JPEB Vol. 9, No. 1, 2024, pp: 15-28



# Jurnal Penelitian Ekonomi dan Bisnis

journal homepage: http://jpeb.dinus.ac.id



# The Beneish M-Score Model in Detecting Fraudulent Financial Reporting: The Hexagon Perspective Theory

Sherawanti Permata Kusuma¹, Melati Oktafiyani²™, Imang Dapit Pamungkas³, Juli Ratnawati⁴

<sup>1,2,3,4</sup> Department Accounting, Faculty of Economics and Business, Dian Nuswantoro University, Indonesia

# **Article Information**

# Abstract

Article history: Accepted: January 2024 Approved: February 2024 Published: March 2024

Keywords: Fraudulent financial reporting Hexagon theory Beneish M-Score This research aims to investigate the effect of fraud on fraudulent financial reports (FFR) using the hexagon theory. The seven factors were financial stability, external pressure, ineffective monitoring, auditor changes, director changes, arrogance, and collusion. This study has a population of health companies listed on the IDX in 2018–2021. This study uses a quantitative approach. Based on the logistic regression analysis, the study finds that financial stability, change director, and arrogance affect FFR. On the other hand, external pressure, ineffective monitoring, auditor change, and collusion do not affect FFR.

How to Cite: Kusuma, S., Oktafiyani, M., Pamungkas, I., & Ratnawati, J. (2024). The Beneish M-Score Model in Detecting Fraudulent Financial Reporting: The Hexagon Perspective Theory. *Jurnal Penelitian Ekonomi dan Bisnis*, 9(1), 15-28. doi:https://doi.org/10.33633/jpeb.v9i1.8369

 ${}^{\boxtimes} correspondence \ address:$ 

ISSN 2442-5028 (print) 2460-4291 (online) DOI: 10.33633/jpeb.v9i1.8369

Fakultas Ekonomi dan Bisnis Universitas Dian Nuswantoro, Jalan Nakula 1 No. 5-11 Semarang E-mail: melati.oktafiyani@dsn.dinus.ac.id



# INTRODUCTION

The pandemic caused by COVID-19 diseases within the first case in Indonesia was announced on March 20, 2020. drastically change the situation in the industry. A lot of businesses went into crisis, even through bankruptcy. But this is not the case in the health sector. According to Utami & Aliyansah, (2020)after the first case was announced, pharma products became the fastest-growing goods, experiencing 48% growth in Indonesia. Vitamins have become the fastest-growing non-food category in the country, with an 80.5% increase. With the growing demand for health-related goods up so fast due to the pandemic, many companies in this field saw a chance to market their product. Utami & Aliyansah, (2020) found that after the first case was announced, pharma products became the fastest-growing goods, experiencing 48% growth in Indonesia. Vitamins have become the fastest-growing non-food category in the country, with an 80.5% increase. With the growing demand for health-related goods up so fast due to the pandemic, many companies in this field saw a chance to market their product.

Therefore, high demand for health-related products creates a loophole that can be exploited, and this resulting fraud case from Kimia Farma reused antigen tools for detecting the COVID-19 virus. According to detikNews, this activity resulted in a \$30 million profit for the manager. Business manager Kimia Farma Laboratory oversees antigen testing at Kualanamu Airport, and four other partners are involved in the scenario of reusing cotton buds for the antigen test. The average number of antigen test patients per day is 250, but the number of people reported to the airport and Kimia Farma Laboratory Center on Jalan RA Kartini was around 100, and around 150 patients benefit from the results of using antigen swab cotton buds. (detikNews, 2021).

The Association of Certified Fraud Examiners (ACFE) (SURVEI FRAUD INDONESIA, 2020) published on Mei 2020, reported 239 cases of fraud in Indonesia, with total losses exceeding Rp. 873 billion. Corruption, with 167 cases and a 70% outcome rate, has become the most common fraud case in the country, resulting in a loss of approximately Rp. 373 billion. Then there were 50 cases of state-owner exploitation, with a rate of 20.9% and a loss of approximately Rp. 257 billion. The survey also identifies fraudulent financial reports in 22 of 239 cases, resulting in a loss of approximately \$242 billion in this area at a 9.2% rate. Also, fraud happens in a lot of industries, including the health industry. The health industry experiences 4.2% of the total losses caused by fraud. With this number, the industry estimates a loss of around Rp 36 billion. Fraud in the health industry ranks number four, surpassing transportation, and other industries.

Cases of fraudulent financial reporting that are constantly increasing lead researchers to continue to improve fraud theory. As a result, the hexagon theory was born as a new fraud detection model developed by Vousinas, (2019). Fraud that occurs year after year eventually evolves the method by which the fraud happens to conceal their activities. As a result, the theory of fraud evolves. Vousinas, (2019) founded the Cases of fraudulent financial reporting that are constantly increasing lead researchers to continue to improve fraud theory. As a result, the hexagon theory was born as a new fraud detection model developed by Vousinas (2019). Fraud that occurs year after year eventually evolves the method by which the fraud happens to conceal their activities. As a result, the theory of fraud evolves. Vousinas (2019) founded the Hexagon Theory on the Triangle Theory's Foundation.

According to the theory, there are five major factors that lead to committing fraud. The stimulus for pressuring someone to commit fraud takes a different form for each person's needs for high financial results to meet an expected target. Especially in this pandemic situation where health industries are in high demand and the situation changes drastically, expectations will rise. The stimulus can be represented by financial stability and external pressure that accrue at a company. Fraud can be triggered when a person could commit the capability factor is represented by the change in director. Opportunities play a role in fraud; without this factor, it is difficult for fraud to take place. Ineffective monitoring can create opportunities for fraud. On the other hand, the rationalization of the perpetrator's fraud behaviour is correct, and he feels he is not making the mistake of taking the action taken. This factor can be seen in the frequent changes in auditors. Over time, ego, or arrogance in someone's attitude, has proven to be one of the reasons someone committed fraud, to excel, dominate, or gain

acceptance from others. Furthermore, fraud can be committed with two or more people's agreement to streamline the action required.

Table 1. Research Gap

		Table 1.	Research Gap
Variable Dependent	Variable Independent	Effect	Researcher
	External	Affected	Nur Fajri (2018); Achmad, Hapsari, & Pamungkas, (2022); Adnovaldi & Wibowo, (2019)
	Pressure	Not Affected	Sari & Khoiriah (2021); Purnama & Astika, (2022); Haqq & Budiwitjaksono, (2020)
	Ineffective	Affected	Lestari & Henny (2019); Arum & Wahyudi, (2020); Nanda et al., (2019)
	Monitoring	Not Affected	Diansari & Wijaya, (2019); Pratami et al., (2019); Noble, (2019)
	Changes in	Affected	Syahria, (2019); Maryadi et al., (2020); Pramana et al., (2019)
	Auditor	Not Affected	Sari et al. (2020); Hidayah & Saptarini, (2019); Hidayat & Utami, (2023)
	Change in	Affected	Pambudi et al., (2022); E. R. Utami et al., (2019); Suryani, (2019)
	Director	Not Affected	Fathmaningrum & Anggarani (2021); Rimadanti et al., (2022); Nanda, Zenita, et al., (2019)
	A	Affected	Sari & Khoiriah (2021); Andalia et al., (2021); Suryandari & Pratama (2021)
	Arrogance —	Not Affected	Aviantara, (2021); Rizkiawan et al., (2022); Harman & Bernawati, (2020)
	Collusion —	Affected	Sari & Nugroho (2020); Aviantara (2021); Sukmadilaga et al. (2022)
	Collusion —	Not Affected	Larum et al. (2021); Achmad, Ghozali, Rahardian, et al., (2022); Julia & Yunita, (2022)

Source: Data Processed (2023)

Research on factors affecting fraudulent financial reporting reveals inconsistent results. A study of Umar et al. (2020) suggest that financial stability negatively affects fraudulent reporting, while Apriliana & Agustina (2017) and Achmad et al. (2022) suggest financial stability positively affects FFR. In contrast, Rusmana & Tanjung (2019); Achmad, Ghozali, Rahardian, et al. (2022); Nur Fajri (2018) stated that financial stability had no effect on the FFR. Furthermore, Nur Fajri (2018); Achmad, Hapsari, & Pamungkas, (2022); Adnovaldi & Wibowo, (2019) indicates that the external pressure affects fraudulent financial reporting. Meanwhile, research by Sari & Khoiriah (2021); Purnama & Astika, (2022); Haqq & Budiwitjaksono, (2020) showed external pressure could not detect fraudulent financial reporting. Lestari & Henny (2019); Arum & Wahyudi, (2020); Nanda et al., (2019) concluded that in effective monitoring affects the FFR. However, Diansari & Wijaya, (2019); Pratami et al., (2019); Noble, (2019) demonstrated that inffective monitoring has no effect on the FFR. The research finding by Syahria, (2019); Maryadi et al., (2020); Pramana et al., (2019) suggested change in auditor affects fraudulent financial reporting, but Fathmaningrum & Anggarani (2021); Rimadanti et al., (2022); Nanda, Zenita, et al., (2019) don't. Change in director affects the FFR as the result of research by Pambudi et al., (2022); E. R. Utami et al., (2019); Suryani, (2019). In contract, Fathmaningrum & Anggarani (2021); Rimadanti et al., (2022); Nanda, Zenita, et al., (2019) found that Change in director do not affect the FFR. Sari & Khoiriah (2021); Andalia et al., (2021); Suryandari & Pratama (2021) concluded that arrogance can detect the FFR. Meanwhile, Aviantara, (2021); Rizkiawan et al., (2022); Harman & Bernawati, (2020) concluded that the FFR cannot be detected by arrogance. Furthermore, collusion was proved affect the FFR in accordance with the research of Sari & Nugroho (2020); Aviantara (2021); Sukmadilaga et al. (2022). Larum et al. (2021); Achmad, Ghozali, Rahardian, et al., (2022); Julia & Yunita, (2022) proved the difference result of research that collusion does not affect the FFR.

# **Hexagon Theory**

A researcher from the National Technical University of Athens Vousinas, (2019) was the first to present the hexagon fraud theory. It considers the Pentagon theory, including stimulus, capacity, opportunity, rationalization, and ego. Hence, by introducing collision, Vousinas (2019) adjusted and evolved the theory, which was updated into SCORE. This addition considers collusion as a key component in several difficult and costly fraud and financial crimes. It demonstrates that an agreement has been made between two or more people to convince someone or a third party when there is fraud (Vousinas, 2019).

The theory is based on the Triangle theory introduced by Cressey (1953). According to the theory, a person commits fraud because of three scenarios or factors: pressure, competence, and rationality. As time passed, the theory added the arrogance and opportunity factor proposed by Wolfe & Hermanson, (2004) and renamed the Diamond Fraud theory. After reconsidering, Vousinas, (2019) developed the Hexagon theory and added collusion as one of the fraud triggers.

# Fraudulent Financial Reporting (FFR)

The association of Certified Fraud Examiners (ACFE) defines FFR as the intentional, purposeful misrepresentation or exclusion of material facts or financial statement to mislead and when analyzed with all available information, induce the reader to change his or her judgment in making a choice, usually involving investments. This action may reduce the financial statement's reliability, its consequences may affect multiple parties (Indarto & Ghozali, 2016). According to Dalnial et al., (2014) Financial fraud is typically committed by falsifying financial statements and incorporating manipulation aspects.

#### **Financial Stability**

The financial stability system could effectively distribute assets, determine, and control financial risk, establish labor supply at the sustainable rate for the industry, and minimize relative price fluctuations of real or financial assets that affect macroeconomic stability or the level of employment. With it, users usually become more confident when using stable financial statements. Hence, a company with excellent financial stability becomes more favorable. Therefore, it becomes important for the company to meet the stability of its finances within the rate of the industry so that this fraudulent financial reporting can be done. Achmad et al. (2022); Umar et al. (2020); and Apriliana & Agustina (2017) found financial stability affects FFR.

H1: Financial Stability positively affects the FFR.

#### **External Pressure**

The need to meet the expectations of company performance can trigger external pressure. Measured by the leverage ratio, which is calculated by comparing the total debt with the total asset A high leverage ratio indicates that the company is on the debt side. It assists the user in determining the company's capacity to pay back the load. This puts management under pressure to ensure that the company has a healthy leverage ratio, as determined by the industry. Management may commit fraud to conceal the company's true performance and avoid a decrease in performance.

When management is under pressure to meet certain expectations from third parties or parties of another company, this is referred to as external pressure. As a result, there is an increased probability that management will engage in fraudulent financial reporting to meet an agent's expectations. With Nur Fajri (2018); Achmad, Hapsari, & Pamungkas, (2022); and Adnovaldi & Wibowo, (2019) research results in external pressure affected FFR. H2: External Pressure positively affects the FFR.

# **Ineffective Monitoring**

Monitoring a company is a must; each company has a different method or system for monitoring. When the monitoring has a weakness or is ineffective, it can create an opportunity to commit fraud against the company. Because the management is closely related to them, the Board of Commissioners can monitor how the company is run. Not all managers do their activities correctly or stick to the regulations. When this happens and is combined with ineffective monitoring, it increases the opportunity for fraud. As shown by Lestari & Henny (2019); Arum & Wahyudi, (2020); and Nanda et al., (2019) ineffective monitoring of a company affects FFR. The less effective monitoring, the greater the risk of FFR occurs.

H3: Ineffective Monitoring positively affects the FFR.

# **Changes in Auditor**

A frequent change of auditor can indicate a company is putting effort into justifying the fraudulent act committed. This action is an attempt by the company to remove indications of fraud discovered by a previous auditor. Those actions can demonstrate that a change in auditor can be associated with financial reporting fraud. Auditors are in critical control of fraudulent financial reporting. Auditors can also provide information on how and where companies commit fraud. Syahria, (2019); Maryadi et al., (2020); and Pramana et al., (2019) show the change in auditor has affected fraudulent financial reporting. Auditor modifications, usually made by a business, imply that the sector may be associated with fraud. This is done by the company to minimize the risk of detecting FFR (Achmad, Ghozali, & Pamungkas, 2022).

H4: Changes in Auditor positively affect the FFR.

### Change in Director

As an individual who has a big influence on a company, the attitude and skill of the director play an important role in the company. This can indicate that the director is more likely to use fraud triggers such as pressure or rationalization to meet the agent's target. A change of director activity can be one of the ways for the company to hope to look for a new director who is more capable of carrying out the duties. However, taking this action too frequently may indicate fraud or even potential FFR in the previous leadership. Pambudi et al., (2022); E. R. Utami et al., (2019); Suryani, (2019) say that change in director affected fraudulent financial reporting. H5: Change of Director positively affects the FFR.

#### Arrogance

The role of the company reflects the director's ego. The dual position held by the director demonstrates the individual's larger ego. With these two positions, it is possible to maximize the available power. As a result, it increases the probability of FFR occurring in the company for the benefit of the director. It is shown in Sari & Khoiriah (2021); Andalia et al., (2021); and Suryandari & Pratama (2021) research resulting in arrogance affecting FFR.

H6: Arrogance positively affects the FFR.

# Collusion Effect on FFR

In collusion, two or more people work together to achieve a mutually beneficial goal. This usually leads to an agreement involving items to help the party work toward the goal. A party can be between a company's employees or between employees and outside parties. This practice is against the law; moreover, it is done for personal gain. When there is collusion, fraud is more likely to occur. This is reinforced by Sari & Nugroho (2020); Aviantara (2021); and Sukmadilaga et al. (2022) show collusion affects FFR.

H7: Collusion positively affects the FFR.

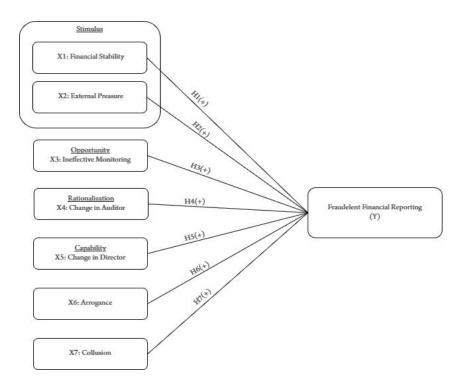


Figure 1. Conceptual Framework

# **METHOD**

The study investigates the effect of various elements, including financial stability, external pressures, ineffective monitoring, auditor and director changes, arrogance, and collusion, on the likelihood of FFR. The data for this research was gathered from secondary sources, specifically the financial statements of companies obtained from the official website of IDX. The study focuses on health enterprises listed on the IDX from 2018 to 2021. A targeted sampling method was employed to select the sample, and Table 3 provides details of the specific requirements and incomplete data for the years 2018 to 2021.

 Table 3. Sampling Requirement

No	Requirement	Total
1	Public Healthcare Companies listed on the IDX during the period spanning from 2018 to 2021	30
2	Companies that did not maintain a consistent listing on the IDX throughout the duration from 2018 to 2021.	(13)
3	Inadequate data available for the time frame spanning from 2018 to 2021	(4)
4	Companies fulfil the requirements for the period of 2018 to 2021	16
5	There are observations or data available for the company over four years (16x4)	56

For this study, qualitative data analysis was carried out using SPSS (Statistical Package for Social Science) software version 25. As the dependent variable was in the form of a dummy, logistic regression analysis was used. This type of analysis does not rely on the assumption of data normality for the independent variables. The following logistic regression model was used to test the research hypothesis.

$$LN\frac{Fraud}{1-Fraud} = \beta^0 + \beta 1 \ CHANGE + \beta 2 \ LEV + \beta 3 \ BDOUT + \beta 4 \ AUCHANGE + \beta 5 \ DCHANGE + \beta 6 \ DUAL + \beta 7 \ AFFILIATE$$

The dependent variable in this study is FFR, as measured by the Beneish M-Score. The Beneish M-Score comprises eight financial ratios listed in Table 3, and it can be calculated using the following formula: M-Score = 4.840 + (0.920 x DSRI) + (0.528 x GMI) + (0.404 x AQI) + (0.892 x SGI) + (0.115 x DEPI) - (0.172 x SGAI) - (0.327 x LVGI) + (4.697 x TATA). The calculation of the Beneish M-Score can yield the following results: if the score is below -1.78, the company is categorized as a non-manipulator, indicating no suspicion of financial statement fraud. However, if the score exceeds -1.78, the company is considered to have engaged in financial statement fraud or falls under the manipulator category. The definitions of the study variables are provided below.

Table 4. Variable Operational Measurement

No	Variable	Measurement	Scale	Source
1	FFR	Beneish Model	Ratio	(Beneish, 1999)
2	Financial	Change of total assets in the company	Ratio	(Skousen et al.,
2	Stability	throughout the last two years	Katio	2008)
3	External	Total Liabilities	Ratio	(Skousen et al.,
3	Pressure	Total Assets	Ratio	2008)
4	Ineffective	Total of Independent Commissioners	Ratio	(Skousen et al.,
т	Monitoring	Total of Independent Commissioners	Ratio	2008)
5	Auditor in	Dummy:1 If the company changes auditor, 0	Nominal	(Skousen et al.,
3	Change	otherwise	Nommai	2008)
6	Director in	Dummy:1 If the company changes director, 0	Nominal	(Wolfe &
U	Change	otherwise	Nommai	Hermanson, 2004)
7	Arrogance	Dummy:1 If the president director holds a dual	Nominal	(Howarth, 2012)
/	Arrogance	position, 0 otherwise	Nommai	(110wartii, 2012)
8	Collusion	Dummy:1 If a director has a family affiliate with	Nominal	(Vousinas, 2019)
o	Collusion	a stakeholder, 0 otherwise	INOIIIIIIdl	( v ousillas, 2019)

Source: Data Processed (2023)

The SCORE Model developed by Vousinas (2019) for studying the factors that lead to FFR is used to measure the independent variables. The measurement of fraudulent financial statements is based on Beneish, (1999), who developed the most recent and detailed measurement adopting eight components obtained from financial statements. The detailed measurement of the Beneish M-Score formula for each element:

Table 5. Dependent Variable Measurement

No	Ratio	Proxy	Formula				
		Days Sales in	$(receivables_t/sales_t)$				
1	DSRI	Receivables	$\frac{(receivables_{t-1}/sales_{t-1})}{(receivables_{t-1}/sales_{t-1})}$				
		Index	$(receivables_{t-1}/sales_{t-1})$				
2.	GMT	Gross Margin	$((sales_{t-1} - COGS_{t-1})/sales_{t-1})$				
2	Index		$((sales_t - COGS_t)/sales_t)$				
		A + O 19	$(Total\ Asset_t - Current\ Asset_t + PPE_t / Total\ Asset_t)$				
3	AQI	Asset Quality Index	$\overline{(Total\ Asset_{t-1} - Current\ Asset_{t-1} + PPE_{t-1} / Total\ Asset_{t-1})}$				
		muex	PPE = Property, Plant, and Equipment				
	CCI	Sales Growth	$(sales_t)$				
4	SGI	Index	$\overline{(sales_{t-1})}$				
		Dammariation	$(Depreciation_{t-1}/PPE_{t-1} + Depreciation_{t-1})$				
5	DELI	Depreciation	${(Depreciation_t/PPE_t + Depreciation_t)}$				
		Index	PPE = Property, Plant, and Equipment				

6	SGAI	Sales, General, and Administrative Expenses Index	$\frac{(Sales, General, and\ Administrative\ Expenses\ _t\ /\ sales_t)}{(Sales, General, and\ Administrative\ Expenses\ _{t-1}\ /\ sales_{t-1})}$
7	LVGI	Leverage In dex	$\frac{(\textit{Current Liability}_t + \textit{Long Term Debt}_t  /  \textit{Total Asset}_t)}{(\textit{Current Liability}_{t-1} + \textit{Long Term Debt}_{t-1}  /  \textit{Total Asset}_{t-1})}$
8	TATA	Total Accruals to Total Assets	$\frac{(NI\ from\ Continuing_t - Operating\ Cashflow_t)}{Total\ Asset_t}$ $NI = \text{Net\ Income}$

Source: Beneish, (1999)

# RESULT AND DISCUSSION

According to Table 6, the average value of the FFR variable is 0.14, indicating that 14% of the samples demonstrate the occurrence of financial reporting fraud (coded as 1), while the remaining 86% of the samples do not exhibit such fraud (coded as 0). Furthermore, based on classification, Table 7 provides an analysis of the contingency that should occur, or the expected frequencies based on empirical data for the dependent variable. Specifically, there are 8 samples classified as companies committing financial reporting FFR (coded as 1), while there are 48 companies classified as not committing FFR (coded as 0).

Table 6. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
M- Score	56	0	1	.14	.353
Financial Stability	56	-790060	7023786	682844.59	1199777.313
External Pressure	56	,0	,7	,363	,1987
Ineffective Monitoring	56	,2	1,0	,464	,1600
Change Auditor	56	0	1	.39	.493
Change Director	56	0	1	.48	.504
Arrogance	56	0	1	.64	.483
Collusion	56	0	1	.50	.505
Valid N (listwise)	56				

Source: SPSS Data Processed (2023)

Table 7. Classification Table

			Predicted					
			M- So	core	Percentage Correct			
	Obs	erved	No Fraud	Fraud	<del>_</del>			
Step 0	M- Score	No Fraud	48	0	100.0			
		Fraud	8	0	.0			
	Overall F	Percentage			85.7			

Source: SPSS Data Processed (2023)

The Hosmer and Lemeshow Test in Table 8 shows the result of the significant number of 0.901 > the significant level ( $\alpha = 5\% = 0.05$ ). In conclusion, the research data model can be considered a suitable and effective fit for describing the research variable. It is deemed appropriate and feasible for this study.

Table 8. Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	2.819	7	.901

Source: SPSS Data Processed (2023)

Table 9. Omnibus Tests

		Chi-square	df	Sig.
Step 1	Step	15.512	7	.030
	Block	15.512	7	.030
	Model	15.512	7	.030

Source: SPSS Data Processed (2023)

Furthermore, the suitability of the variable is evident from the Omnibus Test result presented in Table 9. The chi-square value of 15.512 is greater than the chi-square table value on the degrees of freedom (df), which is 14.067. The significance value of the test is 0.030, which is less than 0.50, thus rejecting the H0. This indicates that the inclusion of independent variables has a natural effect on the model and confirms that the model is a good fit. The logistic model used in this study is described in Table 10, and the correlation matrix is presented in Table 11.

Table 10. Logistic Regresion

		В	S.E.	Wald	df	Sig.	Exp(B)	95% C	.I.for EXP(B)
								Lower	Upper
	Financial Stability	.000	.000	4.908	1	.027	1.000	1.000	1.000
	External Pressure	1.522	3.559	.183	1	.669	4.581	.004	4902.767
	Ineffective Monitoring	5.452	3.397	2.577	1	.108	233.234	.300	181512.518
Step 1	Change Auditor	375	1.138	.108	1	.742	.688	.074	6.396
зсер 1	Change Director	3.187	1.520	4.398	1	.036	.041	.002	.812
	Arrogance	3.036	1.478	4.217	1	.040	.048	.003	.871
	Collusion	3.243	1.735	3.494	1	.062	.039	.001	1.171
	Constant	1.535	2.041	.566	1	.452	.215		

Source: SPSS Data Processed (2023)

Table 11. Correlation Matrix

		Constant	Financial Stability	External Pressure	Ineffective Monitoring	Change Auditor	Change Director	Arrogance	Collusion
Step -	Constant	1.000	190	694	438	.118	.100	127	354
	Financial Stability	190	1.000	.204	.382	220	538	546	177
	External Pressure	694	.204	1.000	.039	440	296	.018	.422
	Ineffective Monitoring	438	.382	.039	1.000	061	474	587	454

	Change Auditor	.118	220	440	061	1.000	.049	.098	004
	Change Director	.100	538	296	474	.049	1.000	.637	.311
A	Arrogance	127	546	.018	587	.098	.637	1.000	.476
(	Collusion	354	177	.422	454	004	.311	.476	1.000

Source: SPSS Data Processed (2023)

The logistic model used in this study is as follows:

 $LN \frac{Fraud}{1-Fraud} = -1.535 + 0 \text{ Financial Stability} + 1.522 \text{ External Pressure} + \text{Ineffective Monitoring} - 0.375$  Change Auditor - 3.187 Change Director - 3.036 Arrogance - 3.243 Collusion

#### Financial Stability on FFR

The hypothesis test result, as provided in Table 12, supports the acceptance of the first hypothesis (H1). This indicates that financial stability, as represented by changes in total assets, has a positive influence on FFR. When the value of a company's assets experiences fluctuations, management may feel pressured to manipulate the financial records to maintain the appearance of stable asset growth. Moreover, stakeholders who rely on financial statements tend to have more confidence in companies that exhibit consistent financial performance. This pressure increases the likelihood of fraudulent activities occurring. This study's findings align with Achmad et al. (2022); Umar et al. (2020); Apriliana & Agustina (2017) revealing FFR is affected by financial stability. These findings provide support for the principles of agency theory, highlighting the heightened potential for fraud due to the high expectations of principals regarding the agents' performance and the agents' desire to receive incentives for exceptional work.

Table 12. Summary of Hypothesis Test

	Description	Coefficient	ρ-Value	Result
H1	Financial Stability → FFR	.000	.027	H1 Accepted
H2	External Pressure → FFR	1.522	.669	H2 Rejected
H3	Ineffective Monitoring → FFR	5.452	.108	H3 Rejected
H4	Change Auditor → FFR	375	.742	H4 Rejected
H5	Change Director → FFR	3.187	.036	H5 Accepted
Н6	Arrogance → FFR	3.036	.040	H6 Accepted
H7	Collusion → FFR	-3.243	.062	H7 Rejected

Source: Data Processed (2023)

# **External Pressure on FFR**

Pressure from a third party, specifically a creditor, on a management loan can lead to fraud. However, it is expected that management will improve various strategies and plans for obligation so that management will feel less pressure. This study found that external pressure (H2) does not affect FFR. This is most likely due to a higher leverage ratio not pressure for management to do FFR. This finding aligns with the study done by Sari & Khoiriah (2021); Purnama & Astika, (2022); Haqq & Budiwitjaksono, (2020) revealing FFR is unaffected by external pressure.

# **Ineffective Monitoring of FFR**

According to the hypothesis test result in this study, it can be inferred that the third hypothesis (H3) is rejected. The research reveals that the proportion of ineffective monitoring attributed to independent trust does not contribute to the likelihood of fraudulent financial reporting. Conversely, it suggests that companies' ineffective independent auditor monitoring systems are less prone to engaging in FFR. This observation could imply that these companies have effective monitoring mechanisms or robust corporate governance practices in a position to deter external interference. Additionally, independent boards of directors might refuse to endorse financial statements if they suspect fraudulent activities. This finding aligns with the study done by Diansari & Wijaya, (2019); Pratami et al., (2019); Noble, (2019) revealing FFR is unaffected by ineffective monitoring.

#### **Change Auditor on FFR**

According to the hypothesis test result for the auditor, the switch affects FFR (H4) and is rejected. It demonstrates that company auditor turnover does not affect the possibility of a company committing fraud. Hence, a company can switch auditors due to factors such as the completion of a prearranged contract or other considerations. This change in auditors may be driven by the company's aim to reduce audit fees and enhance corporate governance, thereby avoiding excessively high audit costs that could potentially impact the company's susceptibility to committing fraud. No matter how often the change of external auditors in a company occurs, it does not affect the potential for fraudulent financial statements. This finding aligns with the study done by Fathmaningrum & Anggarani (2021); Rimadanti et al., (2022); Nanda, Zenita, et al. (2019) revealing FFR is unaffected by a change of auditor.

#### **Change Director on FFR**

According to the hypothesis test result for the director, switching affects FFR (H5), which is accepted. It shows there is a connection between director changes and potential companies committing fraud. In addition, there is a possibility of a director change caused by the director who has proven to admit fraudulent financial reports. This action increases the difficulty of detecting potential fraud because the new director needs time to adapt the company's financial report information. This finding aligns with the study done by Pambudi et al., (2022); E. R. Utami et al., (2019); Suryani, (2019) revealing FFR is affected by a change of director.

#### Arrogance on FFR

According to the hypothesis test result proven arrogance affects FFR(H6). It has proven that the dual position of the president of the director influences a company to commit fraud. Possibly when internal interest meets ego and is given the power to arrange fraud to happen to gain personal gain. In addition, a dual position is bad for the company because it can weaken internal control. Therefore, fraudulent action can happen at the company. This finding aligns with the study done by Sari & Khoiriah (2021); Andalia et al., (2021); Suryandari & Pratama (2021).

# Collusion on FFR

According to the hypothesis test result, collusion affects FFR (H7), which is rejected. Furthermore, affiliation family between company officials and stakeholders has been proven not to affect the company's ability to commit fraud. This finding aligns with the study done by Larum et al. (2021); Achmad, Ghozali, Rahardian, et al., (2022); Julia & Yunita, (2022).

# CONCLUSION AND RECOMMENDATION

The high occurrence of FFR cases has spurred researchers to investigate this issue further. This research was conducted to identify the factors that influence FFR, including financial stability, external pressure, ineffective monitoring, auditor changes, director changes, arrogance, and collusion. The results show that financial stability,

director changes, and arrogance have a significant impact on FFR, whereas external pressure, ineffective monitoring, auditor changes, and collusion do not. However, the study is limited by the fact that many health companies have become listed companies after 2018, which accounts for 43.3% of all health-listed companies and affects the data used in the research. In the future, researchers may consider using other proxy approaches, such as the F-score model or Altman Z-score model and adding additional independent variables such as personal financial need, audit fees, and financial targets.

# REFERENCE

- Achmad, T., Ghozali, I., & Pamungkas, I. D. (2022). Hexagon Fraud: Detection of Fraudulent Financial Reporting in State-Owned Enterprises Indonesia. *Economies*, 10(1). https://doi.org/10.3390/economies10010013
- Achmad, T., Ghozali, I., Rahardian, M., Helmina, A., Hapsari, D. I., & Pamungkas, I. D. (2022). Detecting Fraudulent Financial Reporting Using the Fraud Hexagon Model: Evidence from the Banking Sector in Indonesia. https://doi.org/10.3390/economies
- Achmad, T., Hapsari, D. I., & Pamungkas, I. D. (2022). Analysis of Fraud Pentagon Theory to Detecting Fraudulent Financial Reporting using F-Score Model in State-Owned Companies Indonesia. WSEAS Transactions on Business and Economics, 19, 124–133. https://doi.org/10.37394/23207.2022.19.13
- Adnovaldi, Y., & Wibowo, W. (2019). ANALISIS DETERMINAN FRAUD DIAMOND TERHADAP DETEKSI FRAUDULENT FINANCIAL STATEMENT. *JURNAL INFORMASI, PERPAJAKAN, AKUNTANSI, DAN KEUANGAN PUBLIK, 14*(2), 125–146. https://doi.org/10.25105/jipak.v14i2.5195
- Andalia, A., Amiruddin, A., & Pontoh, G. T. (2021). Analysis of Factors Affecting Fraudulent Financial Reporting with Independent Commissioners as Moderation Variable. *GATR Accounting and Finance Review*, 5(4), 01–12. https://doi.org/10.35609/afr.2021.5.4(1)
- Apriliana, S., & Agustina, L. (2017). The Analysis of Fraudulent Financial Reporting Determinant through Fraud Pentagon Approach. *JDA Jurnal Dinamika Akuntansi*, 9(2), 154–165. https://doi.org/10.15294/jda.v9i2.4036
- Arum, E. D. P., & Wahyudi, I. (2020). Fraudulent Financial Reporting Detection in Banking Sector: Evidence from Indonesia. *International Journal of Psychosocial Rehabilitation, Conference Special Issue.*
- Aviantara, R. (2021). The Association Between Fraud Hexagon and Government's Fraudulent Financial Report.

  Asia Pacific Fraud Journal, 6(1), 26. https://doi.org/10.21532/apfjournal.v6i1.192
- Beneish, M. D. (1999). The Detection of Earnings Manipulation. *Financial Analysts Journal*, 55(5), 24–36. https://doi.org/10.2469/faj.v55.n5.2296
- Cressey, D. R. (1953). Other people's money; a study of the social psychology of embezzlement. In *Other people's money; a study of the social psychology of embezzlement*. Free Press.
- Dalnial, H., Kamaluddin, A., Sanusi, Z. M., & Khairuddin, K. S. (2014). Detecting Fraudulent Financial Reporting through Financial Statement Analysis. *Journal of Advanced Management Science*, 2(1), 17–22. https://doi.org/10.12720/joams.2.1.17-22
- detikNews. (2021, April 29). *Manajer Kimia Farma Raup Untung Rp 30 Juta dari Hasil Tes Antigen Bekas*. https://news.detik.com/berita/d-5551640/manajer-kimia-farma-raup-untung-rp-30-juta-dari-hasil-tes-antigen-bekas
- Diansari, R. E., & Wijaya, A. T. (2019). Diamond fraud analysis in detecting financial statement fraud. *Journal of Business and Information Systems* (e-ISSN: 2685-2543), 1(2), 63–76. https://doi.org/10.36067/jbis.v1i2.23
- Fathmaningrum, E. S., & Anggarani, G. (2021). Fraud Pentagon and Fraudulent Financial Reporting: Evidence from Manufacturing Companies in Indonesia and Malaysia. *Journal of Accounting and Investment*, 22(3), 625–646. https://doi.org/10.18196/jai.v22i3.12538
- Haqq, A. P. N. A., & Budiwitjaksono, G. S. (2020). Fraud Pentagon for Detecting Financial Statement Fraud. Journal of Economics, Business, & Accountancy Ventura, 22(3). https://doi.org/10.14414/jebav.v22i3.1788
- Harman, S. A., & Bernawati, Y. (2020). Determinant of Financial Statement Fraud: Fraud Pentagon Perspective in Manufacturing Companies. 19(4), 628–638. https://doi.org/10.17051/ilkonline.2020.04.166
- Hidayah, E., & Saptarini, G. D. (2019). Pentagon Fraud Analysis in Detecting Potential Financial Statement Fraud of Banking Companies in Indonesia.

- Hidayat, E., & Utami, W. (2023). Determinants of Financial Statement Fraud: Political Connections as Moderation. *International Journal for Multidisciplinary Research (IJFMR)*, www.ijfmr.com•
- Howarth, C. (2012). The Mind Behind The Fraudsters Crime: Key Behavioral and Environmental Elements. : https://www.fraudconference.com/uploadedFiles/Fraud\_Conference/Content/Course-Materials/presentations/23rd/ppt/10C-Jonathan-Marks.pdf
- Indarto, S. L., & Ghozali, I. (2016). Fraud diamond: Detection analysis on the fraudulent financial reporting. *Risk Governance and Control: Financial Markets and Institutions*, 6(4Continued1), 116–123. https://doi.org/10.22495/rcgv6i4c1art1
- Julia, J., & Yunita, A. (2022). The Effect of Hexagon Fraud in Detecting Fraud Financial Statements (Empirical Study on Financial Sector Companies Listed on the Indonesia Stock Exchange 2017-2021). International Journal of Multidisciplinary: Applied Business and Education Research, 3(10), 2112–2124. https://doi.org/10.11594/ijmaber.03.10.23
- Larum, K., Zuhroh, D., & Subiyantoro, E. (2021). Fraudlent Financial Reporting: Menguji Potensi Kecurangan Pelaporan Keuangan dengan Menggunakan Teori Fraud Hexagon. *AFRE (Accounting and Financial Review)*, 4(1), 95–106. https://doi.org/10.26905/afr.v4i1.5957
- Lestari, M. I., & Henny, D. (2019). PENGARUH FRAUD PENTAGON TERHADAP FRAUDULENT FINANCIAL STATEMENTS PADA PERUSAHAAN PERBANKAN YANG TERDAFTAR DI BURSA EFEK INDONESIA TAHUN 2015-2017. *Jurnal Akuntansi Trisakti*, 6(1), 141–156. https://doi.org/10.25105/jat.v6i1.5274
- Maryadi, A. D., Midiastuty, P. P., Suranta, E., & Robiansyah, A. (2020). Pengaruh fraud pentagon dalam mendeteksi fraudulent financial reporting. *Jurnal Akuntansi, Keuangan, Dan Manajemen,* 2(1), 13–25. https://doi.org/10.35912/jakman.v2i1.104
- Nanda, S. T., Salmiah, N., & Mulyana, D. (2019). Fraudulent Financial Reporting: A Pentagon Fraud Analysis. *Jurnal Ilmiah Ekonomi Dan Bisnis*.
- Nanda, S. T., Zenita, R., & Salmiah, N. (2019). Fraudulent Financial Reporting: A Fraud Pentagon Analysis. *GATR Accounting and Finance Review*, 4(4), 106–113. https://doi.org/10.35609/afr.2019.4.4(2)
- Noble, M. R. (2019). Fraud diamond analysis in detecting financial statement fraud. *The Indonesian Accounting Review*, 9(2), 121. https://doi.org/10.14414/tiar.v9i2.1632
- Nur Fajri, S. (2018). THE EFFECT OF FINANCIAL STABILITY, EXTERNAL PRESSURE, PERSONAL FINANCIAL NEED, FINANCIAL TARGETS, INEFFECTIVE MONITORING AND AUDIT QUALITY ON DETECTING FRAUD FINANCIAL STATEMENT IN PERSPECTIVE OF FRAUD TRIANGLE. Journal of Business Economics, 23(2), 191–199. https://doi.org/10.35760/eb.2018.v23i2.1828
- Pambudi, B. C., Ekonomi, F., Bisnis, D., Lampung, U., Sudrajat, S., & Amelia, Y. (2022). PENGARUH KARAKTERISTIK FRAUD PENTAGON DALAM MENDETEKSI KECURANGAN LAPORAN KEUANGAN PADA PERUSAHAAN SEKTOR KEUANGAN YANG TERDAFTAR DI BURSA EFEK INDONESIA PERIODE 2016-2020. In *Jurnal Akuntansi Bisnis dan Ekonomi* (Vol. 1, Issue 08).
- Pramana, Y., Suprasto, H. B., Putri, I. G. A. M. D., & Budiasih, I. G. A. N. (2019). Fraud Factors of fFinancial Statements on Construction Industry in Indonesia Stock Exchange. *International Journal of Social Sciences and Humanities*, 3(2), 187–196. https://doi.org/10.29332/ijssh.v3n2.313
- Pratami, S. R., Widowati, Y. S., & Prapti, L. (2019). Influence Of Fraud Pentagon Toward Fraudulent Financial Reporting In Indonesia An Empirical Study On Financial Sector Listed In Indonesian Stock Exchange. INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH, 8, 8. www.ijstr.org
- Purnama, S. I., & Astika, I. B. P. (2022). Financial Stability, Personal Financial Need, Financial Target, External Pressure dan Financial Statement Fraud. *E-Jurnal Akuntansi*, 32(1), 3522. https://doi.org/10.24843/eja.2022.v32.i01.p15
- Rimadanti, S., Santoso, A., & Sulistyawati, A. I. (2022). The Role of Pentagon Fraud in Detecting Fraudulent Financial Statements. *Golden Ratio of Finance Management*, 2(2), 87–97. https://doi.org/10.52970/grfm.v2i2.185
- Rizkiawan, M., Subagio Politeknik Keuangan Negara STAN Jl Bintaro Utama Sektor, S. V, Selatan, T., & rizkiawan, I. (2022). Fraud Hexagon and corporate governance analysis on the potential fraud in financial statements. *Integritas: Jurnal Antikorupsi*, 8(2), 269–282. https://doi.org/10.32697/integritas.v8i2.909
- Rusmana, O., & Tanjung, H. (2019). Identifikasi Kecurangan Laporan Keuangan Dengan Fraud Pentagon Studi Empiris BUMN Terdaftar Di Bursa Efek Indonesia.

- Sari, M. P., Pramasheilla, N., Fachrurrozie, Suryarini, T., & Paimuigkas, I. D. (2020). Analysis of fraudulent financial reporting with the role of KAP big four as a moderation variable: Crowe's fraud's pentagon theory. *International Journal of Financial Research*, 11(5), 180–190. https://doi.org/10.5430/IJFR.V11N5P180
- Sari, S. P., & Khoiriah, N. (2021). Hexagon Fraud Detection of Regional Government Financial Statement as A Fraud Prevention on The Pandemic Crisis Era. 24(2).
- Sari, S. P., & Nugroho, N. K. (2020). Financial Statements Fraud dengan Pendekatan Vousinas Fraud Hexagon Model: Tinjauan pada Perusahaan Terbuka di Indonesia 26.
- Skousen, C. J., Smith, K. R., Wright, C. J., & Chasteen Chair, L. G. (2008). Detecting And Predicting Financial Statement Fraud: The Effectiveness Of The Fraud Traingle And SAS No. 99. http://ssrn.com/abstract=1295494Electroniccopyavailableat:https://ssrn.com/abstract=1295494Electroniccopyavailableat:https://ssrn.com/abstract=1295494Electroniccopyavailableat:https://ssrn.com/abstract=1295494
- Sukmadilaga, C., Winarningsih, S., Handayani, T., Herianti, E., & Ghani, E. K. (2022). Fraudulent Financial Reporting in Ministerial and Governmental Institutions in Indonesia: An Analysis Using Hexagon Theory. *Economies*, 10(4). https://doi.org/10.3390/economies10040086
- SURVEI FRAUD INDONESIA. (2020).
- Suryandari, E., & Pratama, L. V. (2021). Determinan Fraud Dana Desa: Pengujian Elemen Fraud Hexagon, Machiavellian, dan Love of Money. *Reviu Akuntansi Dan Bisnis Indonesia*, *S*(1), 55–78. https://doi.org/10.18196/rabin.v5i1.11688
- Suryani, I. C. (2019). ANALISIS FRAUD DIAMOND DALAM MENDETEKSI FINANCIAL STATEMENT FRAUD: STUDI EMPIRIS PADA PERUSAHAAN MANUFAKTUR YANG TERDAFTAR DI BURSA EFEK INDONESIA (BEI) TAHUN 2016-2018. In Seminar Nasional Cendekiawan ke (Vol. 5).
- Syahria, R. (2019). DETECTING FINANCIAL STATEMENT FRAUD USING FRAUD DIAMOND (A Study on Banking Companies Listed On the Indonesia Stock Exchange Period 2012-2016). *Asia Pacific Fraud Journal*, 4(2). https://doi.org/10.21532/apfjournal.v4i2.114
- Umar, H., Purba, R., Partahi, D., & Purba, R. B. (2020). Fraud Diamond Analysis In Detecting Fraudulent Financial Report. Article in International Journal of Scientific & Technology Research. www.ijstr.org
- Utami, B. S., & Aliyansah, P. I. (2020). COVID-19: Challenges and opportunities in Indonesia health sector. E3S Web of Conferences, 202. https://doi.org/10.1051/e3sconf/202020201008
- Utami, E. R., Muhammadiyah, U., Jalan, Y., Selatan, L., Tirto, T., Kasihan, B., & Pusparini, N. O. (2019). The Analysis of Fraud Pentagon Theory and Financial Distress for Detecting Fraudulent Financial Reporting in Banking Sector in Indonesia (Empirical Study of Listed Banking Companies on Indonesia Stock Exchange in 2012-2017).
- Vousinas, G. L. (2019). Advancing theory of fraud: the S.C.O.R.E. model. *Journal of Financial Crime, 26*(1), 372–381. https://doi.org/10.1108/JFC-12-2017-0128
- Wolfe, D. T., & Hermanson, D. R. (2004). The Fraud Diamond: Considering the Four Elements of Fraud. https://digitalcommons.kennesaw.edu/facpubs