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# The Diversity of Board of Directors Characteristics and Firm Value: Analysis From Indonesian Public Companies

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**Abstract.** The research contributes to provide insights on how characteristics of board of directors can affect firm value by analyzing board characteristics such as gender diversity, age and educational background to firm value of public firms in Indonesia. Generational diversity is being considered as an independent variable as it has never been assessed in Indonesia. Resource dependence theory and upper echelons theory are used in this research among other available concepts to explain the impact of board characteristics during the decision-making process and its access to resources. ROA is used in this research as the profitability approach indicator of firm value, while Tobin's Q is used as the market approach indicator of firm value. Samples used in this research amounts to 1.151 samples from 411 companies. The results show that educational background and board age significantly affects firm value positively when measured by profitability approach indicator. While gender diversity and generational diversity both have no significant effect on firm value when measured by either profitability approach indicator or market approach indicator due to homogeneity. The results indicate that the appointment of directors with older age while possessing higher education can increase a company's firm value which is measured by profitability indicators.

Keywords: Board Age, Educational Background, Firm Value, Gender Diversity, Generational Diversity

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## Introduction

In the early 21st century, the world was shocked by fraud cases conducted by massive corporations. These four cases were conducted by Enron, Parmalat, Tyco, and WorldCom. The impact of these cases is significant enough to trigger the establishment of the Sarbanes Oxley Act in 2002.

In Indonesia, the importance of corporate governance has been realized since 1998. In that particular year, Komite Nasional Kebijakan Governance (KNKG) was formed, an institution that formulates a framework for proper implementation of good corporate governance. The International Finance Corporation (IFC) sees that the economic downturn due to 2008 Global Financial Crisis can be prevented if industries in Indonesia implement proper corporate governance policies. Therefore, IFC then started its operations in Indonesia to help subdue the issue. In 2015, Otoritas Jasa Keuangan (OJK) issued a regulation related to corporate governance through POJK No. 21 / POJK.04 / 2015 regarding the Guidelines on Implementing Corporate Governance for Public Company as a manifestation of efforts to improve the quality of corporate governance mechanisms.

A company is said to implement proper corporate governance if there is a presence of a committee that oversees the performance of the directors and managers of the company and that the company is transparent in their management. The crucial role of the board of directors' in leading a company attracts the attention of several researchers to conduct research whether characteristics of the board of directors can affect the value of the company. Previous studies have successfully examined several characteristics of the board of directors that affect the firm's value, namely gender diversity, age, and education.

Previous research related to gender diversity shows that diversity in the board of directors can improve the quality of corporate governance mechanisms (Vahamaa, 2017) and increase corporate value (Ullah, Fang, and Jebran, 2019) by providing a new perspective, improving board performance, aiding in risk mitigation and improve company performance (PricewaterhouseCoopers, 2019). Research conducted by IFC (2019) discovered that countries in Southeast Asia have begun promoting gender diversity on the board of directors namely Singapore, Malaysia, and the Philippines.

In addition to gender diversity, education is one other aspect of the board characteristics that is considered important. Education plays a predominant role as a higher educational background on the board can help foster innovation and better decision making (Kagzi and Guha, 2018). The age-related studies of directors found that the age of directors reflects the level of maturity of directors when leading the company and, at the same time, reflects the experience of the director (Hafsi and Turgut, 2012).

However, research conducted on those three characteristics of the board of directors are not always consistent. For example, several studies have found that gender diversity (Kusuma, 2018; Sajjad & Rashid, 2015; Al-Mamun, Yasser, Entebang, and Nathan, 2013) and the age of the board of directors (Kusumastuti and Supatmi, (2007); Kartikaningdyah and Putri (2017)) does not affect the company's financial performance while research related to educational background found that there is a negative relationship between the educational background of the board of directors to the value of the company (Saputra, 2019)

Due to the inconclusive results, this study is considered appealing to be conducted in Indonesia by analyzing all industries. This study differs from previous studies because it utilizes generational diversity as an age proxy, which has not been previously studied in Indonesia. It is hoped that this research will be able to explain the influence of the characteristics of the board of directors in terms of gender diversity, educational background, and age on company value.

## Literature Review

### *Upper Echelons Theory*

The upper echelons theory that was first investigated by Donald C. Hambrick and Phyllis A. Mason in 1984 explained that upper management's characteristics could influence decision-making. This theory explains some aspects that can influence upper management in decision-making. Also, each individual's ability is different, so that making a decision is increasingly complex when faced with external conditions. So that in making these decisions, not all external conditions can be considered. Therefore, boundaries will be formed, which will limit the scope in forming alternatives and its consequences. This theory has examined several aspects of the many characteristics that can be observed from top-level management age, functional track, other career experiences, education, socioeconomic roots, financial position, and group characteristics.

*Resource Dependence Theory*

Resource Dependence Theory is a theory by Jeffrey Pfeffer and Gerald Salancik that elaborates how external factors can affect an organization's sustainability. This theory views the organization as an entity connected to other organizations through social relations or dependency due to the fact that the organization requires resources. This theory explains the three main pillars, namely; the importance of environmental factors to understand the organization's decisions, the importance of the board, and the reasons for mergers and acquisitions.

Environmental factors are considered crucial in this theory as Pfeffer and Salancik (1978) argues that organizations make decisions based on external environmental conditions. The decision was formed so that the organization could survive in changing market conditions. Thus, the organization is considered to be continuously influenced by the external environment, primarily as it relies on the external environment to obtain necessary resources.

This theory views that management plays an essential role in the decision-making process and securing the organization's resources. In their research, Pfeffer and Salancik (1978), revealed that the board was able to provide several benefits to the organization, for instance the transfer of information in the form of advice or consultation and also providing access to obtain resources. Previous research on resource dependence theory (Mintzberg, 1983; Pearce & Zahra, 1992; Pfeffer, 1972, 1973) in Goodstein, Gautam, and Boeker (1994) suggested that increasing the size of the board structure and the diversity of board characteristics can help organizations gain a lot more of resources.

*Firm Value*

Firm value is a measurement that reflects the value of a company in the market. A firm's value is different from market capitalization because market capitalization only measures the value of a company's equity by multiplying the number of shares outstanding and the price of the stock at a particular moment. The research of Dang, Vu, Ngo, and Hoang (2019) explained that there are two approaches to measuring company value – asset-based perspective and performance-based perspective.

Selvam, Gayathri, Vasanth, Lingaraja, and Marxiaoli (2016) explained that measurement of firm value based on performance-based perspective is divided into; profitability, market performance, company growth, employee satisfaction, customer satisfaction, environmental performance, and social performance. Selvam et al., (2016) explained that one of the measurements that could be considered to measure the company's performance from the profitability approach is the Return on Assets ratio. However, if researchers want to measure company performance using a market value approach, one proxy that can be used is the Tobin's Q ratio (Selvam et al., 2016). Fujianti (2018) revealed that the Return on Assets ratio illustrates the company's achievements after implementing policies and decision making carried out by the board of directors, and according to Kilic and Kuzey (2016).

*Board of Directors Characteristics*

According to research conducted by Erhardt, Werbel, and Shrader (2003), the characteristics of the board of directors can be divided into two aspects; cognitive and demographic. Where cognitive aspects are composed of knowledge, educational background, values, and the individual's point of view. While the demographic aspect consists of gender, age, ethnicity, and race. In this study, the board of directors' characteristics will be more focused in the form of gender, educational background, and age.

## Hypothesis Development

*Gender Diversity and Firm Value*

Resource dependence theory by Pfeffer and Salancik (1978) argues that organizations depend on the external environment to obtain resources and mentioned that board members play an important role in providing resources for organizations. This theory also revealed the importance of diversity and the board's size in providing resources for the organization. In addition to increasing access to resources needed by the organization, Vahaama (2017) found that diversity can also improve corporate governance mechanisms. Alazzani (2016) argues that women are more sensitive to the social environment, so female directors tend to carry out corporate social responsibility, which then increases the value of the company. Previous research revealed that gender diversity within the board helps to provide a new perspective on the board (PwC, 2019), promotes creativity and innovation within the company (Nguyen and Faff, 2006), and helps the board to be more effective in problem solving (Smith, Smith, and Verner, 2006). Based on the theory and arguments from previous research, the hypotheses for the effect of gender diversity on firm value are as follows:

H1: Gender diversity on the board of directors has a positive effect on firm value.

*Educational Background and Firm Value*

Upper echelons theory proposed by Hambrick and Mason (1984) considers the importance of educational background, which is a characteristic of the board from cognitive aspect. The theory explains that one's educational background can illustrate one's abilities in the occupied field. The theory also explains that the higher the educational background, a director is considered to be more open minded, having better ability to process information, a higher level of tolerance, and the ability to evaluate alternatives. This theory is supported by previous research in which Cheng, Chan, and Leung (2010) proved that the presence of an educated CEO (who has a bachelor's degree or higher) will increase the company's performance which is reflected in an increase in ROA, EPS, and Market to Book Value. Meanwhile, research conducted in Ghana by Boadi and Osarfo (2019) concluded that directors with undergraduate education (equivalent to S1) positively affect a company's performance if measured by profitability. Research in Indonesia conducted by Dewi and Dewi (2016) found that variations in educational backgrounds between the board of directors and commissioners had a positive and significant effect on Islamic banking companies in Indonesia. From the presentation of concepts and previous research, the hypotheses that can be formed to analyze the influence of educational background on firm value are as follows:

H2: Gender diversity on the board of directors has a positive effect on firm value.

*Age and Firm Value*

From the resource dependence theory, it is found that diversity is one aspect that can contribute in increasing a company's access to resources. One aspect that can then aid in providing resources is experience. According to research by Darmadi (2011), the experience can be reflected through the age of the member of the board of directors. According to Cheng et al. (2010), directors with older age will focus more on returns, increasing ROA and EPS. Sitthipongpanich and Polsiri (2015) in Fujianti (2018) revealed that a more experienced board of directors have better understanding of the company thus the decision-making process will be more effective.

Previous studies also examined the influence of age, measured by generational diversity. According to the research by Sullivan, Carraher and Mainiero (2009) in Munoz-Torres et al (2015), it is revealed that there are four generations namely the Greatest Generation (1922 - 1945), Baby Boomers (1946 - 1964), Generation X (1965 - 1983), and Generation Y (1984 - 2002) and each has different characteristics. Individuals from Greatest Generation are described as disciplined, strict to traditional values, and is very loyal. Baby Boomers are considered hard workers because this generation believes that success will be achieved through hard work. Generation X are able to learn quickly and respect diversity. On the other hand, Generation Y is considered different from the previous generation. Based on Stojavona, Tomsik, Blaskova, and Tesarova (2015), individuals from Generation Y are more optimistic than the previous generation, and have the ability to work well in a team.

Previous studies considered different ranges in grouping directors as old or young. Kusumastuti et al. (2007) examined the age aspect using proportions with the age category of young directors that are directors under the age of 40 years. Whereas Darmadi (2011), used the age under 50s to classify the board of directors was as a young individual. This research will use the age of the board of directors over the age of 50 considering the retirement age in Indonesia is at the age of 55 years and a publication by the United Nations Development Program (UNDP) in 2018 revealed that the life expectancy of Indonesian citizens is at 64 years. From the arguments and previous research, this research will develop two hypotheses related to the board of directors' age:

H3A: The age of the board of directors has a positive effect on the value of the company.

H3B: The diversity of the generation of directors in the company has a positive effect on the value of the company.

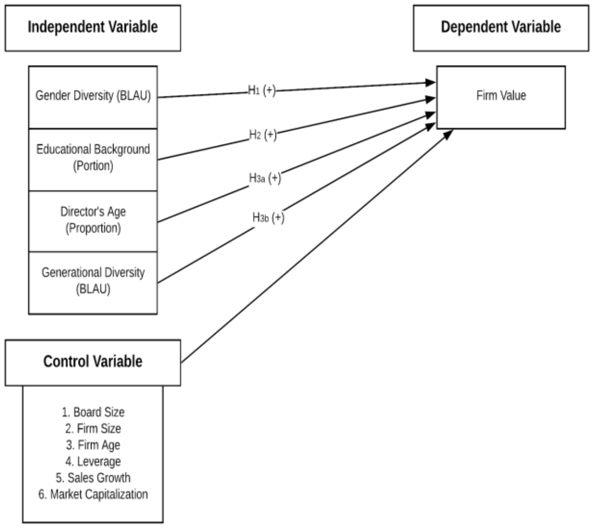


Fig. 1 Research Framework

## Research Methodology

In this study, data are collected from the S&P Capital IQ database and company's annual reports. Only companies listed on the Indonesia Stock Exchange from 2016 to 2018 will be used in this research. Companies that are delisted permanently will not be considered. From these criteria, the samples that were successfully obtained at the beginning were 490 companies. The number of companies are then adjusted to match the established sample criteria. The total sample of companies used in this study was 411 companies with a total sample of 1,151 samples during the observation period from 2016 to 2018.

The equations in this research will be divided into 2, in which Y1 will be used as the main analysis while Y2 will be used in sensitivity analysis. The equations are as follows:

**Y1 = β0 + β1 BLAUGEN + β2 DD_EDU + β3 DD_AGE + β4 DD_SIZE+ β5 FSIZE + β6 FAGE + β7 DAR + β8 GROWTH + β9 MC + ε**

**Y2 = β0 + β1 BLAUGEN + β2 DD_EDU + β3 BLAUGRT + β4 DD_SIZE+ β5 FSIZE + β6 FAGE + β7 DAR + β8 GROWTH + β9 MC + ε**

Note:

| | | |
|---|---|---|
| ROA | : | Firm Value |
| BLAUGEN | : | Gender Diversity (Blau's Index) |
| DD_EDU | : | The proportion of board of directors with minimal education background of |
| DD_AGE | : | The proportion of board of directors who are over 50 years of age |
| DD_SIZE | : | The amount of Board of Directors |
| BLAUGRT | : | Generational Diversity (Blau's Index) |
| FSIZE | : | Size of Firm measured by square root of total assets |
| FAGE | : | Age of Firm since it was founded |
| DAR | : | Ratio of total debt to total asset |
| GROWTH | : | Annual Sales Growth |
| MC | : | Square root of market capitalization |

## Results

*Descriptive Statistics*

Table 1 illustrates the descriptive statistics in this study. For independent variables, descriptive statistics indicate that the BLAUGEN variable that is gender diversity measured by Blau's index, has an average of 0.178. Gender diversity index has a maximum of 0.5, which shows the composition of directors with balanced gender diversity (Heterogeneous) and a minimum number of 0, indicating that gender diversity is not balanced (Homogeneous). From these averages, it is concluded that gender diversity in the board of directors are not yet achieved.

The educational background of directors (DD_EDU) received an average of 0.9209, which indicates that the majority of the board of directors in companies in Indonesia are composed of directors with bachelor degrees. From the descriptive statistics, it is known that the DD_AGE variable has an average of 0.556, which indicates that the majority of the directors' positions in Indonesian companies are held by directors who are over 50 years old. However, when examining the age diversity from the aspect of generation, the average of the BLAUGRT variable stands at 0.3682, which indicates that the diversity of the generation aspects of companies in Indonesia are not quite diverse.

Table 1
Descriptive Statistics

| Variables | Mean | Std. Dev. | Max | Min |
|---|---|---|---|---|
| **ROA** | 3.4776 | 6.0449 | 42.58 | -34.57 |
| **TOBINSQ** | 1.5649 | 2.2261 | 35.4 | 0.2 |
| **BLAUGEN** | 0.1787 | 0.2001 | 0.5 | 0 |
| **DD_EDU** | 0.9209 | 0.1517 | 1 | 0 |
| **DD_AGE** | 0.5561 | 0.2811 | 1 | 0 |
| **BLAUGRT** | 0.3682 | 0.1798 | 0.7222 | 0 |
| **DD_SIZE** | 4.8679 | 1.9763 | 12 | 2 |
| **FSIZE** | 3063.7423 | 3872.1047 | 36012.5 | 132.413 |
| **FAGE** | 35.6655 | 20.5341 | 201 | 2 |
| **DAR** | 0.2720 | 0.1983 | 0.862 | 0 |
| **GROWTH** | 22.7208 | 260.5900 | 6302.04 | -1983.41 |
| **MC** | 2372.3373 | 3114.2026 | 25318.6 | 131.135 |

Source: Processed Data, (2020)

The results of the regression analysis with the fixed effect model approach and the of Driscoll-Kraay Standard Errors shown in Table 2 concludes that the BLAUGEN and BLAUGRT variables do not significantly affect the firm value, while the DD_EDU and DD_AGE variables have a positive effect on firm value. Data from table 2 shows that this model is suitable for interpreting the effect of board characteristics on firm value because Prob > F is below the 0.05 significance level. Table 2 shows that the R-Squared obtained in the study was 0.1441 (14.41%) for model 1 and 0.1422 (14.22%) for model 2.

Table 2
Regression Results

| ***Driscoll-Kraay Standard Error*** | | |
|---|---|---|
| | **Model 1** | **Model 2** |
| **Number of Observation** | 1.511 | 1.511 |
| **Prob > F** | 0.0357 | 0.0412 |
| **R-Squared** | 0.1370 | 0.1341 |
| **Variable** | **Coefficient (P>\|t\|)** | **Coefficient (P>\|t\|)** |
| | **ROA** | |
| **BLAUGEN** | 0.7686353 (0.142) | 0.6944598 (0.179) |
| **DD_EDU** | 1.202358 (0.072)* | 0.9436244 (0.113) |
| **DD_AGE** | 1.063297 (0.008)*** | |
| **BLAUGRT** | | 0.2444021 (0.204) |
| **DD_SIZE** | -0.0072949 (0.020)** | -0.0099953 (0.008)*** |
| **FSIZE** | 0.0003215 (0.010)*** | 0.0003181 (0.009)*** |
| **FAGE** | -0.1915352 (0.034)** | -0.1703435 (0.035)** |
| **DAR** | -10.08452(0.020)** | -10.09139 (0.021)** |
| **GROWTH** | 0.0103932 (0.035)** | 0.0104782 (0.032)** |
| **MC** | 0.0006357 (0.010)*** | 0.0006234 (0.010)*** |
| **cons** | 8.654194 (0.043)** | 8.787612 (0.027)** |

***Note:*** * indicate significance at P|t|< 0.10 (10%); ** indicate significance at P|t| < 0.05 (5%); *** indicate significance at P |t| < 0.01 (1%).
Number of Observation: 1151 Observation

Source: Processed Data, (2020)

### *Gender Diversity*

The results from hypothesis test in table 2 show that gender diversity does not significantly affect firm value, rejecting the first hypothesis formulated. The results obtained are not in line with the explanation of the Resource Dependence Theory. Resource Dependence Theory explains that diversity within a company can affect a company's access to resources needed to operate. The results obtained are not aligned to upper echelons theory, which explains that group characteristics can improve the decision-making process due to heterogeneity that occurs in the composition of directors in Indonesia. Thus, based on research conducted in Indonesia, the results of the study are not in accordance with the explanation of resource dependence theory and upper echelons theory.

Although results differ from the theory used, this study is in line with the results found by Al-Mamun, Yasser, Entebang, and Nathan, (2013) and Kusuma (2018). Al-Mamun *et al*., (2013) argues that gender diversity does not have a significant effect on firm value because women are considered to possess insufficient experience and there is a lack of ability to contribute in increasing company profitability compared to their male compatriots. Besides, the results obtained are also supported by Kusuma (2018), who concludes that gender diversity does not significantly influence firm value due to low level of gender diversity in Indonesia. These findings of this study also supports the results, where gender diversity does not significantly affect firm value due of male domination of the board of directors. This findings from the data presented in descriptive statistics shows that the average gender diversity index in Indonesia is only 0.17 out of a maximum of 0.5. Table 3 explains that over the past three years, the percentage of women directors ranging from 14.4% to 14.8%, with an average of 14.69% for three years. This is very small compared to the average proportion of men which is 85.31%.

Table 3
Men and Women Percentage on Board of Directors in 2016 - 2018

| Period | Men Percentage | Women Percentage |
|---|---|---|
| **2016** | 85.13% | 14.87% |
| **2017** | 85.24% | 14.76% |
| **2018** | 85.56% | 14.44% |
| **Three years average** | 85.31% | 14.69% |

Source: Processed Data, (2020)

### *Educational Background*

From the results of the hypothesis test in table 2, it is known that the educational background of the board of directors has a positive effect on firm value, where the results obtained accept the second hypothesis of this study. The results obtained are in line with upper echelons theory where the level of education possessed by board of directors can increase the value of the company because the educational background can reflect the ability and knowledge of a board of directors. Upper Echelons Theory considers that the level of education of the board of directors can encourage innovation, provide a new perspective in dealing with a problem, assist in decision making, and contribute to the execution of strategies.

Besides being in line with the theory used, the results of this study are also constant with the findings of Darmadi (2013), Boadi and Osarfo (2019) and Magoutas, Agiomirgianakis, and Papadogonas (2011). Darmadi (2013) discovered that directors with postgraduate education had a positive effect on company value. Meanwhile, Boadi and Osarfo (2019) concluded that directors with undergraduate education had a positive effect on company performance. Then, Magoutas *et al*. (2011) explained that education could positively affect company performance because educated employees have higher productivity. Also, having educated employees can help improve the company's innovation, and also educated employees have the ability to contribute more to the company's profitability.

Although the first model shows significant results (0.072), the significance level is considered low. Therefore, in the second model, results showed that educational background had no significant effect on firm value. The following results are obtained because this research examines the entire industry so that the scope of research is still too broad.

Compared with previous studies, Kartikaningdyah *et al*. (2017) and Saputra (2019) found that educational background had no significant effect on firm value due to differences in the scope used in research to measure the effects of board of directors' educational backgrounds on firm value. This study uses the scope of the board of directors' education based on a bachelor's degree from any field of study the board of directors has. Meanwhile, research by Kartikaningdyah et al. (2017) and Saputra (2019) use the scope of education based on a bachelor's degree held by directors in economics and business. Then, both researches conducted by Kartikaningdyah *et al*. (2017) and Saputra (2019) also did assess all industries in Indonesia. So that both factors are considered to be the reason why the results recorded are inconsistent.

Table 4
Industries Possessing Highest Proportion of Board of Directors with Bachelor's Degree.

| Variable | Industry | Value (3 Years Avg.) | Max. Value |
|---|---|---|---|
| DD_EDU | 1. *Utilities, Energy Equipment and Services, Pharmaceuticals, Biotechnology and Life Sciences, Household and Personal Products, Insurance*<br>2. *Banks*<br>3. *Software and Services* | 1. 1<br>2. 0,989<br>3. 0,988 | 1 |

Source: Processed Data, (2020)

After exploring deeper into the data used in the study, it is known from Table 4 that several industries which has board of directors who completed undergraduate studies comes from the energy, biotechnology, pharmaceutical industries. While ranked second is the banking industry with a proportion of educated directors reaching 98.9% (0.989). Then standing in third position is the software and services industry with a proportion of 98.8% (0.988). This finding is considered reasonable because the industry requires unique expertise, so directors in the firm must also have knowledge in the field.

*Age*

Results in table 2 concluded that the board of directors' age has a positive and significant relationship to firm value. These results are in line with the upper echelons theory, which states that older board of directors will be more careful in making decisions. Similar studies have been carried out by Fujianti (2018) in Indonesia in the property, construction, and real estate industry and obtains constant results with this research. Fujianti (2018) argues that older directors have a significant positive effect on company value due to the fact that these directors possess a lot more of experience and have broader connections. Cheng et al. (2010) argues that older board of directors tend to focus more on increasing returns that could be obtained by the company being managed rather than younger directors. Table 5 depicts the condition in Indonesia, where there are higher percentage of directors aged above 50 years old than younger directors and that its three-year average is at 55,6%.

Table 5
Proportion of Board of Directors Who are Over 50 Years of Age

| Period | Average of Board of Directors Who are Over 50 Years of Age |
|---|---|
| **2016** | 53.67 % |
| **2017** | 56.60 % |
| **2018** | 56.51 % |
| **Three Years Average** | 55.59% |

Source: Processed Data, (2020)

*Generational Diversity*

Generational diversity variable is tested in the second model, where the variable acts as another indicator of age diversity. Therefore, the difference between the first and second models only lies in the measurement of age diversity. The results from this test find no significant effect on the generational diversity with the firm value. Based on these results, then hypothesis 3b is rejected. Based on the upper echelons theory, diversity within the board can aid in solving new issues. According to the resource dependence theory, diversity can contribute to the access of resources for the company. However, due to lack of generational diversity that occurs in Indonesian companies, the impact of diversity cannot be proven in this study, and the results obtained in this study are not aligned with the explanation of the two theories. Previous studies that analyzed generational diversity carried out in Europe found a significant positive relationship between generational diversity and firm value which is measured using EBITA (Munoz-Torres, Ferrero and Fernández-Izquierdo, 2015). The study found that generational diversity could enhance the directors' point of view and their cognitive abilities. The difference in results can be seen from the generational diversity index in Europe, reaching 0.5741 while similar index in Indonesia are only at 0.3682.

The results of this research differ from research conducted by Wallin and Petersson (2017) in Sweden who argued that a diverse board of directors had a significant negative relationship to firm value. According to Wallin and Petersson (2017), a homogeneous board of directors can increase interaction between boards of directors, increasing the level of cooperation within the board. The following in table 6 is the composition in the board of directors for three years in Indonesia based on their group of generations. From the table, it can be seen that the board of directors are still dominated by individuals from Baby Boomers and Generation X. However, throughout the period of analysis, it can be claimed that regeneration occurs in the board of directors of public companies in Indonesia due to the increase of percentage in both Generation X and Generation Y.

Table 6
Composition of Board of Directors Generation in Indonesia from 2016 - 2018

| Period | Greatest Generation | Baby Boomers | Gen X | Gen Y |
|---|---|---|---|---|
| **2016** | 1.90% | 47.48% | 49.17% | 1.45% |
| **2017** | 1.78% | 45.14% | 51.07% | 2.01% |
| **2018** | 1.71% | 40.50% | 54.94% | 2.85% |
| **Three Years Average** | **1.80%** | **44.35%** | **51.74%** | **2.11%** |

Source: Processed Data, (2020)

*Sensitivity Analysis*

The results from sensitivity analysis depicted on table 7 shows that educational background has no significant effect on firm value. This study however, managed to obtain the same results as previous research by Fujianti (2018), who analyzed the property industry in Indonesia, although the proxy to analyze firm value used was Price-Book Value. Fujianti (2018) argued that education is not a guarantee that the directors can have better performance because charisma, personality, and efforts shown by a director are considered more important than the educational background to improve company performance.

Table 7
Regression Results for Model 1a dan Model 2a

| ***Sensitivity Analysis - Robust*** | | |
|---|---|---|
| | **Model 1a** | **Model 2a** |
| **Number of Observation** | 1.511 | 1.511 |
| **Number of Groups** | 411 | 411 |
| **F (9 , 410)** | 4.87 | 4.97 |
| **Prob > F** | 0.0000 | 0.0000 |
| **Overall R-Squared** | 0.2540 | 0.2369 |
| **Variable** | **Coefficient (P>\|t\|)** | **Coefficient (P>\|t\|)** |
| | **TOBINS Q** | |
| BLAUGEN | 0.2610958 (0.211) | 0.2568425 (0.219) |
| DD_EDU | -0.2439046 (0.188) | -0.224103 (0.221) |
| DD_AGE | -0.0774629 (0.345) | |
| BLAUGRT | | 0.0729336 (0.658) |
| DD_SIZE | 0.00188441 (0.100)* | 0.0019312 (0.099)* |
| FSIZE | -0.0002397 (0.000)*** | -0.0002398 (0.000)*** |
| FAGE | -0.0195921 (0.349) | -0.0215523 (0.288) |
| DAR | 0.75663 (0.140) | 0.762424 (0.138) |
| GROWTH | -0.0006347 (0.321) | -0.0006298 (0.329) |

| ***Sensitivity Analysis - Robust*** | | |
|---|---|---|
| | **Model 1a** | **Model 2a** |
| MC | 0.0003617 (0.000)*** | 0.0003637 (0.000)*** |
| cons | 2.012951 (0.023)** | 1.986184 (0.002)*** |

***Note:*** * indicate significance at P|t|< 0.10 (10%); ** indicate significance at P|t| < 0.05 (5%); *** indicate significance at P |t| < 0.01 (1%).
Number of Observation: 1151 Observation

Source: Processed Data, (2020)

While analyzing board age diversity, it is shown that the effect on firm value as measured by market perspective indicators is not significant. This is in line with research conducted by Kartikaningdyah and Putri (2017) who examined directors under 50. Kartikaningdyah and Putri (2017) stated that older directors are considered more susceptible health problems which affect the board's contribution to the firm value. However, this study found that older board of directors also does not significantly affect the value of the firm. This could indicate that the age of the older or younger directors are unable to significantly influence the firm's value.

## Conclusion

Based on the results of the study, it can be concluded that gender diversity does not significantly influence firm value. This study is consistent with research conducted by Al-Mamun *et al*., (2013) and Kusuma (2018) which revealed that gender diversity had no significant effect on firm value because of the low representation of women in the board of directors of a company and women who do not have adequate experience and sufficient ability to contribute to company's performance rather than male compatriots.

The results of the analysis show that education can increase the firm's value with a profitability approach. Magoutas et al. (2011) argue that educated employees have higher level of productivity and can improve a company's innovation. The results obtained in this study are also in accordance with Boadi and Osarfo (2019) and Darmadi (2013). The results obtained in this study are different from the results of some studies due to differences in the scope of the educational variables used and the samples being analyzed.

The board age variable can increase the value of the company when analyzed using profitability approach perspective. The results of this study are in line with the results of the Fujianti (2018). Fujianti argued that older directors can improve company performance because older directors have broader connections and are able to make decisions more effectively than younger directors. Meanwhile, Cheng et al. (2010) explained that older directors can contribute to a company's performance because directors over 50 years old are more focused on maintaining returns. Meanwhile, Sajjad and Rashid (2015) explained that young directors tend to have less experience than older directors. On the other hand, generational diversity in the board of directors in Indonesia does not significantly affect a firm's value through analysis from profitability approach and a market approach. This is reasonable because it can be seen from the data that most of the directors in Indonesia are from Baby Boomers and Generation X.

Nevertheless, the results shown from the sensitivity analysis concluded that gender diversity have insignificant results towards firm value when analyzed using Tobin's Q. These results are consistent with Kusuma's (2018) research, which argued that there is no significant effect between gender diversity and firm value due to low the level of women serving as directors. The second variable, namely educational background, does not significantly influence firm value if firm value is measured by Tobin's Q. The sensitivity test results are in line with the study of Fujianti (2018). Fujianti (2018) argued that the qualitative characteristics in a director have better ability to improve company performance, such as charisma, the effort shown, and the directors' personalities.

Meanwhile from the sensitivity analysis, it can be concluded that the directors who are aged older than 50 years old does not significantly influence the firm's value. This study complements the previous research conducted by Kartikaningdyah and Putri (2017) who examined directors under the age of 50 years old. Consistent results from previous studies can indicate that age diversity does not significantly influence a firm's value.

### *Limitations*

This study consists of several limitations. First this study can be outdated due to the advancements made on regulatory policies or code of corporate governance in Indonesia. Second, based on the knowledge of the authors, this study is the first in Indonesia to examine the effects of generational diversity on firm value. However, the results show that generational diversity does not significantly affect firm value due to low generational diversity in Indonesia based on calculations made using Blau's Index. Third, companies with incomplete data are not considered in the study. Finally, the board of director's experience is measured by the director's age, which may not be a relevant proxy to measure experience.

*Recommendations*

Future studies can also utilize Blau's Index to analyze the effects of educational diversity on firm value. Our study recommends that future studies should analyze the effects of board characteristics on firm value after POJK Nomor 21/POJK.04/2015 regarding Corporate Governance Implementation in Public Companies is officially implemented. Furthermore, researchers can also examine the effects of generational diversity to a family owned firm's value as there is a tendency for family owned firms to appoint their next of kin as a board member to regenerate. Finally, future studies should expand the period of analysis in order to provide better elaboration on the effect of board characteristics towards firm value.

*Implications*

The authors hope that the following research are able to benefit for:

1. Management and Shareholders
   The implication of this research to a firm's management and shareholders is that this research can inform the management and shareholders of the importance of board characteristics, namely board of director's education and age. Considering those characteristics in the appointment of board of directors may be crucial as the result of this research shows that the board of director's education and age positively affects firm value.
2. Academic Officials and Researchers
   Upcoming research can also expand the analysis to not only in Indonesia but also ASEAN countries with similar characteristics to assess the effect of board characteristics on firm performance. This research can be reference for researchers or academic officials due to the fact that when this research is completed, it is the first in Indonesia to assess the impact of generational diversity to firm value.

## References

Al-Mamun, A., Yasser, Q. R., Entebang, H., dan Nathan, T. M (2013). Gender Diversity and Economic Performance of Firms: Evidences from Emerging Market. Journal of Economic Development, Management, IT, Finance and Marketing. 5(2). 100 – 110. Retreived from https://www.researchgate.net/publication/259913739_Gender_Diversity_and_Economic_Performance_of_Firms_Evidences_from_Emerging_Market

Alazzani, A., Hassanein, A., dan Aljanadi, Y. (2016). Impact of gender diversity on social and environmental performance: evidence from Malaysia. Corporate Governance: The international Journal of Business in Society. 17(2), 266 - 283. https://doi.org/10.1108/CG-12-2015-0161

Andersson, P., dan Wallgren, F. (2018). Board Gender Diversity and Firm Financial Performance. (Master Thesis, Jonkoping University, Sweden). Retrieved from https://www.diva-portal.org/smash/get/diva2:1206669/FULLTEXT01.pdf

Boadi, I., Osarfo, D. (2019); Diversity and Return: The Impact of Diversity of Board Members' Education on Performance. Corporate Governance (Bingley). 19(4), 824 - 842. https://doi.org/10.1108/CG-01-2019-0017

Cheng, L.T.W., Chan, R.Y.K., dan Leung, T.Y. (2010). Management demography and corporate performance: Evidence from China. International Business Review. 19(3) 261-275. https://doi.org/10.1016/j.ibusrev.2009.12.007

Dang, H. N., Vu, V. T. T., Ngo, X. T., dan Hoang, H. T. V. (2019). Study the Impact of Growth, Firm Size, Capital Structure, and Profitability on Enterprise Value: Evidence of Enterprises in Vietnam. The Journal of Corporate Accounting & Finance. 30(1). 146-162. https://doi.org/10.1002/jcaf.22371

Darmadi, S. (2013). Board members' education and firm performance: evidence from a developing economy. International Journal of Commerce and Management. 23(2), 113-135. https://doi.org/10.1108/10569211311324911

Darmadi, S (2011). Board Diversity and Firm Performance: the Indonesian Evidence. Corporate Ownership and Control Journal. 8(2-4). 450-466. https://doi.org/10.22495/cocv8i2c4p4

Dewi, L. G. K dan Dewi, A. A. (2016). Pengaruh Diversitas Dewan Komisaris dan Direksi pada Nilai Perusahaan pada Perusahaan Sektor Keuangan yang Terdaftar di Bursa Efek Indonesia Tahun 2009 - 2013. E-Journal Akuntansi Universitas Udayana. 16(1), 812-836. Retreived from https://ojs.unud.ac.id/index.php/Akuntansi/article/view/21673

Erhardt, N., Werbel, J., dan Shrader, C. (2003). Board Director Diversity and Firm Financial Performance. Corporate Governance: An International Review. 11(2). 102-111. https://doi.org/10.1111/1467-8683.00011.

Fujianti, L. (2018). Top Management Characteristics and Company Performance: An Empirical Analysis on Public Companies Listed in the Indonesian Stock Exchange. European Research Studies Journal. 21(2), 62-76. Retreived from https://www.researchgate.net/publication/326318035_Top_management_characteristics_and_company_performance_An_empirical_analysis_on_public_companies_listed_in_the_Indonesian_stock_exchange

Goodstein, J., Gautam, K., dan Boeker, W. (1994). The Effects of Board Size and Diversity on Strategic Change. Strategic Management Journal. 15(1). 241-250. https://www.jstor.org/stable/2486969

Hambrick, D.C. dan Mason, P.A. (1984). Upper Echelons: The Organization as a Reflection of Its Top Managers. The Academy of Management Review. 9(2), 193-206. https://www.jstor.org/stable/258434?seq=1

International Finance Corporation (2014), "The Indonesia Corporate Governance Manual", Jakarta, Indonesia. Retreived from https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+cg/resources/toolkits+and+manuals/understanding+indonesia+corporate+governance+manual+and+roadmap

International Finance Corporation (2019), "Board Gender Diversity in ASEAN", Washington D.C., United States of America. Retreived from https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+cg/resources/guidelines_reviews+and+case+studies/board+gender+diversity+in+asean

Kagzi, M., dan Guha, M. (2018). Does Board Demographic Diversity Influence Firm Performance? Evidence from Indian - Knowledge Intensive Firms. Benchmarking: An International Journal. 25(3). 1028 - 1058. https://doi.org/10.1108/BIJ-07-2017-0203

Kartikaningdyah, E., dan Putri, R. N. (2017). Pengaruh Tax Avoidance dan Board Diversity terhadap Kinerja Perusahaan dalam Perspektif Corporate Governance. Journal of Applied Accounting and Taxation. 2(2), 114-122. Retreived from https://pdfs.semanticscholar.org/be14/25ae8d6f8dff9beb5c0b0af9f7f1839ed591.pdf

Kilic, M., dan Kuzey, C. (2016). The Effect of Board gender Diversity on Firm Performance: Evidence from Turkey. Gender in Management: An International Journal. 31(7), 434-455. https://doi.org/10.1108/GM-10-2015-0088

Kusuma, S. Y. (2018). Pengaruh Diversitas Gender Dewan terhadap Kinerja Keuangan pada Perbankan yang Terdaftar di BEI Periode 2014 - 2017. EQUILIBRIUM: Jurnal Ekonomi Syariah. 6(2). 253-269. https://doi.org/10.21043/equilibrium.v6i2.4782

Kusumastuti, S., Suptami, dan Sastra, P. (2007). Pengaruh Board Diversity Terhadap Nilai Perusahaan dalam Perspektif Corporate Governance. Jurnal Akuntansi dan Keuangan. 9(2), 88-89. https://doi.org/10.9744/jak.9.2.pp.%2088-98

Loh, L., dan Nguyen, M. H. (2018). Board Diversity And Business Performance In Singapore-Listed Companies, The Role of Corporate Governance. The International Journal. 7(10). 95-104. Retreived from https://bschool.nus.edu.sg/images/CGIO/board-diversity/CGIO_Board-Diversity-and-Business-Performance-in-Singapore-listed-Companies.pdf

Magoutas, A., Agiomirgianakis, G.M., dan Papadogonas, T. (2011). Education and Firm Performance. Empirical Evidence from Greece. International Journal of Economic Research. 8(2), 141-152. Retreived from https://www.researchgate.net/publication/258938705_Education_and_Firm_Performance_Empirical_Evidence_from_Greece

Munoz-Torres, M. J., Fernandez-Izquierdo, M. A., dan Ferrero-Ferrero, I. (2015). Age Diversity: An Empirical Study in the Board of Directors. Journal Cybernetics and Systems: An International Journal. 46(3-4), 249-270. https://doi.org/10.1080/01969722.2015.1012894

Nguyen, H., dan Faff, R. (2006). Impact of Board Size and Board Diversity on Firm Value: Australian Evidence. Corporate Ownership & Control. 4(2). 24-32. https://doi.org/10.22495/cocv4i2p2

Peraturan OJK Nomor 21 Tahun 2014, "Penerapan Pedoman Tata Kelola Perusahaan Terbuka" Retreived from https://www.ojk.go.id/id/kanal/pasar-modal/regulasi/peraturan-ojk/Documents/Pages/POJK-Nomor-21POJK042014-Penerapan-Pedoman-Tata-Kelola-Perusahaan-Terbuka/pojk-nomor-21042014-penerapan-pedoman-tata-kelola-pt.pdf

Pfeffer, J., dan Salancik, G. (1978). The External Control of Organizations: A Resource Dependence Perspective. New York: Stanford University Press.

PricewaterhouseCoopers. (2019). PwC's Annual Corporate Directors Survey. Retreived from https://www.pwc.com/us/en/services/governance-insights-center/library/annual-corporate-directors-survey.html

Sajjad, S., dan Rashid, K. (2015). The Relationship between Board Diversity and Firm Performance: Evidence from the Banking Sector in Pakistan. The IUP Journal of Corporate Governance. 14(3). 25-47. Retreived from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2695301

Saputra, W. S., (2019). Pengaruh Diversitas Dewan Direksi Terhadap Nilai Perusahaan. Jurnal Riset Manajemen dan Bisnis (JRMB) Fakultas Ekonomi UNIAT. 4(3), 503-510. Retreived from http://jrmb.ejournal-feuniat.net/index.php/JRMB/article/view/294

Selvam, M., Gayathri, J., Vasanth, V., Lingaraja, K., dan Marxiaoli, S. (2016). Determinants of Firm Performance: A Subjective Model. International Journal of Social Science Studies. 4(7). 90-100. https://dx.doi.org/10.11114/ijsss.v4i7.1662

Smith, N., Smith, V., dan Verner, M. (2006), Do Women in Top Management Affect Firm Performance? A Panel Study of 2500 Danish Firms, International Journal of Productivity and Performance Management. 55(7), 569-593. https://doi.org/10.1108/17410400610702160

Ullah, I., Fang, H., dan Jebran, K. (2019). Do Gender Diversity and CEO gender enhance firm's value? Evidence from an emerging economy. Corporate Governance: The International Journal of Business in Society. 20(1). 44-66. https://doi.org/10.1108/CG-03-2019-0085

Unite, A. A., Sullivan, M., dan Shi, A. A. (2016). Gender Diversity in Boards and Performance of Philippine Publicly Traded Firms: Do Women Matter? Working Paper Series. 2016(36). https://doi.org/10.13140/RG.2.1.1587.2888

Vahamaa, E. (2017). Female Executives and Corporate Governance. Managerial Finance. 43(10). 1056-1072. https://doi.org/10.1108/MF-04-2016-0098

Vetter, T. R. (2017). Descriptive Statistics: Reporting the Answers to the 5 Basic Questions of Who, What, Why, When, Where, and a Sixth, So What? Anesthesia and Analgesia. 125(5), 1797 - 1802. https://doi.org10.1213/ANE.0000000000002471

Wallin, F. dan Petersson, C. (2017). Three Types of Age Diversity in Board of Directors and the Relationship to Firm Performance. (Master's thesis, Uppsala University, Sweden). Retreived from http://www.diva-portal.org/ smash/get/diva2:1111350/FULLTEXT01.pdf

World Bank. (2011). Pendidikan tinggi dapat memberikan kontribusi yang lebih besar bagi pembangunan Indonesia. Retreived from https://www.worldbank.org/in/news/press-release/2011/10/13/higher-education-contribute-even-more-indonesia-development