their qualifications, integrity, and independence. This result is supported by research that has been done by [41].

Related party transactions that were rationalization proxies could not generate a potential for fraudulent financial statements. Related party transactions are contracts or business arrangements between related parties with a special relationship and purpose that create a greater risk of material misstatement than transactions with independent parties. This result is supported by research done by [42].

Research has highlighted the importance of a CEO's educational background as a proxy for the ability to prevent potential fraud in a company's financial statements. However, arguments indicate that a CEO's educational background does not directly guarantee integrity or honesty in the company's accounting practices. In some cases, CEOs or Presidents with high academic backgrounds have been involved in fraudulent financial reporting practices in large business entities that implement comprehensive accounting information systems.

Fraudulent practices in financial reports are rarely carried out individually by the CEO or President. Instead, such fraud often involves collusion with other members of the company's management or finance department. In this context, the CEO's educational background may not be sufficient to prevent or detect fraud committed by others in the organization.

Internal and external audits should not be ignored when detecting and preventing fraud in financial reports. Internal and external auditors have a crucial role in evaluating the effectiveness of the company's internal control system and investigating potential fraud that may occur. Thus, although the CEO's educational background can be a relevant factor, an effective internal and external monitoring system is also needed as a more holistic preventive measure in reducing the potential for fraud in financial reports, [43]. This result is supported by research done by.

CEO's picture as an ego or arrogance proxy is declined for having the ability to generate a potentially fraudulent financial statement. It has the same result as [44] research. The frequency of the CEO picture on the company's annual report can be interpreted as introducing the CEO in charge to the public and his performance and achievements during his tenure, [45].

Political connection as a collusion proxy also had no potential to trigger a fraudulent financial statement action from the hypothesis test result. It has the same result [45] research. A political connection in a state-owned enterprise is required to perform supervisory functions for the board of directors in the state's interest. The twelfth audit committee can reduce the effect of collusion on fraudulent financial statements. The hypothesis result has a p-value of <0.001 and -0.432 as a path coefficient, thus making the hypothesis accepted.

5 Conclusion

Based on the findings of this research, it can be concluded that none of the components of the Hexagon Fraud Model directly impact the production of financial reports containing conditions, except for financial stress. Financial pressure is still a significant proxy for the pressure or stimulus that drives events in financial reports. The reduction in collusion with financial reports is caused by the existence of the Audit Committee, which acts as a moderating variable. However, the effectiveness of the Audit Committee in moderating the state of financial reporting still needs to be strengthened.

Although the components of the Hexagon Model of Fraud do not directly impact the production of fraudulent financial statements, financial stress remains a significant factor. This shows that economic pressure is still the main trigger for fraud in financial reports. The importance of strengthening the role and capabilities of the Audit Committee in detecting and preventing fraud.

Further research is recommended to expand the research sample and not use CEO photo measurements as a proxy for arrogance, especially if the company sample is taken from 2019-2022, a period during which CEO photos often wear masks due to COVID-19 conditions. This can increase the validity of research results. In addition, further research can explore other factors that can influence the condition of financial statements and look more deeply into the role of the Audit Committee in preventing and reducing risks.

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Declaration of Generative AI and AI-assisted Technologies in the Writing Process

During the preparation of this work the author(s) used Grammarly Premium software to check grammar, spelling, etc. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

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- Achmad, Tarmizi regarding conceptualization and funding acquisition.
- Ghozali, Imam regarding methodology and data curation.
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