

Asian Development Policy Review

ISSN(e): 2313-8343

ISSN(p): 2518-2544

DOI: 10.55493/5008.v11i2.4843

Vol. 11, No. 2, 110-122.

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URL: www.aessweb.com

Board diversity and firm value: A study on Malaysian listed firms in manufacturing and non-manufacturing sectors



Mohd Waliuddin
Mohd Razali^{1,2*}

Pan Xin Yi¹

Nordiana Ahmad
Nordin¹

Anuar Muhammad³

Janifer Lunyai¹

¹Faculty of Economics & Business, Universiti Malaysia Sarawak, Malaysia.

²Email: xinyi1195@gmail.com

³Email: annordiana@unimas.my

⁴Email: janifer@unimas.my

⁵Faculty of Economics & Management, Universiti Kebangsaan Malaysia, Malaysia.

⁶Email: walirazali@yahoo.com

⁷Faculty of Accountancy, Universiti Teknologi MARA Melaka Branch, Malaysia.

⁸Email: anuar843@uitm.edu.my



(+ Corresponding author)

ABSTRACT

Article History

Received: 24 February 2023

Revised: 16 May 2023

Accepted: 26 July 2023

Published: 4 August 2023

Keywords

Age

Corporate governance

Education level

Firm performance

Gender

Outside director.

The main purpose of this study is to examine the relationship between board diversity and firm value in firms in the manufacturing and non-manufacturing sectors listed on Bursa Malaysia. The methodology of this study utilized 200 samples of Malaysian listed companies from 2014 to 2016. The board diversity variables in this study were gender, age, educational level, outsider director, and nationality. Diversity data were collected from the annual report, while all financial data, such as firm age, firm value, and firm leverage, were collected from the Eikon database. The findings show that educational level has a negative relationship with firm value, while outsider director has a positive relationship with firm value in the manufacturing sector. In the non-manufacturing sector, gender and nationality have positive relationships with firm value. In conclusion, the manufacturing industry needs outsider directors' expertise to improve production operations. A higher level of education may lead directors to focus on fewer business aspects rather than the overall business. The non-manufacturing sector requires knowledge and skills that enhance customer satisfaction and thus increase firm value. The practical implication is that regulators such as Bursa Malaysia can enforce boardroom diversity through rules and regulations, which will affect firm value.

Contribution/Originality: Unlike prior studies, this study separates the sample of firms into manufacturing and non-manufacturing sectors. Separating these sectors offers the advantage of a more focused and in-depth analysis of each industry's unique characteristics, challenges, and opportunities. The regression results prove that board diversity affects firm value differently in the two sectors.

1. INTRODUCTION

The world has seen considerable transformation in every aspect, including economic, political, social, and technological changes, each of which has required businesses to become more competitive to be the best in the industry. When a company's board of directors is diverse, its decision-making capability is stronger, and it can make decisions more effectively based on the objectives of the firm in both the short and the long term (Cox & Blake, 1991).

Board diversity is an essential measure of good governance. It is an attribute of a well-functioning board and contributes to the firm's sustainable development. In 2012, the Malaysian government implemented a governance policy called the Malaysian Code on Corporate Governance (Securities Commission, 2012) to function as a guidance system for firms in Malaysia. This policy strengthens board composition, independence, accountability, and transparency by encouraging board diversity in terms of gender, educational level, outsider director, nationality, and age. A diverse board can support effective auditing, risk management, and internal control within a firm. This policy can help firms maintain better relationships with their stakeholders and shareholders. Board diversity positively impacts firm performance (Erhardt, Werbel, & Shrader, 2003). The purpose of board diversity in a company is to increase the quality of board decisions based on the interests of the firm and enhance the firm's performance. This is because board diversity can offer resources to the firm, such as internal and external network connections to customers, suppliers, and other board members. These connections will help the firm know and respond to its environment to boost its performance (Beckman & Haunschild, 2002). Worldwide business practices put a lot of emphasis on corporate governance, but the question of whether board diversity influences firm value still needs to be answered conclusively. Some firms successfully manage their operations under the current political and economic conditions; however, some firms bear significant losses. This difference begs the question of which factors influence firm value, especially which aspects of board diversity. Board diversity can increase firm value; firms gain access to more skills from various directors, which can improve firm management. Board diversity is also essential because it helps reduce conflicts between directors and managers. Board diversity is expected to enhance the board's decision-making because each director contributes a different background and perspective. These can help the firm to devise new solutions to problems (Thomsen & Conyon, 2012). There are various aspects of board diversity, such as gender, age, education level, outside expertise, and nationality. Board diversity can bring a range of perspectives, experiences, and expertise to the decision-making process, leading to more informed and well-rounded decisions (Carter, Simkins, & Simpson, 2003), which are valuable to firms and their shareholders. As a result, many firms in Malaysia have recognized the importance of diversity in the boardroom and taken steps to promote diversity and inclusion in their organizations. Therefore, this study examines the relationship between board diversity and firm value.

2. LITERATURE REVIEW

2.1. Underlying Theories

2.1.1. Agency Theory

Agency conflicts appear due to differing interests between owners and managers. The principals want their agents to work hard to maximize the principals' utility, but the agents also strive to maximize their own utility. Agency theory asserts that the individual or group with business relationship authority (the principle) will direct another individual or group (the agent) to act within its jurisdiction and produce wealth for the principle (Jensen & Meckling, 1976). Due to information asymmetry, agents can operate in their own self-interest rather than the firm's best interests. For example, directors have managerial and operational control over a firm, so they have more knowledge and information about its business than other shareholders. This will lead the directors to work to maximize their profits, not the profits of other shareholders. According to Patten and Trompeter (2003), directors are rational in making decisions that could increase the benefit not only to the business but also, primarily, to themselves. For example, they manipulate reports to earn bonuses. Balanced board composition and corporate governance will help diminish the agency problem. The directors and the managers should do their jobs to meet the objectives of the firm, not to generate wealth for themselves. Board diversity can help a firm gain access to more skills from numerous directors, such as experience, knowledge, skills, and specialized expertise, which will increase the firm's ability to compete with its competitors.

This can attract more investors to invest in the firm and raise its market performance. The directors, managers, and other shareholders will benefit when the firm makes more profit and has a good reputation. A diverse board can

solve problems and will display less biased decision-making as their objectives will be focused on maximizing firm value and performance.

2.2. Board Diversity

2.2.1. Gender

Based on Burke (2003), Zelechowski and Bilimoria (2004) and Stephenson and Nt (2004) stated that when employing women on boards of directors, the board enjoys certain competitive benefits. Women have a better knowledge of markets and customers, and they are also more community-focused, innovative, and socially minded. Furthermore, board diversity can increase creativity and innovation, leading to efficient decision-making (Carter et al., 2003). Women are more conservative. Compared with men, they tend to avoid risk. This means that women take their time to decide. Female board members are more cautious and meticulous, and this attitude will influence the board's decision-making. Female board members can reduce the risk of failure and mistakes that would affect the firm's performance and value (Kusumastuti, Supatmi, & Sastra, 2007).

2.2.2. Age

The relationship between directors' age and firm performance has been the subject of much debate and research. According to Carter et al. (2003), there is a belief that younger directors bring new perspectives, skills, and ideas to the board, which can help firms remain innovative and competitive. Directors from the 34-50 age group are the most healthy, calm, responsible, and able to control themselves. Older directors will evaluate information more carefully and accurately. However, young directors can combine information when making decisions and have greater confidence in their choices. Therefore, the age of the board members is an essential variable in a company's success (Levinson & Peskin, 1981).

2.2.3. Educational Level

According to Simons and Pelled (1999), higher levels of education are positively correlated with firm performance. Individuals with an advanced education possess more knowledge, skills, and expertise, which can lead to improved performance in various organizational contexts. A study by Papadakis and Bourantas (1998) found that higher-educated directors are more capable of processing and analyzing information and tend to execute strategies that emphasize product differentiation and innovation. The number of directors with a higher educational level has increased steadily over the past 10 years. The increase in highly educated directors has shown that educational level affects firm value.

2.2.4. Outsider Directors

Outside directors contribute to positive supervision functions and good firm performance (Hermalin & Weisbach, 2000). With an independent party on the board, the decision-making will be more objective because the decision is likely to be taken in the firm's interest. With independent directors on the board, objectivity is possible; therefore, the board of directors' independence is essential to the firm's success. In addition, the presence of independent directors can increase confidence in a firm's financial reports because the decisions are more objective. Thus the financial information will be more reliable and less prone to fraud (Kang, Cheng, & Gray, 2007).

2.2.5. Nationality Diversity

Foreign board members are expected to bring the firm competitive advantages, including an international network and shareholder rights. When business globalization increases, foreign investors can purchase more shares in the firm to increase their market share performance. Furthermore, foreign board members also expand business networks or relationships with the firm around the globe. They can also contribute a better understanding of their

country's geographical marketplace and its numerous supplier and customer demographics (Robinson & Denchant, 1997).

3. METHODOLOGY

3.1. Data and Sample

This study used secondary data, which involves the use of previously collected data. The sample of this study comprised 200 listed companies from Malaysia in the manufacturing and non-manufacturing sectors, specifically, 100 firms from each sector. Two data sources were used in this study. Firstly, to collect information on the background of the board members, such as their gender, age, educational level, and the age of the firm, the firms' annual reports were consulted for the years 2014 to 2016 (3 years); these were downloaded from Bursa Malaysia. The firms' financial data were taken from the Eikon database.

3.2. Regression Model

The function of the regression model in this study is as follows:

$$FValue_{i,t} = \alpha_{i,t} + \beta_1 Gen_{i,t} + \beta_2 Age_{i,t} + \beta_3 Edu_{i,t} + \beta_4 Out_dir_{i,t} + \beta_5 Nat_div_{i,t} + \beta_6 FAge_{i,t} + \beta_7 FSize_{i,t} + \beta_8 FLev_{i,t} + \varepsilon_{i,t}$$

Where:

ε = Standard normal, randomly assigned error term.

α = Constant.

β = Coefficient.

i = Companies.

t = Time.

Dependent variable:

FValue = Firm value.

Independent variables:

Gen = Gender of board members.

Age = Age of board members.

Edu = Educational level of board.

Out_dir = Outsider directors on the board.

Nat_div = Nationality diversity of the board.

Control variables:

FAge = Firm age.

FSize = Firm size.

FLev = Firm leverage.

Table 1. Measurement of the variables.

Variable	Measurement
Firm value (FValue)	The market value of total assets to book value of total assets
Gender of board (Gen)	Total number of female directors to board size
Age of board (Age)	The ratio of the total age of all directors to board size
Educational level of board (Edu)	The ratio of the total number of directors who had master's or PhD to board size
Outsider directors on board (Out_dir)	The ratio of the total number of independent directors to board size
Nationality diversity of board (Nat_div)	The ratio of the total number of foreigners to board size
Firm age (FAge)	Total number of years since the firm's establishment
Firm size (FSize)	Total sales
Firm leverage (FLev)	The ratio of total debt to total assets

3.3. Measurement of the Variables

Table 1 presents all the measurements of the dependent variable, independent variables, and control variables. Nine variables were examined in total.

4. FINDINGS AND DISCUSSION

4.1. Descriptive Statistics of the Manufacturing Sector

In Table 2, the mean of the dependent variable, firm value (FValue), is 1.245, indicating that the average firm value of the sample is 1.25. The minimum and maximum values for FValue are 0.05 and 5.68, respectively. The study includes several independent variables related to board diversity: gender, educational level, outsider directors, nationality, and age. The mean proportion of female directors on the board (Gen) is 10.5%, with a range of 0% to 50%. The mean educational level (Edu) is 48.2%, representing the percentage of directors with a master's or PhD, and ranges from 0% to 100%. The average proportion of outsider directors (Out_dir) for the sample companies is 19.4%, ranging from 0% to 62.5%. The mean of nationality diversity (Nat_div) is 9.5%, indicating the average proportion of foreign directors, and it ranges from 0% to 80%. The average age of the directors is 57.424 years (Age) and ranges from 42.833 to 74.60 years. The mean firm age (FAge) is 28.610 years, with a range of 6 to 133 years. The mean of log firm size (FSize) is 5.518 and ranges from a minimum of 4.526 to a maximum of 7.498. Finally, firm leverage (FLev) has a mean of 31.9, indicating that the sample's average firm leverage is around 31.9%, and ranges from a minimum of 1.6% to a maximum of 58.5%.

Table 2. Summary of descriptive statistics of the manufacturing sector.

Variable	Mean	Std. dev.	Min.	Max.
FValue	1.245	0.994	0.050	5.680
Gen	0.105	11.287	0.000	0.500
Edu	0.482	0.325	0.000	1.000
Out_dir	0.194	18.831	0.000	0.625
Nat_div	0.095	0.180	0.000	0.800
Age	57.424	5.114	42.833	74.600
FAge	28.610	17.757	6.000	133.000
FSize	5.518	0.539	4.526	7.498
FLev	0.319	0.141	0.016	0.585

4.2. Descriptive Statistics of the Non-Manufacturing Sector

Table 3 provides an overview of the sampled non-manufacturing companies' characteristics. The mean firm value (FValue) is 1.619, indicating that the average firm value is 1.619. The minimum and maximum values of FValue are -2.950 and 26.390, respectively. The sample has a mean gender (Gen) of 0.125, representing that the average proportion of female directors on the board is 12.5%. The minimum and maximum values for Gen are 0 and 0.429, respectively. The mean educational level (Edu) is 0.247, suggesting that 24.7% of directors have a master's degree or PhD. The minimum and maximum range of Edu is between 0 and 0.75. The average number of independent directors in the sample firms is 33.4%, with a mean outsider director (Out_dir) value of 0.334. The minimum and maximum values of Out_dir are 20.0% and 67%, respectively. The average nationality diversity (Nat_div) is 0.040, implying that the average proportion of foreign directors in the firms is 4%. The minimum and maximum range of Nat_div is between 0 and 0.33. The average age of directors (Age) is 56.739 years, with a minimum age value of 39.66 years and a maximum age value of 66.44 years. The mean firm age (FAge) is 25.098 years, suggesting that the age of the sample firms is around 25 years. The minimum and maximum range of FAge is between 4 years and 96 years. The mean log firm size (FSize) is 5.556, with a minimum and maximum value of 3.746 and 7.649, respectively. The sample has a mean firm leverage (FLev) of 0.192, representing an average FLev of 19.2%. The minimum and maximum range of FLev is between 0 and 59.1%.

Table 3. Summary of descriptive statistics of the non-manufacturing sector.

Variable	Mean	Std. dev.	Min.	Max.
FValue	1.619	2.950	-2.920	26.390
Gen	0.125	0.111	0.000	0.429
Edu	0.247	0.191	0.000	0.750
Out_dir	0.334	0.116	0.200	0.667
Nat_div	0.040	0.079	0.000	0.333
Age	56.739	5.023	39.660	66.440
FAge	25.098	17.213	4.000	96.000
FSize	5.556	0.767	3.746	7.649
FLev	0.192	0.147	0.000	0.591

4.3. Pearson's Correlation Coefficient Test

The relationships between the various firm characteristics are presented in Table 4. Firm value (FValue) is positively and significantly correlated with both firm age (FAge) and firm size (FSize) at a 1% significance level, but it has a negative and significant relationship with firm leverage (FLev) at a 5% significance level. Gender (Gen) is positively and significantly related to educational level (Edu) and outsider director (Out_dir), both at a 1% significance level, and also to firm size at a 5% significance level. However, gender has a significant negative relationship with firm age at a 10% significance level. Educational level (Edu) is positively and significantly related to the outsider director variable (Out_dir) and nationality diversity (Nat_div) at a 1% and 10% level of significance, respectively. It also has a negative and significant relationship with firm age at a 10% significance level, but a positive and significant relationship with firm size at a 1% significance level. Outsider director (Out_dir) is negatively and significantly related to nationality diversity (Nat_div) at a 10% level of significance, but positively and significantly related to firm leverage at a 10% level of significance. It also has a negative and significant relationship with firm age at a 1% level of significance. Nationality diversity (Nat_div) is positively and significantly related to both firm age and firm size at a 1% level of significance, but negatively related to firm leverage at a 1% significance level. Age has a positive correlation with both firm age and firm size at a 1% level of significance, and firm age is positively related to both firm size and firm leverage at a 1% level of significance.

As shown in Table 5, firm value has a positive and significant correlation with gender at a 1% significance level. Next, firm value shows a positive relationship with nationality diversity at a 1% significance level and a positive correlation with firm size at a 5% level of significance. Firm value also shows a positive and significant correlation with firm leverage at a 1% level of significance. Gender has a negative and significant correlation with outsider directors at a 5% level of significance. In contrast, it has a positive and significant relationship with firm age at a 10% level of significance.

Gender has positive and significant relationships with firm size and firm leverage at a 1% and a 10% level of significance, respectively. Educational level has a negative and significant relationship with the board's age and firm leverage at a 1% and a 10% level of significance, respectively. Moreover, outsider director has a negative and significant relationship with nationality diversity, firm age, and firm leverage at a 1% and a 10% level of significance, respectively.

Nationality diversity has a negative correlation with firm age at a 1% significance level. Also, nationality diversity has a positive and significant relationship with firm size at a 1% significance level. Board age has positive and significant correlations with firm age, firm size, and firm leverage at a 10%, 1%, and 10% level of significance, respectively. Finally, firm size has a positive and significant relationship with firm leverage at a 1% significance level.

$$FV_{it} = \alpha + \beta_1 GEN_{it} + \beta_2 EDU_{it} + \beta_3 OUTDIR_{it} + \beta_4 NATDIV_{it} + \beta_5 AGE_{it} + \beta_6 FAGE_{it} + \beta_7 FSIZE_{it} + \beta_8 FLEV_{it} + e_{it} \quad (1)$$

4.4. Regression Results

To examine the relationship between firm value and the other variables, equation one was re-estimated by dividing the variable into manufacturing and non-manufacturing sectors. Table 6 reports the results of the panel data. Accordingly, Equation 1 includes a broader set of variables representing manufacturing and non-manufacturing sectors as a measure of firm value.

In the manufacturing sector, the value of R squared is 0.141. This implies that the five independent variables in the model account for 14% of the variance. The value of the adjusted R squared is 0.119, meaning that 11.9% of the variation in the firm value can be explained by the variation in the five independent variables. The value of the F statistic is 6.433, and the model fits the study with a significance value of 0.000.

In the non-manufacturing sector, the value of R squared is 0.096. This implies that the five independent variables in the model account for 9.6% of the variance. The value of the adjusted R squared is 0.069, meaning that 6.9% of the variation in the firm value can be explained by the variation in the five independent variables. The value of the F statistic is 3.544, and the model fits the study with a significance value of 0.001.

4.4.1. Variables with Significant Effects on Firm Value in the Manufacturing Sector

First, there is a negative relationship between educational level and firm value, with a t-value of -2.0430 and a significance level of 0.0419, as shown in Table 6. The coefficient for educational level is -0.5725. A previous study by Atahau and Supatmi (2011) reported that the educational level of directors has a positive relationship with firm performance. Therefore, our result differs from the prior research. No prior study has reported that educational level has a negative effect on firm value. The significant negative influence may be explained by the fact that education at the master's or PhD level is more focused. Directors need to focus on the research they conduct, and they do not need to study subjects unrelated to their research or syllabus. After completing a master's or PhD level education, their area of expertise is narrower.

Second, there is a positive relationship between the outsider director variable and firm value, with a t-value of 1.704 and a significance level of 0.089. The coefficient for outsider director is 0.006. Therefore, the hypothesis is supported since the influence of the outsider director variable is significant at the 10% level. This result is consistent with prior studies. Previous researchers also reported a positive relationship between outsider directors and firm performance (Baysinger & Butler, 1985; Brickley, Coles, & Terry, 1994; Dalton & Daily, 1999). With a larger proportion of outsider board members, the firm is expected to achieve better value and profits than with a smaller proportion of outsiders (Kang et al., 2007).

Third, there is a positive relationship between firm age and firm value, with a t-value of 3.625 and a significance level of 0.000. The coefficient for firm age is 0.012. Hence, the hypothesis is supported since the influence of firm age is significant at 1%. The result is consistent with prior research, which also reported a positive and significant relationship between age and profitability (Akinyomi & Olagunju, 2013).

Fourth, there is a positive relationship between firm size and firm value, with a t-value of 3.764 and a significance level of 0.000. The coefficient for firm size is 0.414. Therefore, the hypothesis is supported. The result is consistent with previous research. The positive impact of size on profitability is due to the economics of scale, which reduces firms' costs and increases their profitability and performance (Halil & Hasan, 2012).

Table 4. Pearson correlation coefficient results for the manufacturing sector.

Correlation probability	FValue	Gen	Edu	Out_dir	Nat_div	Age	FAge	FSize	FLev
FValue	1.000								
Gen	0.0735 0.187	1.000							
Edu	-0.000 0.995	0.410*** 0.0000	1.000						
Out_dir	-0.003 0.9598	0.470*** 0.000	0.784*** 0.000	1.000					
Nat_div	0.053 0.345	-0.067 0.233	0.0870* 0.119	-0.091* 0.104	1.000				
Age	0.045 0.417	-0.014 0.809	-0.025 0.649	-0.003 0.957	0.049 0.379	1.000			
FAge	0.229*** 0.000	-0.093* 0.0939	-0.084* 0.132	-0.210*** 0.000	0.142*** 0.011	0.140*** 0.011	1.000		
FSize	0.249*** 0.000	0.1101** 0.048	0.253*** 0.000	0.074 0.182	0.196*** 0.000	0.128*** 0.021	0.334*** 0.000	1.000	
FLev	-0.159** 0.004	-0.019 0.733	0.002 0.972	0.097* 0.081	-0.241*** 0.000	0.005 0.923	0.127*** 0.022	0.041 0.465	1.000

Note: *** indicates significance at the 0.01 level (1-tailed); ** indicates significance at the 0.05 level (1-tailed); * indicates significance at the 0.10 level (1-tailed).

Table 5. Pearson correlation coefficient results for the non-manufacturing sector.

Correlation probability	FValue	Gen	Edu	Out_dir	Nat_div	Age	FAge	FSize	FLev
FValue	1.000								
Gen	0.221*** 0.000	1.000							
Edu	-0.069 0.250	-0.040 0.508	1.000						
Out_dir	0.008 0.890	-0.119** 0.049	0.049 0.414	1.000					
Nat_div	0.156*** 0.010	0.084 0.166	0.045 0.457	-0.169*** 0.005	1.000				
Age	0.011 0.851	-0.050 0.412	-0.158*** 0.008	-0.038 0.529	0.033 0.589	1.000			
FAge	-0.079 0.192	0.094* 0.118	-0.080 0.184	-0.107* 0.077	-0.178*** 0.003	0.100* 0.097	1.000		
FSize	0.120** 0.046	0.205*** 0.000	-0.084 0.163	-0.073 0.223	0.161*** 0.007	0.173*** 0.004	0.016 0.793	1.000	
FLev	0.129*** 0.032	0.096* 0.111	-0.096* 0.110	-0.111* 0.066	-0.051 0.396	0.103* 0.087	0.056 0.354	0.470*** 0.000	1.000

Note: *** indicates significance at the 0.01 level (1-tailed); ** indicates significance at the 0.05 level (1-tailed); * indicates significance at the 0.10 level (1-tailed).

Table 6. Summary of multiple regression analysis.

Variable	Manufacturing sector coefficient T-statistic probability	Non-manufacturing sector coefficient T-statistic probability
Constant	-0.652	0.072
	-0.842	0.030
	0.401	0.976
Gender	0.006	5.630
	1.053	3.4920
	0.293	0.001***
Educational level	-0.573	-1.000
	-2.043	-1.091
	0.042**	0.276
Outsider director	0.001	1.311
	1.704	1.101
	0.089*	0.272
Nationality diversity	-0.213	5.448
	-0.680	2.347
	0.497	0.020***
Board's age	-0.003	0.003
	-0.253	0.087
	0.800	0.931
Firm age	0.012	-0.013
	3.625	-1.295
	0.000***	0.196
Firm size	0.414	-0.0181
	3.764	-0.0679
	0.000***	0.9459
Firm leverage	-1.5409	2.474
	-3.9403	1.839
	0.0001***	0.067*
R-squared	0.141	0.097
Adjusted R-squared	0.1189	0.069
S.E. of regression	0.933	2.847
Sum squared resid	273.409	2163.695
Log-likelihood	-431.398	-675.793
F-statistic	6.433	3.544
Prob(F-statistic)	0.000	0.000

Note: *** indicates significance at the 0.01 level (1-tailed); ** indicates significance at the 0.05 level (1-tailed); * indicates significance at the 0.10 level (1-tailed).

Finally, there is a negative relationship between firm leverage and firm value with a t-value of -3.940 and a significance level of 0.000. The coefficient for firm leverage is -1.541. Hence, the hypothesis is supported. This result is consistent with previous research, as researchers have found negative relationships between firm leverage and profitability (Myers, 2001; Negash, 2001; Phillips & Sipahioglu, 2004). For instance, Bialowas and Sitthipongpanich (2004) found that the leverage ratio was negatively associated with firm value because the higher financial risk of debt financing lowered the firm value.

4.4.2. Variables with Significant Effects on Firm Value in the Non-Manufacturing Sector

The study found several significant relationships between various factors and the value of non-manufacturing firms. First, female directors had a positive relationship with firm value, with a coefficient of 5.6297 and a t-value of 3.49 at a significance level of 0.001. This finding is consistent with prior research by Adams and Kirchmaier (2013) and Carter et al. (2003), which suggested that women bring a unique perspective to the boardroom, with a leadership style that encourages multiple perspectives and strengthens relationships, reducing conflicts and positively affecting firm performance.

Second, the study found a positive relationship between nationality diversity and firm value, with a coefficient of 5.45 and a t-value of 2.35 at a significance level of 0.020. This result is consistent with prior research by Carter et al. (2003) and Erhardt et al. (2003), suggesting that the presence of foreign investors on the board gives a better understanding of the international marketplace, leading to better decisions related to the supplier and customer demographics in their countries' marketplaces.

Finally, the study found a positive relationship between firm leverage and firm value, with a coefficient that was not specified and a t-value of 1.84 at a significance level of 0.067. This result is consistent with prior research by Robb and Robinson (2009) and Ruland and Zhou (2005), suggesting that higher levels of debt increase financing costs and decrease the amount of money available to invest in future growth opportunities, potentially making the firm riskier to investors, who may demand a higher return on their investment.

5. CONCLUSIONS AND IMPLICATIONS OF THE STUDY

In the manufacturing sector, this study showed that gender has a positive but insignificant relationship with firm value, while nationality diversity and board members' age have a negative, insignificant relationship with firm value. Educational level and firm leverage have a negative relationship. The educational level of directors has a negative and significant relationship with firm value because a higher educational level results in more focused expertise on the part of the degree holder. Meanwhile, firm leverage has a negative and significant relationship with firm value because higher financial debt will reduce a firm's performance and value. However, outsider directors, firm age, and firm size all have a positive and significant relationship with firm value. The outsider director variable has a positive effect on firm value because the board's decision-making will be more objective and based on the firm's interests. In turn, this results in higher firm value and profits than in firms with a smaller proportion of outsider directors.

In the non-manufacturing sector, the study showed that outsider director and board age have a positive but insignificant relationship with firm value. On the other hand, the directors' educational level, firm age, and firm size have negative but insignificant effects on firm value. In addition, gender, nationality diversity, and firm leverage have positive and significant relationships with firm value. Gender has a positive effect on firm value with a significance level of 1% as women are calmer and steadier when making essential decisions that can influence firm performance. Furthermore, nationality diversity also has a positive effect on firm value because foreign directors can help the firm increase its global business networks or relationships. They can better understand the marketplace in terms of the supplier and customer demographics in their countries. Firm leverage has a positive relationship with firm value. A firm's debt level is positively related when shareholders have total control over the firm's business. It is negatively related when debt holders have the power to influence the course of the business.

There are several possible reasons for the different effects of board diversity on firm value in the two different sectors. The manufacturing sector differs from the non-manufacturing sector, which includes the service sector. The manufacturing sector focuses on producing goods and storing them before delivering them to customers. Therefore, the sector needs outside director expertise to improve production operations. A higher level of education may lead directors to focus on fewer business aspects rather than on the overall business. On the other hand, the non-manufacturing sector, service firms in particular, needs the knowledge and skills contributed by women and foreign directors to deliver a customer experience that leads to satisfaction. Some advantages of including female and foreign directors include more outside (international) talents, increased problem-solving capabilities, and exploration into new markets.

This research can provide some valuable insight to regulators. Regulators such as Bursa Malaysia and investors can enforce rules and regulations, especially those that significantly affect firm performance and value through good corporate governance, such as board diversity and ensuring that the public, investors, and employees are well protected and treated equally in order to create a transparent capital market. Also, this study could help managers gain insight into how to enhance firm performance and firm value using corporate governance tools such as board

diversity. Future research should include a broader sample from other industries and use other measures of firm performance, such as earnings per share, economic value added (EVA), and growth.

Funding: This study received no specific financial support.

Institutional Review Board Statement: Not applicable.

Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

Data Availability Statement: Upon a reasonable request, the supporting data of this study can be provided by the corresponding author.

Competing Interests: The authors declare that they have no competing interests.

Authors' Contributions: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

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