International Journal of Economics, Business and Accounting Research (IJEBAR)
Peer Reviewed – International Journal
Vol-8, Issue-3, 2024 (IJEBAR)
E-ISSN: 2614-1280 P-ISSN 2622-4771
https://jurnal.stie-aas.ac.id/index.php/IJEBAR

INFLUENCE OF FRAUD HEXAGON MODEL IN DETECTING FINANCIAL STATEMENT FRAUD

(Case study on non-Cyclical Consumer companies listed on the Indonesia Stock Exchange 2019 – 2022)

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Abstract: Financial statement fraud is an important problem that must be avoided in companies. Three categories of fraud were found in the 235 instances of fraud reported in the ACFE Indonesia survey: financial statement fraud 9.2% (22 cases), asset misuse (20.9% (50 cases), and corruption 69.9% (167 cases). Therefore, steps should be taken to identify potential causes of financial statement fraud. To find these factors, a number of models can be applied. The fraud hexagon model, created by Vousinas in 2019, is one of the latest models to examine how the components of the fraud hexagon model affect the detection of financial statement fraud. This research is quantitative and uses 104 data from 26 consumer non-cyclical companies listed in 2019 and – 2022 on the Indonesia Stock Exchange (IDX). was used. Logistic regression analysis was used to evaluate the hypothesis. The results showed that there was only one variable that affected Financial Statement Fraud, namely the Inventory Trunover variable from the Opportunity factor variables, namely External Pressure from the Stimulus factor, Director Change from the Capability factor, Total Accrual to Total Asset from the Rationalization factor, CEO's Picture from the Ego (arrogance) factor, and government cooperation from the Collusion factor have no effect on Financial Statement Fraud.

Keywords: *Fraud , Financial Statement Fraud, Fraud Hexagon Model.*

Submitted: 2024-09-19; Revised: 2024-09-28; Accepted: 2024-09-30

1. Introduction

Financial reports are reports that describe the financial position of the results of an accounting process during a certain period which is used as a communication tool for interested parties (Suteja, 2018) . Financial reports function as a measuring tool to assess company performance and to support decision making by stakeholders. internal. Therefore, it is important to develop financial reporting standards that are practical, reliable, and easy to understand. In addition, the report should avoid providing information that could mislead readers. In this way, stakeholders will have more confidence in the information presented. , thereby reducing the risk of fraud by management or other parties.

Fraud is *a* deviant or deceptive act carried out by someone by intentionally manipulating financial reports to cover up their mistakes and then the deviation or fraud can cause losses to stakeholders, where it is only for their own interests (individuals) (Sari & Nugroho, 2020) .

According to a survey by the ACFE Indonesia Chapter (ACFE, 2019) , fraud occurred in 239 incidents which were grouped into three categories of fraud, namely *financial statement fraud* , asset misappropriation, and corruption. A total of 167 cases (69.9 %) of fraud were in the form of corruption, 50 cases (20.9%) were in the form of asset misappropriation, and 22 cases (9.2%) were in the form of *financial statement fraud* .

One example of a case that occurred in Indonesia is the involvement of PT Indofarma in fraudulent practices. This case was revealed when BAPEPAM (OJK) found indications that important information regarding losses had been covered up for two consecutive years. The results of the investigation showed that the value of the inventory of goods in process for the 2001 fiscal year was reported higher than it should have been, which was 28.87 billion. As a result, net profit was also overstated by the same amount, while the cost of goods sold was reported lower. In addition, PT Ritel Global Solusi (RGS), which is a division of Envy Technologies Indonesia, was also accused of manipulating financial data. This information was revealed through a letter sent by Envy management to the IDX on July 21, 2021. RGS, which is a subsidiary of Envy, is suspected of manipulating the 2019 financial report. Envy explained this problem in the letter. According to CNBC Indonesia, the IDX asked for an explanation from the company concerned. In its letter, BEI raised questions regarding RGS's financial figures included in Envy's 2019 annual financial report (LKT), considering that RGS did not prepare the financial report (Sandria, 2021). With cases like this, it is very important to pay special attention, so that auditors need to consider factors that may cause fraud in the company.

Factors contributing to fraud have been identified in various detection frameworks, including the fraud triangle hypothesis introduced by Cressy in 1953. Furthermore, the introduction of fraudulent behavior resulted in a new model launched by Vousinas (2019) as the fraud hexagon model. This detection model is a development of the Pentagon Fraud Detection Model created by Crowe in 2012, which initially consisted of five elements and was later expanded to six aspects that contribute to fraud: Stimulus (pressure), Opportunity, Rationalization, Ability, Ego (Arrogance), and an additional factor, namely collusion. Therefore, the purpose of this study is to test and analyze the influence of factors in the fraud hexagon on financial statement fraud.

2. Research Method

This research is a quantitative research and the data used is secondary data taken from the company's official website or IDX. The population in this study is non-cyclical consumer companies listed on the Indonesia Stock Exchange in 2019 - 2022. Sampling uses a purposive sampling technique with criteria and details that can be seen in table 1 below:

Table 1. Sampling Criteria

No	Criteria	Amount
1.	Companies sector *consumer - cyclical* listed x Exchange.	125
2.	Companies sector *consumer non-cyclical* that are not the main board the IDX.	(69)
3.	Non-cyclical consumer sector companies that are not listed or that irregularly or incompletely release their financial reports between 2019 and 2022.	(14)
4.	Company does have profit or experiences loss	(15)
5.	Financial report company uses other than currency country Indonesia IDR	(1)
	Sample of companies that criteria	26
	Total Sample Research = 26 companies x 4 years	104

Operational Definition of Variables
Dependent Variable

Financial Statement Fraud is the dependent variable in this study. The variable will be measured using the *F-Score model.* Fraud and manipulation of financial statements can be identified using the F-Score calculation method. By combining the two elements of financial performance and accrual quality, the F-score can be determined. Here is the equation model:

F-Score = Accrual Quality + Financial Performance *Accrual Quality* is proxied by RSST *accrual,* below calculation formula :

$$\text{RSST Accrual} = \frac{(\Delta\ WC + \Delta\ NCO + \Delta\ FIN)}{Average\ Total\ Assets}$$

Information:

WC (*Working Capital*) = *Current Asset – Current Liability*

NCO (*Non Current Operating Accrual)* = (*Total Assets-Current Assets-Investment and Advances*) - (*Total Liabilities-Current Liabities-Long Term Debt*)

FIN (*Financial Accrual*) = *Total Investment – Total Liabilities*

ATS (*Average TotalAsset*) $= \frac{(Begening\ Total\ Assets\ +\ Ending\ Total}{2}$

Financial Performance is projected with Formula The following is used to make adjustments to receivable , x inventory accounts, cash sales accounts, and revenue accounts:

Financial Performance = Change in Receiveable + Change in Inventories+Change in Chase Sales + Change in Earnings

Information:

- *Change in Receiveable* $= \frac{\Delta Receivable}{Average\ Total\ Assets}$

- *Change in Inventories* = $\frac{\Delta\ Inventory}{Average\ Total\ Assets}$
- *Change in Chase Sales* = $\frac{\Delta\ Sales}{Sales\ (t)} - \frac{\Delta Receivable}{Receivable\ (t)}$
- *Change in Earnings* = $\frac{Earnings\ (t)}{Average\ Total\ Assets\ (t)} - \frac{Earnings\ (t-1)}{Average\ Total\ Assets(t-1)}$

When a company's F-Score exceeds one, there is a possibility that the company is committing *financial statement fraud*. However, the company cannot be suspected of committing *financial statement fraud* if the F-Score is less than or equal to one. The resulting score will be converted into a *dummy variable*, with a value of 0 for companies that are not proven to have committed fraud and a value of 1 for companies that are proven to have committed fraud.

Independent Variables

Table 2. Operational Definition of Variables

Variables	Variable Definition	Operational Variables
External Pressure	External pressures faced by management	Total Liabilities / Total Assets (Sari & Nugroho, 2020)
Change in Director	Change of directors can result in *a conflict of interest* and allow for fraudulent financial reporting.	Code 1, if there is a change in director during 2019-2022 Code 0, if there is no change in director during 2019-2022. Skousen *et, al* (2009)
Inventory Turnover	Inventory turnover can create an opportunity for management to manipulate financial reports by increasing their value to make them look better.	Cost of Goods Sold (COGS) / Average Inventory. (Riska et al., 2019)
Rationalization	The Total Accrual to Total Asset (TATA) proxy is used in this study to calculate the rationalization value. The accrual ratio can be a representation of management justification in implementing the accrual principle.	(Net Income From Continuing Operation (t)-Cash Flow From Operating) / (Total Assets (t)). (Annisa & Ghozali, 2020)
Ego (Arrogance)	A superior attitude from someone who feels that all existing rules do not apply to him.	Number of CEO Photos in Financial Reports. Skousen *et, al* (2009)
Collusion	According to Vousinas (2019), *collusion* is related to a covert agreement or collaboration between two or more individuals with the intention of one party carrying out actions that are detrimental to the other party , including seizing the rights of a third party.	Code 1, if the company collaborates with government projects during 2019-2022 Code 0, if the company does not collaborate with government projects during 2019-2022. The Vousinas (2019)

Data Analysis Techniques

This study uses data analysis techniques, namely logistic regression. This technique is used because the dependent variable is a *dummy variable*. To help understand the characteristics of the data studied, descriptive statistical analysis is used. Furthermore, a classical assumption test is carried out in the form of a multicollinearity test, where a good regression model does not have a correlation between its variables, according to Gozali in (Purwanti, 2020) logistic regression analysis does not require normality assumptions and classical assumptions in its independent variables. In his research, (Purwanti, 2020) still uses the multicollinearity test. To determine the feasibility of the regression model, it is seen from the Hosmer and Lemeshow's Goodness of Fit Test, where if the significance value is more than 0.05 then the model can be declared Fit or feasible, after which to assess the Overall model fit can be determined by looking at -2Log Likelihood in blocks 0 and 1, if there is a decrease in value it can be determined that the regression model is feasible and able to predict its observations. Finally, to assess the coefficient of determination based on the Nagelkerke's R Square value. This study uses the following regression model with a significance value of 5%:

$$FFS = a + b_1 EXPR + b_2 DCHANGE + b_3 INVT + b_4 TATA + b_5 CEOPIC + b_6 COLL + e$$

Information :

FFS	= Fraud *financial statement fraud*	INVT	= *Inventory Turnover*
a	= Constant	TATA	= *Total Accrual to Total Assets*
b	= Regression coefficient	CEOPIC	= *CEO's Picture*
EXPR	= *External Pressure*	COLL	= *Collusion*
DCHANGE	= *Change In Director*	e	= Error

The assessment of the results of each variable is indicated by its significance value, namely if the significance value is less than 0.05 then the variable has an effect, whereas if the significance value is more than 0.05 then the variable is declared to have no effect.

3. Results and Discussion

3.1. Results

Descriptive Statistics test results

The results of the descriptive statistical test can be seen in table 2 below. :

Table 3. Descriptive Statistical Test Results

Variables	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Financial Statement Fraud	104	0	1	4	0.04	0.193
External Pressure	104	0.10	0.82	42.77	0.4113	0.20492
Director Change	104	0	1	43	0.41	0.945
Inventory Turnover	104	0.91	22.28	648.55	6.2360	3.52711
Total Accrual to Total Asset	104	0.20	3.57	111.24	1.0696	0.73007
CEO's Picture	104	1	7	312	3.00	1,583

Government Cooperation	104	0	1	32	0.31	0.464

Source: processed secondary data, 2024

Classical Assumption Test Results

In this study, the author only uses one classical assumption test, namely the multicollinearity test. The results of the multicollinearity test are shown in table 3 below

Table 4. Multicollinearity Test Results

Variables	Collinearity Statistics	
	Tolerance	VIF
External Pressure	0 .815	1.227
Director Change	0 .891	1.122
Inventory Turnover	0 .855	1,170
Total Accrual to Total Asset	0 .728	1,373
CEO's Picture	0 .877	1.140
Government Cooperation	0 .738	1.355

Source: processed secondary data, 2024

Based on the table above, the TV value is > 0.10 and VIF < 10, so the data states that there is no correlation between the independent variables .

Hypothesis Testing Results

a. Regression Model Suitability Test

In hypothesis testing, a feasibility test of the regression model was carried out by referring to the Hosmer and Lesmeshow significance value. The resulting significance value is 0.956 (more than 0.05) so that the regression model can be declared fit or able to predict its observation value. These results are supported by the -2LogLikelihood value in block 0 of 33.909 which decreased in block 1 of 21.326, this decrease indicates that the regression model is feasible to use.

b. Determinant Coefficient Test

The determination coefficient test that can be determined by looking at the Negelkerke R Square value, the results show a value of 0.410 which means that the variability of each factor of the Fraud Hexagon Model is able to explain Financial Statement Fraud by 41% while the remaining 59% is explained by other factors outside this study. Hypothesis testing uses logistic regression analysis, with a significance value of 0.05 and the following regression formula:

FFS = -12.100 + 3.871EXPR – 2.743DChange + 0.488INVT – 0.028TATA + 0.808CEOPic + 1.781KRPM + e

This formula is obtained from the results of the logistic regression test, which appears in table 4 below:

Table 5
Logistic Regression Test Results

Variables	Regression Coefficient	Significance	Information
External Pressure	3,871	0.325	H1 rejected
Director Change	-2,743	0.128	H2 rejected
Inventory Turnover	0.488	0.022	H3 accepted
Total Accrual to Total Asset	-0.028	0.972	H4 rejected
CEO's Picture	0.808	0.165	H5 rejected
Government Cooperation	1,781	0.281	H6 rejected
Constant	-12.100	0.004	

Source: processed secondary data, 202 4

The constant value of -12.100 indicates that the fraud factors in the hexagon model: External Pressure, Director Change, Inventory Turnover, Total Accrual to Total Asset, CEO's Picture, and Government Cooperation are constant or equal to negative twelve, negative twelve, so the probability of Financial Statement Fraud will decrease. The regression coefficient of the External Pressure variable is 3.871, indicating that an increase in External Pressure will increase the probability of Financial Statement Fraud. The regression coefficient of the Director Change variable is -2.743, indicating that each increase in the value of Director Change will decrease the probability of Financial Statement Fraud. The regression coefficient of the Inventory Turnover variable is 0.488, indicating that each increase in the value of Inventory Turnover will increase the probability of Financial Statement Fraud. The regression coefficient of the Total Accrual to Total Asset (TATA) variable is -0.028, indicating that each increase in the value of TATA will decrease the probability of Financial Statement Fraud. The regression coefficient of the CEO's Picture variable is 0.808, indicating that every increase in the CEO's Picture value will increase the probability of Financial Statement Fraud. The regression coefficient of the government cooperation variable is 1.781, indicating that every increase in the value of government cooperation will increase the probability of Financial Statement Fraud.

3.2. Discussion

Based on several tests that have been conducted, it can be concluded that the research results are as follows:

1. The Influence of External Pressure on Financial Statement Fraud

   The level of significance is 0.325 and the regression coefficient is 3.871 for the External pressure variable based on the findings of the statistical test. The significance value exceeds 5%, so H1 is rejected. This shows that Financial statement fraud is not affected by External Pressure. This study is in line with the results of research conducted by (Budiyanto & Puspawati, 2020) which found that financial statement fraud was not influenced by external pressure, consistent with the findings of this study, also supported by research conducted by (Rahmawati & Utami, 2023) that External Pressure does not

have a significant effect on the occurrence of fraud in financial reports, but this study cannot support the research conducted by (Wulandari & Trisnawati, 2022) which states that external pressure variables have an effect on financial statement fraud. External pressure has no effect because most companies can pay off their debts and on the other hand the company's assets have increased, so that management does not feel pressured by either creditors or investors.

2. The Influence of Change in Director on Financial Statement Fraud

   The regression coefficient of the Director Change variable has a significance level of 0.128, exceeding 5% so that H2 is rejected. This shows that director change has no effect on financial statement fraud. This study is in line with research conducted by (Hartadi, 2022) that change of director does not have a significant effect on fraudulent financial statements. This study is also supported by (Bifadli et al., 2023) change in director has no effect on financial statement fraud. The purpose of changing directors is to improve company performance, so changing directors has not been able to affect financial statement fraud.

3. The Effect of Inventory Turnover on Financial Statement Fraud

   The results of the statistical test of the Inventory Turnover variable show a regression coefficient of 0.488 with a significance level of 0.022, indicating that Financial Statement Fraud is influenced by Inventory Turnover. Research by Riska et al. (2019) also found that inventory turnover has a positive effect on financial statement fraud. A positive coefficient indicates that the higher the inventory turnover value, the greater the likelihood of financial statement fraud. Company management is trying to increase the Inventory Turnover value as an indicator of good financial performance. Fast inventory turnover shows the company's ability to generate effective sales to increase profits.

4. The Influence of Rationalization on Financial Statement Fraud

   Rationalization as measured by Total Accrual to Total Asset (TATA) has no effect on financial statement fraud, as shown by the results of the study with a TATA regression coefficient of -0.028 and a significance level of 0.972. This study is in line with research conducted by (Putra & Mildawati, 2023) and (Puspaningrum et al., 2024) which states that the rationalization variable using the company's total accrual proxy does not have a significant effect on fraudulent financial statements, but research conducted by (Putri & Amalia, 2024) states different results that rationalization with the Total Accrual to Total Asset (TATA) proxy has a significant positive effect on fraudulent financial statements. The management integrity factor is recognized as an important factor influencing decisions related to total accruals in financial statements. Management with high integrity tends to be honest and does not manipulate financial statements using accrual values.

5. The Influence of Ego (Arrogance) on *Financial Statement Fraud*

   Ego (Arrogance) is proxied by CEO's Picture, where based on the test results, the CEO Picture has a regression coefficient of 0.808 at a significance level of 0.165. The significance value is more than 5%, so H5 is not accepted. Therefore, there is no relationship between Financial statement fraud and CEO image. This study is in accordance with research conducted by (Putri & Amalia, 2024) that no influence was found on financial statement fraud. Although the results of this study are consistent with the research of Sagala & Siagian (2021), it does not strengthen the findings of the research of Octani et al. (2021) which states that the CEO image has a negative effect on financial statement fraud. The CEO's image appears in the financial report to introduce the

company's leader, and the average number of images is only used to record the activities carried out by the company.

6. The Influence of Collusion on Financial Statement Fraud

   Collusion is proxied by government cooperation, in the test obtained a regression coefficient of 1.781 and a significance level of 0.281, the test findings indicate that government cooperation is not significant. Because this value is greater than 5%, H6 is not accepted. This shows that *financial statement fraud* is not influenced by government cooperation. The findings of this study are in line with the findings of Nurardi & Wijayanti (2021), but do not strengthen the findings of Handoko (2021) who found that government cooperation affects *financial statement fraud* . Most likely, companies have different expectations of what they will achieve, so government cooperation has no effect on financial statement fraud. This is also because the average company studied did not cooperate in government projects.

4. Conclusion

The results of the study indicate that there is only one variable that affects Financial Statement Fraud, namely the Inventory Turnover variable from the Opportunity factor. While for other variables, such as External Pressure from the Stimulus factor, Director Change from the Ability factor, Total Accrual to Total Assets from the Rationalization factor, CEO Image from the Ego factor (arrogance), and government cooperation from the Collusion factor do not affect Financial Statement Fraud. This study is still limited in the scope of its objects and proxies for each factor of the fraud hexagon model, therefore it is recommended to expand the research object by covering different company sectors. For example, all non-Cyclical Consumer company sectors or other sectors and adding proxies for each factor of the fraud hexagon model, such as proxies for stimulus such as financial stability and personal financial needs, proxies for ability, namely CEO Education, proxies for opportunities such as ineffective monitoring and the nature of the industry, proxies for rationalization, namely audit changes, proxies for ego (arrogance).

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