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Evaluating the impact of hexagon fraud on potential financial statement fraud with audit quality as a moderator

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ABSTRACT

Agency theory states that fraudulent financial reporting involves deliberate actions that misrepresent financial data, often driven by conflicting interests between agents and principals. On the other hand, the GONE theory attributes fraud to greed, opportunity, needs, and exposure. This study investigates the influence of the fraud hexagon on the likelihood of fraudulent financial reporting, with audit quality as a moderating factor. Therefore, the authors purposively selected 40 industrial sector companies listed on the Indonesian Stock Exchange from 2020 to 2022, ending with 120 observations as the sample. Data analysis with pooling tests and MRA tests reveals that total asset accrual and holding multiple positions contribute to the potential for fraudulent financial reporting. However, financial targets, CEO education, engagement in government projects, and industry nature exhibit no significant impact. Additionally, the moderating effect of audit quality fails to mitigate the positive influence of financial targets and industry nature on fraudulent financial reporting potential. Future research can employ logistic regression and incorporate additional independent variables.

INTRODUCTION

Financial statement fraud is a deliberate act of presenting better data (over-statement) or worse data (under-statement), resulting in financial reports that do not correspond to actual conditions. Biased financial information becomes irrelevant and invalid information in decision making because the information presented is not based on actual circumstances. Misappropriation of assets, false financial reporting, and corruption are the three forms of fraud identified by ACFE (2020). Because the number of reported instances of financial statement fraud is rising year, it is an issue that must not be ignored. The reason behind this is that in order to attract investors, financial reports are meticulously and extensively prepared.

The beginning of the fraud theory was put forward by Donald R. Cressy in 1953, which was called the "Fraud Triangle". According to this theory, there are 3 causes of fraud, namely pressure, opportunity and rationalization. Over time, the fraud triangle theory was developed into the "Fraud Diamond" by Wolfe and Hermason in 2004. The elements of the fraud diamond are pressure, rationalization, opportunity and capability. The next theoretical development in 2011 was "Pentagon Fraud" which was developed by Crowe Horwath LLP. The elements of the fraud pentagon are arrogance, rationalization, pressure, opportunity and competence. Then this theory was refined by Georgios L. Vousinas in 2016. This theory is known as the "Fraud Hexagon" or the S.C.C.O.R.E model. The elements in the fraud hexagon are stimulus (pressure), capability, collusion, opportunity, rationalization, and ego (arrogance).

There are several factors from each element in the fraud hexagon, namely: (1) stimulus (pressure): financial target, financial stability, external pressure, and personal financial needs, (2) capability: change of director and CEO's education, (3) collusion: state-owned enterprises and collaboration with government projects, (4) opportunity: quality of external audit, ineffective monitoring, and nature of industry, (5) rationalization: change in auditor, auditor's opinion, and total accrual of total assets, (6) ego (arrogance): CEO's pictures and dualism position. In this research, we use a moderating variable whose main objective is to weaken the influence of the fraud hexagon on fraudulent financial statements. The moderating variable can use the internal audit committee or audit quality.

Agency Theory

Agency theory explains the relationship between the agent (company management) and the principal (shareholders), this theory was put forward by (Jensen dan Meckling, 1976). Because the agent is the party who makes the financial reports, the agent has more information than the principal, so information asymmetry occurs. The agent may not provide all the information to the principal. Additionally, there is a conflict of interest between the agent's and principal's interests; the agent wants bonuses and incentives, while the principal wants the company to do well so he can obtain a good return on his investment.

GONE Theory

Bologna (1993) proposed the GONE theory, which attempts to explain why people commit fraud. The GONE theory consists of: (1) greed, which occurs because of a feeling of dissatisfaction with something that is owned so that someone commits fraud to get what they want, (2) opportunity, is a situation where someone can commit fraud

because they are conditions that make it possible not to be detected, (3) needs, economic pressure that requires someone to commit fraud, (4) exposure, is a punishment or consequence imposed on the perpetrators but does not provide a deterrent effect.

Fraud

Fraud is all kinds of methods used to gain advantage from other parties by doing various methods, including wrong things. For the purposes of audits, fraud is defined in SAS No. 99 (2003) as a purposeful act leading to a substantial misrepresentation. The results of research conducted by the Association of Certified Fraud Examiners (ACFE) Global show that every year as many as 5% of an organization's revenue becomes victims of fraud (Rohmah et al., 2023).

Fraud Classification (Fraud Tree)

Fraud tree is a classification system for various forms of fraud (Uniform Occupational Fraud Classification System). Fraud is classified into three main forms, namely corruption, misappropriation of assets, and fraudulent financial statements. These three forms of fraud are mapped into a "Fraud Tree" which is useful for assisting accountants in recognizing, identifying and diagnosing fraud that occurs.

Fraudulent Financial Statements

According to the Australian Auditing Standards, financial statement fraud is financial reporting with the aim of deceiving users of financial statements and conscious misrepresentation. In measuring and calculating financial statement fraud, there are various models that can be used, namely the Beneish M-Score which was introduced by Messod D. Beneish in 1999, the Fraud Score (F-Score) which was introduced by Dechow et al. (2007), and Altman Z-Score which was introduced by Edward I in 1969. The F-Score method is used to assess the financial health of a company and see the potential future performance of its shares, the Z-Score method is used to measure the possibility of company bankruptcy by taking measurements financial health and assess the risk of bankruptcy, while the M-Score method is used to detect possible manipulation of financial statements.

Fraud Hexagon Theory

Fraud theory is a concept that explains the reasons and possibilities for fraud in the business world. Fraud theory continues to develop, this is due to the increasing number of fraud cases occurring in the world. The first fraud theory was initiated by Donald R. Cressey in 1953, this theory was called "Fraud Triangle". According to this theory, there are three elements that cause fraud, namely pressure, opportunity and rationalization.

In 2004, David T. Wolfe and Dana R. Hermanson revealed that there are four elements that cause fraud, namely pressure, opportunity, rationalization, and ability, this fraud theory is called "Fraud Diamond". In 2011, Crowe Horwath proposed that there are five elements that cause fraud, namely pressure, opportunity, rationalization, competence and ego. And the newest fraud theory is the "Fraud Hexagon" which was introduced by Voutsinas in 2019. According to Voutsinas (2019) there are six elements

that cause someone to commit fraud, namely stimulus (pressure), capability, collusion, opportunity, rationalization, and ego (arrogance).

Audit Quality

This research uses a moderating variable where this variable is an independent variable that will weaken or strengthen the relationship between other independent variables and the dependent variable. There are two moderating variables in relation to the potential for fraudulent financial statements, namely audit quality and internal audit committee.

In this study, researchers used audit quality as a moderator. Due to the asymmetry of information between company management and investors, a third party, namely an auditor, is needed. BIG 4 public accounting firms (KAP) (PricewaterhouseCoopers/PWC, KPMG, Deloitte, and Ernst and Young) are considered to have higher credibility and independence than NONBIG 4 KAPs (Primastiwi dan Saeful, 2020).

Research Objectives

This study aims to determine the influence of financial targets, CEO's Education, collaboration with government projects, nature of industry, total accrual of total assets, and dualism position on the potential for fraudulent financial statements in industrial sector companies registered in BEI 2020-2022. As well as to determine the effect of audit quality moderating financial targets and the nature of industry in industrial sector companies listed on the Indonesia Stock Exchange in the 2020-2022 period.

Research Framework and Hypothesis

The Influence of Financial Targets on Potential Financial Statement Fraud

A company's financial aim is an objective it aspires to reach. Return on Assets (ROA) is a benchmark for evaluating financial objectives. Return on Assets is an indicator of a business's efficiency in turning its assets into profit (Pratiya et al., 2018). It is likely that fraud will occur if a corporation sets a high ROA aim. This ties into the idea of agency, in which the principal puts pressure on the agent to perform to the principal's expectations, which could lead to dishonesty. The GONE theory states that people commit fraud due to their need for bonuses to meet basic necessities and their desire for bonuses to achieve what they want. Financial aims significantly impact fake financial statements, according to studies by Amar and Iskandar (2023), Tarjo et al. (2021), and Sagala and Siagian (2021).

H1: Financial targets have a positive effect on the potential for fraudulent financial statements.

The Influence of CEO's Education on the Potential for Financial Report Fraud

CEO's education refers to the educational history of the CEO. In order to produce big profits, all it takes is a CEO with a college degree, who possesses a wealth of information and a high IQ. The CEO, in his role as an educated agent, can utilise his intelligence to achieve his goals, including, according to agency theory, keeping the principal in the dark about any and all information pertaining to the company. If a CEO has a prestigious background, he can utilise his knowledge to gain everything he wants, which can lead to greed and deception, according to the GONE theory. Education of

CEOs significantly reduces the likelihood of misleading financial statements (Sihombing and Panggulu, 2022; Preicilia et al., 2022; Aviantara, 2021).

H2: The likelihood of misleading financial statements is reduced when CEOs receive training.

The Effect of Collaboration with Government Projects on the Potential for Fraudulent Financial Statements

Working together on government projects might be seen as an indicator of collaboration, which can help uncover instances of financial report falsification. The agent may feel pressured to commit fraud by inflating his income to make it appear large, claiming that he received a large sum of money from the government, as per agency theory, which states that principals demand the best performance from agents. If you believe the GONE idea, this is a perfect chance to pull off some fraud. Sari and Nugroho (2020) and Sagala and Siagian (2021) both state that working on government projects together reduces financial statement fraud.

H3: Working together on public initiatives reduces the likelihood of misleading financial statements.

Industry Factors Affecting the Probability of False Financial Statements

The amount of a company's receivables is one indicator of its health. Because management can easily calculate the quantity of uncollectible receivables, fraud might occur when there is a large amount of receivables and minimal cash inflow. According to Skousen et al. (2008), managers can manipulate the amount of bad debts as a means of committing fraud. Agents might commit fraud by overestimating their receivables because, according to agency theory, principals demand top performance from their agents, which puts undue pressure on them. The GONE idea suggests that this could be a chance for fraud. Both Putri dan Suhartono (2023) and Tarjo et al. (2021) suggest that the likelihood of misleading financial statements is positively affected by the nature of the industry.

H4: The likelihood of falsified financial statements is positively affected by the nature of the industry.

The Influence of Total Accrual Total Assets on the Potential for Fraud in Financial Statements

Management has the authority to establish its own regulations, including those pertaining to recording, in the event that the company's financial situation worsens. Rather of keeping track of money coming in or going out, TATA records transactions whenever they take place. Agency theory suggests that the TATA technique introduces the prospect of policymaking and data manipulation on the part of the agent in pursuit of an investment from the principal. This presents a potential chance for fraud, according to the GONE theory, due to the discrepancy between recording digital transactions and handling actual currency. It has been found that TATA significantly and positively affects financial statement fraud (Putri and Suhartono, 2023; Annisa and Ghozali, 2020; Iqbal and Murtanto, 2016).

H5: The possibility of misleading financial statements is reduced when entire assets are accrued.

The Effect of Dualism Position on the Potential for Fraud in Financial Statements

An example of a dualist position would be a chief executive officer (CEO) who juggles various responsibilities. The chief executive officer (CEO) often holds multiple roles, such as that of board of commissioners, director of another company, and others. The CEO is seen as haughty by agency theory since he or she is an agent with multiple roles. Instead of putting the needs of the business and its principal first, the CEO may put his or her own interests first. According to the GONE theory, dishonesty stems from avarice and unhappiness, which in turn leads to having several jobs. It has been found that the dualistic position affects financial report fraud (Siregar, 2019; Mardeliani et al., 2022).

H6: The likelihood of misleading financial statements is reduced by adopting a dualist stance.

Financial Target is moderated by the impact of Audit Quality on the likelihood of prospective financial statement fraud

A company's management has financial targets that they are responsible for reaching. Overly ambitious financial goals put undue stress on management. Both the agent and the principal have different interests and have unequal access to information, according to agency theory. One of the reasons someone might commit fraud, according to the GONE hypothesis, is greed. In this scenario, management would inflate financial reports so they would receive large bonuses from investors, but the investors would have no idea what the real numbers were. At this point, the auditor steps in as an impartial third party to verify the accuracy and reliability of the financial reporting. According to Scott (2015), the BIG 4 accounting firms are the most reputable and high-quality options. Primastiwi and Saeful (2020) found that compared to KAP NONBIG 4, businesses that adopt KAP BIG 4 are more trustworthy and autonomous.

H7: The favourable effect of financial goals on the possibility of falsified financial statements is mitigated by audit quality as a moderating variable.

The influence of Audit Quality moderates the Nature of Industry on the possibility of potential financial statement fraud.

As a result of the nature of the business, a little cash inflow is likely to occur in the event that the balance of receivables is high. There is a chance that management could falsify its financial reports by understating its receivables. Since the agent and principal do not have the same interests, a neutral third party is required to verify and oversee the accuracy of the reported financial data in accordance with agency theory. Since business leaders generate accurate financial reports in response to investor demands, the GONE theory postulates that greed is a motivating factor in deception. Investors, however, are in the dark about the true financial reporting. Financial reports must be audited by an independent party. Primastiwi and Saeful (2020) state that audit quality has the potential to mitigate the beneficial impact of industry characteristics in identifying possible instances of financial report fraud.

H8: The moderating variable of audit quality reduces the favourable effect of industry nature on the possibility of false financial statements.

METHODS

The objects used in this research are industrial sector companies listed on the IDX for the 2020-2022 period. In order to apply observational methods, researchers perused the company's official website and www.idx.co.id for yearly reports. The sampling technique in this research uses non-probability sampling techniques and purposive sampling methods. Testing in this study used IBM SPSS Statistics ver. 25. The following are the criteria used in this research, namely: (1) industrial sector companies registered on the IDX for the period 2020 to 2022; (2) companies that have listed before 2020; (3) companies that have not experienced delisting in the 2020 to 2022 period; and (4) the company presents a complete annual report related to the variables required in the research.

Table 1. Sampling Procedure

Descriptions	Total
Total industrial sector companies registered on the IDX for the 2020-2022 period	63
Companies that do not meet the established criteria:	
1. Newly listed companies during the research period	(15)
2. Companies that experienced delisting in the research period	(3)
3. Companies that present incomplete annual report data	(4)
4. Companies affected by outliers in SPSS	(1)
Total companies that meet the criteria	40
Research period	3
The total research samples	120

Variables

Dependent Variable

According to Suwarsa and Hasibuan (2021), the dependent variable is a variable that is the result of the existence of an independent variable. This research uses the Beneish M-Score to see the potential for fraudulent financial statements. Beneish M-Score Method was initiated by Beneish (1999). A company is said to be committing fraudulent financial reporting if the M-Score value is > -2.22 . Table 2 (see page 91) displays the eight ratios used to calculate the Beneish M-Score.

Independent Variables

The term "independent variable" is used by Suwarsa and Hasibuan (2021) to describe any variable other than the dependent variable that has the potential to affect the latter.

Stimulus: Financial Target. Financial targets are the expectations of shareholders (investors) for company management to achieve the desired targets. The target is in the form of income achievements that must be met by management so as to encourage management to provide the best work results so that the target can be achieved. This can encourage management to commit fraudulent acts in order to

Table 2. Variables Used to Calculate the Beneish M-Score

Variables	Formula
M-Score	$M - Score = -4,84 + 0,92(DSRI) + 0,528(GMI) + 0,404(AQI) + 0,892(SGI) + 0,115(DEPI) - 0,172(SGAI) - 0,327(LVGI) + 4,697(TATA)$
Day's Sales in Receivables Index (DSRI)	$DSRI = \frac{Receivable_t / Sales_t}{Receivable_{t-1} / Sales_{t-1}}$
Gross Margin Index (GMI)	$GMI = \frac{(Sales_{t-1} - COGS_{t-1}) / Sales_{t-1}}{(Sales_t - COGS_t) / Sales_t}$
Asset Quality Index (AQI)	$AQI = \frac{1 - (Current Asset_t + PPE_t) / Total Asset_t}{1 - (Current Asset_{t-1} + PPE_{t-1}) / Total Asset_{t-1}}$
Sales Growth Index (SGI)	$SGI = \frac{Sales_t}{Sales_{t-1}}$
Depreciation Index (DEPI)	$DEPI = \frac{Depreciation_{t-1} / (Depreciation_{t-1} + PPE_{t-1})}{Depreciation_t / (Depreciation_t + PPE_t)}$
Sales General and Administrative Expenses Index (SGAI)	$SGAI = \frac{SG\&A Expense_t / Sales_t}{SG\&A Expense_{t-1} / Sales_{t-1}}$
Leverage Index (LVGI)	$LVGI = \frac{Total Liabilities_t / Total Asset_t}{Total Liabilities_{t-1} / Total Asset_{t-1}}$
Total Accruals to Total Assets (TATA)	$TATA = \frac{EAT_t - Cash flow from operation_t}{Total Asset_t}$

meet these targets. According to Skousen et al. (2008), the greater the financial target set, the greater the potential for fraudulent financial statements. Ratios to measure financial targets using Return on Assets (ROA):

$$ROA = \frac{\text{Laba Bersih}}{\text{Total Asset}}$$

Capability: CEO's Education. A person's capacity for reasoning, deliberation, and action is directly proportional to their level of education. People with greater education tend to know more things. A very intelligent person could be a fraudster because of their wealth of information and ability to conceal their deceit. Octaviana (2022) states that a dummy variable can be used to measure the CEO's education. Code 1 is utilized when the chief executive officer (CEO) possesses a master's degree (S2) or higher. Nevertheless, code 0 applies if the chief executive officer (CEO) possesses a degree below a master's (S2).

Collusion: Collaboration with Government Projects. Government initiatives can be used as a surrogate for collaboration in order to discover fraud. It will be harder to find if businesses and the government work together. Companies find it simpler to secure loans, capital infusions, and licenses when they collaborate with government projects. Using dummy variables, we may measure the level of cooperation with government projects. In this case, the corporation receives code 1 if it agrees to work with the government to carry out its project. On the other hand, code 0 is assigned to the business if it refuses to cooperate with the government.

Opportunity: Nature of Industry. A large amount of receivables in a company indicates that the cash flow entering the company is small. The company can estimate the number

of receivables even though the company does not yet know whether the receivables are paid or not by the client. A large number of receivables can indicate potential fraud in the company's financial reports because management could manipulate financial report data. The following formula can be used to determine the receivables change ratio, which is used in industrial measurement:

$$\text{RECEIVABLE} = \left(\frac{\text{Receivable}_t}{\text{Sales}_t} - \frac{\text{Receivable}_{t-1}}{\text{Sales}_{t-1}} \right)$$

Rationalization: Total Accrual Total Assets (TATA). Operational activities in a company are generally determined by management. Therefore, management can carry out records according to their own policies, then justify or rationalize their actions. Therefore, according to several previous studies, the higher the TATA ratio, the higher the possibility of financial statement fraud. The TATA ratio can be measured using the formula:

$$\text{TATA} = \frac{\text{EAT}_t - \text{Cash flow from operation}_t}{\text{Total Asset}_t}$$

Ego/Arrogance: Dualism Position. If the CEO in a company has multiple positions, for example being a director in another company or being on the board of commissioners, then there is a possibility that the CEO will neglect his work and the supervisory function of the company will be lower because his focus is not only on one job. According to Jannah et al. (2021), having multiple positions allows a CEO to sacrifice the interests of the company. The measurement of the arrogance variable can be measured through a dummy variable. If a CEO has more than one position, it is coded 1, but if a CEO only has one position, namely only CEO/leader of the company, it is coded 0.

Moderating Variable

Moderating variables are variables that can strengthen or weaken the influence of the independent variable on the dependent variable. In this research, audit quality is used as a moderating variable. There is information asymmetry and different interests between the agent and the principal. As a result, a third party must verify the accuracy of management's financial reporting. The third party here is the auditor, an auditor who is proven to have good credibility and quality, namely BIG 4. If the company uses a BIG 4 auditor, there is little chance of fraud occurring. This statement is supported by (Primastiwi and Saeful, 2020).

The measurement of audit quality as a moderating variable uses a dummy variable. If a company uses BIG 4 as an auditor in auditing its financial reports, it is given a code of 1. However, if a company uses NONBIG 4 as an auditor in auditing its financial reports, it is given a code of 0.

Data analysis techniques

Descriptive Statistics

Descriptive statistical analysis is data testing to obtain a general picture and conclusions regarding the sample studied. In this research, minimum, maximum, average (mean) and standard deviation values are used (Ghozali, 2018).

Coefficient Similarity Test (Pooling Test)

The pooling test aims to find out whether time series data with cross sectional data can be combined (pooled). This test uses dummy variables for 2020 and 2021 (2020 will be coded 1 for dummy variable D1 and code 0 for other years; 2021 will be coded 1 for dummy variable D2 and code 0 for other years). **(a)** If the sig value is ≤ 0.05 , pooling cannot be carried out and testing must be carried out annually; **(b)** if the sig value is > 0.05 , pooling can be carried out and the test can be carried out once.

The following formula used for testing similarity coefficients:

$$\begin{aligned} \text{FRAUD} = & \beta_0 + \beta_1 \text{ROA} + \beta_2 \text{REC} + \beta_3 \text{TATA} + \beta_4 \text{CEOEDU} + \beta_5 \text{DUALCEO} + \\ & \beta_6 \text{KPP} + \beta_7 \text{ROA_KA} + \beta_8 \text{REC_KA} + \beta_9 \text{D}_1 + \beta_{10} \text{D}_2 + \beta_{11} \text{D}_1 \text{ROA} + \beta_{12} \text{D}_1 \text{REC} + \\ & \beta_{13} \text{D}_1 \text{TATA} + \beta_{14} \text{D}_1 \text{CEOEDU} + \beta_{15} \text{D}_1 \text{DUALCEO} + \beta_{16} \text{D}_1 \text{KPP} + \beta_{17} \text{D}_2 \text{ROA} + \\ & \beta_{18} \text{D}_2 \text{REC} + \beta_{19} \text{D}_2 \text{TATA} + \beta_{20} \text{D}_2 \text{CEOEDU} + \beta_{21} \text{D}_2 \text{DUALCEO} + \beta_{22} \text{D}_2 \text{KPP} + \\ & \beta_{23} \text{D}_1 \text{ROA_KA} + \beta_{24} \text{D}_1 \text{REC_KA} + \beta_{25} \text{D}_2 \text{ROA_KA} + \beta_{26} \text{D}_2 \text{REC_KA} + \varepsilon \end{aligned}$$

Descriptions:

FRAUD : Fraudulent financial statements

β_0 : Constant

β_{1-26} : Regression coefficient for each variable

ROA : *Return on Assets* ratio

REC : Ratio on changes in trade receivables

TATA : Total accrual ratio

CEOEDU : CEO education

DUALCEO : Number of CEO positions

KPP : Companies collaborating with government policies

KA : Audit quality

Dummy variable; 1 = KAP BIG 4; 0 = KAP NONBIG 4

D₁ : Dummy variable1 (year); 1 = 2020; 0 = other than 2020

D₂ : Dummy variable (year); 1 = 2021; 0 = other than 2021

ε : Error

Classical Assumption Tests

Normality test. The purpose of the normalcy test is to determine if the residual values follow a normal distribution. A normal distribution is an excellent characteristic of a regression model (Ghozali, 2018). In this study, the One-Sample Kolmogorov-Smirnov normality test was used. By decision making criteria: (a) the data is normally distributed if the significance value is greater than or equal to α (0.05); (b) the data is not normally distributed if the sig value is less than α (0.05).

However, Bowerman (2017), in his theory "The Central Limit Theorem" added that if the research sample exceeds 30 then it can be assumed that the research data is normally distributed.

Multicollinearity Test. The multicollinearity test aims to test whether there is a correlation between the independent variables in the regression model, this is because a good regression model should not have a correlation between the independent variables (Ghozali, 2018). By decision making criteria: (a) if the tolerance value is < 0.10 or the VIF value is > 10 then there is multicollinearity; (b) if the tolerance value is ≥ 0.10 or the VIF value is ≤ 10 then there is no multicollinearity.

Heteroscedasticity Test. According to Ghazali (2018), the heteroscedasticity test is a test of the inequality of variance from confounding variables from one observation to another. This research uses the Spearman's Rho test. The following are the test criteria: (a) if the Sig value. (2-tailed) ≤ 0.05 then heteroscedasticity occurs; (b) if the Sig value. (2-tailed) > 0.05 , then heteroscedasticity does not occur.

Autocorrelation Test. The autocorrelation test aims to find out whether in the linear regression model there is a relationship between residual errors in the research period (t) and the previous period (t-1) (Ghozali, 2018). The autocorrelation test uses non-parametric statistical testing Run Test, with test criteria: (a) if the value of Asymp. Sig. (2-tailed) < 0.05 , then there are symptoms of autocorrelation; (b) if the value of Asymp. Sig. (2-tailed) > 0.05 , so there are no symptoms of autocorrelation.

Moderated Regression Analysis (MRA). The MRA test aims to test independent variables that influence the dependent variable in the presence of a moderating variable.

$$\text{FRAUD} = \beta_0 + \beta_1 \text{ROA} + \beta_2 \text{REC} + \beta_3 \text{TATA} + \beta_4 \text{CEOEDU} + \beta_5 \text{DUALCEO} + \beta_6 \text{KPP} + \beta_7 \text{KA} + \beta_8 \text{ROA_KA} + \beta_9 \text{REC_KA} + \varepsilon$$

Hypothesis Testing

Model Hypothesis Test (F Test). According to Ghazali (2018), the F test aims to test the feasibility of the model whether the regression model equation can be used to see the influence of the independent variable on the dependent variable. Decision making criteria: (a) if the sig value ≤ 0.05 then the regression model is significant and feasible; (b) if the sig value is > 0.05 then the regression model is not significant and is not feasible.

T Test. Ghazali (2018) noted that the t test is used to test the partial significance of the coefficient which shows the influence of each independent variable individually on the dependent variable. The statistical hypothesis in this test is:

- (a) H_{o1}: $\beta_1=0$, indicating that the financial target does not influence the likelihood of fraudulent financial statement occurrences.
- (b) H_{a1}: $\beta_1>0$, indicating that the implementation of financial targets increases the likelihood of fraudulent financial statements.
- (c) H_{o2}: $\beta_2=0$, indicating that the education of the CEO does not impact the likelihood of fraudulent financial statements.
- (d) H_{a2}: $\beta_2>0$, indicating that the education of the CEO positively influences the likelihood of fraudulent financial statements.
- (e) H_{o3}: $\beta_3=0$, indicating that there is no discernible impact of collaborating on government initiatives on the likelihood of fraudulent financial statements.
- (f) According to H_{a3}, $\beta_3>0$, indicating that engaging in government project collaborations positively impacts the likelihood of generating fraudulent financial statements.
- (g) H_{o4}: $\beta_4=0$, indicating that the likelihood of fraudulent financial statements is unaffected by the industry in which one operates.
- (h) H_{a4}: $\beta_4>0$, indicating that the likelihood of fraudulent financial statements is positively correlated with the character of the industry.
- (i) H_{o5}: $\beta_5=0$, indicating that there is no relationship between the total accrual of total assets and the likelihood of fraudulent financial statements.

- (j) $H_{a5}: \beta_5 > 0$, indicating that the possibility of fraudulent financial statements is positively impacted by the total accrual of total assets.
- (k) Since $H_{o6}: \beta_6 = 0$, it can be concluded that the dualism position does not influence the likelihood of fraudulent financial statements.
- (l) $H_{a6}: \beta_6 > 0$, indicating that the dualism position increases the likelihood of fraudulent financial statements.
- (m) $H_{o7}: \beta_7 = 0$, indicating that the positive impact of financial targets on the likelihood of fraudulent financial statements cannot be mitigated by audit quality.
- (n) $H_{a7}: \beta_7 < 0$, indicating that the positive impact of financial targets on the likelihood of fraudulent financial statements may be mitigated by audit quality.
- (o) Since $H_{o8}: \beta_8 = 0$, it can be concluded that the positive impact of industry characteristics on the likelihood of fraudulent financial statements cannot be mitigated by audit quality.
- (p) $H_{a8}: \beta_8 < 0$, indicating that the positive impact of industry characteristics on the likelihood of fraudulent financial statements can be mitigated by audit quality.

Determination Coefficient (R^2). The coefficient of determination (Adjusted R^2) is used to determine the magnitude of the variation in the dependent variable which can be explained by the variation in the independent variable (Ghozali, 2018).

RESULTS AND DISCUSSION

Descriptive Analysis

With the use of descriptive statistics, one may learn about a dataset by looking at its average, minimum, maximum, and standard deviation values.

Table 3. Descriptive Analysis

Variables	N	Minimum	Maximum	Mean	Std. Deviation
FFR	120	-4,7987	4,5428	-2,3167	1,1911
ROA	120	-0,2108	0,5449	0,0385	0,0897
REC	120	-0,4014	0,3982	-0,0058	0,0866
TATA	120	-0,3135	0,1540	-0,0365	0,0834

- (a) The variable representing potential for financial statement fraud (FFR) indicates the average likelihood of such fraud occurring. According to the test results, 38% of cases involved fraud while 62% did not.
- (b) The financial target variable (ROA) signifies the average profitability of the company in relation to its asset base. Test findings reveal that 40% of cases exhibited an ROA ratio above the average, while 60% fell below.
- (c) The industry nature variable (REC) denotes the average ratio of a company's total receivables to its total sales. Analysis shows that 53% of cases had a REC ratio surpassing the average, whereas 47% were below.
- (d) The variable for total accrual to total assets (TATA) represents the average accrual profit held by the company. Test results indicate that 58% of cases had a TATA ratio exceeding the average, while 43% were below.

Table 4. CEO Education (CEOEDU)

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
The CEO has less than a master's education (S2).	67	55,8	55,8	55,8
The CEO has a master's degree (S2) or above.	53	44,2	44,2	100,0
Total	120	100,0	100,0	

In the provided table, out of the 120 research samples, 55.8% of CEOs possessed education levels below a master's degree, while 44.2% held a master's degree or higher (Table 4)

Table 5. CEO Position (DUALCEO)

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
The CEO does not hold concurrent positions.	59	49,2	49,2	49,2
The CEO holds multiple positions.	61	50,8	50,8	100,0
Total	120	100,0	100,0	

In the table presented, out of the 120 research samples, 49.2% of CEOs held single positions, while 50.8% of CEOs concurrently held multiple positions.

Table 6. Companies Collaboration with Government Project

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
The company does not collaborate with government projects.	60	50,0	50,0	50,0
The company collaborates with government projects.	60	50,0	50,0	100,0
Total	120	100,0	100,0	

Table 6 displayed that among the 120 research samples, 50% were involved in government projects, while the other 50% were not.

Table 7. Audit Quality (KA)

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Financial reports audited by KAP NONBIG 4	85	70,8	70,8	70,8
Financial reports audited by KAP BIG 4	35	29,2	29,2	100,0
Total	120	100,0	100,0	

In Table 7, we can see that as much of 70.8% of the 120 research samples had their financial reports audited by non-Big 4 firms, while 29.2% were audited by Big 4 firms.

Coefficient Equality Test (Pooling Test)

The pooling test aims to find out whether time series data with cross sectional data can be combined (pooled). Table 8 consists of the results of the pooling test.

Table 8. Pooling Test Results

Model	Criteria	Sig	Description
D ₁	Sig > 0,05	0,368	Passes pooling test
D ₂	Sig > 0,05	0,234	Passes pooling test
D ₁ ROA	Sig > 0,05	0,471	Passes pooling test
D ₁ REC	Sig > 0,05	0,388	Passes pooling test
D ₁ TATA	Sig > 0,05	0,738	Passes pooling test
D ₁ CEOEDU	Sig > 0,05	0,823	Passes pooling test
D ₁ DUALCEO	Sig > 0,05	0,618	Passes pooling test
D ₁ KPP	Sig > 0,05	0,253	Passes pooling test
D ₂ ROA	Sig > 0,05	0,632	Passes pooling test
D ₂ REC	Sig > 0,05	0,245	Passes pooling test
D ₂ TATA	Sig > 0,05	0,438	Passes pooling test
D ₂ CEOEDU	Sig > 0,05	0,065	Passes pooling test
D ₂ DUALCEO	Sig > 0,05	0,731	Passes pooling test
D ₂ KPP	Sig > 0,05	0,374	Passes pooling test
D ₁ ROA_KA	Sig > 0,05	0,223	Passes pooling test
D ₁ REC_KA	Sig > 0,05	0,749	Passes pooling test
D ₂ ROA_KA	Sig > 0,05	0,926	Passes pooling test
D ₂ REC_KA	Sig > 0,05	0,652	Passes pooling test

Table 8 displays the data pooling results for the 2020-2022 period. The significance values for D1 through D2REC_KA are all greater than 0.05, indicating no differences in coefficients. Therefore, the data can be processed and analyzed collectively for the three-year period.

Classic Assumption Test

The results of the classical assumption test are summarized in Table 9. The normality test suggests non-normal distribution of the data, as indicated by the Asymp. Sig. (2-tailed) value being less than 0.05. However, according to Bowerman (2017) and his exposition of "The Central Limit Theorem," with a sample size exceeding 30, data can be assumed to be normally distributed. With 120 samples in this study, the data was deemed to follow a normal distribution. Additionally, the multicollinearity test results show Tolerance values ≥ 0.10 and VIF values ≤ 10 , indicating no multicollinearity, suggesting each independent variable can adequately explain the others. Furthermore, the heteroscedasticity test reveals a Sig. (2-tailed) value exceeding 0.05, indicating the absence of significant differences in the variance of independent variables. Finally, the autocorrelation test yields an Asymp. Sig. (2-tailed) value of 0.5820, suggesting no autocorrelation symptoms in this study.

Table 9. Classical Assumption Test Results

Testing Types	Criteria	Results	Decision
Normality	Sig. > 0,05	0,0000	In this scenario, the data tends to follow a normal distribution when the sample size surpasses 30, which is confirmed by the Central Limit Theorem, and the null hypothesis is rejected.
Multicollinearity	Tolerance > 0,1 VIF < 10	Variables	Tolerance
		ROA	0,8820
		REC	0,9580
		TATA	0,9140
		CEOEDU	0,9240
		DUALCEO	0,8210
		KPP	0,8680
Heteroscedascity	Sig. > 0,05	VIF	Sig.
		ROA	0,6390
		REC	0,2250
		TATA	0,1530
		CEOEDU	0,7030
		DUALCEO	0,0780
		KPP	0,4000
Autocorrelation	Sig. > 0,05	0,5820	Do not reject H ₀ (PASS)

Moderated Regression Analysis (MRA)

Looking at the dependent and independent variables in respect to a moderating variable is what the Multiple Regression Analysis (MRA) test is all about. The equation derived from the MRA test results displayed in Table 10 is as follows:

$$FRAUD = -2,200 + 0,604 ROA + 0,199 REC + 4,889 TATA - 0,193 CEOEDU + 0,487 DUALCEO - 0,338 KPP - 1,746 ROA_KA + 2,453 REC_KA$$

Table 10. MRA Outputs

Variables	Unstandardized Coefficients (B)	Sig.
(Constant)	-2.200	0.000
ROA	0.604	0.659
REC	0.199	0.872
TATA	4.889	0.000
CEOEDU	-0.193	0.373
DUALCEO	0.487	0.034
KPP	-0.338	0.124
KA	0.279	0.308
ROA_KA	-1.746	0.538
REC_KA	2.453	0.662

Goodness of Fit and Hypothesis Testing

The multiple linear regression analysis yielded an F-test value of 3.147 with a significance level of 0.002 (Table 11). A significance level below 0.05 indicates the regression model is fit and has the efficacy in detecting potential financial statement fraud, where the independent variable influences the dependent variable.

The t-test results, presented in Table 12, are as follows. Among the variables, two exhibited significance levels below 0.05, rejecting the null hypothesis (H_0) - total accrual total assets (TATA) and dualism position (DUALCEO), both showcasing positive B values, suggesting that they positively impact the potential for fraudulent financial statements. Conversely, other variables, including financial target (ROA), CEO's education (CEOEDU), collaboration with government projects (KPP), nature of industry (REC), and the moderating effect of audit quality on financial targets and industry nature, demonstrated significance levels above 0.05, failing to reject H_0 . This implies their negligible effect on the potential for fraudulent financial statements. The research achieved an Adjusted R^2 value of 0.140 (14%), indicating that 14% of the variance in the dependent variable (potential financial statement fraud) can be explained by the independent variables, namely total accrual total assets (TATA) and dualism position (DUALCEO).

Table 11. F Test Results

Model		F	Sig.
Regression		3.147	0.002
Independent Variables	Unstandardized Coefficient (B)	Sig.	Sig./2
ROA	0.604	0.659	0.330
CEOEDU	-0.193	0.373	0.187
KPP	-0.338	0.124	0.062
REC	0.199	0.872	0.436
TATA	4.889	0.000	0.000
DUALCEO	0.487	0.034	0.017
KA	0.279	0.308	0.154
ROA_KA	-1.746	0.538	0.269
REC_KA	2.453	0.662	0.331
Adjusted R Square=0.140			

DISCUSSION

The influence of financial targets on the potential for fraudulent financial statements

The t-test results revealed a regression coefficient of 0.604 with a significance value of 0.330 (Sig. > 0.05). These findings suggest that the financial target variable does not exert a significant positive effect on the potential for fraudulent financial statements. Consequently, in this study, hypotheses H_0 and H_1 are neither rejected nor accepted. This indicates that whether there is pressure or no pressure stemming from financial targets does not correlate with fraud likelihood. However, these results present limitations in addressing both agency theory and GONE theory. This discrepancy may

arise from management perceptions regarding the achievability of specified Return on Assets (ROA) targets, potentially diminishing the incentive for fraudulent behavior. Hence, irrespective of ROA levels, the potential for fraudulent financial statements remains unaffected. These findings diverge from prior studies by Amar and Iskandar (2023), Hartadi (2022), and Tarjo et al. (2021), which found significant effects of financial targets on financial statement fraud.

The influence of CEO's education on the potential for fraudulent financial statements

The t-test results yielded a regression coefficient of -0.193 with a significance value of 0.187 (Sig. > 0.05). These findings suggest that the CEO's education level does not exert a significant effect on the potential for fraudulent financial statements. Thus, whether a CEO possesses a high level of education or not does not correlate with fraud likelihood. Consequently, in this study, hypothesis H₀ is upheld while H₂ is rejected. However, these results pose limitations in addressing both agency theory and GONE theory. Despite the notion that higher education fosters ethical conduct, emphasizing integrity and honesty, this study finds that CEO's educational background does not play a significant role in deterring fraudulent behavior. These findings contradict prior research by Preicilia et al. (2022) and Aviantara (2021), which observed a significant positive relationship between CEO's education and the potential for fraudulent financial statements.

The effect of collaboration with government projects on the potential for fraudulent financial reporting

The t-test results revealed a regression coefficient of -0.338 with a significance value of 0.062 (Sig. > 0.05). These findings suggest that the variable 'collaboration with government projects' does not exert a significant effect on the potential for fraudulent financial statements. Thus, whether there is cooperation with the government or not, it does not appear to influence fraud likelihood. Consequently, in this study, hypothesis H₀ is retained while H₃ is rejected. However, these results present challenges in addressing both agency theory and GONE theory. It's possible that company management with political connections or ties may not exploit them for personal gain or company profit, thus mitigating the potential for fraudulent behavior. These findings contradict prior research by Adhitama et al. (2023) and Sari and Nugroho (2020), which observed a positive effect of collaboration with government projects on fraudulent financial reporting.

The influence of the nature of industry on the potential for fraudulent financial statements

The t-test results yielded a regression coefficient of 0.199 alongside a significance value of 0.436 (Sig. > 0.05). These findings indicate that the nature of industry variable does not exert a significant positive effect on the potential for fraudulent financial statements. Thus, the size of receivables, whether large or small, does not correlate with fraud likelihood. Consequently, in this study, hypothesis H₀ remains unchallenged, while H₄ is rejected. However, these results present limitations in addressing both agency theory and GONE theory. This discrepancy may be attributed to the specific industry context under examination, namely the industrial sector, where credit policies are

commonly enforced. In such sectors, the accumulation of receivables, often stemming from large projects, may not necessarily signal fraudulent activity but rather reflect standard business practices. These findings diverge from prior studies by Putri and Suhartono (2023), Tarjo et al. (2021), and Fouziah et al. (2022), which observed a significant positive relationship between the nature of industry and the potential for fraudulent financial statements.

The effect of total accrual of total assets on the potential for fraudulent financial statements

The t-test results revealed a regression coefficient of 4.889 with a significance value of 0.000 (Sig. < 0.05). These findings underscore the significant positive impact of the total asset accrual variable on the likelihood of fraudulent financial statements. Consequently, in this study, hypotheses H_5 and H_0 remain unchallenged. This suggests that higher Total Asset Accrual (TATA) ratios correlate with an increased potential for financial statement fraud. This observation resonates with agency theory, positing that agents may resort to various methods, such as recognizing income before cash receipt, to fulfill principal wishes. Elevated total accrual values relative to total assets may signal fraudulent financial reporting within a company. Moreover, this research aligns with the GONE theory, suggesting that discretion in accrual recording presents an opportunity for fraud, as disparities between recorded and physical assets provide avenues for manipulation. However, these findings diverge from previous studies by Pratiwi et al. (2022) and Ardiyani and Utaminingsih (2015), which found no significant effect of the Total Asset Accrual ratio (TATA) on financial statement fraud.

The effect of dualism position on the potential for fraudulent financial statements

The t-test results unveiled a regression coefficient of 0.487 alongside a significance value of 0.017 (Sig. < 0.05). These findings underscore the significant positive impact of the dualism position variable on the likelihood of fraudulent financial statements. Consequently, in this study, we refrain from rejecting hypothesis H_6 and reject H_0. This implies that CEOs holding multiple positions exhibit a heightened potential for fraudulent financial reporting. This observation aligns with agency theory, positing that CEOs, acting as agents, may harbor conflicting interests distinct from those of the principal. Concurrent CEO positions may foster conflicts of interest, allowing CEOs to exploit their authority for personal gain at the expense of shareholder interests. Furthermore, this research aligns with the GONE theory, suggesting that holding multiple positions may stem from a sense of dissatisfaction with singular achievements, thereby introducing a greed factor conducive to fraudulent behavior. However, these findings diverge from prior studies by Fajri et al. (2023), Kristiana and Hatta (2022), and Siddiq and Suseno (2019), which found no significant effect of the dualism position on fraudulent financial statements.

The influence of Audit Quality moderates the Financial Target on the potential for fraudulent financial statements

The t-test results revealed a regression coefficient of -1.746 with a significance value of 0.269 (Sig. > 0.05). These findings suggest that the audit quality variable does not

mitigate the positive impact of financial targets on the likelihood of fraudulent financial statements. Consequently, in this study, we fail to reject the null hypothesis (H_0) and reject H_7 . However, the results of this research present challenges to both agency theory and GONE theory, as they indicate that audit quality does not attenuate the positive influence of financial targets on fraudulent financial statements. This is due to the nuanced nature of audit quality, which cannot be solely determined by the size of the Public Accounting Firm (KAP). Non-BIG 4 KAPs may possess adequate audit quality, while BIG 4 KAPs may not always exhibit exemplary performance, as evidenced by cases such as Enron Andersen's significant fraud. These findings diverge from those of Himawan (2022), whose research suggests that audit quality effectively weakens the positive influence of financial targets on detecting fraudulent financial statements.

The influence of Audit Quality moderates the Nature of Industry on the potential for fraudulent financial statements

The t-test results yielded a regression coefficient of 2.453 with a significance value of 0.331 (Sig. > 0.05). These findings suggest that the audit quality variable does not mitigate the positive impact of industry nature on the potential for fraudulent financial statements. Consequently, in this study, we fail to reject the null hypothesis (H_0) and reject H_8 . Industry nature, characterized by a high volume of receivables, implies a potential decrease in cash inflow, potentially leading to fraudulent financial reporting as management may manipulate bad debt estimations. Hence, the presence of a third-party verifier becomes crucial to ensure the integrity of financial reports. External auditors or Public Accounting Firms (KAP), including both BIG 4 and NONBIG4, serve as this third-party verifier. BIG 4-affiliated KAPs are perceived to possess greater independence, thereby limiting fraudulent activities, thus potentially weakening the positive impact of industry nature on the likelihood of fraudulent financial reporting. Nonetheless, our findings diverge from those of Primastiwi and Saeful (2020), whose research suggests that audit quality effectively mitigates the influence of industry nature on fraudulent financial reporting detection.

CONCLUSION RECOMMENDATIONS

Total accrual to total assets and dualism position exert a discernible positive influence on the potential for fraudulent financial statements. Conversely, factors such as financial targets, CEO's education, collaboration with government projects, and the nature of industry fail to demonstrate significant evidence of impacting the likelihood of fraudulent financial reporting. There is a lack of sufficient evidence supporting the moderating effect of audit quality in mitigating the influence of financial targets and industry nature on the detection of potential fraudulent financial statements.

RECOMMENDATIONS

Practical Recommendations

The management of companies is advised to enhance their supervisory function, utilizing both internal audit and audit committee mechanisms to mitigate the occurrence of fraudulent activities. Additionally, in preparing financial reports, adherence to all

relevant regulations and laws is crucial to ensure the accuracy and reliability of the financial information presented.

Prospective investors, particularly those interested in industrial sector companies, are urged to exercise caution and thoroughness in their evaluations, as healthy financial reports may not always reflect the true financial health of a company. Based on the findings of this study, investors are advised to pay close attention to indicators such as revenue growth, cash flow, and the CEO's simultaneous roles. This research indicates that CEOs holding multiple positions and exhibiting high total accrual to total assets ratios may signal potential financial reporting fraud.

Suggestions for Future Research

This study underscores the complexity of identifying and addressing fraudulent activities within organizational settings. Further research endeavors may benefit from exploring additional variables and methodologies to deepen our understanding of the dynamics surrounding financial statement fraud detection and prevention. Regarding fraud hexagon, researchers are encouraged to explore alternative methodologies beyond multiple linear regression analysis, such as logistic regression, to gain deeper insights into the dynamics of fraudulent behavior.

This study identified only the total accrual to total assets (TATA) and dualism position (DUALCEO) variables as significant influences on the potential for fraudulent financial statements, future researchers exploring fraud hexagon concepts can consider employing additional proxies. These may include stimulus elements such as financial stability, external pressure, and personal financial needs; capability elements such as changes in directorship; collusion elements involving state-owned enterprises; opportunity elements like the quality of external audits and effectiveness of monitoring; rationalization elements such as changes in auditors and auditor opinions; and ego elements including the visibility of CEO images. Such refinements can enrich the understanding of fraudulent behavior within organizational contexts.

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