

The Substance of Indonesian Women Directors in Creating Value

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ABSTRACT

This paper aims to provide insight into the impact of the existence of female directors in the board of directors on firm value by taking into consideration the educational level and tenure of women directors in the governance of Indonesia's companies. The hypotheses are tested on 177 Indonesian listed companies in the IDX between 2015-2020, manufacturing and retail industries, using the weighted least squares regressions. The evidence conveys that the educational level rather than the simple presence of women directors can increase firm value. Additionally, results reveal that the tenure of women is negatively related to firm value, as it might impair the board's independence. This study explores the potential of women on board through their educational level and tenure in the firms. Future studies may expand to include factors such as family background, reputation, and other personal or professional elements that can enhance women's performance in companies. Few studies have addressed the impact of women across different industries, especially in developing economies. This research contributes by examining the demographic variables of women board members that are still poorly apprehended (i.e. their educational level and tenure) in such a setting.

Keywords: Women directors; firm value; education; tenure; upper echelon.

INTRODUCTION

Women and men are vastly different; this is indeed an inescapable fact of life. Countless remarks have reinforced the extreme differences between the sexes in popular culture [25], [25],[26],[48]. This also applies in the business world, where several studies have indicated the fact that women and men lead in different ways [18]. Man is often viewed as a highly confident leader who is commonly associated with dominance and decisiveness, while women display more communal traits such as warmth, empathy, and kindness [51]. Yet, women are often taken for granted because of their gender and consequently under-represented in the boardroom [18].

Over the past two decades, the subject of the presence of women on the board of directors has increasingly become a topic of interest [6], [36], [39], [6],[36], [56]. However, despite thorough research, no consensus has been reached on the influence of women on board on firm performance. Some research suggests that women on board tend to empower varied knowledge, skills, background and personal qualities to be leveraged; therefore, they add necessary dynamic for strategy tasks [57]; as such, they have the potential to boost creativity and innovation and thus firm performance [1], [45]. On the contrary, some argue that women have a detrimental repercussion on a company's performance,

which is highly due to the investors having a stereotypic assumption about women's lack of competence and unfitness for leadership positions [38]. These mixed and contradictory results come as no surprise given the complexity between the presence of female boards and company success, theoretically and empirically. Research on firm value as a primary determinant of firm performance is still lacking. Hence, the present research is designed to explore the influence of women's presence, education, and tenure on the corporate board towards the firm value.

It is important to note that the main objective of an organization is to maximize the firm's value, and one of the functions of the board of directors is to create value for its shareholders. Firm value, also known as enterprise value, is an economic metric that depicts the market value of a company as a whole [13]. The use of just financial metrics to portray the true image of an organization's success is backwards-looking in and of itself. Because of this reason, this research employs firm value as a metric for firm performance, offering forward-looking insight into potential results that are not achievable via conventional accounting methods. We measure firm value using Tobin's Q, which demonstrates the firm's future and growth prospects.

To have a more sophisticated interpretation of the role of women's representation on board, we

investigate the demographic variables, namely the educational level and tenure of women directors. Of course, having the characteristics of a woman is not a sole predictor of an effective board, but observable measures such as education also need to be considered. According to [16], educational qualification can be used to proxy intellectualism, where more intellectual executives are expected to outperform their colleagues. Similarly, the tenure of the board members is another observable characteristic that could affect the board's quality. Long-tenured directors are associated with more expertise and thus should be more competent in making value-enhancing decisions [7], [21].

Talking further about women's careers, there is a research-backed phenomenon known as the "glass cliff." The "glass cliff" defines the idea that women are promoted to a position of authority when an organization is in trouble [34]. The fact that such a phenomenon exists leads us to believe that women play a crucial role in top management in normal times and during a challenging period. When there is an economic shock, managerial skills are put to the test; thus, the presence of women on board, including their traits, which are educational attainment and tenure, is of great importance. Recently, the world was stunned by the emergence of novel coronavirus disease (COVID-19). COVID-19 is an unanticipated event that has resulted in many business failures, employment losses, and substantial changes in jobs across industries [14], [55]. New research has come to the surface about women leaders doing a better job to tolerate the adverse effects of the crisis. In the context of the world, countries led by women are systematically better, with fewer cases and deaths [15]. Interestingly, similar results were found inside organizations. A 360-degree assessment published in the Harvard Business Review has shown women were rated as more effective leaders by those who worked with them both before and during the first wave of the pandemic [64]. This is because women emphasize interpersonal skills and are more mindful of their followers' wellbeing. Parallel to this discussion, small-medium enterprises (SMEs) owned by women in Indonesia are more resilient in sustaining their businesses amid the pandemic [41].

To establish the linkage concerning women's involvement on boards and firm financial success, the hypotheses are tested on Indonesian manufacturing and retail companies listed between 2015 and 2020, whereas the year 2020 represents the year of the COVID-19 pandemic. We focused on companies in the manufacturing and retail industries because they have the highest female workforce participation [12]. However, despite both having high female participation, the nature of

these two industries contradicts each other. The manufacturing industry converts raw materials into finished goods that go to a distributor or a wholesaler, while the retailers sell the goods to the end consumer. All data was obtained from the Bloomberg Database and the companies' annual reports.

This research adds to the body of knowledge in several ways. To begin with, it contributes to the area of literature by examining the extent to which demographic attributes, namely educational level and tenure, affect the firm value. Second, this paper also includes the COVID-19 period in its sample, where the effectiveness of leadership can be examined. To the best knowledge of the researcher, this is the earliest study that investigates the correlation with the inclusion of the COVID-19 period in such a setting. Finally, we extend the literature by investigating the relationship between women in top management roles and company performance in the context of a developing country, particularly one that adopts a two-tier board arrangement.

The remainder of this paper is structured in the following manner. The next section will comprise literature review and hypotheses development. The data and methodology are described in the section after. Next, we report the empirical result and analysis followed by the robustness check. Last but not least, we draw a conclusion from this study in the endmost section.

Upper Echelons Theory

The Upper Echelons Theory is one of the most prevalent theories that fosters the upsurge of interest in board representation and firm outcomes [44], [46]. Set forth by [22], this theory provides the idea that organization performance reflects the ingrained character within its top management. The essence of the Upper Echelons Theory lies in the premise that top managements' backgrounds, beliefs, and attitudes have a significant impact on how they view and evaluate the situation. Indeed, the theory proposes two main principles: managers behave based on their conceptions of circumstances, and these perceptions are influenced by their backgrounds (seniority, education, and career track) and personality. Consequently, this individualized construal of the circumstances shapes the board decisions and ultimately the outcomes that arise—both strategies and effectiveness.

Operational decisions are known to have a broad behavioral aspect, depicting the decision maker's characteristics to a certain degree [54]. When it comes to organization, each board works in its own dynamics; thus, a deeper understanding of

why companies do what they do or work the way they do must come with the acceptance of biases and dispositions of their most powerful individuals. Although the upper echelons theory originally centered on senior management, some scholars have utilized it for the board of directors by equating boards to "supra top management teams" [50].

The board of directors appears to greatly influence day-to-day corporate choices in the workplace. Given the tremendous effect that board decisions have on organizational success, we see one's characteristics as particularly important at the board level. This is because the board of directors works in an extremely challenging environment. Based on the idea that their actions are determined by cognitive bases and beliefs, the boards' traits can therefore be used to partially forecast organizational performance. However, since such psychological dimensions are difficult to distinguish, the emphasis of the upper echelon's theory is primarily on measurable demographic profiles of the top managers as indicators for their cognitive base and beliefs. Beyond that, the situational aspects of a company, for instance, its environmental setting or firm-specific characteristics, affect the upper echelons' characteristics and corporate strategy.

To support the conventional upper echelon theory, [19] proposed two variables that moderate the correlation between managerial characteristics and firm performance—managerial discretion and executive job demands. First, managerial discretion is associated with the independence or latitude of action with which top executives may exercise in taking business decisions [10]. Upper echelons theory delivers satisfactory prediction of corporate results well in direct proportion to the amount of managerial authority available. When a great deal of discretion is present, managerial characteristics are mirrored in policy and performance. On the contrary, the qualities possessed by top executives are meaningless if discretion is absent [23]. Meanwhile, executive job demands, which are the other moderating variable, relate to the challenge faced by the top management team [20]. The theory proposed that top executives who encounter many obstacles will have much less time to consider choices and will thus take mental shortcuts in the process. In psychology, these shortcuts are known as heuristics, which rely upon individual experiences or immediate solutions that jump to mind [8], [9], [54]. Complex choices are primarily the product of behavioral considerations instead of a mechanical search for economic optimization [22]. As a result, it is expected that the correlation between upper echelon traits and organization outcomes will be greater when managerial obstacles are high.

Two-Tier Board System in Indonesia

When referring to the arrangement in place in Indonesia, all listed companies have two types of boards in their corporate structures, as specified in the country's corporation legislation:

1. Dewan Komisaris (board of commissioners)
2. Dewan Direksi (board of directors)

This two-tier arrangement prevents overlapping membership and role duality as each board of commissioners and directors has its own set of members [60]. The board of commissioners, headed by a president commissioner, is often resorted to as business oversight since its role encompasses the oversight of the company's ability to thrive, conduct and grow the business. Its primary responsibility is to monitor administration including the directors' policies and actions in operating the company [59]. Thus, the function of the board of commissioners is strictly non-executive.

Meanwhile, the board of directors, comprised of majority external board members, are responsible to both shareholders and the board of commissioner. They are mainly in charge of the day-to-day business operations. The board of directors, who the stockholders elect, plays a crucial part in a company. Referring to the Regulations Limited Liability Company enforced in Indonesia, the board of directors is appointed and has full responsibility for the organization's management, following the company's vision and mission. They are largely responsible for managing administrative efficiency and maintaining a fair return for shareholders while minimizing disputes and addressing conflicting demands on the company [13], [32]. For the purpose of this report, we concentrate solely on women who work on the board of directors.

Women Directors Presence and Firm Value

The main purpose of this research is to examine how women directors influence the ability of boards to enhance firm value. According to the upper echelons' theory, firm performance is related to the board members' characteristics. The theory postulates that board decisions, shaped by managers' traits, have a significant impact on operational results. In the context of leadership, women are more likely to pose questions and raise difficult topics in comparison to men [36]. Other research indicates that women presence on board is associated healthy dynamic needed as leveraged and strategy tasks [57].

In the accounting literature, some studies have revealed the positive association between women on the board of directors and company value. For instance, [58] find that the representation of women

in the boardroom Increases the firm value. Likewise, utilizing Tobin's Q to reflect the market-based performance, statistical evidence also a positive correlation between female on board and firm success. Another study shows participation of female directors in corporate board reduces agency costs [2]. In developing economies, [45] undertook research and found empirical evidence to support the notion that women are valuable assets for the company. The study emphasizes that women are a significant source of human capital for the board that benefits the company's success. Thus, resembling previous studies, the following hypothesis is introduced:

H₁: Women's presence on the board of directors positively affects firm value.

Women Directors Education and Firm Value

In spite of predicting the influence of women's representation on board towards the firm value, we also believe that demographic characteristics are likely to influence their judgment. It should be acknowledged that one of the demographic characteristics of the board is education. Education level background are valuable resources that positively associated with firm performance [52]. Directors with higher educational background tend to rely increasingly on appropriate evidence, preventing excessive risk taking [24]. [16] argued that individuals with a high educational attainment have superior quality of education. Education level can therefore improve an organization's market performance significantly.

Previous research conducted by [30] in Indonesia finds that a greater proportion of boards of directors holding postgraduate degrees is linked to improved performance. A board of directors that is composed of well-educated members is believed to process information better and accept significant changes. Likewise, research suggests that a women's education level as a board member positively influences firm performance [28]. [17] contend in a similar manner that superior educational credentials of CEO results in lower levels of IPO underpricing; as such, they are supposed to result in improved firm value. Another study shows elite education translates to superior market performance and science/technology education background manifests in more spending on R&D, less on advertising and less exposure to financial risk for the firm [27]. From all the shreds of evidence, we hypothesized that:

H₂: Women's educational level on the board of directors positively affects firm value

Women Directors Tenure and Firm Value

Besides projecting the influence of female directors on firm value, we also assume that tenure

may affect the outcomes. Board tenure, which refers to the amount of time a person has held the role of director in a particular company, is another key element that affects individual choices. Many researchers have demonstrated tenure to impact the decision-making process in business [11] and company's value significantly [37]. To explore different assumptions about the influence of tenure on organizational performance, [4] examined the relationship between corporate strategy, women directors and firm value. They found that, in general, board tenure has an influence on the relationship between corporate strategy and firm value. This finding agrees with another study that proves that greater tenure comes better performance due to the greater grasp of the business activity [13]. Consequently, they will make value-enhancing decisions that maximize the shareholder's wealth. Resembling previous studies, the following hypothesis is then introduced:

H₃: Women's tenure on the board of directors positively affects firm value.

RESEARCH METHOD

Our sample considers all Indonesian companies listed in the IDX for the years 2015-2020. Afterwards, we retain companies belonging to the manufacturing and retail industry. Companies with insufficient information about female directors and firm value are then disqualified. Finally, we will include companies that meet the aforementioned criteria in the sample. 177 companies ultimately yielded 1062 samples. This study adopted a non-probability sampling technique: purposive sampling. This form of sampling arbitrarily selects certain items from the population based on predetermined characteristics compiled by the researchers. In other words, this research will be centered on particular elements of the population guided by a set of criteria that aim to achieve the goal of this research.

In this particular paper, we utilize Tobin's Q, founded by Professor James Tobin in 1967, as the measure of firm value. Tobin's Q is a traditional measure of firm performance that demonstrates the capital markets' latest estimation regarding the value of return for each dollar of incremental spending. In addition, this ratio provides a more complete view of performance as it considers all of the company's assets and can be easily compared across companies.

This study uses the percentage of women on boards of directors (WBOD) as a proxy for women's presence in the independent variables. The educational level of women board members is represented by the proportion of women holding postgraduate degrees, which includes Master's, graduate credentials, graduate diplomas, Doctor of

Philosophy (Ph.D.), Doctor of Business Administration (DBA), and their equivalents. As for a proxy of women's tenure on the board, we calculate the number of years each woman on the board of directors has held such a position and average the tenure of all women members [13].

In our regression, we also consider a set of control variables to help interpret the relationship between independent and dependent variables. First, firm size is believed to affect the respective company's value [33]. This is because larger companies have access to more capital and better technology to support their operations, which means the company is of greater value. Next, leverage measures the amount of debt held that is used to finance business operations. Leverage assesses the company's risk, which can influence investor confidence and, consequently, the company's value [29]. Third, firms utilize capital expenditure to generate future benefits. With higher capital expenditure, investors expect more returns, which improve their wealth [35]. Fourth, asset turnover represents how efficiently a company manages their assets to generate profit. The higher the asset turnover, the more valuable a company becomes, as it creates the opportunity for investors to invest [5]. Last but not least is industry, which is divided into manufacturing and retail. Industry acts as a control variable because they are of two contradictory natures, which may influence the firm value. We operationalize the industry as a dummy variable, where 1 denotes manufacturing companies and 2 denotes retail companies.

The regression model formulated to test our hypothesis is represented with the following formula:

$$FVALUE_{i,t} = \beta_0 + \beta_1 WBOD_{i,t} + \beta_2 WEDUC_{i,t} + \beta_3 WTEN_{i,t} + \beta_4 FSize_{i,t} + \beta_5 FLeverage_{i,t} + \beta_6 CAPEX_{i,t} + \beta_7 ATO_{i,t} + \beta_8 INDUSTRY_{i,t} + \varepsilon_{i,t} \quad (1)$$

RESULTS AND DISCUSSION

Table 2 reports the descriptive statistics for 1062 firm-year observations. We can see from this table that the company's average value (FVALUE) is 1.3326. The mean percentage of women on the board of directors (PWOB) is 0.128, with the maximum value of 75 percent among the sampled firms. In terms of education, we found that the average percentage of women board members holding postgraduate degrees is 11.9 percent, with the minimum and maximum values of 0 and 100 percent, respectively. With respect to the women's tenure, we find that women work 3.25 years on average. This study also found that in terms of the mean, there is no significant difference before and during COVID-19 for all variables except for capital expenditure (CAPEX) and asset turnover (ATO). CAPEX and ATO are not the main variables

analyzed and concerned in this paper; therefore, we do not test the model in 2 settings (i.e. before and during the pandemic). Furthermore, although the results are not statistically significant, it is evident that the COVID-19 pandemic has negatively impacted firm value by deteriorating the company's financial condition [42], [47].

Table 1. Description of Variables

Variable	Definition	Source
Dependent variable		
FVALUE	Total market value of equity and debt divided by total assets.	Bloomberg
Independent variables		
PWOB	Number of women on the board of directors divided by the total number of board of directors	Published Annual Report
WEDUC	Number of women holding postgraduate degree divided by total number of women on the board of directors	Published Annual Report
WTEN	The average number of years women sit on the board of directors	Published Annual Report
Control variables		
FSIZE	How big or small a company calculated as the natural logarithm of total assets	Bloomberg
CAPEX	Money used by company to purchase, upgrade and maintain physical assets such as plants, assets, technology	Bloomberg
ATO	Total revenue divided by average total assets	Bloomberg
LEV	Proxied by the debt-to-equity ratio calculated as total liabilities divided by total equity	Bloomberg
INDUSTRY	Represented by dummy assuming "1" for manufacturing companies, and "2" for retail companies	Published Annual Report

Before running the regressions, we test the model in advance to address potential multicollinearity and heteroskedasticity issues. Table 3 reports on Pearson correlations and variance inflation (VIF). This study can reject the presence of multicollinearity in our model as none of the correlation coefficients exceed 0.80. Furthermore, all VIF values are lower than 1.937, which falls below the accepted threshold of 10 [1]. We can thus conclude that there is no serious correlation among the variables. This study uses the white heteroskedasticity-consistent standard error estimates (as shown in Table 4). Using a p-value test at a 0.05 significance level, we found that our model suffers from heteroskedasticity. In order to circumvent this issue, we adopt the Weighted Least Square (WLS) estimation to test our hypotheses.

Table 2. Descriptives

Descriptive statistics for continuous variables									
Variable	N	Minimum	Mean	Median	Maximum	SD	Mean before Covid Period	Mean at Covid Period	p-value mean difference
FVALUE	1062	0.0929	1.3326	0.7833	22.742	1.9673	1.3622	1.1846	0.2731
PWOB	1062	0.0000	0.1288	0.0000	0.7500	0.1682	0.1273	0.1359	0.5376
WEDUC	1062	0.0000	0.1190	0.0000	1.0000	0.2966	0.1167	0.1306	0.5764
WTEN	1062	0.0000	3.2505	0.0000	31.000	5.4499	3.2165	3.4208	0.6490
FSIZE	1062	7.9337	12.273	12.333	14.546	0.9430	12.266	12.312	0.5548
CAPEX	1062	0.0000	0.0371	0.0265	0.4326	0.0393	0.0397	0.0240	1.17e-006
ATO	1062	0.0000	1.0601	0.8975	8.4293	0.8140	1.0914	0.9037	0.0051
LEV	1062	0.0000	0.2344	0.2110	2.9423	0.2320	0.2366	0.2234	0.4891
Descriptive statistics for dummy control variable									
Variable	Min.	Max.							
INDUSTRY	1	2							

Note: See Table 1 for variable definition

Table 3. Pearson Correlation & Variance Inflation Factors

Variables	1	2	3	4	5	6	7	8	VIF
(1) FVALUE	1	0.0284	0.0027	-0.0479	0.1640***	0.1683***	0.1208***	-0.0976**	
(2) PWOB		1	0.3865***	0.6296***	-0.0730**	0.0165	0.1295***	-0.1491***	1.937
(3) WEDUC			1	0.2699***	0.0031	-0.0060	-0.0280	-0.0630**	1.187
(4) WTEN				1	-0.0539*	-0.0272	0.0059	-0.1237***	1.710
(5) FSIZE					1	0.2238***	-0.0607**	0.1167***	1.133
(6) CAPEX						1	0.0135	-0.0097	1.059
(7) ATO							1	-0.1369***	1.079
(8) LEV								1	1.063
Mean VIF									1.310

Table 4. Panel Diagnostic & Heteroskedasticity Test

Chow Test	Breusch-Pagan Test	Hausman Test	White Heteroskedasticity Test
F(175, 878) = 26.4802 with p-value 9.87779e-257	LM = 1673.83 with p-value = prob(chi-square(1) > 1673.83) = 0	H = 16.9298 with p-value = prob(chi-square(7) > 16.9298) = 0.0178547	TR ² = 242.566548, with p-value = P(Chi-square(43) > 242.566548) = 0.000000

Table 5. Results

Variables	Coefficient	Std. Error	t-ratio	p-value	
const	-1.0860	0.18564	-5.850	<0.0001	***
PWOB	0.06244	0.11321	0.5516	0.5814	
WEDUC	0.09492	0.05299	1.791	0.0736	
WTEN	-0.01492	0.00250	-5.957	<0.0001	***
FSIZE	0.16951	0.01373	12.34	<0.0001	***
CAPEX	2.66736	0.46305	5.760	<0.0001	***
ATO	0.13640	0.01749	7.800	<0.0001	***
LEV	-0.3796	0.07823	-4.853	<0.0001	***
INDUSTRY	-0.10364	0.03056	-3.391	0.0007	***
Fit model tests:					
F-test	54,83640				
P-value(F)	1,48e-74				
Adjusted R2	0.313816				

Note: * sig at 10%, *** sig at 1%

Table 6 reports the WLS result, which tests our H1, H2, and H3. In terms of the control variables, firm size (FSIZE), capital expenditure (CAPEX), and asset turnover (ATO) have a significantly positive correlation with the firm value. This suggests that big firms, high capital expenditure firms, and well-managed assets enhance the firm value. Conversely, firm leverage has a negative and

significant effect on Tobin's Q. This indicates that financially distressed companies are associated with lower market performance

First, we find no support for H1, as the coefficient of PWOB does not significantly affect the firm's value. To put it in another way, women on the board of directors do not contribute to improving the management's performance in managing the

company assets. This finding aligns with previous literature, which demonstrated that women have no significant effect on firm value because of their under-representation on the board [65]. In Indonesia, women represented an average of 10.45% of Indonesia's board of directors between 2015 and 2020, which confirms the male domination of such positions [31]. Furthermore, another study suggests that a significant boost in performance exists when three women are present on board; however, the impact is weaker over this threshold [45]. However, Indonesian publicly traded firms have no mandatory rulings to include women directors on the corporate board. Consequently, women are often recruited as a symbolic effort for gender equality instead of for their expertise and experience [63].

Table 5 shows that the second hypothesis is completely supported because the WEDUC coefficient is positive and important for the firm's value, measured by Tobin's Q. Increasing the number of post-graduate members by one, all else being equal, increases Tobin's Q by 0.095. This value represents 7% of the mean value of Tobin's Q, indicating that the effect is economically significant. Increasing the number of postgraduate members by one, all else being equal, increases Tobin's Q by 0.095. This value represents 7% of the mean value of Tobin's Q, indicating that the effect is economically significant. The obtained result aligns with the upper echelons theory, which suggests that a board member's educational level can significantly enhance the firm's value. This is because education reflects the knowledge possessed by the company, which can provide a comprehensive perspective on board during the decision-making process [28]. On top of that, postgraduate education benefits the company's value as they have a better cognitive capacity, allowing the identification of appropriate strategic actions to improve competitive advantage.

Finally, we test the impact of the tenure of women directors on the firm value (H3). The coefficient value of -0.0149 (negative) and significant indicates that the longer women serve on the board of directors (WTEN), the worse the firm value. People perceive long-tenured women as a source of conflict due to their close relationship with the longstanding board members. Consequently, the board's independence suffers. Investors hold an unfavorable opinion about the situation as they believe that there will be less effective corporate governance. When women hold the board position for a considerable amount of time, their autonomy enhances, giving them much power to resist new investment decisions that could actually be beneficial for the firm.

Furthermore, extended tenure is associated with worsened firm value because they adapt less to

the changing environment [3]. Even with new women members on the board, they may not be able to contribute as much in terms of enhancing the firm's value. This is because they tend to respect the former members, which prevents them from refuting their opinion or offering their own if it is contrary to the older members'. The tendency of a board to arrive at a uniformity decision may actually suppress innovation where other alternative courses of action remain undiscovered.

Additional Analysis

Additionally, this study would like to see the relationship between women & firm value in each of the two different industries. Table 6 presents the regression for the manufacturing and retail industries. Similar to the above result, we found that women's representation on the board of directors has no significant effect on Tobin's Q regardless of the industry. Women's education (WEDUC) and tenure (WTEN), on the other side, reveal contradicting results between the two sampled industries.

Women's educational level positively influences the value of manufacturing companies. Like the aforementioned, education level will provide a hint for investors about the director's ability, thus positively affecting the firm value [30]. Conversely, education level negatively affects the value of retail companies. When it comes to the retail business, open-mindedness is essential for building trust with the customers, as retail is all about communication and understanding. Research found that those who perceive themselves as experts tend to exhibit more closed-minded behavior [49]. This possibly explains why those with a postgraduate degree are less open-minded than their undergraduate peers. Consequently, close-mindedness means they are less able to achieve communication on a high level. Furthermore, as education increases an individual's knowledge base, that person becomes more aware and cautious in making decisions, potentially to the extent of avoiding any risks. Such an attitude may prevent value creation.

In the manufacturing industry, tenured women are associated with a lower firm value. Many industries experience dramatic change due to digital transformation, but none like the manufacturing industry. According to [8], firm value starts to decline after fewer years of CEO tenure in more dynamic industries if CEOs are less adaptable to changes and if CEO entrenchment is higher. Additionally, women are often perceived as being unable to engage with the rapid development of technology in the manufacturing industries because they tend to be more cautious in their decision-making

Table 6. Additional Result

Variables	Manufacturing				Retail			
	Coefficient	Std. Error	t-ratio		Coefficient	Std. Error	t-ratio	
const	-506004	0.378809	-13.36	***	-0.210085	0.191616	-1.096	
PWOB	0.188400	0.242137	0.7781		0.00893588	0.162727	0.05491	
WEDUC	0.284330	0.0793945	3.581	***	-0.320357	0.0779372	-4.110	***
WTEN	-0.0137407	0.00433016	-3.173	***	0.0204927	0.00659176	3.109	***
FSIZE	0.457822	0.0322643	14.19	***	0.0993243	0.0164706	6.030	***
CAPEX	2.32200	0.567218	4.094	***	2.88085	0.637785	4.517	***
ATO	0.417327	0.0432156	9.657	***	-0.0139737	0.0207459	-0.6736	
LEV	-0.361073	0.0771973	-4.677	***	-0.620791	0.140183	-4.428	***

Note: *** sig at 1%

[61]. On the flip side, women's tenure is beneficial for the retail industry. Retailers focus on building a relationship with their consumers, which takes a considerable amount of time. The board of directors must therefore focus on ways to make the best of customer experience, which requires more than just that knowledge learned in formal education. Over time, board members gain a greater understanding of their customers. As a result, they begin to realize how their expertise can maximize the firm's core competencies.

Robustness Check

To examine the robustness of the result above, we conduct additional analysis by means of quantile regression. Quantile regression is a statistical technique that shows the relationship between independent and dependent variables throughout the conditional distribution function. Quantile can provide comprehensive information on which component of the conditional distributions differs, as it is robust to outliers. In this study, we choose five representative quantiles (5, 25, 50, 75, and 95 percent) and examine whether the relationship between women and firm value is heterogeneous across these quantiles. Table 7 shows the result of the quantile regression.

Based on earlier studies about how leaders behave in organizations, we believe that having women involved improves market performance, as measured by Tobin's Q, and that education level and time spent in the company also impact the firm's value.

The presence of women on the board of directors is u-shaped. This result is shown in the quantile analysis. Regardless of the type of industry, the results of the regression test show that the number of women on the board of directors is not significant to the value of the company. This result is consistent in the manufacturing industry. However, it is different in the retail industry, where it turns out that the large number of female directors

is actually not beneficial for companies with very low company values and very high company values. The dynamic challenges of Indonesia's retail industry likely necessitate fast and high-risk decision-making for companies with low company values, which contradicts the cautious nature of women. On the other hand, companies with high values are generally in a revival cycle that also requires fast and risky innovation. In addition, the presence of female directors in Indonesia is still small, as seen from the low mean value in descriptive statistics. Therefore, their role is not yet large enough to significantly influence the company's value [65].

Focusing on the women's educational level, we find that it positively affects the firm's value, specifically for those firms that do not get much attention from the investor. This means that the presence of highly educated women is significantly positive in firms that have their stock undervalued. Finally, when it comes to the tenure of women on board, the quantile analysis shows that tenure negatively affects the firm value of those companies that are judged well by the investors. This result implies that a firm that has already received lots of funding from the capital market should be better performing without the presence of long-tenured women on the board of directors. Such information was not available in the previous results.

Continuing the discussion of the manufacturing industry, there is a clearer picture of the association between women executives and firm value through the quantile regression. In the WLS result, the correlation between women on board and firm value is insignificant; however, the quantile regression reveals that the relationship between these variables is rather heterogeneous. The presence of women on board is significantly negative at the lowest (Q5%) and highest Tobin's Q quartiles (Q95%) but insignificant in the other three quantiles. Companies in the 5 percent quantile cannot improve their value if the top management team holds a mindset that makes them less

attractive to investors. Furthermore, the more women in leadership positions, the tougher the monitoring, which can become excessive at some point [45]. This is likely to be the case for companies in the 95 percent Tobin's Q quantile. Since these

firms have gotten the attention of the investors, the fear of failure has heightened as they do not want to lose them, leading to more stringent board monitoring. This extra monitoring may become costly and have a detrimental effect upon the firm's value.

Table 7. Quantile Analysis

Variables	All				
	Q5%	Q25%	Q50%	Q75%	Q95%
PWOB	-0.0644 (-0.9033)	0.0255 (0.2583)	-0.0424 (-0.2914)	0.2870 (0.6982)	0.4001 (0.4651)
WEDUC	0.0358 (1.9721)**	-0.0011 (-0.0260)	-0.0338 (-0.5328)	-0.0851 (-0.4756)	-0.3026 (-0.8077)
WTEN	0.0002 (0.0904)	-9.10748e (-0.0318)	-0.0051 (-1.2029)	-0.0229 (-1.9169)*	-0.0826 (-3.3118)***
FSIZE	0.0213 (2,19215)**	0.0556 (4,12618)***	0.1079 (5,43405)***	0.1568 (2,79607)***	0.4395 (3,74590)***
CAPEX	1.0139 (4.4946)***	1.2253 (3.9197)***	1.8466 (4.0065)***	3.9355 (3.0243)***	7.7447 (2.8443)***
ATO	0.0236 (2.1491)**	0.0291 (1.9133)	0.0493 (2.1957)**	0.0085 (0.1342)	1.4661 (11.0523)***
LEV	0.3784 (9.884760)***	0.2658 (5.01054)***	-0.0763 (-0.975977)	-0.59032 (-2.67317)***	-1.4554 (-3.14969)***
INDUSTRY	0.0223 (1.0961)	0.0406 (1.4381)	0.0895 (2.1539)**	-0.0238 (-0.2025)	-0.3492 (-1.4217)
Variables	Manufacturing				
	Q5%	Q25%	Q50%	Q75%	Q95%
PWOB	-0.1644 (-2.976)***	-0.1403 (-1.4581)	-0.0816 (-0.3812)	-0.3003 (-0.5780)	-2.6084 (-2.8790)***
WEDUC	0.0509 (2.3983)***	0.00978 (0.2639)	0.0563 (0.6839)	0.2666 (1.3348)	0.4203 (1.2068)
WTEN	0.0029 (2.0595)**	0.0015 (0.6400)	-0.0039 (-0.7241)	-0.0085 (-0.6493)	-0.0541 (-2.3728)***
FSIZE	0.0516 (5.6389)***	0.13440 (8.4371)***	0.1816 (5.1232)***	0.3908 (4.5434)***	0.7585 (5.0561)***
CAPEX	0.8626 (5.9152)***	1.6484 (2.2189)**	1.6484 (2.9163)***	7.1883 (5.2404)***	11.9967 (5.0147)***
ATO	0.0285 (3.0604)***	0.1224 (7.5438)***	0.1210 (3.3478)***	0.1021 (1.1647)	3.6104 (23.6187)***
LEV	0.3210 (13.2580)***	0.1976 (4.6852)***	-0.1086 (-1.1576)	-0.2484 (-1.0906)	-0.9303 (-2.3422)***
Variables	Retail				
	Q5%	Q25%	Q50%	Q75%	Q95%
PWOB	0.0612 (1.6480)*	-0.1628 (-1.8049)*	-0.3839 (-1.8726)*	0.2920 (0.9867)	1.8538 (1.8743)*
WEDUC	-0.0702 (-3.5124)***	-0.0591 (-1.2174)	-0.1625 (-1.4728)	-0.4830 (-3.0317)***	-2.1095 (-3.9622)***
WTEN	0.0128 (7.6982)***	0.0116 (2.8732)***	0.0213 (2.3163)***	0.0094 (0.7089)	0.0989 (2.2321)**
FSIZE	0.0171 (3.7976)***	0.0230 (2114)**	0.0644 (2.6000)***	0.1216 (3.3983)***	0.0980 (0.8194)
CAPEX	1.0399 (6.0792)***	2.4794 (5.9736)***	1.9181 (2.0317)**	0.8382 (0.6150)	-0.2509 (-0.0551)
ATO	0.0076 (1.4712)	-0.0121 (-0.9618)	-0.0056 (-0.1935)	-0.0817 (-1.9739)**	-0.3170 (-2.2902)**
LEV	0.7402 (21.4767)***	0.2189 (2.6178)***	-0.0321 (-0.1687)	-0.8764 (-3.1911)***	-2.4016 (-2.6170)***

Note: * sig at 10%, ** sig at 5%, *** sig at 1%

Discussing further about the women's background, education, and tenure is significantly positive at the lowest quantile. Although women's presence itself cannot improve the value of manufacturing companies, the participation of educated and experienced women can. Specifically for the women's tenure, the coefficient becomes increasingly more negative as the firm value quantiles increase, starting from being significantly positive in the 5 percent quantile to significantly negative in the 95 percent quantile. This suggests that manufacturing companies with lower attractiveness greatly benefit from having experienced women on their boards. Nevertheless, as the level of maturity of women board members increases, they become more powerful and overconfident in themselves [9], [21]. As the company becomes more attractive, this pushes tenured women to become even more confident to a point where they no longer put considerable thought into every decision made. Therefore, firm values are negatively affected, as experienced by firms in the 50–95 percent quantiles.

Moving on to the retail industry, the quantile regression shows considerable heterogeneity in the relationship between women on board and Tobin's *Q*. Recall that the WLS coefficient on *PWOB* is positive but insignificant (Table 5). However, the quantile regression reveals that the coefficients on *PWOB* are significantly positive at the 5 and 95 percent Tobin's *Q* quantile but significantly negative at the 25 and 50 percent quantile. This implies that appointing women on the board of directors provides benefit for low- and high-performing companies, as they can provide a valuable form of legitimacy in the eyes of the customers. This is contradictory to the manufacturing industry. On the other hand, women directors are unable to enhance the value of those middle-range retail companies. A possible explanation is due to the common belief that women are less experienced to hold leadership positions compared to their male compatriots. As for *WEDUC* and *WTEN*, the WLS coefficients are significantly negative and positive, respectively. The quantile regression confirms our WLS estimates. With all things considered, this quantile analysis gives a deeper insight into which particular firms require women to help improve their performance.

CONCLUSION

This study contributes to the literature by exploring the impact of women on the board of directors on corporate value. To get a deeper understanding about the relationship, we also examine two demographic variables: educational qualification and tenure.

To investigate the association, we rely on a sample of 177 firms belonging to the manufacturing and retail industries. In this analysis, we find that the presence of women directors alone does not significantly affect firm value. This conclusion may be due to the fact that they are still under-represented in Indonesia's boardroom, preventing value creation. With no mandatory rulings to include women in the boardroom, women will only be recruited as a token of gender equality. In addition, companies in Indonesia may include women on their boards of directors merely to gain legitimacy from society, showing that their boards do not consist solely of men. Therefore, government and regulators should consider mandating a minimum number of women on the board to enhance diversity and improve overall performance.

Taking education into account, we found that highly educated women board members positively affect firm value. On the contrary, extended tenure is conflicting on the board of directors because they are perceived as less effective in performing their functions. This aligns with the upper echelon theory, which suggests that female directors who have held their positions for an extended period may be resistant to change and more cautious when facing the risks associated with these changes. Additionally, according to resource-based theory, the tenure and education levels of female directors are considered unique resources. Tenure is negative to firm value, but education level is positive to firm value, indicating the importance of quality of work experience, not just duration.

Policy suggestions that can be implemented by company management internally are about increasing women's empowerment in the company and opening up great opportunities for women to improve their skills and education levels. Companies need to review their tenure policies to avoid stagnation. Companies need to ensure that women in high positions are truly given space to contribute maximally, making their existence significant in the eyes of investors.

There is a relationship between the two characteristics: women who pursue higher education tend to have shorter tenure. Thus, the knowledge and skills obtained during their study may contribute well to value creation. It is important to note that the presence of not just any women is needed to enhance firm overall performance, but instead qualified women are required. In other words, when hiring women to the board, their qualifications, whether in terms of education or experience, become one vital aspect.

The results of our study have meaningful importance for an entity. First of all, it suggests that having women on the board can create value for

firms. This paper specifically emphasizes the importance of education and experience across various industries. A deeper analysis of each industry reveals a contradictory need for women in manufacturing and retail. The presence of long-tenured women is more likely to decrease the value of manufacturing firms. The evidence suggests that in such an industry, the presence of newly appointed board members can be beneficial, as it brings a new perspective into board discussion. On the other hand, the retail industry needs longer-tenured women to allow for knowledge continuity and the creation of the best customer experience.

Despite its contribution, there are some limitations present in our study. First, this research samples the manufacturing and retail industry. We need to conduct more research to determine if the findings apply to the wider industry. It is also fascinating to examine the hypotheses in the masculine industry. With regards to the variables, we do not include the profitability measures in the control variable, which could affect the relationship between women and firm value. This issue could be addressed in future studies. It would be possible to assess the association between women and firm value with consideration of other market value metrics such as market-to-book ratio, share price, or total shareholder return. Lastly, future studies may adopt a similar approach when examining the context of other developing countries.

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