

Female in the Boardroom and Firm Performance: An Insight of Indonesia's Firms

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Abstract

The purpose of this research is to determine the impact of female board members on firm performance. This study employed a purposive sampling technique with a research sample comprised of 264 non-financial companies listed on the Indonesia Stock Exchange between 2013 and 2019. As proxies for the independent variable of females in the boardroom, this study examines female directors' presence, a dummy variable for female CEOs, the proportion of female directors, and female directors' business ability. The return on assets (ROA), return on equity (ROE), and Tobin's Q are all proxies for gauging corporate performance. This study's analysis technique is robust regression analysis. Female board members had the greatest influence on firm performance, according to the findings. Overall, the female CEO dummy serves as a proxy for the strength of the company's performance.


Keywords: Boardroom, business expertise, female director, gender diversity, robust regression, Indonesia's Firms.

JEL Classification: M14; G30; G34; G38.


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Mujeres en la sala de juntas y desempeño empresarial: una visión de las empresas de Indonesia

Resumen

El propósito de esta investigación es determinar el impacto de las mujeres consejeras que pertenecen a la junta directiva en el desempeño de la empresa. Este estudio empleó una técnica de muestreo intencional con una muestra de investigación compuesta por 264 empresas no financieras que cotizan en la Bolsa de Valores de Indonesia entre 2013 y 2019. Como sustitutos de la variable independiente de mujeres en las salas de juntas, este estudio examina la presencia de directoras, una variable ficticia para directoras ejecutivas, la proporción de directoras y la capacidad empresarial de las directoras. El rendimiento de los activos (ROA), el rendimiento del capital (ROE) y la Q de Tobin son indicadores para medir el desempeño corporativo. La técnica de análisis de este estudio es el análisis de regresión robusta. Según los resultados, las mujeres miembros de las juntas directivas tuvieron la mayor influencia en el desempeño de la empresa. En general, la variable ficticia de la directora ejecutiva sirve como indicador de la solidez del desempeño de la empresa.

Palabras clave: Sala de juntas, experiencia empresarial, directora, diversidad de género, regresión robusta, empresas de Indonesia.



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INTRODUCTION

There are two viewpoints on the board of directors, according to the resource dependence approach. First and foremost, the board of directors is a component of the firm and its circumference. As a result, they must offer firm information and resources while also shielding it against uncertainty. Second, the board of directors is responsible for internal controls that affect the firm's efficiency. The resources of the firm reflect gender diversity and tenure.

According to the Blue-Ribbon Committee, diversity is characterized by gender, ethnicity, age, and nationality (Song et al. 2020). In terms of financial decisions, Gordini and Rancati (2017) and Xie et al. (2020) stated that gender diversity influences the various roles and functions of gender, namely female CEOs have characteristics that male CEOs do not hold, such as maternal and protective behavior, caution, and good business intuition.

Doan and Iskandar-Datta (2020), Sapienza et al. (2009) and Zirgulis et al. (2021) discovered that women who enter the banking industry are less risk-averse than women who enter other businesses. This finding means that the banking sector's findings on the gender-risk link may not be applicable to other sectors, necessitating a more widespread investigation into the risk implications of more gender diversity on non-banking firm boards (Love et al., 2023; Kauff et al., 2020; Teodosio et al., 2021). However, the tendency toward these consequences is really an empirical question. Furthermore, data from social psychology studies supports the concept that diversity leads to more moderate decisions (Kong et al., 2022; Lee et al., 2019). Still, little systematic evidence of these effects on corporate board functioning exists. Gender diversity increases moderation in board decisions, which is consistent with the intuition that business risk increases with Chief Executive Officer (CEO) authority (Lassoued & Khanchel, 2023; Cordeiro et al., 2020; Gyapong et al., 2019). Powerful CEOs can make unconstrained decisions, resulting in more unique choices, more extreme outcomes, and, ultimately, increased risk (Greiner et al., 2023; Bhat et al., 2019). Similarly, homogeneity of interests, motivations, and perspectives among board members would result in more unique judgments because they attract less scrutiny within the board. Internal governance's disadvantage would eventually show in more volatile business results. According to this argument, greater gender diversity should result in less variable outcomes. Furthermore, diversity would intensify tensions and destabilize the board's decision-making process, making the possibility of reaching consensus more difficult and the outcomes more irregular

(Wang & Lv, 2023; Tran & Turkiela, 2020). According to the organizational behavior reference, team diversity includes numerous facets (Abdullah & AL-Abbrow, 2023; Lee et al., 2018). As a result, we employ a broad approach that includes multiple elements of variety. We categorize our variables for analysis based on gender, years of education, and years of experience. This method adapts Baranchuk and Dybvig's (2009) model, which develops a model in which gender diversity incorporates many variables relating to directors' preferences, incentives, and information access.

Building on this metric and logic, our research aims to provide numerous fresh insights into the extent to which gender diversity on corporate boards can improve management performance. First, we examined how female director participation in each of these jobs relates to managerial ability using the standard distinction between advising and monitoring duties of directors. Second, we looked at critical mass as an important boundary condition and found that the critical mass of female directors plays a significant role in order to enhance managerial ability in general, but especially when critical mass exists in monitoring roles. Our research is the first attempt to demonstrate a theoretical link between board gender diversity and managerial aptitude while also offering strong empirical evidence to back up these findings.

LITERATURE REVIEW

Diversity in terms of racial and gender mix is frequently regarded as essential for maximizing organizational resources (Hoang et al., 2022; Porcena et al., 2021). In other words, gender diversity can improve company performance because it adds efficiency to the decision-making process and adds a wider range of perspectives (Cordeiro et al., 2020). In other words, gender diversity can boost organizational performance because it allows the assessment of decisions from multiple points of view (Cordeiro et al., 2020). The pathways and conditions under which board gender diversity transfers into benefits for corporations are the subject of persistent debate from agency and resource dependence perspectives. Female directors may be in a unique position to impact management abilities since their resource provisioning function allows a broader and more diversified range of perspectives in assisting managers. Furthermore, female directors might affect managerial abilities by providing additional resources to managers and providing better management oversight (Issa et al., 2022).

Most of the current research focuses on efforts to connect board gender diversity to distant outcomes that are only marginally, if at all, related to the improved managerial oversight and advice that female directors are said to contribute. The board largely controls the business through its advice and monitoring of management, which is a theoretical absence in most research linking board diversity to distal results (Bezemer, 2023). In our situation, we underline that the function of female directors in terms of managerial skills has not yet been explored. Capable managers ultimately determine the fate of the company, but they do so within the board's monitoring and advising parameters (Pandey et al., 2023). As a result, there is a need for a fine-grained study of the more immediate ways gender diverse boards genuinely affect organizations, such as improving the competence of managers tasked with making day-to-day executive decisions on behalf of shareholders. Given that the board chooses, monitors, and advises managers, boosting management skills emerges as a new perspective on how gender diverse boards affect firms.

It is crucial to investigate the notion that the board plays a significant role with a view to foster managerial skills through their advising and monitoring functions, but that this influence is most pronounced when (and where) a critical mass of female directors exists. Lone women on boards may bear a disproportionate responsibility since they are better prepared and more present than their male counterparts, which may undercut their potential contributions or, conversely, may be viewed as tokens, which diminishes their inputs.

Mixed evidence on the impact of more gender-diverse boards has hampered progress toward increased female representation on boards. Part of the empirical data on how women on boards affect firms is beneficial, with more gender diverse boards associated with outcomes such as higher firm performance (Safiullah et al., 2022), innovation (Issa & Zaid, 2023), social performance (Islam et al., 2022), and fewer ethical lapses (Issa & Bensalem, 2023). Others, on the other hand, question the impacts of board gender diversity, claiming that female directors may potentially reduce business performance and result in a loss of overall value for stockholders, as gender-diversified boards may battle with inertia under certain conditions. Although the moral case for equity has gained ground, the business justification remains somewhat ambiguous.

As progress is made, it is critical to investigate the specific ways in which female directors might improve business performance. The next step is to look at intermediate company outcomes that are more closely tied to a board's monitoring

and advising responsibilities. We propose that the issues might be attributable in part to misinterpretations of high-level linkages with long-term outcomes, such as firm-level financial, social, and technological performance. These efforts may obscure the immediate outcomes (e.g., improving managerial skills) that are more directly related to the choices made by gender diverse boards via the specific responsibilities that female directors perform on boards (e.g., monitoring or advising as members of various committees). To grasp this, it is necessary to revisit the primary functions that female directors play in organizations.

DATA

The population of this study included all non-financial companies registered on the Indonesia Stock Exchange (BEI) between 2013 and 2019. This study employs imbalanced panel data and a purposive sampling strategy, which determines the sample based on certain traits which are thought to have a tight association with population characteristics. This approach is used to gather samples that meet the specified requirements. The author has established the following requirements:

- In the 2013–2019 period, non-financial companies listed on the Indonesia Stock Exchange (IDX) must publish financial reports for at least one year.
- Non-financial companies are listed on the Indonesia Stock Exchange (IDX), which displays the data and relevant information required in this study for all variables.

This study has 264 firm samples, or 1223 observations, based on the criteria indicated above. Appendix A1 contains variables, concepts, and measurements (see in the supplementary materials file).

METHODOLOGY

Robust regression is a technique used when the model contains several outliers¹ (Misha & Müller, 2022). This method is useful for assessing data that has been influenced by the value of outliers to generate a resilient or robust model. Small changes in vast sections of the data have little effect on a strong estimate. Huber's M-estimate

¹ An outlier is an observation that lies an abnormal distance from other values in a random sample from a population.

is one of the most important and extensively used robust regression estimates. The M-estimate is, in principle, an estimate that minimizes an objective function that is the asymmetrical function of the residual or a function that contributes to each residual in the objective function.

$$\min_{\beta} \sum_{i=1}^n \rho(e_i) = \min_{\beta} \sum_{i=1}^n \rho \left[y_i - \sum_{j=0}^k X_{ij} \beta_j \right] \quad [1]$$

$$\sum_{i=1}^n \rho(u_i) = \sum_{i=1}^n \rho \left(\frac{e_i}{\hat{\sigma}} \right) \quad [2]$$

where $\rho(u_i)$ is the asymmetrical function of the residuals or functions contributing to each residual in the objective function. In general, a robust scale estimate needs to be estimated, and $\hat{\sigma}$ is a robust estimation scale. To find $\hat{\sigma}$ in robust regression with M-estimate, the equation is often used:

$$\hat{\sigma}_1 = \frac{(\text{median } |e_i - \text{median}(e_1)|)}{0.6745} \quad [3]$$

Table 1.

Descriptive statistics

xxx	Mean	Median	Maximum	Minimum	Std. Dev.	Observations
ROA	0,0227	0,0319	2,1920	-10,7443	0,4310	1.223
ROE	0,0745	0,0700	7,9904	-11,0404	0,6474	1.223
Tobin's Q	1,3478	0,7379	22,8657	-0,6107	2,3027	1.223
FiBD	0,4358	0,0000	1,0000	0,0000	0,4961	1.223
DFD	0,0630	0,0000	1,0000	0,0000	0,2430	1.223
PFD	0,1372	0,0000	1,0000	0,0000	0,1870	1.223
FBE	0,3737	0,0000	1,0000	0,0000	0,4840	1.223
Size	7.724.375	2.015.753	261.855.000	5.080	20.031.187	1.223
Leverage	0,5466	0,4772	11,8463	0,0076	0,7116	1.223
Liquidity	2,3220	1,4771	32,6617	0,0044	2,9158	1.223
Cash Flow	0,3464	0,2186	16,3919	-1,4395	1,0184	1.223
Growth	0,1684	0,1012	9,6132	-0,9331	0,4849	1.223

Source: Authors elaboration.

RESULTS

Variables like return on asset (ROA), return on equity (ROE), Tobin's Q (TBQ), female in the boardroom (FiBD), a *dummy variable* for female CEO (DFD), the proportion of female director (PFD), female business expertise (FBE) have higher standard

deviation than the mean. This condition suggests that these variables have high variability in the samples. A similar situation applies to the control variables like size, leverage, liquidity, cash flow, and growth opportunity. The female in the boardroom variable has an average value of 0.4358. This number means that there are 43.58% female directors in the sample companies.

Meanwhile, the dummy variable for female CEO has an average value of 0.0630. This value indicates that 6.3% of women are CEOs in non-financial companies listed on the Indonesia Stock Exchange for 2013-2019. The variable of proportion for female directors has an average value of 0.1372. This value means that approximately 13.72% of company directors are female. Next, the female business expertise variable has an average of 0.3737. This figure indicates that 37.37% of female directors have competence in the business field.

Table 2.

<i>Regression result</i>						
xxx	Y=ROA	Y=ROA	Y=ROE	Y=ROE	Y=Tobin's Q	Y=Tobin's Q
FiBD	0.0111	0.0659***	0.0332**	-0.0193	-0.0823	-0.2214
DFD	0.01881**	0.0368***	0.0401***	-0.1111***	-0.0960	-0.6516***
PFD	-0.0443**	-0.0992***	-0.0756**	0.0166	0.5223**	-0.9624***
FBE	0.0295	-0.0516***	-0.0086	0.0125	-0.0128	0.5506***
FiBD*LEV		-0.1112***		0.0829*		-0.0707
DFD*LEV		-0.0427***		0.3586***		1.2461***
PFD*LEV		0.1725***		-0.1326*		3.7134***
FBE*LEV		0.0971***		-0.0322		-0.9459***
Size	0.0083***	0.0081***	0.0178***	0.0166***	0.1337***	0.1347***
Liquidity	-0.0006	0.0001	-0.0003	0.0008	-0.0298***	0.0249***
Leverage	-0.0645***	-0.0619***	-0.0064	-0.0058	-0.013'8	-0.1115**
Growth	0.0057*	0.0046	0.0115*	0.0095	0.0237	0.0179
Cash Flow	0.0057**	0.0052*	0.0125***	0.0139**	0.4581***	0.5519***
Adj R ₂	0.04	0.04	0.04	0.03	0.05	0.04

Source: Authors elaboration.

To investigate the impact of board gender diversity (FiBD, DFD, PFD, and FBE) on firm performance, we use a robust regression to regress firm performance metrics on female directors' measures as follows:

$$ROA = \gamma_0 + \delta_1 FiBD_{it} + \delta_2 DFD_{it} + \delta_3 PFD_{it} + \delta_4 PFD_{it} + \delta_5 Size_{it} + \delta_6 Liquidity_{it} + \delta_7 Leverage_{it} + \delta_8 Growth + \delta_9 Cash Flow_{it} + \epsilon_{it} \quad (4)$$

$$ROE = \gamma_0 + \delta_1 FiBD_{it} + \delta_2 DFD_{it} + \delta_3 PFD_{it} + \delta_4 PFD_{it} + \delta_5 Size_{it} + \delta_6 Liquidity_{it} + \delta_7 Leverage_{it} + \delta_8 Growth + \delta_9 Cash Flow_{it} + \epsilon_{it} \quad (5)$$

$$Tobin's Q = \gamma_0 + \delta_1 FiBD_{it} + \delta_2 DFD_{it} + \delta_3 PFD_{it} + \delta_4 PFD_{it} + \delta_5 Size_{it} + \delta_6 Liquidity_{it} + \delta_7 Leverage_{it} + \delta_8 Growth + \delta_9 Cash Flow_{it} + \epsilon_{it} \quad (6)$$

DISCUSSION

Non-financial enterprises (including manufacturing industries) in developing nations such as Indonesia face strong product demand. As a result, organizations require extra managerial competence, particularly female directors, as well as equity to improve corporate performance. As a result, it is necessary to investigate the factors influencing the manufacturing industry's ability to attract external financing and the improvement of its performance. We claim that the firm's achievements in non-financial enterprises can be influenced by the company's leadership structure, profile, and motivation of the CEO (Abebe et al., 2020; Eide et al., 2020; Martinez-Alonso et al., 2020).

Table 2 shows that the female variable in the boardroom has a significant effect on the return on equity. The conclusions of this study suggest that having female directors on the board of directors can improve their companies' future performance. This issue has arisen because of the increased representation of female directors in Indonesian management. Gender-diverse boards have been found to influence numerous firm-level outcomes through their monitoring and advising functions (Alkebsee et al., 2022; Ali Gull et al., 2023). Female directors are expected to be more attentive monitors of management (Mohsen Al-Absy, 2023; Cambrea et al., 2023) and to provide better skills, qualifications, and breadth of viewpoints to management (Kim & Starks, 2016).

Thus, to the degree that more gender-variable boards might affect organizations by better monitoring and advising management, it is worth investigating if more gender-diverse boards can improve managerial skills. However, this circumstance comes to light because female directors are likewise competent at managing the organization.

According to classical finance research, the relation between females in the boardroom and a firm's level of performance generally predicts that CEOs are well-established over time and will pay off debts. We provide an affirmative hypothesis in our research work. We contend that non-financial (including manufacturing) businesses can be regarded as sophisticated growing institutions and that their CEO will gradually align with the firm's mission to serve as many customers as possible (Cornelissen et al., 2021; Magrelli et al., 2020; Roque et al., 2020). Furthermore, because non-financial (including manufacturing) firms, such as financial service firms, are entrepreneurial institutions, the probability of growing performance is more likely in organizations with longer CEO tenure (Reino et al., 2020).

Our findings support the premise that the longer a CEO stays in charge, the more organizations will improve their performance. Manufacturing businesses can expand and enhance their product and customer service by increasing CEO competency. We believe that this conclusion has practical implications. According to Yan et al. (2023), non-financial firms (including industrial companies), such as microfinance industries, continue to lack a core in liability management. Companies will need to expand their debt financing equity due to the various females in the boardroom to sustain their manufacturing capacity. Our research demonstrates that the higher the firm's level of performance, the longer the CEO's tenure.

In this article, we also analyze the moderating effect of leverage. Our result suggests that leverage is having a moderate impact on females in the boardroom and the firm's performance. According to Solomon et al. (2021) and Valenti and Horner (2020), agency theory suggests that managers are risk avoidants because they care about their undiversified human capital. Classical literature also explores how directors could be encouraged to make critical choices through the corporate governance process. And referring to Hatane et al. (2019) and Sanchez-Marin et al. (2017), this governance process consists of both external mechanisms and monitoring by stockholders, as well as risk-gratifying compensation through the internal mechanism.

This study adds to the literature on the factors that influence firm success and the role of women in corporate decision-making. To the best of our knowledge, this is the first study in Indonesia that has investigated the effects of board gender diversity on business performance. Furthermore, our findings add to the academic literature by demonstrating that female directors, female CEOs, and female business knowledge can help reduce agency conflicts between shareholders and managers by improving oversight through effective governance measures. Our findings also

contribute to the literature related to corporate governance in firm value by implying that female CEOs' contributions are one of the crucial aspects in a company that can improve managers' performance.

RESEARCH IMPLICATIONS

The findings about the association between female directors, female CEOs, female business expertise, and firm performance may have important implications for firms, the government, regulators, managers, and shareholders. To foster gender diversity and improve corporate governance processes, the government should make mandated quotas for female directors on company boards. By supporting female directors on corporate boards in emerging economies such as Indonesia, policymakers may establish efficient and effective governance procedures. Shareholders should also evaluate the board composition, which is a key aspect that can benefit them by minimizing managers' opportunistic behavior.

The study's findings have relevance for other emerging economies aiming to uncover elements that help improve corporate governance procedures. Our findings suggest that gender diversity is at least one of the significant characteristics that can improve board dynamics and lead to high company performance.

CONCLUSIONS

Our research has substantial policy and practice implications. Our findings add to the business case for gender diversity on boards by documenting supporting evidence that increased female director participation on boards improves firms performance. However, because women continue to be underrepresented on corporate boards (Knyazeva et al., 2013), our findings have policy implications in terms of designing boardroom gender quotas (Greene et al., 2020), by proposing that a distinct value-added of women in their monitoring and advising tasks is especially noticeable when there are three or more female directors on boards.

Furthermore, we show that gender diverse boards help shape the firm's human capital (Gould et al., 2018), since firms with higher female director participation tend to elevate managers with a more complete set of abilities. This discovery is novel and significant as we reconsider the demands placed on corporate executives as

well as the managerial career routes rewarded by more gender-diverse boards. As a result, companies that accept more female directors on their boards may be better positioned to increase human capital in their managerial ranks.

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DECLARATION OF CONFLICTS OF INTEREST

Apart from the acknowledged funding body, the authors have no further interests to declare.

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A1. VARIABLE, CONCEPT, AND MEASUREMENT

Variable	Concept	Measurement
Firm performance	Result of the business process	ROA = EAT/Total Assets ROE = EAT/ Stockholder's Equity Tobin's Q = (MVS+D)/TA
<i>Female in Boardroom</i>	Female director in the boardroom	FiBD = 1 at least one female director available and 0 otherwise
<i>Dummy for Female CEO</i>	Female as CEO in Board	DFD=1 if CEO is Female and 0 otherwise
<i>Proportion of Female Director</i>	Proportion of female in the boardroom	PFD = (Sum of Female Director/ Sum of Director) × 100%
Female Business Expertise	Female director has background in the business field.	FBD = 1 if having <i>business expertise</i> and 0 otherwise
<i>Firm Size</i>	Assets belong to the firm	Size = Ln (Total Assets)
<i>Leverage</i>	Amount of total liability to total asset	Leverage = Total liability/ total asset
Liquidity	Amount of cash belong to the firms	Liquidity = Current Assets/Current Liabilities
<i>Cash Flow</i>	Cash in and out yearly	Cash flow = Net Income + Depreciation of asset
Growth	Total change of the firm's asset	$Growth = (Total Asset_t - Total Asset_{t-1}) / Total Asset_{t-1}$



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