

Do Fraud Hexagon Components Promote Fraud in Indonesia?

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JEL Classification:

K40

K42

Received: 04 February 2022

1st Revision: 04 April 2022

2nd Revision: 07 April 2022

Accepted: 09 April 2022

Abstract

This study provides information about the likelihood of the nature of fraud companies so that investors and stakeholders can make better decisions. The Beneish model and the fraud theory are two well-developed ideas for understanding fraud motivations and detecting earnings manipulation in a corporation. Unlike previous studies using the fraud triangle, this study uses the latest theory (the fraud hexagon) perspective to detect fraud actions. Thus, this study aims to examine the applicability of the fraud hexagon components in combination with the M-score from the Beneish model. Seventy-six manufacturing firms listed on Indonesia Stock Exchange from 2015 to 2019 were chosen as samples. The findings confirmed that enterprises with fraud tend to: be more financially stable, be more leveraged, have higher profitability, have cooperation projects with the government, have more related-party transactions, have more auditor changes, be less liquid, less changing directors, be less supervised, and less display CEO.'s picture.

Keywords:

beneish m-score, financial statement fraud, fraud detection, fraud hexagon.

How to Cite:

Alfarago, D., & Maburur, Z.. (2022). Do Fraud Hexagon Components Promote Fraud in Indonesia? *Etikonomi*, 21(2), 399–410. <https://doi.org/10.15408/etk.v21i2.24653>.

INTRODUCTION

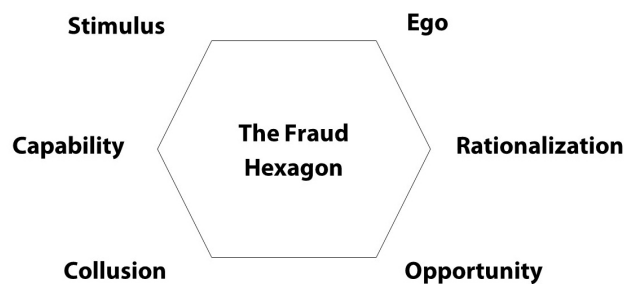
Fraud is a worldwide phenomenon (Xin et al., 2018). The image and value of the company are damaged whenever fraud is revealed. Among all types of crimes, fraud is the most dangerous to society and has the most significant economic impact (Free, 2015). According to ACFE (2020), financial fraud has minor cases but comes with the most significant losses for companies. These losses will significantly impact the capital market, resulting in a loss of shareholder value, a drop in the value of shares, bankruptcy or liquidation, and delisting from the national stock exchange (Beasley et al., 1999). For this reason, financial statement fraud has become enemies of investors and other stakeholders due to its notorious effect.

Business ethics is vital to the existence of companies in many countries and regions (Sroka & Lőrinczy, 2015). Strict ethical business practice is needed when the public is at war with fraud. Ethics should be a foundation for doing business to avoid unintended consequences and unethical behavior (Fitri et al., 2019). According to Adhariani & Siregar (2018), a lack of ethics in the organization can promote fraud. Therefore, companies should follow and obey the ethics set because it can prevent any kind of fraud from occurring.

Financial Statement Fraud (FSF) is the misstatement or elimination of the amount of disclosure deliberately made to deceive its users (Fitri et al., 2019). Due to its disproportionate impact on if it exists in a business, fraud detection has become a concern for researchers and academics to study (Suyanto, 2009). ACFE classifies fraud schemes into three main categories, known as the fraud tree, namely financial statement fraud, corruption, and asset misappropriation.

A theory that can explain fraud is the fraud hexagon theory proposed by Vousinas (2019). This theory can explain the factors that cause fraud by its components: Stimulus, Capability, Collusion, Opportunity, Rationalization, and Ego (S.C.C.O.R.E.). These components are shown in Figure 1.

Figure 1. Fraud Hexagon Model



Stimulus is pressure for someone to commit fraud, either financial or non-financial motive (Abdullahi & Mansor, 2017; Vousinas, 2019) this paper takes an in-depth look at the convergent and divergent of two classical fraud theories which are: (i. Capability refers to someone's ability to infiltrate the company's internal control, formulate complex fraud strategies, and control a social environment that can benefit him (Antawirya et al., 2019; Bire et al., 2019; Marks, 2012; Nuryani et al., 2018) social capital, and economic capital

on LPD financial performance in Buleleng regency as well as their influence of financial performance on corporate social. The sampling technique was used purposive sampling, primary data collection (questionnaire). Collusion refers to a fraudulent agreement or agreement between two or more people against another party for malicious purposes (Vousinas, 2019). Opportunities can occur because of ineffective controls or governance systems that allow individuals to commit fraud in the organization (Omukaga, 2021). Rationalization is the perpetrator's tendency to seek justification for his fraudulent acts. Ego, called arrogance in other models, is a behavior of superiority or greed of someone who thinks that internal control does not apply to him (Marks, 2012).

Combined with the fraud hexagon theory, fraud can be detected through a model called Beneish M-Score, introduced by Messod D. Beneish in 1999. This model can identify companies that tend to deceive their financial statements by using several measurements (Beneish, 1999). Many studies linked the Beneish model with the fraud theory, focusing on examining the influence of fraud components in detecting fraud occurrence resulted in which fraud components contribute to the likelihood of fraud. Unlike previous research, this study offers the applicability of the fraud hexagon components with Beneish M-Score results using the mean value of statistics descriptive data to find out the companies' tendency to conduct fraud. Therefore, this study aims to examine the applicability of the fraud hexagon components in combination with the M-score from the Beneish model to detect the occurrence of fraud in companies. This kind of study had been conducted by Fitri et al. (2019) using the fraud pioneer theory called the fraud triangle, which explains three leading causes of fraud, namely pressure, opportunity, and rationalization.

This study revealed that firms found to be fraudulent: (1) have more pressure on financial stability, leverage, and financial targets, (2) fewer independent commissioners and more receivables from related parties, and (3) more frequent auditor changes. Then, to find out the latest condition, this present study will fill the gap in existing research by updating the factors influencing fraud using the fraud hexagon model. This study's results are expected to offer some fruitful information for investors so as not to get trapped in the company's intentional misrepresentation before making investment decisions on particular firms. Besides, this study can be used as additional references for the Ministry of Finance of Indonesia (especially the Directorate General of Taxes) to design a suitable technique/policy related to financial and tax audits used by tax auditors who examine companies' financial statements.

METHODS

This study takes the population from all manufacturing companies listed on the Indonesia Stock Exchange (IDX) in 2015-2019, consisting of three sectors, namely the consumer goods industry, basic and chemical industrial sectors, and various industrial sectors. Based on the data obtained during the 2015-2019 period, the total research population is 193 companies. Using the purposive sampling method, authors set specific criteria to get a set of samples (see Table 1). According to the selected results, 76 eligible companies as the research samples. Therefore, the total number of observations for five years in this study is 380.

This study used the secondary data collected from the annual report from 2015 to 2019. The data is obtained through the official website of the Indonesia Stock Exchange (www.idx.co.id). Both financial and non-financial data are needed in this study. The documentation approach is used to collect the data by examining, researching, and analyzing the company's financial accounts.

Table 1. Sampling Criteria

No	Criteria	Number of Companies
1	Manufacturing companies listed on IDX from 2015-to 2019	193
2	Companies that do not publish annual reports for the period	(60)
3	Companies that do not use IDR as the reporting currency during the period	(28)
4	Missing data	(29)
Number of samples per year		76
Number of observations (76 x 5 years)		380

Beneish Model can separate companies that (likely) commit fraud and do not commit fraud by detecting earning manipulation conducted by companies through its M-Score (Beneish, 1999). M-Score of greater than -2.22 means that the company (likely) manipulates its financial statements. Conversely, an M-Score less than -2.22 indicates that the company does not conduct manipulation. By employing this, a score of “1” will be given for suspected fraud companies, while a score of “0” will be given for those not. The Beneish M-Score calculation formula is as follows:

$$\text{M-Score} = -4.84 + 0.92 \cdot \text{DSRI} + 0.528 \cdot \text{GMI} + 0.404 \cdot \text{AQI} + 0.892 \cdot \text{SGI} + 0.115 \cdot \text{DEPI} - 0.172 \cdot \text{SGAI} + 4,679 \cdot \text{TATA} - 0.327 \cdot \text{LVGI}.$$

Where:

DSRI = Days' Sales in Receivable Index = $(\text{Receivable}_t / \text{Sales}_t) / (\text{Receivable}_{t-1} / \text{Sales}_{t-1})$; **GMI** = Gross Margin Index = $[(\text{Sales}_{t-1} - \text{COGS}_{t-1}) / \text{Sales}_{t-1}] / [(\text{Sales}_t - \text{COGS}_t) / \text{Sales}_t]$;

AQI = Asset Quality Index = $[1 - (\text{Current Assets}_t + \text{PPE}_t) / \text{Total Assets}_t] / [1 - ((\text{Current Assets}_{t-1} + \text{PPE}_{t-1}) / \text{Total Assets}_{t-1})]$;

SGI = Sales Growth Index = $\text{Sales}_t / \text{Sales}_{t-1}$;

DEPI = Depreciation Index = $[\text{Depreciation}_{t-1} / (\text{PPE}_{t-1} + \text{Depreciation}_{t-1})] / [\text{Depreciation}_t / (\text{PPE}_t + \text{Depreciation}_t)]$;

SGAI = Sales, General and Administrative Expenses Index = $(\text{SGA Expense}_t / \text{Sales}_t) / (\text{SGA Expense}_{t-1} / \text{Sales}_{t-1})$;

TATA = Total Accruals to Total Assets = $(\text{Income from Operating}_t - \text{Cash Flow from Operating}_t) / \text{Total Assets}_t$;

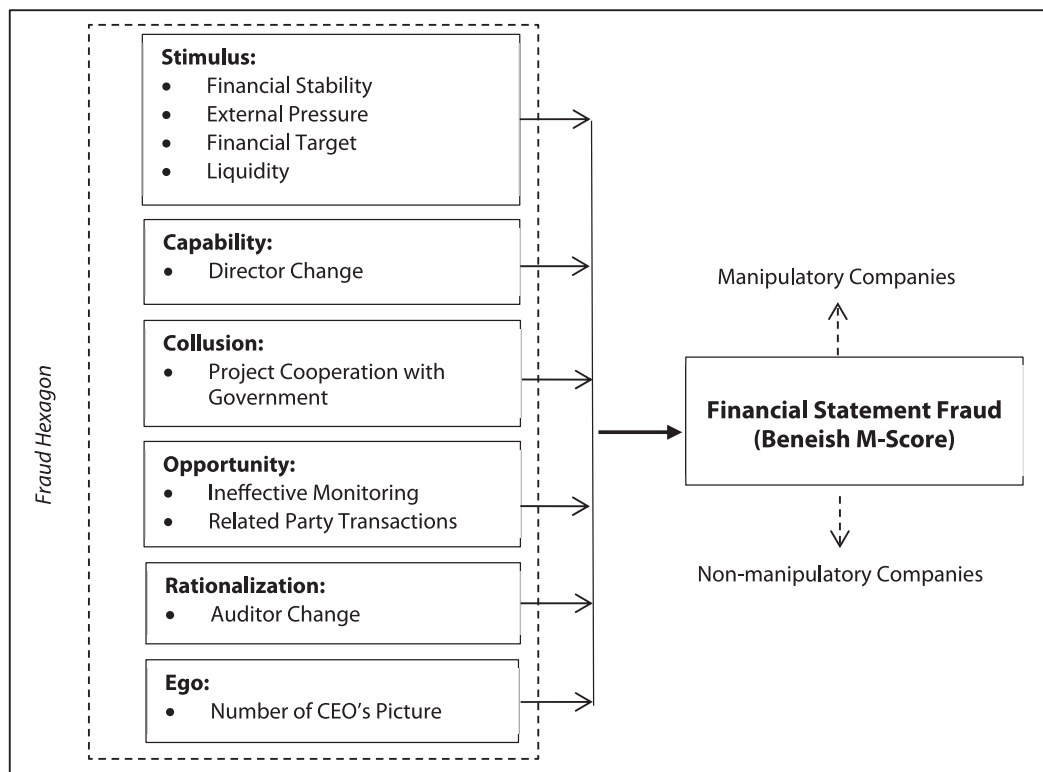
LVGI = Leverage Index = $[(\text{Current Liabilities}_t + \text{Long Term Debt}_t) / \text{Total Assets}_t] / [(\text{Current Liabilities}_{t-1} + \text{Long Term Debt}_{t-1}) / \text{Total Assets}_{t-1}]$.

Since its inception in 1999, the Beneish model has been widely adopted by academics and business people and is the most comprehensive way to detect manipulation in firms (Fitri et al., 2019) cases of frauds are rarely covered by the media. Even though some fraud might not be material enough to be detected, the motivation for conducting fraud exist, especially when the internal systems have some leakage. The fraud triangle and the Beneish model are two well-developed theories to understand the motivations for fraud and to detect earnings manipulation in a business. Therefore, this empirical research aims to examine the applicability of the fraud triangle components combined with the M-score from Beneish model. The investigation involves panel data from 270 non-financial companies listed on IDX (Indonesia Stock Exchange. This model is suitable to be used in developing countries, such as Bangladesh, Bosnia and Herzegovina, Malaysia, and Indonesia, as proven by Ahmed & Naima (2016), Aris et al. (2015), Halilbegovic et al. (2020), Kamal et al. (2016), and Suyanto (2009).

After separating detected and non-detected fraud companies, the fraud hexagon components need proxies to be measured. In this study, stimulus (pressure) is proxied by financial stability, external pressure, profitability, and liquidity. Capability is proxied by a director change, collusion by project cooperation with the government, opportunity by ineffective monitoring and related party transactions, rationalization by auditor change, and ego by the number of CEO's picture.

Figure 2 shows the theoretical framework that indicates the effect of the fraud hexagon model on Financial Statement Fraud measured by Beneish M-Score.

Figure 2. Theoretical Framework



RESULT AND DISCUSSIONS

By employing the Beneish M-Score model, the companies can be categorized as manipulatory and non-manipulatory. An M-Score of less than -2.22 suggests that the company is not a manipulator. In contrast, an M-Score of greater than -2.22 indicates that it is likely a manipulator. Table 2 shows the calculation of Beneish’s M-score with its eight variables based on financial data from 2013 to 2015.

Table 2. Beneish’s M-Score

DSRI	GMI	AQI	SGI	DEPI	SGAI	TATA	LEVI	M-Score	Conclusion	Total
0.991	0.851	1.193	1.049	1.042	0.656	-0.042	1.023	-3.018	Non-fraud	64 Companies
4.358	6.713	3.121	1.113	1.394	1.312	0.082	1.060	3.809	Fraud	12 Companies

The Beneish M-Score separates the samples so that non-suspected and suspected fraud firms can be found. Then, to connect the result between the Beneish Model and the tendency of fraud, this study uses two categories of companies: with fraud and without fraud, as shown in Table 3.

Table 3. Average Value of Fraud Hexagon Components

Variables			Non-fraud Indication N = 326	Fraud Indication N= 54
Stimulus	Financial Stability	ACHANGE	0.071	0.201
	Leverage	DR	0.518	0.549
	Financial Target	ROA	0.051	0.082
	Liquidity	WCTA	0.188	0.187
Capability	Director Change	DIRCHANGE	0.460	0.370
Collusion	Project cooperation with government	GOVTPROJECT	0.181	0.185
Opportunity	Ineffective Monitoring	INDBOARD	0.391	0.389
	Related Party Transaction	RPT	0.269	0.336
Rationalization	Auditor Change	AUDCHANGE	0.160	0.220
Ego	Number of CEO’s Picture	CEOPIC	2.970	2.570

Table 3 displays the average value of stimulus, capability, collusion, opportunity, rationalization, and ego indicators for fraud and non-fraud companies. By applying this technique, the tendency of companies to commit fraud will be obtained. First, for stimulus (pressure), firms detected with fraud are financially more stable (ACHANGE = 0.201), more leveraged (DR = 0.549), higher profitability (ROA = 0.082), but less liquid (WCTA = 0.187) compared to non-detected fraud firms which receive less pressure (ACHANGE = 0.071), less level of debt (DR = 0.518), less financial target (ROA = 0.051), and higher liquidity level (WCTA = 0.188). These results are in line with the

study conducted by Fitri et al. (2019), which stated all detected fraud companies have a higher ratio on pressure component, except for liquidity. Achmad et al. (2022) stated that if a company's asset growth fluctuates in value, management will be under pressure to change the financial statements to make the asset growth appear steady. Users of financial statements may have greater confidence in companies with solid financial charts (Achmad et al., 2022). Consequently, companies have to solve this issue to gain investors' trust and do whatever it takes to get their financial performance look healthy. Financial distress may motivate management to commit unethical behavior (Stice, 1991; Suyanto, 2009).

Then, regarding the company's leverage ratio, the higher the company's leverage, the higher the potential for violations and the likelihood of fraud. Higher leverage is typically associated with a better capability for violations of mortgage agreements and a reduced ability to obtain additional capital through borrowing (Dalnial et al., 2014). Christie (1990), leverage is potentially correlated with earnings improving accounting policies. If these policies are not enough to keep away from violations of debt covenants, managers can be inspired to understate liabilities or assets. After that, in terms of profitability, a high ROA ratio indicates that companies have a good performance, increasing the company's stocks prices in the market, which is attractive for investors (Husna & Satria, 2019). According to Sawangarreerak & Thanathamthee (2021), from an organizational management perspective, there could be a need for profits due to incentives/pressures for executives who want to provide income of their financial statements, as favored. This can lead to creative accounting, consisting of inflated profits or underestimated costs, making the income within the financial statements look better. This can be considered as a signal of a fraudulent financial statement. However, for the last stimulus factor, liquidity, it is found that less liquid companies tend to commit financial fraud. Managers will engage in a range of activities when the firm is not functioning well (low liquidity level) to demonstrate to the shareholders that the company is in a healthy and prosperous state, including financial reporting fraud (Indarto & Ghozali, 2016). Firms with liquidity issues have notably more errors of their financial statement than other companies (Dalnial et al., 2014).

Second, for capability, firms with fraud tend to maintain their director for a longer period ($DIRCHANGE = 0.370$) than non-fraud companies, which conduct director switches more frequently ($DIRCHANGE = 0.460$). The result does not prove that manipulatory companies tend to conduct changing of directors. Change of directors is not an act executed by management because of the desire of hiding the company's fraudulent act. The changing director is a normal phenomenon to appoint new directors because of their role in the board of directors' structure. The board of directors' replacement or dismissal is regulated in Indonesian Law No. 40 of 2007 concerning Limited Liability Companies (UUPT). Article 105 paragraph (1) states that the Board of Directors and the Board of Commissioners can be dismissed based on the General Meeting of Shareholders' decision (by stating the reasons). The result of this study is contrary to the results of studies carried out by Agrawal et al. (1999), and Ariyanto et al. (2021) stated that detected companies suspected of fraud have a high turnover among directors. Third, for collusion, companies

that have a project cooperation with the government were likely to commit an illegal act (GOVTPROJECT = 0.185) compared to those that do not (GOVTPROJECT = 0.181). The result confirms that project cooperation between companies and the government might lead to an illegal act. According to Locatelli et al. (2017), fraud is particularly relevant in large and unusual projects when the government serves as client/owner or perhaps the primary contractor. Especially in megaprojects, in which public actors have a significant role, fraud is very likely to happen in corruption. Fraudulent companies can make a deceitful deal in many projects with governments. Consequently, corruption worsens both cost and time performance and the benefits introduced.

Fourth, for the opportunity, firms with detected fraud have less independent commissioner supervision (INDBOARD = 0.389) and more transactions with related parties (RPT = 0.336) than companies without fraud, which have more independent commissioner supervision (INDBOARD = 0.391) and less special transactions (RPT = 0.269). Fitri et al. (2019) stated that management from firms that had detected fraud attempted to limit the number of independent commissioners to prevent fraud detection. The existence of independent commissioners is believed to provide more objective oversight in a company, thus making it difficult for management to negotiate deceitful deals. Then, in regards to related party transactions, manipulatory companies conducted more transactions with organizations with which they have a special relationship because, with these special organizations, it is easier to plan a crime (Fitri et al., 2019). Related-party transactions might create the potential for a conflict of interest or lead to other illegal situations. Fifth, for rationalization, fraudulent corporations change external auditors more frequently (AC = 0.220) than non-fraudulent companies (AC = 0.160). According to Lou & Wang (2009), change in auditors reduces the possibility of auditors detecting fraud. The older auditor may be better able to detect any potential fraud committed by management, whether directly or indirectly (Umar et al., 2020). Fitri et al. (2019) stated that because external auditors have no relationship with or interest in a company, their professional judgment (audit opinion) is based solely on the facts discovered during the audit process. Hence, different auditors' audits each year allow management to conceal proofs. Sixth, forego, firms with fraud indication tend to display their CEO picture less (CEOPIC = 2.570) than non-fraud indication firms (CEOPIC = 2.970). Based on the data, it is found that the more CEO a company has, the more CEO picture will have appeared in the annual report. The images attached are served to inform as well as introduce to the public, particularly stakeholders, who the company's CEO(s) is (are) (Fathmaningrum & Anggarani, 2021).

Furthermore, the images demonstrate how much responsibility the CEO has in each series of activities and in directing the organization. Another study on CEO narcissism found that the number of CEO photos in the annual report does not always aim to manipulate earnings because narcissistic CEOs can receive higher compensation than less narcissistic CEOs even if the company performs worse (Ham et al., 2018). The results in this study do not support the study conducted by Marks (2012) which stated that according to the findings of the Committee of Sponsoring Organizations of the Treadway

Commission (COSO) study, 70% of fraud perpetrators have a personality that combines pressure with arrogance or greed.

CONCLUSION

This empirical study aims to compare the fraud hexagon model to the Beneish model to examine its applicability in detecting the likelihood of fraud. The results reveal that the manipulatory companies tend to be more stable, more leveraged, have higher profitability, cooperate with the government's project, have more related-party transactions, and conduct more auditor changes. Also, manipulatory companies are less liquid, less changing their director, less supervised, and less displayed C.E.O.'s picture compared to companies that are not likely to commit fraud.

This study has implications for prospective investors and stakeholders to analyze the company's financial statement so as not to get trapped in its unethical behavior, which can help them make better financial decisions than before. As for the Indonesian government, this study can be used as a reference for the Directorate General of Taxes in making a guideline related to tax audits so that tax auditors will not be able to be deceived by good financial reports. Despite being the first study to examine the applicability of the fraud hexagon components in combination with Beneish's model, this study is not without its limitations. First, it only applies some proxies of fraud components. The subsequent researchers are expected to use other proxies such as the personal financial need for pressure, nature of the industry for the opportunity, size of the audit committee for rationalization, Corporate Governance Index (CGI) for capability, and other possible proxies for arrogance and collusion. Second, this study chose only manufacturing companies in Indonesia as the samples. Future researchers should expand it to all non-financial companies to give the more actual condition in Indonesia. Moreover, researchers can use another model to detect fraud, such as the Dechow F-Score Model, to see the likelihood of fraud in Indonesia based on a different theory.

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