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## **HEXAGON FRAUD IN FRAUDULENT FINANCIAL STATEMENTS: THE MODERATING ROLE OF AUDIT COMMITTEE**

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### **Abstract**

*This paper aims to examine the effect of the fraud hexagon on fraudulent financial statements (FFS), and the audit committee (AC)'s role in moderating this relation. The research model uses logit regression with data on all non-financial companies in Indonesia ranging from 2016 to 2020, which were obtained from annual reports and Thomson Reuters. The sensitivity test uses a coefficient difference test based on the Overall Manipulation Index. This study shows that the probability of FFS is higher when the manager has the stimulus, opportunity, and capability. On the other hand, rationalization and collusion do not affect the probability of FFS. Interestingly, managers with high ego do not commit fraudulent financial reporting. The AC can minimize the stimulus, opportunity, and capability of the manager to make FFS. On the other hand, the AC cannot minimize the rationalization, ego, and collusion network of the manager. Theoretically, this study contributes to developing the situational action theory literature related to FFS and the fraud hexagon framework. This study provides academic implications that the arguments and empirical research findings that examine the behavior of managers in committing fraudulent financial reporting can be built not only based on the proxies used, but also by referring to the fraud theoretical framework.*

**Keywords:** *Audit Committee, Fraud Hexagon, Fraudulent Financial Statement*

### **Abstrak**

Penelitian ini bertujuan untuk menguji pengaruh fraud hexagon terhadap terjadinya kecurangan laporan keuangan, serta peran komite audit memoderasi pengaruh ini. Model penelitian ini menggunakan regresi logit dengan data seluruh perusahaan non keuangan di Indonesia dari tahun 2016 hingga 2020 yang diperoleh dari annual report dan Thomson Reuters. Uji sensitivitas menggunakan uji beda koefisien berdasarkan tingkat Overall Manipulation Index. Studi ini menunjukkan bahwa probabilitas FFS lebih tinggi ketika manajer memiliki stimulus, peluang, dan kapabilitas. Di sisi lain, manajemen tidak mempertimbangkan ego, rasionalisasi dan jaringan kolusi dalam melakukan FFS. AC dapat meminimalisir stimulus, peluang, dan kapabilitas manajer untuk melakukan FFS. Di sisi lain, AC tidak dapat meminimalisir jaringan rasionalisasi, ego, dan kolusi manajemen. Secara teoritis, penelitian ini memberikan kontribusi untuk mengembangkan literatur situational action theory dan framework fraud hexagon. Studi ini memberikan implikasi akademis bahwa argumen dan temuan penelitian empiris yang mengkaji perilaku manajer untuk melakukan FFS dapat dibangun tidak hanya berdasarkan proksi yang digunakan, melainkan mengacu pada framework teori fraud.

**Kata kunci:** *Audit Committee, Fraud Hexagon, Fraudulent Financial Statement*

## INTRODUCTION

Fraud costs organizations, corporations, and governments billions in monetary terms and poses massive adverse effects on fraud victims. Therefore, understanding the causes of frauds are of paramount importance because it will allow steps to open the occurrence of fraud (Maulidi and Ansell 2020). Fraud is difficult to eliminate when the society is less likely to perceive certain types of behavior as wrong and unwilling to deal with it in a meaningful way (Eriksson et al. 2015; Liu et al. 2017). In a survey conducted by the Association of Certified Fraud Examiners (ACFE) (ACFE, 2021), among the types of fraud that causes tremendous loss to organizations is fraudulent financial statements (FFS).

Thus far, models that describe the causes of fraud use fraud theories, such as the fraud triangle, fraud diamond, and others. However, those models are not without criticism (Free 2015; Murphy 2012), the implication of the fraud triangle is restricted to explaining partial fraud perpetrated by a single offender. Rabeea et al. (Rabeea et al. 2018) criticizes that the theoretical framework in the fraud triangle is only focused on a single psychological dimension of a fraud perpetrator acting alone. Furthermore, Maulidi and Ansell (Maulidi and Ansell 2020) also have shown that other elements matter rather than the simplified psychology by Cressey (Cressey 1953), leading to the fraud triangle. The environment strongly influences individual factors; one must focus on intrinsic factors inherent in individuals and trigger fraud intentions (Utami et al. 2019). The development of literature that criticizes previous fraud models has led to the advent of a fraud model that is more up-to-date, which is the fraud hexagon model. Vousinas (Vousinas 2019) developed this model based on the central assumption that fraud occurs due to the cooperation or collusion between the leaders in a company. This model assumes that a lousy

leadership environment, or a “poor tone at the top”, renders it easier for a fraud to occur in various lines within a company because the fraud does not need to be carried out secretly.

Findings related to the previous fraud models are still debatable. Sari et al. (2020), Yulianti et al. (2019), and Nindito (2018) regarding the fraud pentagon model similarly found that the ego measurement is not appropriate to represent the arrogance of the managers. This suggests that the fraud pentagon model needs to be refined using other models. Thus, this study seeks to improve the fraud hexagon model, which uses ego measurements following the precedent set by Garcia-Meca et al. (2021).

The fraud hexagon model also shifts the paradigm from pressure to stimulus, where the stimulus is described as an impulse that does not only come from corporate pressure. This contrasts with the studies conducted by Meiryani et al. (2020), Sari et al. (2020), Yulianti et al. (2019), and Fitri et al. (2019), which view that pressure only comes from the company's financial factors. Previous researchers have not widely discussed the shift in the meaning of pressure to stimulus, leaving a room that can be developed from past studies. In addition, Vousinas' model has not yet determined how to reflect the collusion committed by the company. This cause has resulted in the development of research related to the fraud hexagon that has not mushroomed, which is trying to be answered by this study.

A fraud can be detected through the information contained in a financial statement. The FFS detection model that is often used to examine whether a financial statement contains an element of manipulation is the Beneish's M-Score Model, but many researchers adjusted the model's construct to the conditions in their respective countries. Svabova et al. (2020) adapted the construct of the model to the conditions in Slovakia, where such a modified model was able to detect frauds more accurately than the original M-score

from Beneish. Lu and Zhao (2020) adjusted the M-score based on the economic conditions in the People's Republic of China, and Shaari et al. (2017) in Iran. Meanwhile, in Indonesia, no research has adjusted the construct of the M-score model, which frequently resulted in inaccuracies in detecting frauds compared to the other detection models, as found by Aviantara (2021), Kukreja et al. (2020), and Maccarthy (2017).

On the other hand, companies must have optimal corporate governance (CG) mechanisms to support company supervision. One of the general indications about CG that good governance leads to high-quality financial reports (Hasnan et al. 2021). Al-Absy et al. (2019) criticize a more critical issue, which is how adequately the audit committee (AC) can play a role in monitoring the accounting and financial reporting processes. AC is usually charged with ensuring that the company's financial statement meets the criteria for accuracy (Gorshunov et al. 2021). Therefore, it must be meticulous and set the tone to ensure accuracy in the firm's financial reporting (Compernelle 2018; Fiolleau et al. 2019; Turley and Zaman 2007). Thus, fraud reporting is likely to occur when the AC relaxes its thoroughness and follows the manager's recommendations without verifying critical statements (Gorshunov et al. 2021).

This research has several novelty contributions that can develop further academic literature. This study focuses on discussing the fraudulent behavior of managers in manipulating financial statements, where we identified that managers tend to commit frauds when they have great opportunities and the ability and good understanding to take advantage of such opportunities. Previous empirical studies that use the context of Indonesian background (Fitri et al. 2019; Handoko and Tandean 2021; Sari et al. 2020; Yulianti et al. 2019) tend to discuss the indications of fraud in the financial statements, instead of the underlying behavior. Huber (Huber

2017) also argues that the fraud triangle framework has been misused by researchers and has little to do with explaining fraud or "shedding light on fraud." It can be seen which behavioral elements motivate managers to commit fraud. On the other hand, previous studies that discuss fraud behavior were mostly in the form of conceptual research, such as Lokanan and Sharma (2018), Koomson et al. (2020), and Avortri and Agbanyo (2021). Therefore, this research opens a new avenue to the approach of combining empirical research findings whose main argument comes from fraudulent behavior in the fraud hexagon model.

The FFS detection models in the previous studies in countries other than Indonesia were modified in accordance with their current respective economic conditions. In contrast, studies based in Indonesia, such as Aviantara et al. (2021), only used the basic M-score equation. Thus, this study seeks to strengthen the M-score prediction findings using the Overall Manipulation Index (OMI) as a part of the sensitivity test, which is still scarcely investigated by previous studies. According to Hasan et al. (2017), OMI can detect FFS more accurately because it can see the potential for FFS in each component of the financial statements.

Furthermore, the fraud theory has developed into the latest model, namely the fraud hexagon (Vousinas 2019), which still does not have many empirical findings to support its development. The fraud hexagon model is a model that identifies six factors for the occurrence of fraud; in which this model is the first fraud model that carries the assumption that fraud is carried out in groups or collusion. So far, the element of collusion has not been considered as a factor in the occurrence of fraud by previous fraud models. This new element still lacks evidence from previous studies because the model developed by Vousinas (2019) is still in the form of conceptual research that has not determined how to measure collusion by the managers.

This study seeks to prove how the elements of collusion can be known, which is still a little research linking collusion that occurs in FFS.

In addition, this study relates the findings to the Situational Action Theory (SAT), a theory that is still rarely addressed and associated with FFS. This study implies that the fraud that occurs is based on the situations faced by the person as well as how they react and make decisions. This study found that managers who have a stimulus to commit fraud know that there are opportunities and have the ability to execute FFS. Other findings also imply that the behavior of managers who take actions based on the situation they face can at least be minimized by the optimal role of the AC in maintaining the quality of financial reports, in which the AC can moderate the stimulus, opportunities, and capabilities of managers. In other words, CG must be addressed and strengthened to limit managers' fraudulent behavior. From the implication of this study, it is hoped that investors can be more careful in investing their funds in companies. This implication also serves as a warning for the issuers that CG is essential, and that maintaining the quality of financial reports cannot only depend on the AC. This study provides academic implications that the arguments and empirical research findings that examine the behavior of managers to conduct FFS can be built not only based on the proxies used. So far, the majority of empirical studies that discuss the fraud model address the proxies of the elements in the fraud model. Those conclusions obtained are less clear to see which of the managers' behaviors that have the potential to commit fraudulent financial reporting.

The following sections in this study are organized as follows: Section 2 provides the reviews of empirical assessments and hypotheses. Section 3 presents the data and the adopted methodologies. Section 4 describes the empirical results, and Section 5 concludes.

## LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

### Literature Review

#### *Situational Action Theory*

One theory that summarizes the structural theory of financial crime is the Situational Action Theory (SAT) (Lokanan and Aujla 2020). The basis of the SAT model proposes that criminal acts result from a perception-choice process as a situational mechanism initiated and guided by the interaction of individual tendencies and the environment that can lead to crime (Wikström 2010). Even under similar conditions, someone can perform different actions at different times. It means that many factors can influence a person to commit a crime. Even though there is an opportunity to start, a person may not commit fraud because of supervision or the lack of support from their partner.

Lokanan (2018) categorizes financial crime as a moral problem, which can be analyzed using the SAT approach. SAT seeks to understand why disobedience between moral rules and individual moral values occurs and leads to rule violations (Lokanan and Aujla 2020). The fraud hexagon identifies the causes of someone committing a fraud by dividing it into several moral and environmental factors, one of which is collusion. Because FFS is a part of financial crime, its occurrence as a result of moral and environmental problems is terrible. The moral factor of a person described in the hexagon fraud is the primary cause of someone committing fraudulent financial reporting. The occurrence of fraudulent financial reporting is also coherent with the SAT's view that making "more or fewer choices can be" depending on the level of familiarity based on the setting one is following as well as the circumstances (Wikström 2014).

#### *Background Context in Indonesia*

The Association of Certified Fraud Examiners' (ACFE) survey (2021) found that the Asia-Pacific region has the most

noticeable loss impact worldwide due to frauds. Indonesia is the country that has the most fraud cases in the Asia-Pacific region with 36 cases, surpassing China in second place with 33 fraud cases. The survey is based on a questionnaire targeting Certified Fraud Examiners who received fraud cases between 2018 – 2019, and have identified the fraud perpetrators. The questionnaire in the survey contains question indicators regarding the details of the fraud cases, including information on perpetrators, victim organizations, fraud methods used, as well as general fraud trends.

This finding is supported by the 2020 Corruption Perception Index's survey, which shows that Indonesia has experienced a decline in scores compared to 2019 among countries in the ASEAN region. This indicates that during the 2019-2020 period, fraud cases in Indonesia have increased more than in other countries. Many cases of FFS experienced by large companies, such as Garuda Indonesia, were specifically investigated by Aviantara (2021). This has put CG in Indonesia under the spotlight due to the rise of FFS cases.

Regulations in Indonesia stipulate that the model structure used by companies operating in Indonesia is based on a two-board system. In Indonesia, ownership characteristics dominated by concentrated ownership are the main obstacles to governance practices (Utama et al. 2017a), which means there are potential agency problems between majority shareholders and minority shareholders. Good governance can reduce agency costs because management prioritizes the interests of shareholders by maximizing company resources (Mardjono and Chen 2020). Companies must carry out CG under the principles of transparency, accountability, responsibility, independence, and fairness. CG in Indonesia aims to protect investors from information gaps that can be exploited by the top management in a company. "Tone at the top" has a significant role in describing whether the company's management is implementing good CG. Suppose

management does not carry out governance according to the rules. In that case, the company can be considered unhealthy because there are many fraud scandals, which can lead to the company's bankruptcy. These companies collapsed due to strategic failures and fraudulent practices from the top management that went undetected for a long time because of the lack of independent supervision by the board of commissioners.

The AC is critical in assisting the supervisory function, especially concerning the supervision of information contained in the financial reports issued by management (Ariningrum and Diyanty 2017). The AC consists of at least one independent commissioner and two other members from outside the company. The AC's duties are stipulated under POJK (Financial Services Authority Regulation) Number 55 of 2015, reflecting on the ASEAN Corporate Governance Scorecard (ACGS). Through the supervisory mechanism regulated by the AC, managers cannot commit frauds in preparing financial reports (Mardjono and Chen 2020). The number of invalid financial reports is also the responsibility of the AC (Pathak et al., 2021), which also indirectly contributes to the occurrence of fraud. Therefore, AC has a strategic position to minimize the possibility of managers committing frauds and making FFS.

### **Hypotheses Development**

With the authority that managers have in preparing financial statements, they have the potential of using financial reports as a tool to commit frauds. Whether a manager can commit fraud can only be seen through his personality and behavior, which can then describe how they faces issues and obstacles in preparing their financial statements. Manager behavior that can potentially cause them to commit fraudulent financial reporting is illustrated in the fraud hexagon model, which consists of stimulus, opportunity, rationalization, capability, ego, and collusion network.

According to Deutsch (Deutsch 1966), the meaning of stimulus is that a person's response to take an action is the result of stimulation at the time of the previous experience. The combination of stimulus and response will create a particular behavior in which the stimulus arises from within the person. In the context of frauds, someone who is stimulated to commit a fraud will responsively commit fraud incidentally. The response to deviant actions results from an urge or stimulus, which then requires a person to commit fraud (Yazid et al. 2020). One of the events that occur incidentally in the company is the presence of left and unused cash. Unused company cash will motivate managers to commit fraud (Fakhroni et al. 2018). In other words, one of the factors that can stimulate managers to manipulate financial statements is the presence of excess cash in the company, which increases their motivation to obtain more incentives.

On the other hand, managers with weak self-control will impulsively perform FFS (Khatwani and Goyal 2019), causing control over managers to be an essential means to reduce agency conflict between shareholders and managers (Mouline and Sadok 2021). Managers with positions that are prone to fraud, such as having a specific authority in making decisions and preparing financial statements, will have more potential to commit fraudulent financial reporting. Such vulnerable positions potentially increase the stimulus for the manager to make FFS, and therefore, there is a need for strict supervision in the preparation of financial statements, which is the prominent role of the AC. Strict supervision from the AC causes managers to always have good intentions and avoid situations that cause them to be motivated into committing fraudulent financial reporting. With the AC, the stimulus will not encourage the manager to respond by making FFS because the AC helps control the manager from deviant behaviors.

**H<sub>1a</sub>: Managers are likely to be involved in FFS when they have a high stimulus to commit fraud.**

**H<sub>1b</sub>: The AC moderates the relationship between the manager's stimulus to the probability of FFS.**

Opportunity has a different meaning from stimulus. Stimulus is when a person is in a condition that encourages them to commit a fraud with a motivation that comes from within themselves. At the same time, opportunities can occur when an individual gains access to something wrong (Saluja et al. 2021). This access comes from the external factors of the people who want to commit frauds. The external factor is the strength of an entity's internal control system as a measure of the extent to which opportunities will be created within the organization to provide space for individuals to engage in fraud (Koomson et al. 2020). Opportunities arise from the weaknesses of the company's supervision, which is described as a situation that allows fraud to occur (Khatwani and Goyal 2019). This allows the perpetrators to be undetected after committing fraud (Desai 2020). Managers have the opportunity to commit fraudulent financial reporting because the preparation of financial statements requires estimates and subjective considerations (Skousen et al. 2009). Managers will focus on looking for opportunities in transactions in the company if they intend to manipulate the financial statements (Schnatterly et al. 2018). Managers benefit from their position of being able to compile financial reports and have the advantage of information asymmetry so they can get the opportunity to make FFS at any time. On the other hand, the AC has the authority and resources to protect the stakeholders' interests by ensuring the reliability of financial reporting, internal control, and risk management, as well as through careful monitoring (Abdillah et al. 2019). Companies with weak internal controls will have loopholes that present the managers

with opportunities to manipulate transactions (Yazid et al. 2020). The AC must maintain the quality of the information submitted in the financial statements, so that managers do not take advantage of opportunities to manipulate them.

**H<sub>2a</sub>: Managers are likely to be involved in FFS when they have a high opportunity to commit fraud.**

**H<sub>2b</sub>: The AC moderates the relationship between the manager's opportunity to the probability of FFS.**

Rationalization is an individual's attitude that makes them justify their fraudulent behaviors as not a crime (Abdullahi and Mansor 2015). Fraud perpetrators often do not think of themselves as criminals—they rationalize it by understanding their illegal behavior and maintaining the belief that they are still trusted before committing a fraud (Owusu et al. 2021). Managers never think of themselves as fraudsters because they feel they are doing their job well. They think that what is reported in the financial statements is true until fraud is detected because, from their view, it is the manager who runs the company, so they are the one who knows the ins and outs of the transactions. On the other hand, AC has a vital role in maintaining the company's quality of financial statements. AC can counter what the manager thinks is correct by examining the financial statements they have prepared. Managers will insist that what they are doing is not fraud until the supervisory board conducts checks and investigations to prove the validity of the information that they provided (Abdillah et al. 2019).

**H<sub>3a</sub>: Managers are likely to be involved in FFS when they have a high rationalization to commit fraud.**

**H<sub>3b</sub>: The AC moderates the relationship between the manager's rationalization to the probability of FFS.**

Capabilities refer to personal traits and abilities that play a major role in whether fraud will occur in the presence of pressure, opportunity, and rationalization (Vousinas 2019). The ACFE survey (2021) also shows that most of the frauds are carried out by the management and top-level executives, which indicates that these individuals' abilities are quite high in the organization and are considered trustworthy due to their decisive roles in the organization. In addition to committing frauds, capable managers show that managers are willing to manipulate or exploit others to achieve their goals (Akinwumi et al. 2020). Without the ability to commit frauds, the opportunities and pressures that arise to commit frauds will not run optimally. Managers who have a good understanding of finance will be easier to manipulate (Smith et al. 2021). Additionally, they also have the understanding and access to know which items in the financial statements can be manipulated. Even if the manager has the capability or ability to commit fraudulent financial reporting, the AC can limit their power. The AC must be critical and master the scope of knowledge and experience. The AC will be able to detect financial statement manipulation cases better if they are also financially competent (Gorshunov et al. 2021). The AC has a more thorough understanding of financial statements and can independently examine the adequacy of financial statements. Financial literacy allows them to find problems in financial statements and skillfully deal with managers (Hambrick et al. 2015).

**H<sub>4a</sub>: Managers are likely to be involved in FFS when they have a high capability to commit fraud.**

**H<sub>4b</sub>: The AC moderates the relationship between the manager's capability to the probability of FFS.**

One of the main characteristics of narcissistic managers is that they hold on to unrealistic and unattainable goals because of their excessive self-aggrandizement



(García-Meca et al. 2021). Managers with big ego consider themselves capable of achieving high targets to get the image that they are the best managers. The main goal of managers wanting to achieve high targets, or even unrealistic ones, is to gain the recognition as great managers and receive more incentives (Cragun et al. 2020). To fulfill their ambition, managers might do various things, which is only to achieve their unrealistic goals. They might feel the need to show good performance in managing the company because of the desire to hold this position for a long time. Managers with big egos will use their authority to force others in the subordinate positions to follow their will in achieving such unrealistic targets. Their unrealistic targets can be manifested in the financial reports. Managers with high egos will force them to manipulate financial statements so that the information conveyed follows what they are targeting. Selfish managers will create specific information processing barriers to the AC and regain control. The AC is required to suppress the manager's ego and strengthen their position as a supervisor so that managers do not take advantage of their power and position. Managers do not cover up information critical to the company (Boivie et al. 2021), so with the presence of AC, the manager's ego will also be suppressed, making it less likely for them to commit fraudulent financial reporting.

**H<sub>5a</sub>: Managers are likely to be involved in FFS when they have a high ego to commit fraud.**

**H<sub>5b</sub>: The AC moderates the relationship between the manager's ego to the probability of FFS.**

When many parties work together to commit fraud, the damage caused can be much more devastating (Zahari et al. 2021). This is because collusion can cause parties who do not want to commit fraud to be incited to participate because of the pressure from the fraud perpetrators if they are not willing to cooperate. Collusion also

requires parties to act as "partners in crime" (Maas and Yin 2021). The manager is a figure within the company who has the advantage of network and connectivity with other parties who can be invited to form illegal cooperation. Managers can easily hide or insert frauds that they do by cooperating with other parties, making it difficult for the supervisors to detect. The preparation of financial statements is related to transactions with parties outside the company—when the parties who transact with the company collude, the transactions that occur appear authentic. The AC's challenge is to ensure accurate information and keep it from being influenced by managers collaborating to commit fraud (Pathak et al. 2021). The AC is responsible for monitoring and managing violations that are caused within the organization and aim to reduce complex fraud risks (Alam et al. 2021). An AC that plays an optimal role can find the activities of managers who commit collusion and which parties carry out the fraudulent financial reporting. Therefore, AC must ensure accuracy in corporate financial reporting (Fiolleau et al. 2019), although it is challenging to trace collusive FFS. The AC also maximizes the supervision of financial statements. The manager conveys all transactions carried out with related parties and ensures that the transactions carried out are normal.

**H<sub>6a</sub>: Managers have a high probability of being involved in FFS when they have high collusion to commit fraud.**

**H<sub>6b</sub>: The AC moderates the relationship between the manager's collusion to the probability of FFS.**

## RESEARCH METHOD

The population in this study are all non-financial companies listed in the Indonesia Stock Exchange (IDX). The research period is between 2016 and 2020. This research covers all industrial sectors because it anticipates the FFS detection

model, which is not entirely able to detect it 100%. The sample selection method used was purposive sampling, which obtained 325 companies as the research samples. The data needed in this study were taken from the IDX's website and the Eikon Thomson Reuters's database. The analysis used is logistic regression, in which there are two research models as shown below:

$$\text{FFS}_{i,t} = \alpha + \beta_1\text{STI}_{i,t} + \beta_2\text{OPP}_{i,t} + \beta_3\text{RAZ}_{i,t} + \beta_4\text{CAP}_{i,t} + \beta_5\text{EGO}_{i,t} + \beta_6\text{COL}_{i,t} + \beta_7\text{control} + \varepsilon \dots\dots\dots (\text{Model 1})$$

$$\text{FFS}_{i,t} = \alpha + \beta_1\text{STI}_{i,t} + \beta_2\text{OPP}_{i,t} + \beta_3\text{RAZ}_{i,t} + \beta_4\text{CAP}_{i,t} + \beta_5\text{EGO}_{i,t} + \beta_6\text{COL}_{i,t} + \beta_7\text{AC}_{i,t}*\text{STI}_{i,t} + \beta_8\text{AC}_{i,t}*\text{OPP}_{i,t} + \beta_9\text{AC}_{i,t}*\text{RAZ}_{i,t} + \beta_{10}\text{AC}_{i,t}*\text{CAP}_{i,t} + \beta_{11}\text{AC}_{i,t}*\text{EGO}_{i,t} + \beta_{12}\text{AC}_{i,t}*\text{COL}_{i,t} + \beta_{13}\text{control} + \varepsilon \dots\dots\dots (\text{Model 2})$$

Where:

FFS : fraudulent financial statements  
 STI : stimulus  
 OPP : opportunity  
 RAZ : rationalization  
 CAP : capability  
 EGO : egoism  
 COL : collusion  
 AC : audit committee  
 $\alpha$  : constant  
 $\beta$  : coefficient regression  
 $\varepsilon$  : error

FFS detection is measured using the M-score, which is composed of eight ratios that capture either financial statement distortions that can result from earnings manipulation or indicate a predisposition to engage in earnings manipulation (Beneish et al. 2013). M-score is estimated that any company with an M-score of  $> -2.22$  tends to be a manipulator, whereas companies with an M-score of  $< -2.22$  do not manipulate. The results of the M-score calculation will produce two categories that are used as dummy variables. Companies that are indicated to perform FFS with an M-score of  $> -2.22$  will be assigned a code of 1, which means the company tends to commit fraudulent financial reporting. Meanwhile, if the M-score is  $< -2.22$ , it will

be given a code of 0, meaning that the company is not indicated to commit fraudulent financial reporting. The eight ratios form an M-score equation following Aviantara et al. (2021) and Kukreja et al. (2020):

$$\text{M-score} = -4.84 + 0.92*\text{DSR} + 0.528*\text{GMI} + 0.404*\text{AQI} + 0.892*\text{SGI} + 0.115*\text{DEPI} - 0.172*\text{SGAI} + 4.679*\text{Accrual} - 0.327*\text{LEVI}$$

DSR is the ratio of sales in the form of receivables in year t divided by year t-1. GMI is the gross margin ratio divided by year t-1. AQI is the ratio of the company's fixed and current assets, which is then divided by total assets and compared with year t-1. SGI is the ratio of sales in year t divided by year t-1. DEPI is the fixed asset depreciation rate ratio in year t divided by year t-1. SGAI is the ratio of general and administrative selling expenses divided by sales in year t, then compared to year t-1. Accruals are obtained from net income minus operating cash flows, and then divided by total assets in year t. LEVI is obtained from the leverage ratio in year t divided by year t-1. As for the sensitivity analysis using OMI, it is obtained from the benchmark scoring in each ratio component in the M-score equation, following Hasan et al. (2017). On the other hand, the operationalization of other variables is shown in Table 1.

The AC measurement uses analysis content following Utama et al. (2017) based on ACGS items in the company's annual report. For the assessed companies, each item is checked based on whether the company practices the item in their annual report. Components related to the audit committee are in the board structure and composition section. If the company's annual report contains appropriate information on the measurement item, it is given a score of 1, and if it is not appropriate, it is given a score of 0. Thenceforth, it is calculated using the formula, where n means the number of elements of the implemented ACGS, and k means the total analyzed ACGS elements, which are nine items.

**Table 1**  
**Variable Measurement**

Variable	Description	Source
<b>Fraud Hexagon</b>		
Stimulus (STI)	$\frac{(\text{Operating cash flow} - \text{Dividend})(t)}{\text{Total asset } t - 1}$	Skousen et al. (2009)
Opportunity (OPP)	$\frac{\text{Receivables } (t)}{\text{Sales } (t)} - \frac{\text{Receivables } (t - 1)}{\text{Sales } (t - 1)}$	Skousen et al. (2009)
Rationalization (RAZ)	Code 1 if the change of auditors is carried out before the maximum period of tenure ends. Code 0 if the change of auditors is made due to the maximum term of tenure/mandatory rotation; or Code 0 if the auditors do not change.	Skousen et al. (2009)
Capabilities (CAP)	Code 1 if the CEO has a financial background. Code 0 if the CEO has no financial background.	Boyle et al. (2015)
Ego (EGO)	Natural log of total remuneration paid to the managers	Chatterje and Hambrick (2011)
Collusion (COL)	$\frac{\text{RPT Asset} + \text{RPT Liabilities}}{\text{Equity}}$	Habib et al. (2017)
<b>Moderation Variable</b>		
Audit Committee (AC)	Content analysis that scores from the provisions contained in the ASEAN Corporate Governance Scorecard (ACGS)	Utama et al. (Utama et al. 2017a)
<b>Control Variables</b>		
Firm Size (SIZE)	Natural of total asset in year t	Fakhroni et al. (2018)
Profitability (ROA)	$\text{ROA} = \frac{\text{Net Income}}{\text{Total Asset}}$	Fakhroni et al. (2018)
Managerial share (MNG)	$\frac{\text{Managerial share}}{\text{Outstanding share}}$	Skousen et al. (2009)
Change in leverage (ΔLEV)	$\frac{\text{Total debt}_t}{\text{Total asset}_t} - \frac{\text{Total debt}_{t-1}}{\text{Total asset}_{t-1}}$	Aviantara et al. (2021)

$$AC = \frac{n}{k} * 100\%$$

Total ACGS Criteria for the AC section are nine items from each item checked according to the annual report with the criteria provided by ACGS. If AC applies all ACGS provisions, the value obtained is 100%, while, for example AC is only 4 of 9 ACGS provisions, then AC has a value of 4 divided by nine then multiplied by 100%, which is 44.44%. The value of AC content analysis may not be 0 because several provisions in the ACGS are mandatory in Indonesia; for example, one of the AC members must have an accounting background; or meet at least four times a year.

## RESULTS AND ANALYSIS

To observe the data in this study, a data quality test was conducted to ensure the accuracy of the findings obtained. The multicollinearity problem was tested based on the correlation between the explanatory variables and the variance inflation factor (VIF). Symptoms of multicollinearity can be seen from the VIF value and the correlation matrix that none is close to the 0.8 points. In addition, the VIF value of each variable is far below the specified threshold, which is 10.

**Table 2**  
**Regression Results**

Variable	Prediction	Model 1		Prediction	Model 2	
		Coefficient	Sig		Coefficient	Sig
<i>Constant</i>		.6176518			-.2518379	
STI	+	.0000631	0.000***	+	2.1222222	0.004*
OPP	+	2.976903	0.000***	+	2.3000000	0.028**
RAZ	+	199301.5	0.443	+	153.8539	0.084*
CAP	+	4.361529	0.000***	+	3587.124	0.000***
EGO	+	-1.019925	0.025**	+	3.9222222	0.075*
COL	+	-.0070391	0.403	+	6839617	0.160
STI*AC				-	-.6840109	0.006***
OPP*AC				-	-.7661125	0.000***
RAZ*AC				-	-.9508917	0.068*
CAP*AC				-	-.9031881	0.000***
EGO*AC				-	-.5616934	0.178
COL*AC				-	-.7913319	0.120
ROA	+	1692.202	0.000***	+	3024.841	0.000***
MNG	+	1.353934	0.678	+	2.339776	0.638
SIZE	+	1.01776	0.000***	+	.6217852	0.003***
ΔLEV	+	.5629546	0.000***	+	.8233509	0.000***

Significant: \*\*\* $p < 0.01$ ; \*\* $p < 0.05$

The sample consists of 1625 years of observation, with all industrial sectors except the financial industry. MScore: FFS uses the Beneish M-score; STI: stimulus; OPP: opportunity; RAZ: rationalization; CAP: capability; EGO: ego/arrogance; COL: collusion; AC: audit committee; MNG: managerial ownership; ROA: return on assets; SIZE: company size; ΔLEV: change in leverage year  $t$  to  $t-1$

## Discussion

The findings in Table 2 in model 1 show that the tendency of managers to be indicated to commit fraudulent financial reporting is higher when they have a stimulus to commit a fraud, meaning that **H<sub>1a</sub>** is accepted. This finding follows the concept developed by Vousinas (2019) and the argument of Dorminey et al. (2012) that there is an expansion of the meaning of pressure that causes someone to make FFS, where fraudulent financial reporting occurs because the managers who initially do not think about committing a fraud later see that there are favorable conditions, hence they are motivated to commit a fraud. However, managers commit fraud because they see an advantage that can be taken incidentally. When a manager takes an action, or in this case is making FFS, it is caused by something that the directors saw, heard, smelled, and so on just a moment before (Villaescusa and Amat 2021). Preparing financial statements is basically based on the applicable accounting standards, which the managers are required

to obey in preparing financial statements. However, when the manager sees a gap to circumvent the relevant standards, the manager can potentially be involved in fraudulent financial reporting. This finding supports the SAT, which states that the outcome of the perception choice process is a situational mechanism (Wikström 2010). It means asserts that acts of fraud can happen due to a combination of individual and environmental factors, where the stimulus due to the environment owned by the managers provokes or encourages him to commit fraud incidentally.

On the other hand, the findings in model 2 show the probability of managers having a stimulus to perform FFS is reduced when the AC is closely watching, which means that **H<sub>1b</sub>** is accepted. Stimulus relates to the relationship between the impulses of a situation experienced by the manager and how they respond. Initially, the manager did not intend to commit fraud, but when there is a situation that encourages it, the manager has the potential to commit fraud. AC has proven that

continuous monitoring of managers will be able to reduce the stimulus and motivation that appears incidentally to manipulate financial reports. Managers do not experience situations that can encourage them to make FFS due to the strict supervision from the AC since the preparation of the financial statements (Abri et al. 2019). The AC's duties are stated in the AC Charter owned by each company. The AC assists the managers by reviewing the company's financial information and reviewing the company's compliance with the prevailing laws and regulations related to the company's operational activities. AC not only monitors the output of financial statements when they are finished but also accompanies managers in preparing financial reports so that managers do not experience situations that can encourage them to do FFS.

The findings of this study in Model 1 show that the tendency of managers to commit fraudulent financial reporting will increase when they have high opportunities to commit fraud, meaning that  $H_{2a}$  is accepted. This argument is based on the research model used because, in Model 1, there are no variables that are part of the elements of CG. When there is no supervision or good governance, managers have an excellent opportunity to commit fraud, allowing them to manipulate the financial statements. This finding also supports the argument of Dorminey et al. (2012), which states that among the three initial elements that make up the fraud triangle, namely pressure, opportunity, and rationalization, opportunity is the main element that explains why someone commits a fraud. Opportunities for estimates and judgments allowed by accounting standards can result in unethical decisions, such as accounting manipulation (Kagias et al. 2021). Because of this advantage, managers will be more likely to manipulate financial statements where they believe they will have the chance to do so (Nguyen et al. 2021). Even if the situational odds are low, some people may still take

their chances (Desai 2020). The intention to manipulate the financial statements and rationalization of the fraud perpetrators will not work if the perpetrators do not have the opportunity to carry out their fraudulent actions. This finding is in line with the SAT, which emphasizes that the perception-choice process offers a mechanism by which moral emotions can influence decision-making to commit fraud (Trivedi-Bateman 2021). Managers who take advantage of the opportunity to commit the slightest fraud are part of an immoral act that affects their decision-making process, which ends in manipulating financial statements. This finding confirms that the morals held by the managers determine whether they will commit fraud or not. This is because different people will differ in interpreting the opportunities that exist, both small and large, to commit fraud (Nguyen et al. 2021).

On the other hand, the optimal role of the AC reduces the tendency of managers to take advantage of opportunities, meaning that  $H_{2b}$  is accepted. The AC is usually charged with ensuring that the company's financial statements meet the criteria for accuracy (Gorshunov et al. 2021). Managers respond to the opportunities to commit fraud differently in each situation. Suppose in preparing financial statements, and managers feel that the company's control is weak. In that case, the opportunity will increase the possibility of managers committing fraudulent financial reporting. For example, the AC has to ensure that managers do not have a conflict of interest in the company. Suppose the AC cannot detect a manager's conflict of interest in preparing financial statements. In that case, the managers can take advantage of the opportunity to manipulate the condition of the company's financial statements to be in accordance with their own interests. However, on the contrary, if the managers feel that the AC closely monitors the preparation of financial statements, they do not dare to use their

opportunities to commit fraudulent financial reporting.

There is no tendency for the managers to make FFS, be it with high or low rationalization, meaning that **H<sub>3a</sub>** is rejected. An individual who feels depressed will take advantage of the existing opportunities, and in the end, he does not rationalize the action (Kagias et al. 2021). This shows that when the manager commits fraud, he will understand the risks. Managers who get caught manipulating accounting and committing a fraud will bear the consequences (Nguyen et al. 2021). This finding is not in line with the SAT, where relevant morals are used as the basis for explaining the decision to commit a fraud. On the other hand, moral actions are defined as actions that are governed by what is right or wrong to do in certain circumstances (Trivedi-Bateman 2021). Additionally, the optimal role of the AC does not affect the tendency of managers to take advantage of opportunities to make FFS, meaning that **H<sub>3b</sub>** is rejected. The underlying thing is that the manager does not think that the fraud committed is the right thing or needs to be justified, so that in committing fraudulent financial reporting, the manager does not think about the reasons for justification.

The probability that the managers take advantage of manipulating financial statements will increase when managers have high capabilities of committing a fraud. The occurrence of FFS will increase when the manager has a high capability to commit fraud, meaning that **H<sub>4a</sub>** is accepted. Without the ability of managers to execute a fraud, managers will not commit it even though they have the stimulus, opportunity, and rationalization to do so (Maulidi and Ansell 2020). This finding supports the argument of Wolfe and Hermanson (2004), who argue that capability triggers fraud. Managers can manipulate financial statements when they are equipped with knowledge and knowledge about finance so that they know the gaps to do FFS and execute the

opportunities that they have to be perfect and difficult to detect. Managers with high capabilities tend to commit more frauds than those with lower positions (Utami et al. 2019). Managers who have high capabilities are able to commit fraud because they know the ins and outs of the company. This finding is in line with the SAT because managers consider the surrounding conditions, such as the opportunities that exist, to commit fraud and then cause the managers to take a situational decision at that time to commit fraud. This finding follows the argument of Dorminey et al. (2012), which explains that capability modifies the construct of opportunity by limiting opportunities in the sense that individuals must have the appropriate skills to use opportunities. That is, when there is an opportunity to do FFS, managers must have more knowledge about financial statements, which will then be able to move FFS more neatly and realistically.

On the other hand, the optimal role of the AC will reduce the tendency of managers to take advantage of their capabilities to commit fraudulent financial reporting, which means that **H<sub>4b</sub>** is accepted. Effective monitoring can be achieved only if an AC has the capability and performance above the threshold level. This means that the AC requires the necessary competence to fulfill their supervisory duties effectively (Hambrick et al. 2015). Behind its role in filling the role as part of CG, AC is required to have qualified competence to be able to carry out its duties optimally. Financial literacy allows the AC to find problems in financial statements and skillfully deal with managers (Gorshunov et al. 2021). AC is more likely to recognize and understand issues that may arise if they have relevant knowledge in a particular problem area (Velte 2021). This is not without reason because managers know the company, its operations, and internal management issues inside and out, and they can use this knowledge to pursue their interests

(Seifzadeh et al. 2021). As a result, although managers can understand loopholes in manipulating financial statements, the AC is more skilled at dealing with managers to minimize the potential for managers to commit fraudulent financial reporting.

The tendency of managers to make FFS will increase even if the manager has a low ego to commit fraud, meaning that  $H_{5a}$  is rejected. This finding is inversely proportional to the direction of the coefficient than the research hypothesis. Highly narcissistic managers do not like it when they have poor performance and a negative self-image (Chatterjee and Hambrick 2011). Cragun et al. (2020) added that managers with high ego is related to company performance. In other words, managers with high ego need recognition from others that they are successful leaders who can carry out their duties well. They try their best to maintain their integrity in running the company to achieve the company's performance targets. To maintain their self-image, the managers try to carry out their duties honestly and transparently so that they will get recognition, appreciation, and a more sustainable position than having to commit fraudulent financial reporting to achieve unreasonable targets. This finding is not in line with the SAT, where managers' ego demands that they decide what action to take, but their ego leads to the choice not to commit fraud. On the other hand, the optimal role of the AC cannot affect the tendency of managers who have high ego to make FFS, meaning that  $H_{5b}$  is rejected. No matter how big the manager's ego is, the AC cannot eliminate the possibility of the manager being provoked into committing fraudulent financial reporting because of their ego. However, suppose it is related to the findings in Model 1. In that case, this is relevant because, without supervision from the AC, managers assume that when they have a high ego, they will tend to not commit fraudulent financial reporting.

Managers do not make FFS, be it when they have a large or small collusion network, meaning that  $H_{6a}$  is rejected. Managers do not find the right 'partner in crime' to collude with (Maas and Yin 2021), or looking for partners to collude with is too risky if their partners cannot be invited to cooperate. This finding indicates that collusion may not be caught through the information submitted by managers in the financial statements because they might work together to delete certain information in the financial statements. When several managers work together, they may undermine independent transaction verification processes or other mechanisms designed to uncover fraud (Vousinas 2019). The SAT changes attention from the level of analysis of a person (individual) committing fraud to a more complex level. However, this finding shows that when fraud is driven collectively or managers collude, it does not cause an indication of FFS. On the other hand, the optimal role of the AC cannot influence the tendency of managers who have a large collusive network to perform FFS, meaning that  $H_{6b}$  is rejected. It will be tough, if not impossible, to detect it (Villaescusa and Amat 2021). The AC has difficulty detecting the occurrence of FFS if, in the preparation of financial statements, the manager cooperates with many parties so that they can manipulate transactions and their traces. The AC is more likely to identify errors if they elaborate on the information provided in detail (Pathak et al. 2021). Apparently, when the managers colluded, they would not provide all the information needed by the AC (Xiao et al. 2021), which made it difficult for the AC to detect the fraud.

### Sensitivity Analysis

The test is carried out using the coefficient difference test in the sensitivity analysis. The component used as the basis for the difference tests is the Overall Manipulation Index (OMI) variable, which has 8 data groupings due to its stratified scoring. However, the difference test can

only be done at the OMI value = 1 to OMI = 6 because OMI = 0, OMI = 7, and OMI = 8 have little observational data that make the regression cannot be carried out.

This analysis presented in Table A (in Appendix) shows that the findings obtained in the primary study model are consistent with the sensitivity test. The stimulus and the opportunity has a significant effect on the indication of FFS occurrence when the variables are OMI 4 to OMI 6, with the coefficient value increasing in each OMI. That is, the tendency of managers to perform fraudulent financial reporting caused by them having a stimulus and opportunities to commit fraud is when they manipulate four to six components in the financial statements.

The manager's ability has a significant effect on the indication of FFS occurrence when the variables are OMI 2 to OMI 6, with the coefficient value increasing in each OMI. That is, the tendency of managers to perform fraudulent financial reporting caused by them having the capability to commit fraud is when they manipulate two to six components in the financial statements. This shows that managers can maximize the components of the financial statements even though only a few are manipulated with the knowledge they have. This finding is linear with the main finding of this study. With the slightest opportunity to make FFS, managers who have high knowledge will show their capability to see the tiniest gaps to do it.

Other findings show that regardless of the number of components in the financial statements manipulated by managers, they are not based on rationalizations for their actions. The manager's ego plays a central role in which, when more and more elements in the financial statements are manipulated, the manager's ego is getting smaller. This is in line with the findings of this study which suggest that the manager's ego is related to the ego to maintain their integrity, so that they attempt

to minimize the manipulation to keep their integrity undamaged.

## CONCLUSION

Model 1 testing shows that behavioral factors that influence managers to commit fraudulent financial reporting are when managers have high stimuli, ample opportunities, and high capabilities to manipulate financial statements. On the other hand, this study obtained inversely proportional findings to the hypothesis. This study found that managers with high egos do not tend to make FFS. Another finding in Model 1 shows that the manager's rationalization and network of collusion do not increase their tendency to commit fraudulent financial reporting. In Model 2 testing, it shows that the AC can minimize the behavior of motivated managers, see opportunities, and execute these opportunities into FFS. Model 2 also finds that the AC cannot minimize the manager's rationalization, ego, and collusion network, which causes managers to tend to make FFS. The sensitivity test also corroborates the findings in the primary model of this study.

The current study is not free from limitations that can be corrected in future studies. This study only generalizes all industrial sectors without grouping each industry so that the findings are less specific. Besides, it also does not consider the impact factors of the COVID-19 pandemic. Therefore, further research can consider the impact of the COVID -19 pandemic as one of the variables that determine the companies to carry out fraudulent financial reporting because not all pandemics have the same impact due to COVID-19. Measurement of manager behavior in the fraud hexagon model, which is interpreted using the components contained in the financial statements, can be more optimal if data mining is strengthened using primary data in the forms of surveys and questionnaires. Measurement of variables that show the



findings do not affect the occurrence of FFS, namely rationalization, ego, collusion, may indicate that the variables are less relevant and less representative because the proxy is based on the monetary value stated in the financial statements. Therefore, further research can formulate more relevant measurements in interpreting the elements that exist in the fraud hexagon with its relationship to the behavior when it is carried out for manipulation of financial statements.

This study discusses and directly relates the variables in the fraud hexagon model without mentioning or discussing the relationship with its proxies in discussing the findings, limiting the researchers in discussing the effect of these variables on the occurrence of FFS indications. Future research is expected to build arguments in explaining the elements in the fraud hexagon model and other fraud models not referring to the proxies used. However, arguments are built on the behavior that causes FFS so that the findings obtained can later be narrowed down to find out which behaviors have the potential to cause managers to commit fraudulent financial reporting because this is still rarely done by previous empirical studies. This study performs a coefficient difference test by grouping companies that make FFS based on the number of components of financial statements manipulated using OMI. Further research can be developed because this is still rarely done. Further research can also rank which industrial sectors have indications of FFS occurrence with high and low potential, as well as which elements of the financial statements are most often used to commit fraudulent financial reporting.

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**Appendix**

**Table A**  
**Sensitivity Analysis**

	STI		OPP		RAZ		CAP		EGO		COL	
	<i>coef</i>	<i>sig</i>	<i>coef</i>	<i>sig</i>	<i>coef</i>	<i>sig</i>	<i>coef</i>	<i>sig</i>	<i>coef</i>	<i>sig</i>	<i>coef</i>	<i>sig</i>
OMI 1	1.23	0.25	0.23	0.80	14.83	0.98	1.22	0.24	-1.71	0.00***	-	0.89 0.13
OMI 2	2.01	0.05*	1.10	0.20	16.06	0.98	2.28	0.02**	-2.39	0.00***	0.86	0.37
OMI 3	2.00	0.05*	1.23	0.15	16.12	0.98	2.33	0.02**	-2.62	0.01***	1.19	0.21
OMI 4	2.51	0.02**	1.84	0.03**	16.78	0.98	3.18	0.00***	-3.33	0.03**	1.99	0.04**
OMI 5	3.46	0.00***	3.41	0.00***	17.72	0.98	3.98	0.00***	-4.00	0.04**	2.15	0.03**
OMI 6	4.48	0.00***	3.51	0.00***	18.57	0.98	5.10	0.00***	4.42	0.16	4.00	0.00***
R-square	0.1046		0.1384		0.1487		0.1384		0.0956		0.0976	

Significant: \*\*\* $p < 0.01$ ; \*\* $p < 0.05$

OMI: Overall Manipulation Index; STI: stimulus; OPP: opportunity; RAZ: rationalization; CAP: capability; EGO: ego/arrogance; COL: collusion