

## Beneish Model: Detection of Indications of Financial Statement Fraud Using CEO Characteristics

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### ABSTRACT

The study aims to analyze the influence of CEO characteristic factors on indications of financial statement fraud using the Beneish Model. Based on the upper echelon theory, this study proposes six hypotheses which are tested using logistic regression analysis. This study uses secondary data derived from financial statements or annual reports of mining companies listed on the Indonesia Stock Exchange from 2015 to 2019. The results of this study show that CEO characteristics in the form of CEO age, educational background, and work experience cannot be used as indicators that can detect financial statement fraud. Meanwhile, some other characteristics that are still the focus of this study, such as CEO's gender, tenure, and nationality have an influence on indications of financial statement fraud. So, it can be concluded that the CEO characteristics that have a link in detecting financial statement fraud can be considered fraud prevention efforts.

Keyword: Beneish Model, CEO Characteristics, Financial Statement Fraud

### 1. INTRODUCTION

Currently, fraud has become a global problem. The Association of Certified Fraud Examiners (ACFE, 2020) defines fraud as an act to seek illegal profit by individuals or groups that causes large losses. According to Report to The Nation (ACFE, 2020), fraudulent practices have occurred in 125 countries with 2,504 cases, and have caused losses in global projections reaching 5% of turnover each year with a median nominal loss of US\$3.6 billion. These fraudulent practices have a significant impact on organizations and industrial sectors in the world, especially the mining sector. The survey results

show that the highest losses due to fraud are in the mining industry, amounting to US\$475,000. Figure 1 attached illustrates the condition of the mining sector based on its business tendency index, where the mining sector's business tendency index fluctuates. Even though the business conditions in the second, third and fourth quarters of 2019 experienced continuous increases, mining is still classified as a sector experiencing contraction or in a weak condition compared to other industrial sectors (BPS, 2020).

Based on the fraud tree, financial statement fraud is included in the category of the fewest fraud cases but causes

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the highest loss impact (ACFE, 2020). Alhmoed and Aldhamari (2020) explain that basically financial statements are important information outputs on company performance and serve as guidelines for decision making by various related parties. Meanwhile, the responsibility for the preparation and presentation of the financial statements is held by the management of the company. However, financial reports are often used as a medium in carrying out fraudulent practices. The focus of this research is the Chief Executive Officer (CEO). This position is the top executive position and is considered the most powerful, as evidenced by its authority in making decisions and exercising the authority of a company (Chou and Chan 2018). Unfortunately, this power is often used for personal gain. CEOs are often involved in fraudulent financial statements (Troy et al., 2011).

This study uses upper echelon theory as the basis for detecting fraudulent financial statements. The theory explains that the skills and personality of top executives are able to influence the development and increase of company value including strategic decisions taken (Hambrick and Mason, 1984). However, actually measuring a person's values and personality is very difficult, so it is recommended to use a proxy in the form of individual characteristics (Hambrick, 2007). Based on this theory, this study uses several factors that are thought to influence companies to commit financial statement fraud as a result of CEO characteristics, which consist of age, gender, educational background, length of service or tenure, work experience, and nationality. This study uses the Beneish model as a measurement of financial statement fraud. This model is considered to have higher accuracy than Fscore in predicting fraudulent financial statements (Basmar and Ruslan, 2021; Hugo, 2019; Patmawati, 2021). Several previous studies also used the Beneish model in predicting financial statement fraud (Irwandi et al., 2019;

Lubis, 2020; Ibadin and Ehigie, 2019).

Age is important to identify a person's quality based on sociological aspects (Baker and Mueller, 2002). Younger CEOs are considered to have aggressive tendencies and are involved in fraudulent financial statements, while older CEOs are considered to always make more accurate judgments of an action and are able to improve the quality of financial reports (Brouthers et al., 2000; Huang et al., 2012; Troy et al., 2011; Zahra et al., 2007). In addition, there are studies that do not find any effect of age differences on indications of fraud (Feng et al., 2011; Schrand and Zechman, 2012).

The next factor is gender. Human characteristics can be distinguished based on the functions and roles that apply in local socio-cultural life (Stoller, 1968). Female CEOs are considered to be more capable of making more ethical decisions than male CEOs (Brennan and McCafferty, 1997; Cumming et al., 2015; Zahra et al., 2007). However, in reality, the practice of fraud is more associated with opportunities in the position occupied by the individual because the morale of women is not higher than that of men (Dodge, 2009). This is reinforced by reports that the percentage of women's involvement in financial fraud cases is greater than that of men (Bonny et al., 2009).

CEOs who have an educational background in business administration are considered to be better able to understand basic accounting and internal control and always try to avoid losses caused by fraud (Barker and Mueller, 2002; Troy et al., 2011). However, more educated CEOs actually have a tendency to be overconfident so that they are more willing to make risky decisions, including in manipulating financial statements (Schrand and Zechman, 2012). In addition, there is another opinion which states that the emergence of an illegal act is not influenced by the educational background of the executive (Frischanita and Bernawati, 2020).

CEOs with longer tenures are considered to be more talented and able to generate high-quality earnings than new CEOs (Ali and Zhang, 2015; Cheng and Leung, 2012). Furthermore, Kusuma (2011) argue that newly appointed CEOs are considered to be more daring in carrying out earnings management practices to reduce earnings at the turn of the year, where the CEO takes this action by manipulating accounting or non-accounting methods. In addition, executives with long tenures are not involved in fraud because they feel exhausted in carrying out detrimental actions (Zahra et al., 2007). However, this is different from the opinion expressed by Crutchley et al. (2007), executives with longer tenure contribute to executive voting which is positively associated with indications of accounting fraud.

Fredrickson (1985) explains that CEOs who have more work experience are able to make better decisions than CEOs who have less work experience. Hitt and Tyler (1991), also share the same opinion that CEO work experience can have an impact on the individual's cognitive structure and assist in making decisions between various strategic choices. However, if a company is classified as a family company, this work experience factor has no influence on the emergence of fraud (Frischanita & Bernawati, 2020).

The next characteristic aspect of CEO is nationality. When a person's nationality is different from the nationality of the entity being managed, it can lead to a different business culture. This provides the possibility for the person to make adjustments first, because in running his business he will definitely experience a greater level of difficulty (Jonsson & Tarukoski, 2017; Bouaziz et al., 2020). However, this difference has its own advantages, where board members with foreign nationality are considered more professional in carrying out company operations and having wider experience (Oxelheim & Randiy, 2003). In contrast, executives with local nationality are more

likely to engage in fraudulent practices (Bouaziz et al., 2020).

Based on the description above, researchers are interested in re-examining the relationship between CEO characteristics and financial statement fraud. This study replicates the research conducted by Troy et al. (2011) with several research differences, such as the object of research, the research period, and the independent variables used. This study uses one dependent variable (financial statement fraud) and six independent variables (CEO age, CEO gender, CEO educational background, CEO length of service or tenure, CEO work experience, and CEO nationality)

## 2. LITERATURE REVIEW AND HYPOTHESIS

### Upper Echelon Theory

Upper Echelon Theory has the main idea that the organization is a reflection of its CEO (Hambrick and Mason, 1984). This theory assumes that the personal characteristics and skill specifications of the CEO can influence several things, including the creation of corporate value, strategies from various alternative choices, and decision making in corporate financial reporting (Hambrick and Mason, 1984). This theory emphasizes the managerial characteristics as an indicator of the things that a company manager brings into an administrative situation. The implications of echelon theory regarding management selection and development are considered to require data based on observable backgrounds from the perspective of a manager or company executive (Hambrick and Mason, 1984). Executives' emotions and cognitive reflect their experiences. If the executive is experienced or focused on only one organization, he is considered to have a limited perspective. On the other hand, the more experience he has, the more perspective he generates. This is in line with the opinion conveyed by Hambrick and Mason (1984) that heterogeneous top executives will bring diverse skills and

knowledge and produce more varied knowledge to be applied in certain situations.

Upper Echelon Theory can be used to explain the detection of fraudulent financial statements. This theory explicitly shows that the characteristics of a top executive can influence an individual's actions (Hambrick and Mason, 1984). There are several opinions and empirical findings that also state about how demographics can provide the possibility of committing a wrong action. For example, Schrand and Zechman (2012) show that the characteristics of CEOs in terms of educational background often lead to a tendency to be overly confident, even though he has to take adverse risks, including fraudulent financial statements. This is important in detecting the occurrence of fraudulent financial statements to realize good company operations.

#### **Financial Statement Fraud**

According to ACFE (2020), financial statement fraud is a scheme carried out by an employee who intentionally covers up real information on financial statements and even intentionally makes misstatements, such as recording fictitious income, increasing asset values, or understating total reported expenses. Based on SAS No. 99 (2002), the classification of financial statement fraud includes:

- a. Misappropriation, falsification, and alteration of accounting information or supporting documents in preparing financial statements
- b. Misrepresentation or intentional misrepresentation of a transaction and other important information on the financial statements
- c. Intentional errors of accounting principles regarding the classification, amount, disclosure or presentation.

Financial statement fraud is included in the category of the fewest fraud cases but causes losses with the largest median compared to other categories (ACFE, 2020). SAS No. 99 (2002) also confirms

that fraudulent financial statements have a significant impact that can harm the reputation, value, and ability to achieve the objectives of an entity. Based on the fraud tree category described by ACFE (2020), there are two types of financial statement fraud: net income overstatement (companies present higher net income than the actual situation) and net income understatement (company presents lower net income than the actual conditions).

#### **Beneish Model**

Beneish M-Score is a model developed by Messod D Beneish in 1999. This model is used to detect manipulation or non-manipulation in a company's financial statements. Beneish (1999) defines earnings manipulation with the assumption that company managers violate generally accepted accounting principles in order to show good company financial performance. Beneish (1999) developed his model by using financial statement data to construct several variables that reflect the effects of manipulation and its prerequisites. This model has several considerations in detecting financial statement manipulation practices, such as:

- a. Consideration regarding signals about future prospects. Assuming that earnings manipulation is possible when the company's future prospects are poor
- b. Consideration of variables based on cash flow and accruals
- c. Consideration of variables taken from positive theory research, where there is a contract-based incentive relationship in earnings management practices

#### **CEO (Chief Executive Officer)**

The CEO (Chief Executive Officer) is the top executive in a company who is fully responsible for the survival and success of the company. According to Daft (2006), the CEO is also responsible for determining the direction of the organization's goals, establishing a strategy to achieve goals, overseeing the running of the organization, interpreting the external environment, and

determining a decision that can affect the organization. In Indonesia, the CEO is better known as the president director. Law no. 40 Chapter VII regulates the functions, responsibilities, and authorities of the board of directors as follows: a) The Board of Directors carries out business operations for the benefit of the entity in accordance with the purposes and objectives of the entity itself; b) The Board of Directors has the authority to run the entity's operations with policies that are deemed appropriate and in accordance with the entity's rules. c) The Board of Directors is responsible for managing the entity in good faith and full of responsibility. d) The Board of Directors is fully responsible if the entity suffers losses due to errors and omissions in their duties. e) The Board of Directors is required to submit all important information and documents, including financial reports to the shareholders (principals).

#### Previous Research

Troy et al. (2011), in his research entitled "*CEO Demographics and Accounting Fraud: who is more likely to rationalize illegal acts?*", examined the CEO characteristic variables as follows: CEO's age was measured by calculation since the beginning of the year the fraud occurred, functional experience was measured by number of functional positions or executive positions before becoming CEO, and business education background was measured using a dummy variable. Meanwhile, the independent variable of accounting fraud was measured using a dummy variable. The population of the research was SEC Accounting and Auditing Enforcement Releases (AAERs) from 1992 to 2005 with the final sample consisting of 312 public companies from 43 industrial sectors. The results showed that CEO age, functional experience and business education had a negative effect on accounting fraud, while stock options did not moderate the relationship between these variables.

Hiliard and Neidermeyer (2018) conducted a research entitled "*Gendering of Fraud: An International Investigation*".

The research examined the fraud tree consisting of financial statement fraud, corruption, and asset misappropriation. The data tested in the study was derived from the Institute for Fraud Prevention (IFP) database with a total of 5,441 fraud cases from 93 countries, from 2002 to 2011. The independent variable used in the study was gender as measured using a dummy variable, with additional factors including the age variable which was measured according to the age of the perpetrator during the study period. The variables of position, education, and level of compensation were measured using a dummy variable. The results showed that female executives tended to be more involved in asset misappropriation and financial statement fraud than in corruption. However, based on the male-dominated executive position, the act of financial statement fraud was more likely to be carried out by men. Age and position factors had a positive effect on financial statement fraud. Gender had a positive effect on asset misappropriation. Meanwhile, corruption tended to be carried out by men in their positions as company owners. Comparison of the level of compensation between female and male fraud perpetrators was 6:37.

Frischanita and Bernawati (2020) conducted a study entitled "*The Effect of CFO Demographics on Fraudulent Financial Reporting*". The sample used in this study was manufacturing companies listed on the Indonesia Stock Exchange for the period 2016 - 2018 with as many as 308 observational data. The dependent variable used was financial statement fraud which was measured using the f-score model. The independent variables used were the age of the CFO as measured by the age of the CFO in the year of the study, the level of education of the CFO was measured by the level of education from high school to doctoral degree, the gender of the CFO was measured using a dummy variable, and the level of experience of the CFO was measured by how long the CFO held

a functional position. The results showed that the age of the CFO had a positive effect on financial statement fraud, while the education level, gender, and level of experience of the CFO had no effect on financial statement fraud.

Alhmoode et al. (2020) conducted a study entitled “*CEO Characteristic and Real Earning Management in Jordan*”. The dependent variable used in this study was real earning management which was measured using three models: the calculation of the normal level of production costs, the normal level of discretionary expenditure, and abnormal discretionary costs. The independent variables used in this study were CEO experience as measured by the number of executive positions held before becoming CEO, CEO tenure as measured by the number of years of service, and CEO duality and CEO political relations as measured using a dummy variable. The population in this study consisted of companies in Jordan in the financial, industrial, and service sectors listed on the Amman Stock Exchange from 2013 to 2018. However, the samples used were only the industrial and service sectors with a total of 95 companies. The results showed that CEO experience and CEO political relations had a positive effect on real earning management, CEO duality had a negative effect on real earning management, while CEO tenure had no effect on real earning management.

Bouaziz et al. (2019) conducted a research entitled “*CEO Characteristic and Earning Management: Empirical Evidence from France*”. The independent variables used were CEO age as measured by the logarithm of CEO age, CEO tenure as measured by the number of years the CEO has served in the position, CEO compensation as measured by total compensation, as well as CEO duality, CEO board membership, CEO gender, CEO turnover, CEO expertise, and CEO nationality as measured using a dummy variable. Meanwhile, the independent variable used in this study was earnings management which was measured using

discretionary accruals. The population of this study consisted of French companies listed on the CAC ALL stock index from 2006 to 2015, with the final sample covering 151 companies. The results showed that CEO tenure, CEO gender, and CEO expertise had a negative effect on earnings management. CEO duality, CEO compensation, and CEO nationality had a negative effect on earnings management, while CEO age, CEO board membership, and CEO turnover had no effect on earnings management.

### **Hypothesis Development**

#### **CEO Age and Financial Statement Fraud**

CEO age is a necessary quality in identifying his or her sociological aspects (Barker and Mueller, 2002). Age is considered to be an effective factor in predicting individual ethical behavior, which is seen based on longer life exposures (Huang et al., 2012). Managers of companies with a younger age will be more aggressive and tend to be involved in financial statement fraud than older managers (Brouthers et al., 2000; Zahra et al., 2007). Based on Upper Echelon Theory, CEO characteristics in terms of age indicate that younger CEOs are considered capable of contributing more to business growth and development with a tendency to use riskier strategies (Hambrick and Mason, 1984). Troy et al. (2011) argues that CEOs with a younger age tend to be willing to take risks, including risks due to financial statement fraud. However, several studies explain that there is no significant relationship between CEO age and financial statement fraud (Feng et al., 2011; Schrand and Zechman, 2012).

H<sub>1</sub>: CEO age has an effect on financial statement fraud

#### **CEO Gender and Financial Statement Fraud**

Stoller (1968) made a separation in human characterization to distinguish definitions based on human biological characteristics in the local socio-cultural context. Female CEOs are considered to be more appropriate in understanding client needs and able to make more

ethical decisions in a job than male CEOs (Brennan and McCafferty 1997; Cumming et al., 2015; Zahra et al., 2007). Based on the perspective of the upper echelon theory, the individual characteristics of the CEO can influence the value creation and corporate strategy, as well as its relation in determining a decision in the company's financial reporting based on alternative choices (Hambrick and Mason, 1984). However, women also do not always have better morals than men. The act of fraud is based more on the existence of opportunities in the position occupied by someone, especially top executives (Dodge, 2009). Some women are also known to be involved in committing fraud, especially in financial matters, where the ratio between women and men is 73% : 27% (Bonny et al., 2009).

H<sub>2</sub>: CEO gender has an effect on financial statement fraud

#### **Educational Background and Financial Statement Fraud**

Upper Echelon Theory, as explained by Hambrick and Mason (1984), considers that educational factors can influence the strategies that will be implemented in an organization based on the existing choices. CEOs who have an educational background in business administration are considered to be better able to understand basic accounting, business processes, internal controls, and the impact of unethical actions, therefore, they will tend to reduce rationalization in financial statement fraud (Troy et al., 2011). Analytical skills taught in business education tend to be geared towards avoiding major mistakes or losses (Barker and Mueller, 2002). This view reflects that business education can lead to better skills in distinguishing between good strategies with acceptable outcomes and potentially detrimental actions. However, there are several studies that explain that educational background has no effect on financial statement fraud (Frischaanita & Bernawati, 2020; Schrand & Zechman, 2012).

H<sub>3</sub>: Educational background has an effect on financial statement fraud

#### **Length of service or tenure and Financial Statement Fraud**

CEOs with longer tenures are considered to be more talented and have more experience in providing important information regarding their companies and commercial environment (Ali and Zhang, 2015; Chai and Zevilir, 2012). In accordance with the opinion of Cheng and Leung (2012), companies led by reputable executives with longer tenures can generate higher quality earnings. Based on the Upper Echelon Theory, the presence of heterogeneous top executives will increase the diversity of knowledge skills to be implemented in certain situations, so that longer experience will bring a greater variety of knowledge to deal with certain situations (Hambrick and Mason, 1984). In addition, the long tenure makes the CEO feel unable to carry out detrimental practices so that his actions are more directed towards minimizing uncertainty over the risk choices to be taken based on previous experience (Simsek, 2007; Zahra et al., 2007). Meanwhile, a short tenure will motivate CEOs to manipulate accounting and non-accounting methods to reduce profits in a certain period (Adiasih and Kusuma 2011). However, there are other studies which state that executives who serve longer can indicate the occurrence of accounting fraud (Crutchley et al., 2007).

H<sub>4</sub>: Length of service or tenure has an effect on financial statement fraud

#### **Work Experience and Financial Statement Fraud**

CEO experience is a very important factor because CEO experience can influence organizational decisions. According to Fredrickson (1985), the decision-making process carried out by experienced CEOs is definitely different from that of inexperienced CEOs. In fact, in terms of experience, it is possible for an executive to make better and more successful decisions

than an inexperienced executive. Hitt and Tyler (1991), also state that the level and form of a work experience can influence several things, such as the CEO's cognitive structure, strategic choices, and the model or decision-making process itself. Upper Echelon Theory explains that the CEO's functional experience reflects his various categories of knowledge to rationalize a choice so as to enable the CEO to utilize more types of information to make an adequate decision. So, with large functional experience and extensive knowledge, CEOs will reduce rationalization in financial statement fraud (Hambrick and Mason, 1984). However, there are other studies which state that there is no relationship between executive work experience and the existence of financial statement fraud (Frischanita and Bernawati 2020).

H<sub>5</sub>: Work experience has an effect on financial statement fraud

**Nationality and Financial Statement Fraud**

Huang et al. (2012) argues that different nationalities mean different business cultures. Based on the perspective of upper echelon theory, the background of a CEO can influence decision making based on several alternative choices, including in terms of the company's financial statements (Hambrick and Mason, 1984). CEOs with foreign nationality (the CEO's nationality is different from the company's country of origin) may find it more difficult to run their business because they need to adapt to the business, compared to CEOs

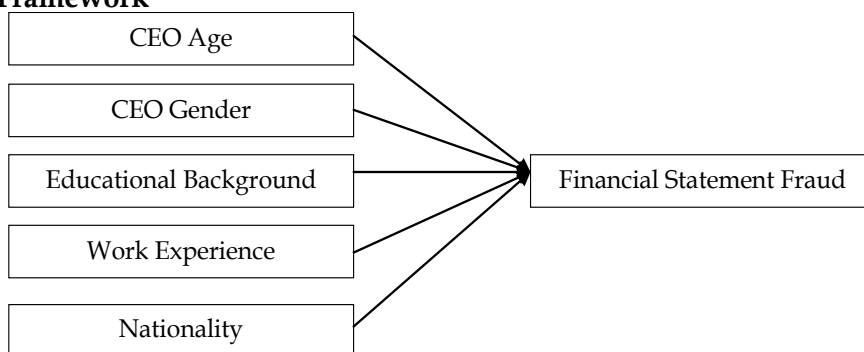
with the same nationality (Bouaziz et al., 2020). However, the company will have an advantage if the company has foreign directors, because they have a wider range of industry experience. In addition, based on market assessments, foreign directors are able to work professionally (Oxelheim and Randoy, 2003).

H<sub>6</sub>: CEO nationality has an effect on financial statement fraud

**3. METHODS**

This research is a quantitative research using secondary data in the form of financial statements or annual reports. The data was processed using SPSS 25.0 software to test the data and hypotheses in this study. The population used in this study was mining companies listed on the Indonesia Stock Exchange (IDX) from 2015 to 2019. The sampling technique was based on purposive sampling with several criteria, consisting of 40 mining companies listed on the IDX during the five research periods from 2015 to 2015. 2019. However, there were 4 companies that did not present complete financial or annual reports during the study period. So, the final sample used was 36 companies with 180 sample units which would later be analyzed using logistic regression. Samples were obtained from the IDX official website or related companies. In addition, this research also used literature study by collecting all information from literature sources that were accurate, credible, and relevant to the research theme.

Figure 2. **Framework**



Source: Troy et.al (2011), Hiliard dan Neidermeyer (2018), Frischanita dan Bernawati(2020),Alhmood dan Al-dhamari(2020), Bouaziz et.al (2020)



### Dependent Variable

The dependent variable in this study is financial statement fraud. Fraud, according to ACFE (2020), is an act to cover up actual financial statement information or to make a misstatement intentionally. In addition, financial statement fraud can be categorized as a violation of generally accepted accounting principles, even though the aim is to demonstrate the company's good financial performance (Beneish, 1999).

The measurement of this variable is carried out using a dummy variable which is based on the formulation of the Beneish m-score model as follows:

$$M\text{-Score Value} = -4.84 + 0.92DSRI + 0.528GMI + 0.404AQI + 0.892SGI + 0.115DEPI - 0.172SGAI + 4.679TATA - 0.327LVGI$$

Details of the calculation of the Beneish Model in detecting fraudulent financial statements are listed in the attached table

1 (Beneish, 1999). There are two categories of companies: companies that are detected to commit financial statement fraud with a score of  $> -2.22$  (code 1) and companies that are not detected to commit financial statement fraud with a score of  $\leq -2.22$  (code 0).

### Independent Variable

The independent variables in this study are the characteristics of the CEO consisting of CEO's age (age), CEO's gender (gender), educational background (edu), length of service (tenure), work experience (experience), and nationality (citizenship). Data on the independent variables are obtained from the annual report, especially information about the president director/ chief director. The CEO's age variable is measured according to the CEO's age number (Frischanita and Bernawati, 2020), work experience variable is measured by the number of functional/executive

Table 1. Calculation of 8 Beneish Model Indicators

DSRI	: $\frac{\text{"Receivables}_t / \text{Sales}_t}{\text{"Receivables}_{t-1} / \text{Sales}_{t-1}}$	measuring the balance of receivables with income
GMI	: $\frac{\text{"(Sales}_{t-1} - \text{Cost of Good Sold}_{t-1}) / \text{Sales}_{t-1}}{\text{"(Sales}_t - \text{Cost of Good Sold}_t) / \text{Sales}_t}}$	measuring gross profit ratio
AQI	: $\frac{\text{"(1 - (Current Assets}_t + \text{PP\&E}) / \text{Total Assets}_t}{\text{"(1 - (Current Assets}_{t-1} + \text{PP\&E}) / \text{Total Assets}_{t-1}}$	measuring the asset quality ratio, whether there is a potential for cost delays
SGI	: $\frac{\text{"Sales}_t}{\text{"Sales}_{t-1}}$	measuring sales ratio
DEPI	: $\frac{\text{"Depreciation}_{t-1} / (\text{Depreciation}_{t-1} + \text{PP\&E}_{t-1})}{\text{"Depreciation}_t / (\text{Depreciation}_t + \text{PP\&E}_t)}}$	measuring the depreciation rate of assets
SGAI	: $\frac{\text{"Sales, General and Adm. Expense}_t / \text{Sales}_t}{\text{"Sales, General and Adm. Expense}_{t-1} / \text{Sales}_{t-1}}$	Comparing selling, administrative and general expenses to revenues
LVGI	: $\frac{\text{"(LTD}_t + \text{Current Liabilities}_t) / \text{Total Assets}_t}{\text{"(LTD}_{t-1} + \text{Current Liabilities}_{t-1}) / \text{Total Assets}_{t-1}}$	measuring the company's ability to pay off its obligations
TATA	: $\frac{\text{"}\Delta\text{Current Assets}_t - \Delta\text{Cash}_t - (\Delta\text{Current Liabilities}_t - \Delta\text{Current Maturities of LTD}_t - \Delta\text{Income Tax Payable}_t) - \text{Depreciation and Amortization}_t}{\text{"Total Assets}_t}}$	calculate changes in capital other than cash minus depreciation

Source : Beneish (1999)

positions occupied before becoming CEO, or refers to the measurement (Troy et al., 2011). The variable of length of service/tenure is measured by the number of years of service as a CEO (Alhmod and Al-dhamari, 2020). Meanwhile, the variables of gender (Bouaziz et al., 2020), educational background (Troy et al., 2011), and nationality (Alhmod and Al-dhamari, 2020) are measured using a dummy variable.

#### 4. RESULTS AND DISCUSSION

The results of data analysis are shown in tables 2 and 3 attached. Based on the data in table 2, the age of the CEO (Age) has a maximum value of 83 years and a minimum value of 35 years with an average age of 55 years. The gender of the CEO (Gender) has a minimum value of 0 and a maximum value of 1, which means that if the CEO in a sample company is male, it is indicated by using the number 0, and if the CEO is female, it is indicated by

using the number 1 because this research focuses on female CEOs. Educational background (Edu) also has a minimum value of 0 and a maximum value of 1, so that if the CEO of the company concerned has an undergraduate or postgraduate educational background in a non-business field, it is indicated by using the number 0, and if the CEO has an undergraduate or postgraduate educational background in business, it is indicated by using the number 1. Length of service (Tenure) has a minimum value of 2 months and a maximum value of 36 years with an average value of 6 years. Work experience (Experience) has a minimum value of 2 and a maximum value of 21, which means that prior to becoming a CEO at the relevant company, the functional position occupied by the CEO was at least 2 positions and at most 21 positions. CEO with Indonesian nationality status (Citizen) is indicated by the number 1, while outside the status it is indicated by the number 0.

Table 2. **Descriptive Statistics**

Characteristics	Min	Max	Mean	Std. Deviation
AGE	35	83	55.36	8.456
GENDER	0	1	0.03	0.165
EDU	0	1	0.58	0.495
TENURE	0.2	36	6.22	6.628
EXPERIENCE	2	21	5.57	2.751
NATIONALITY/ CITIZEN	0	1	0.89	0.315
FRAUD	0	1	0.36	0.480
Valid N (listwise)		180.00		
Hosmer and Lemeshow Test			0.224	
Overall fit test			210.916 < 234,295	
Durbin Watson			1.6878 < 2.089 < 2.1746	
Omnibus test			sig. 0.001	
Multicollinearity Test:				
AGE		TOL 0.695		VIF 1.439
GENDER		TOL 0.972		VIF 1.029
EDU		TOL 0.773		VIF 1.294
TENURE		TOL 0.766		VIF 1.305
EXPERIENCE		TOL 0.914		VIF 1.094
NANIONALITY / CITIZEN		TOL 0.954		VIF 1.048

Source : Processed Data, 2021

Table 3. Logistics Regression Test Results

Variabel	B	Sig.	Odd Ratio
Age	0.003	0.906	1.003
Gender	2.691	0.034	14.740
Edu	-0.086	0.817	0.917
Tenure	-0.102	0.011	0.903
Experience	-0.027	0.672	0.973
Citizen	-2.225	0.007	0.108
Constant	0.125	0.930	1.133
Negelkerke R Square		0,167	
Omnibus Test		Sig. 0,001	

Source : Processed Data, 2021

### Logistics Regression Test Results

The results of the logistic regression test are shown in table 2 attached. Based on the analysis of the feasibility of the model, the value of Hosmer and Lemeshow > 0.05, which means that the model can be said to be fit and there is no significant difference between the observational data and the regression model. In addition, the results of the Overall Model Fit test also show that the model's contribution is considered better when the independent variables are added. Table 2 also explains that there is no multicollinearity in the data and is free from autocorrelation symptoms.

The results of hypothesis testing based on the significance value with the assistance of the IBM SPSS 25.0 program presented in table 3 attached show that of the six hypotheses (H1, H2, H3, H4, H5, H6), three hypotheses are accepted with a significance value < 0.05, because the research uses a significance level of 5%. Table 3 shows that the Negelkerke R Square value is 0.167 with an omnibus test significance value of 0.001 < 0.05. Thus, the independent variables consisting of CEO age, CEO gender, educational background, length of office, work experience, and nationality simultaneously have an influence on the dependent variable of financial statement fraud by 16.7%, while the remaining 83.3% is influenced by other factors outside of this research.

### Discussion

#### The Effect of CEO Age on Financial Statement Fraud

The results of this study indicate that the age of the CEO has no effect on financial statement fraud. Based on the results of the regression test, the significance value is 0.906. So it can be concluded that the CEO age variable partially has no effect on financial statement fraud.

Executive age is thought to be a measure of the quality of a person's personality and an identifying factor based on his sociological aspects (Barker and Mueller, 2002). Brothers et al. (2000) also state that younger managers are indicated to have an aggressive nature in themselves. However, the results of this study show that the CEO's characteristics in terms of age have not been successfully used to detect indications of financial statement fraud. Age cannot be used as an effective predictor in detecting fraudulent practices. Based on the perspective of the Upper Echelon Theory, the age of the CEO cannot be interpreted as a factor that influences decision making in the company's financial reporting.

Based on measurement using the benefit m-score in this study, companies that are indicated to commit financial statement fraud are companies that have CEOs of various ages. In fact, the data shows that the maximum age of the CEO and the minimum age of the CEO are

included in the category of companies that are detected to commit financial statement fraud. So, this is one of the causes that age does not have an effect on financial statement fraud. The age factor cannot be used to detect financial statement fraud. In addition, data [1] also shows that ages ranging from <26 years to >60 years, overall can cause fraud, although with different percentages. This indirectly illustrates that the age factor cannot predict the emergence of fraud, including fraud in financial statements.

The results of this study are in line with the results of research conducted by Schrand and Zechman (2012) that executive age cannot be used as a factor that can indicate fraudulent financial statements. Similarly, the results of research conducted by Feng et al. (2011) also show that the age of executives including chief financial officers (CFO) is very diverse, so there is no significant difference among CFOs involved in financial statement fraud. However, the results of this study are not in line with the results of several other studies which state that CEO age is a factor that can trigger financial statement fraud (Zahra et al., 2007; Troy et al., 2011; Huang et al., 2012).

### **The Effect of CEO Gender on Financial Statement Fraud**

The results of this study indicate that CEO gender has a positive effect on financial statement fraud. Based on the results of the regression test, the significance value is 0.034 and the regression coefficient value is 2.691. So it can be concluded that the CEO gender variable partially has a positive influence on indications of financial statement fraud. The odd ratio value of 14.740 indicates that the chance of being indicated to commit financial statement fraud can increase by 1.374% when the CEO position is held by a woman.

Humans have been separated by biological differences based on their socio-cultural nature (Stoller, 1968). The Upper Echelon Theory states that the characteristics of an executive have an impact on creating value and strategy within the company. These characteristics are also related to the determination of an executive's individual decision on the company's financial reporting based on several alternatives (Hambrick and Mason, 1984). Brennan and McCafferty (1997) consider that female CEOs are easier to understand client needs and allow them not to manipulate financial

**Table 4. Summary of Hypothesis Test Results**

Variable	B	Sig.	Conclusion (sig =5%)
H <sub>1</sub> The Effect of Age on Fraud CEO age has no effect on indications of financial statement fraud	0.003	0.906	Rejected
H <sub>2</sub> The Effect of Gender on Fraud CEO gender has an effect on indications of financial statement fraud	2.691	0.034	Accepted
H <sub>3</sub> The Effect of Education Background on Fraud Educational background has no effect on indications of financial statement fraud	-0.086	0.817	Rejected
H <sub>4</sub> The Effect of Tenure on Fraud Length of service or tenure has an effect on financial statement fraud	-0.102	0.011	Accepted
H <sub>5</sub> The Effect of Work Experience on Fraud Work experience has no effect on indications of financial statement fraud	-0.027	0.672	Rejected
H <sub>6</sub> The Effect of Nationality on Fraud Nationality or Citizenship has an effect on indications of financial statement fraud	-2.225	0.007	Accepted

Source : Processed Data, 2021

statements, so that decisions made by female CEOs are considered more ethical than those made by male CEOs. However, based on the data analyzed in this study, women were indicated to have committed financial statement fraud 4 times in 5 study periods, while men were indicated to have committed financial statement fraud a maximum of 3 times in 5 study periods. This is one of the reasons why female CEOs have a positive effect on financial statement fraud, which means that companies led by female CEOs provide the possibility of an increase in financial statement fraud.

Historically, white-collar crime has been associated with men. However, over time, the current gender gap has narrowed and this can create opportunities for women to commit fraud. Women do not always have better morals than men. Differences in committing fraud are based more on differences in opportunities that can be used as access to commit fraud, especially in positions as top executives of an organization (Dodge, 2009). The results of research conducted by Bonny et al. (2009) also show that the gender difference between the perpetrators of fraud is greater in the financial sector, where 73% of the perpetrators are women, while 27% are men. Female executives are more likely to be involved in fraudulent financial statements and misappropriation of assets, compared to corruption (Hiliard and Neidermeyer, 2018).

#### **The Effect of Educational Background on Financial Statement Fraud**

The results of this study indicate that the educational background of the CEO has no effect on financial statement fraud. Based on the results of the regression test, the significance value is 0.817. So it can be concluded that the educational background variable partially has no effect on financial statement fraud.

Based on the Upper Echelon Theory, decision making in an organization can be influenced by the educational factor of the individual CEO (Hambrick and Mason,

1984). In addition, skills and learning in business education are considered to be able to direct someone to choose a good strategy with maximum results, so that he can indirectly avoid potentially harmful actions (Barker and Mueller, 2002). However, the results of hypothesis testing in this study indicate that the CEO's educational background has no effect on indications of financial statement fraud. According to this research data, from 104 CEOs with business education background, 37 of them are indicated to commit financial statement fraud with a percentage of 36%, and of 76 CEOs with no business education background, 27 of them are indicated to commit financial statement fraud with a percentage of 36%. So, there is no significant difference between CEOs with business education and CEOs without business education in their effect on financial statement fraud.

The results of this study are in line with the results of research conducted by Frischanita and Bernawati (2020) and Schrand and Zechman (2012), that executive educational background has no effect on financial statement fraud. This is because the average level of understanding possessed by a person with an undergraduate and postgraduate educational background tends to only be in theory and has less implementation in the field. So it can be assumed that when the individual enters the company, his skills are still inadequate (Frischanita and Bernawati, 2020).

#### **The Effect of Length of Service or Tenure on Financial Statement Fraud**

The results of this study indicate that length of tenure has a negative effect on financial statement fraud. Based on the results of the regression test, the significance value is 0.011 and the regression coefficient value is -0.102. So it can be concluded that the variable of length of tenure partially has a negative effect on indications of financial statement fraud. The odd ratio value is 0.903, which means that every increase in

the length of the CEO's tenure is able to reduce indications of financial statement fraud by 9.7%.

Based on the Upper Echelon Theory, a company leader who has varied knowledge based on longer experience in occupying a position is considered more capable in dealing with certain situations, including in making decisions to take action (Hambrick and Mason, 1984). The same opinion was also expressed by Cheng and Leung (2012), that an entity that has a leader with a longer tenure and a good reputation will have an impact on the entity's higher earnings quality results. In addition, the long tenure reflects that the executive has experience in handling various conditions, including strategic risks. Thus, uncertainty can be minimized by using an understanding of the risk choices that have been taken by individual executives based on previous results (Simsek, 2007). The results of this study are also in line with the results of research conducted by Cai and Sevilir (2012), that the length of the CEO's tenure increases knowledge and experience which will later provide a lot of important information related to the company. Empirical data from ACFE (2020) also shows that someone with tenure from 1 year to 5 years is the most contributor to cases of fraud, or 46%.

#### **The Effect of Work Experience on Financial Statement Fraud**

The results of this study indicate that work experience has no effect on financial statement fraud. Based on the results of the regression test, the significance value is 0.672. So it can be concluded that the work experience variable partially has no effect on indications of financial statement fraud.

In terms of decision making, there is a difference between a CEO with little experience and a CEO with a lot of experience. This difference can have an impact on the strategic choices made (Hitt and Tyler, 1991; Fredrickson, 1985). Based on the perspective of Upper Echelon Theory, CEO's work experience cannot be interpreted as a factor that can minimize

the occurrence of financial statement fraud. Based on the data in this study, CEOs with little experience are CEOs who have held at least 2 functional/executive positions, while CEOs with a lot of experience are CEOs who have held at most 21 functional/executive positions. Both CEOs with little work experience and CEOs with a lot of work experience are indicated to commit financial statement fraud. The absence of this significant difference is one of the reasons why the CEO's work experience has no effect on fraudulent financial statements.

The results of this study are in line with the results of research conducted by Frischanita and Bernawati (2020), that executive work experience cannot affect the emergence of financial statement fraud. This is because if the company in question is included in a family company, monitoring activities are always actively carried out on executives and other officials so that the CEO will not commit fraud (Frischanita and Bernawati, 2020). Based on the observational data of this study, the CEO of PT DarmaHenwa, Tbk has the most work experience. The company is a family company. So, this can be one of the causes of the absence of a significant relationship between the functional experience of the CEO and indications of fraudulent financial statements.

#### **The Effect of Nationality on Financial Statement Fraud**

The results of this study indicate that CEO citizenship has a negative effect on financial statement fraud. Based on the results of the regression test, the significance value is 0.007 and the regression coefficient value is -2.225. So the nationality variable partially has a negative effect on indications of financial statement fraud. The odd ratio value is 0.108, which means that if the nationality of the CEO is not Indonesian (foreign), it can reduce indications of financial statement fraud by 89.2%.

Based on the perspective of Upper Echelon Theory, the characteristics of the CEO can have an influence on decision

making on several alternative choices, including those related to the company's financial statements (Hambrick and Mason, 1984). Different nationality can give different meanings to business culture (Jonsson and Tarukoski, 2017). According to Bouaziz et al. (2020), CEO with foreign nationality will find it more difficult to run a business when the company run by the CEO is different from his home country. However, in reality, if the company has a foreign board of directors, it can provide a distinct advantage for the company because the individual has wider industry experience and is able to work more professionally, including the tendency not to commit financial statement fraud (Oxelheim and Randoy, 2003). The results of this study are in line with the results of research conducted by Bouaziz et al. (2020) that CEOs who have involvement in increasing the practice of manipulation of financial statements come from within the country. On the other hand, foreign CEOs are able to reduce fraudulent financial statements.

## CONCLUSION

Based on the results of the analysis in this study, it can be concluded that the characteristics of the CEO consisting of gender, length of service or tenure, and nationality can be used to detect fraud in financial statements. Along with the times and increasing gender equality, women are even considered more arrogant than men in committing fraudulent financial statements. On the other hand, foreign CEOs can reduce financial statement fraud. However, other CEO characteristics, which consist of CEO's age, educational background, and work experience, cannot be used to detect fraudulent financial statements.

This study has limitations: (1) CEO characteristics only consist of 6 aspects: age, gender, educational background, length of service or tenure, work experience, and nationality. There may be other aspects that can be used in detecting fraudulent

financial statements. (2) The research data is obtained from the annual report or the company's financial statements, where each company must have different policies in its preparation, thus allowing for different understandings among researchers and biased data.

The results of this study are expected to be able to contribute to the development of accounting science, especially auditing and forensic accounting regarding fraudulent financial statements. Future research is expected to be able to present higher quality results with several recommendations: (1) Further research can examine the characteristics of CEOs other than those used in this study which are suspected of being able to detect financial statement fraud significantly; (2) Further research can use research objects from other sectors so as to be able to generalize the research results. In addition, it is suggested that the company's management consider the individual characteristics of the CEO, which consist of gender, tenure, and nationality of the CEO, in an effort to reduce unethical actions in the form of fraudulent financial statements. Investors are also expected to consider these three factors when they want to allocate capital to companies.

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