Board gender diversity and firm performance: new evidence from cultural diversity in the boardroom

Ashikul Kabir and Saiyara Shabbir Ikra
Department of Business and Technology Management, Islamic University of Technology, Gazipur, Bangladesh
Paolo Saona
Richard A. Chaifetz School of Business, Saint Louis University, Madrid, Spain; Faculty of Economics and Business Administration, Universidad Pontificia Comillas, Madrid, Spain and Faculty of Economics and Administrative Sciences, Universidad Católica de la Santísima Concepción, Concepción, Chile, and
Md. Abul Kalam Azad
Department of Business and Technology Management, Islamic University of Technology, Gazipur, Bangladesh

Received 4 June 2022
Revised 22 September 2022
Accepted 29 October 2022

Abstract

Purpose – This study extends the current literature in the context of European countries by showing that women's participation on the board can enhance the financial performance of a company while moderated by many cultural factors.

Design/methodology/approach – This study examines 19 European countries throughout the period 2010–2020. The time-invariant or individual fixed-effect models are used.

Findings – The authors found that high power distance and masculinity undermine the impact of board gender diversity on firm performance. The gender-diverse board reports a statistically significant negative impact on return on asset (ROA) and return on equity (ROE) while moderated by the power distance index.

Originality/value – This research will be of significant value to the board directors, practitioners and the concerned authority who desire to polish up the firm performance of European countries that are governed by cultural norms.

Keywords Board gender diversity, Firm performance, Cultural diversity

Paper type Research paper

1. Introduction

Gender diversity on board has been an imperative topic in firm performance literature (EmadEldeen, Elbayoumi, Basuony, & Mohamed, 2021; Joecks, Pull, & Vetter, 2012). Prior studies have examined the relationship between gender diversity and firm performance from many perspectives like the composition of the board of directors, earning quality and corporate governance (Kılıç & Kuzey, 2016). In general, it is assumed that gender diversity

Professor Paolo Saona thanks the financial support of the Scholarship Opportunity Fund of Saint Louis University, the Spanish Ministry of Science and Innovation for its financial support (PID2020-114797GB-I00), and Universidad Pontificia Comillas with the internal research grant PP2022_11.

LBS Journal of Management & Research
Emerald Publishing Limited
e-ISSN: 0974-1852
p-ISSN: 0972-8031
DOI 10.1108/LBSJMR-06-2022-0022

increases firm performance (Salloum, Azzi, Mercier-Suissa, & Khalil, 2016). Moreover, gender diversity leads to a better corporate image by higher firm performance (Olaoye & Adewumi, 2020). The selection process of board members that includes both genders is expected to lead to better management as well (Galia, Lentz, Max, Sutan, & Zenou, 2017).

In some of the European countries, the relationship between the presence of women on boards and firm performance has been generally ignored (Kılıç & Kuzey, 2016). In 2019, the European Commission reported that when it comes to decision-making, European Union still scores low. Females are not much encouraged to participate in decision-making because there is a common belief that the female body has a lack of confidence, risk aversion and mental instability (Maxfield, Shapiro, Gupta, & Hass, 2010). Italy and Mexico give preference to men over women because they think that women lack ambition and assertiveness.

This paper contributes to the current literature from different angles. First, this is a ground-breaking research in studying the impact of board gender diversity on the majority of the EU firm's performance while moderated by different cultural dimensions like power distance and masculinity. Second, this paper shows cultural differences across many European countries. Many studies show that countries with high power distance impact positively on a firm's performance (Farooq, Ahmed, & Khan, 2019). But in this study, this power distance is negatively associated with the firm's performance which directly shows that low power distance leads to a high percentage of women and improves the management efficiency of the boards. Third, this paper also considers the role of women and the moderating effect of the global gender gap index as a driving factor of the firm's value. Global Gender Gap advances women's rise to leadership positions and applies a redeployment of work. Fourth, this study shows that more participation of women is positively related to the financial performance of firms, as measured by the return on assets, the return on equity and the profit margin. Also, there is a finding that if women are present on the board, there can be a positive enhancement in performance. Lastly, we follow a methodological strategy based on the application of panel data analysis. This method allows us to control the unobservable heterogeneity problem and the simultaneity or endogeneity problem.

The remaining sections of this study are arranged as follows. Section 2 contains the literature review. Section 3 is based on data and methodology, followed by Section 4 which provides a descriptive analysis and also the summary statistics. Section 4.2 presents the pairwise correlation, and Section 4.3 is the regression analysis table discussing the impact of board gender diversity on a firm's performance. Section 6 presents the conclusion and recommendations for future avenues of research.

2. Background and literature review

2.1 Theoretical perspectives of gender diversity and firm performance

2.1.1 Agency theory. A gender-diversified board is the main essence of agency theory that justifies the board of director's appellation in monitoring and control. Thus, board gender diversity reduces agency problems because of some cultural dimensions. Agency theory incorporates the legitimacy of a firm where managers use shareholders' funds by signing a contract, and as per the contract, returns are divided between them (Al-dhamari, Ku Ismail, & Al-Gamrh, 2016). But this sketchy contract is incomplete which somehow makes managers equipped with residual control of rights. To abridge these excessive residual rights, an effective board of directors is pivotal. Hillman and Dalziel (2003) claimed that the value of shareholders depends on effective monitoring of the board of directors. Generally, the board of directors uses diverse skills and information for effective monitoring. On top of that, if there are women among the board members, there can be a plausible positive association between women and the value of the firm (Lückerath-Rovers, 2013).

2.1.2 Resource dependency theory. Resource dependency theory (RDT) is the key to a firm's success, and control over the resources is a powerful strategy to maintain open access to resources. The RDT suggests that boards have some functions which are dependent to

facilitate the resources and increase the firm's value. To maximize the value, a firm must have resources like an analytic experienced board, independent board members, proper leverage, Global gender gap index (GGG) and gender diversified board. In this paper, firms with gender-diversified board members facilitate more resources which tend to reduce external dependency, decrease uncertainty and increase the firm's value. Gender diversified boards also facilitate access to resources by maintaining proper leverage (Perrault, 2014). Cultural dimensions across different European countries enhance female participation on board by assessing the ability of a company to meet its financial obligations (Terjesen, Couto, & Francisco, 2015). They also improve the analytic decision of a firm by proper strategizing which leads to having more access to resources (Salloum *et al.*, 2016). The GGG also helps to access resources and opportunities that divide these resources equitably between women and men.

3. Empirical literature

Empirical research also supports a positive relationship between women on a board and board monitoring (Jedi & Nayan, 2018). Women in top management are likely to ameliorate the board's independence by enhancing the quality of the boards' decisions properly (Lakhal, Amel, Lakhal, & Malek, 2015). This monitoring is somehow moderated by cultural dimensions – power distance and masculinity – which reduce agency conflict. Compared to the male counterparts in a board, more endeavors are inputted by the women that are needed in a firm (Lakhal, Amel, Lakhal, & Malek, 2015b). So, gender diversity improves board monitoring with better performance of women that impacts the firm positively (Simkins & Simpson, 2003).

4. Hypothesis development

4.1 Relationship between firm's performance and board diversity moderated by power distance

According to Hofstede's cultural dimensions, "power distance" and "masculinity-feminine" have an impact on board gender diversity as well as on firm performance. These cultural dimensions may impact board diversity, while others might resist it. Literature suggests that power distance plays an instrumental role in managerial perceptions of gender (Hauff & Richter, 2015). It is a cultural dimension of an organization that refers to an unequal distribution of power among the board members. Agency theory also states that unequal power distribution results in illicit activities (Mellado & Saona, 2019). Thus, less powerful members of an organization accept this inequality. An organization is highly centralized if the high power distance is prevalent. In a high power distance organization, the concentration of power is confined to those members who oversee authority. Less female members on board comply with distant hierarchical power. In distant hierarchical powered organizations, women rarely do something explicit when the instructions are provided by the top members (Salloum *et al.*, 2016). But more women on board lead to decentralization of an organization where women take initiative explicitly and do not comply with distant hierarchical power (Daniels & Greguras, 2014).

H1. Firm performance is positively related to board diversity while moderated by power distance.

4.2 Relationship between firm's performance and board diversity moderated by masculinity

Masculinity is a cultural dimension that represents an inclination towards achievements, assertiveness and material rewards for success. Countries with high masculinity in an organization lead to a more differentiated gender-diverse board where board members are mostly object-oriented (Hussein, Mohammed Mahmood, & Alkasb, 2020). However, in feminine culture, there is an equality of genders, and board members are very compromising and friendly. Women on board members are likely to do non-monetary work and give freedom to other members (Lückerath-Rovers, 2013). They are mainly relationship oriented rather than object

oriented. Based on the RDT, if there are more women on board in a masculine country, there can be less decisive work and more compliance with societal norms in an organization.

H2. Firm performance is positively related to board diversity while moderated by masculinity.

5. Methodology

5.1 Data and data sources

The sample includes 2,970 firm-year observations of European firms covered in Thomson Reuters Refinitiv Eikon from 2010 to 2020. These companies belong to the market index of their corresponding country markets. Thomson Reuters Refinitiv Eikon is a standard and well stablished source of information in this research field that supplies harmonized data that enable comparison of firms´financial information across countries. Following Mellado & Saona (2019), a significant number of years are considered in the analysis to prevent misspecification due to missing data in the cross-sections. Additionally, to prevent biases in the estimations due to the economic disturbances caused by the subprime crises, we started the period of analysis in 2010. Following Mellado & Saona (2019), financial institutions (S.I.C. 6000–6999) as well as utility firms (S.I.C. 4900-4999) were excluded from the sample because of their regulated status. Table 1 exhibits the structure and composition of the cross-section, time-series data by country.

Table 1. Variable identification and measurement approach

Variable identification	Acronyms	Definitions and measures
Main variable		
Firm performance (Dependent variable)		
Return on asset	ROA	Ratio of net profit to total reported assets
Return on equity	ROE	Ratio of net profit to total shareholder's equity
Gender diversity variable		
Proportion of women on board	GD2	Total number of women on the board divided by the total number of board members
Board Blau index	GD3	
Board Shannon index	GD4	
Country level variable		
World governance index	WGI	Measure six dimensions- Voice of accountability, Political Stability, Government effectiveness, Regulatory environment, Rule of law and Control of Corruption
Global gender gap index	GGG	The index measures gaps rather than levels. It captures gaps in outcome variables rather than gaps in input variables
Factor world governance index	FWGI	
National culture (Hofstede cultural dimensions)		
Power distance	PD	The index is described as "the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally"
Masculinity vs Femininity	MAS	It refers to the distribution of roles between men and women
Control variable		
Board specific control variable		
Board size	BSize	Total number of directors on the board
CEO duality	Duality	Chief Executive Officer (CEO) has both the presidency of the company as the chairman of its Board of Directors
Proportion of independent board member	PIBM	Percentage of independent board members divided by the total number of board members
Firm-specific control variable		
Leverage	Lev	Total debt divided by total asset
Firm size	FSize	Total size of the firm
Analytic experienced board	AEB	Percentage of analytic experienced board members divided by the total number of board members

5.2 Variable measurement

5.2.1 Dependent variable. To construct an appropriate firm performance measure, this study adopts two financial indicators including (1) return on asset (ROA) and (2) return on equity (ROE). ROA_{it} is measured as the ratio of a firm's net profit to the total assets reported in a given financial year. ROE (ROE_{it}) refers to how appropriately a firm is utilizing shareholders' equity to maximize the firm's earnings. It is measured as the ratio of net profit to the total reported shareholders' equity in a given financial year.

5.2.2 Independent variable. The Gender Diversity (GD) metric measures the firm's performance through the recruitment of female executives on the board. Generally speaking, it will be measured in the three said categories by applying the following metrics in each category. First, gender diversity will be computed as the proportion of women on the board ($GD2$) which represents the share of female members to the total number of each category (e.g. board members). However, given the construction of this metric can lead to having the board members compounded only by male members or female members, representing consequently the lack of gender diversity, we follow previous literature (Abad, Lucas-Pérez, Minguez-Vera, & Yagüe, 2017; Martín-Ugedo, Minguez-Vera, & Rossi, 2019; Saona, Muro, San Martín, & Baier-Fuentes, 2019) and use two additional indexed measures of gender diversity for each category of female leadership considered in this study that takes into account the proportion of both gender in each category. These indexed measures correspond to the Blau (1977) index ($GD3$) and the (Shannon, 1948) Index ($GD4$) of Diversification. Blau index is computed as $GD3 = 1 - \sum_{i=1}^{n} P_i^2$, where P_i corresponds to the proportion of board members of each gender. The range of values of $GD3$ variable is between 0, when there is no gender diversity at all, meaning that there are only male members or female members in each of the three categories considered in this study, and 0.5 when there is an equal proportion of male and female members in each category. The Shannon index is calculated with the same inputs as Blau index as $GD4 = \left| \sum_{i=1}^{n} LnP_i^{P_i} \right|$. $GD4$ variable takes values between 0 when there is no gender diversification and 0.693 when there is an equal proportion of men and women in each of the categories considered in this study.

5.2.3 Control variable. Board characteristics and Firm-Specific- BoardSize, Independent board members and CEO Duality are board-related control variables that are included to measure the governance quality of an organization. In past studies, firm's performance has been measured in different ways but none of the measures is ideal. In this study, firms with more independent board members perform better.

5.2.4 Country-level variables. In the regression model, Z is the country-level variable which is comprised of the World Governance Index and the Global Gender Gap. The World Governance Index summarizes the quality of governance, and data are obtained from the World Bank which help firm to operate the policies properly. Global Gender Gap is used to measure the performance of an organization by setting a proper index value, and low GGG equally distributes resources among board members.

5.2.5 Cultural index variables. The second group of explanatory variables corresponds to the country's national culture, measured by Hofstede's culture index. The index is a widely applied tool to measure and analyze cultural differences among countries. This study captures the country's cultural perspective with two dimensions: (1) Power distance (PD) and (2) Masculinity (MAS). The value of each of the dimensions ranges from 0 to 100. The cultural index variable which is consisted of Power distance and Masculinity is multiplied by gender diversity to test the significant presence of women on board in different European countries.

5.3 Research design

To examine the impact of various independent variables on a firm's value, we estimate regression models which are used to test the above-mentioned hypothesis:

$$FirmPerformance_{it} = \alpha + \beta 1 GD_{it} + \beta 2(GD_{it} * Culturaldimension) + \beta 4 BoardSize + \beta 3 Independentboardmembers + \beta 5 CEOChairmanSeperation + \beta 6 leverage + \gamma Zkt + \varepsilon \quad (1)$$

where, $FirmPerformance_{it}$ denotes the performance of the firms as measured by ROA_{ikt}, ROE_{ikt} for the ith firms in the t period. GD_{it} comprises GD2, GD3 and GD4. We use cultural dimensions – power distance and masculinity – rather than other dimensions because these variables measure the gap between genders and measure the equality among the board members of firms. In high power distance and high masculine countries, board members of firms are object-oriented and do not need further justification of any decision. For this, the performance of the firm decreases.

$$ROA = f\,(GD_{it},\ GD_{it} * Cultural\ dimension)$$

where the country coefficient of high power distance and high masculinity is 1. In low power distance and low masculine countries, board members of firms are relationship-oriented, and board members have democratic relations between expecting and accepting power. This enhances the performance of the firms more than the countries with high power distance and high masculinity.

$$ROE = f\,(GD_{it},\ GD_{it} * Cultural\ dimension)$$

where the country coefficient of low power distance and low masculinity is 0. This model is estimated by the generalized least square method. It removes the heterogeneity problem.

6. Results and discussions

Descriptive statistics: Table 2 Panel A reports descriptive statistics for the proportion of female directors across European countries where N represents the number of companies reported. On average, only 25.0% of the board members in major European firm samples are found to be women. It indicates that the reported proportion of women is still a minority among the male board members among the European firms. The highest proportion of female directors is reported in Norway. Slovenia is the only country to report a high minimum proportion of women on corporate boards among all other European firms.

Table 3 reports the matrix of correlations among the firm performance measures, board characteristics, cultural indices and control variables used in the experiment. The correlation between firm performance measures (ROA and ROE) is found to be significantly high (0.77) in the Pearson correlation matrix reported below. Both the diversity indices (Blau and Shannon) are significantly and positively correlated with the proportion of women on board. The average variation inflation factor (VIF) score for all the explanatory variables is below the cut-off value of 10 (Table 4), which confirms that the variables reported are free from multicollinearity problem.

To determine if the fixed or random effects model is the best fit to study the relationship between gender diversity, board characteristics and firm performance, the Hausman specification test is run to determine the validity of fixed and random effect estimators. The following hypotheses are adopted under the test:

H0. The preferred model is random effects.

H1. The alternative model is fixed effects.

Acronyms	Variables	Obs	Mean	Median	St.Dev	Min	Max
ROA	ROA	4,068	0.055	0.048	0.049	−0.057	0.286
ROE	ROE	4,198	0.113	0.122	0.164	−1.088	0.582
GD2	Proportion of women on board	2,970	0.250	0.250	0.130	0.000	0.667
GD3	Board Blau index	2,970	0.341	0.375	0.136	0.000	0.500
GD4	Board Shannon index	2,970	0.509	0.562	0.180	0.000	0.693
PIBM	Proportion of independent board members	2,969	0.613	0.615	0.235	0.000	1.000
BSize	Board size	2,969	11.559	11.000	3.895	2.000	26.000
Duality	CEO duality	2,978	0.221	0.000	0.415	0.000	1.000
AEB	Analytic experienced board	2,959	6.466	6.050	2.555	0.250	22.917
Lev	Leverage	4,328	0.582	0.593	0.178	0.009	0.997
FSize	Firm size	4,328	22.273	22.469	2.071	14.218	26.932
GGG	Global gender gap index	4,140	0.768	0.759	0.049	0.664	0.900
WGI	World governance index (0–1)	4,140	0.772	0.789	0.082	0.527	0.875
MAS	Masculinity index	4,400	43.083	43.000	24.758	5.000	88.000
PD	Power distance index	4,400	42.042	35.000	16.700	11.000	73.000

Note(s): This table represents the summary statistics of the firm performance, board characteristics, cultural indices and control variables for the sample of 518 firms of European countries. The final study sample consists of strongly balanced panel of 2,970 firm-year observations for the period of 2010 to 2020

Table 2.
Descriptive statistics of variables

The Hausman test result reveals that the study rejects the null hypothesis with the p-value of 0.000 ($\chi^2 = 32.21$), implying that the fixed effect models are preferred for explaining the aforementioned relationship (Tables 5 and 6).

In Table 6, the relationship between the cultural indices and their relationship with firm performance measures is being studied for each of the variables. Power distance appears to be positively associated to the firm's ROA at a 1% significance level, by collectively controlling all the adopted firm-level attributes (coeff.PD = 0.001, $p < 0.01$). Thus, the higher a country scores in this dimension, the better the financial implications for the firms operating in this country. By quantifying this finding, it is found that firms operating in a "power distant" country, that is one standard deviation (St. Dev_{PD} = 16.700) higher than the average country's score ($Mean_{PD}$ = 42.042), are estimated to achieve 4.2% ROA (coeff.$_{PD}$ × $Mean_{PD}$), keeping all other things being constant. About the second cultural dimension, masculinity vs femininity, this study finds an inverse association with the ROA (coeff.$_{MAS}$ = −0.001, $p < 0.01$).

7. Conclusions

This study extends the existing literature on board gender diversity by examining the relationship between gender diversity and firm performance covering firms from 19 European countries from 2010 to 2020. Utilizing two measures of firm performance, namely, ROA and ROE, our results show that gender diversity exerts a positive effect on the firm's performance. The regression results also indicate that the presence of women on board has a significant impact on firm performance when estimated through pooled ordinary least square (OLS). Hence, board gender diversity has a statistically significant positive impact on firm performance when moderated by various cultural factors.

Further analysis shows that gender-diverse board reports a statistically significant negative impact on ROA and ROE while moderated by the power distance and masculinity index. This study provides many managerial insights. Consistent with Kılıç and Kuzey (2016), the findings support that firms should increase the number of women on board because gender-diverse boards enhance productivity and creativity. This paper also

Table 3.
Pearson correlation matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) ROA	1.00															
(2) ROE	0.77*	1.00														
(3) GD2	0.03	−0.01	1.00													
(4) GD3	0.03	−0.01	0.95*	1.00												
(5) GD4	0.03	−0.01	0.92*	0.99*	1.00											
(6) PIBM	0.02	0.00	0.20*	0.22*	0.21*	1.00										
(7) BSize	−0.22*	−0.08*	−0.10*	−0.07*	−0.04	−0.32*	1.00									
(8) Duality	−0.06*	−0.01	0.03	0.01	0.01	−0.10*	0.22*	1.00								
(9) AEB	0.08*	0.07*	−0.08*	−0.10*	−0.10*	−0.11*	0.07*	0.22*	1.00							
(10) Lev	−0.33*	0.11*	−0.05	−0.04	−0.03	−0.04	0.25*	0.05*	−0.04	1.00						
(11) FSize	−0.11*	0.14*	0.06*	0.09*	0.10*	0.08*	0.51*	0.15*	0.02	0.35*	1.00					
(12) GGG	0.05*	−0.03	0.39*	0.36*	0.34*	0.24*	−0.32*	−0.17*	−0.14*	−0.04*	−0.07*	1.00				
(13) WGI	0.13*	0.05*	0.15*	0.17*	0.16*	0.30*	−0.41*	−0.31*	−0.13*	0.00	0.18*	0.69*	1.00			
(14) FWGI	0.13*	0.06*	0.16*	0.17*	0.17*	0.31*	−0.41*	−0.32*	−0.13*	0.01	0.20*	0.68*	1.00*	1.00		
(15) MAS	−0.03	0.05*	−0.25*	−0.21*	−0.19*	−0.06*	0.24*	−0.02	0.04	0.09*	0.19*	−0.60*	−0.34*	−0.33*	1.00	
(16) PD	−0.14*	−0.06*	0.04	0.01	−0.00	−0.20*	0.33*	0.47*	0.16*	0.01	−0.03	−0.46*	−0.76*	−0.75*	0.01	1.00

Note(s): ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

This table represents the Pearson's correlation among the identified variables of the study. Here, ROA and ROE are the proxy measure of "Firm performance"; PIBM, BSize, Duality are the proxy measures of the "Board characteristics"; FSize, Lev and AEB are the "Firm control variables"; GGG, WGI are the country level variables; PD and MAS represent the Hofstede's culture dimensions. The correlation matrix depicts the strength and sign of the relationship amongst the variables. *p*-values are in parentheses; *, ** and *** indicate significance at the 10, 5 and 1% levels, respectively

Variables	VIF	Tolerance
Board size	1.680	0.596
Firm size	1.540	0.649
Proportion of independent board	1.240	0.809
Leverage	1.120	0.891
CEO duality	1.100	0.906
Analytic experienced board	1.060	0.941
Mean VIF	1.290	

Note(s): This table depicts the collinearity statistics of the board characteristics and firm control variables. The VIF of less than 10 indicates that there are no multi-collinearity problems among the variables

Table 4.
Collinearity statistics

	ROA					
Variables	(1)	(2)	(3)	(4)	(5)	(6)
GD2	0.029***	0.015**				
	(0.006)	(0.006)				
GD3			0.018***	0.011**		
			(0.005)	(0.005)		
GD4					0.012***	0.008**
					(0.004)	(0.004)
boardindep	0.000	0.000	0.000	0.000	0.000	0.000
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
BoardSize	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
AnalyticCEOCh ~ n	0.001	0.000	0.001	0.000	0.001	0.000
	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
AnalyticExper ~ d	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
lev2	−0.086***	−0.085***	−0.086***	−0.085***	−0.086***	−0.085***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
size	−0.009***	−0.009***	−0.009***	−0.009***	−0.009***	−0.009***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
divGGG2	−0.009**	−0.008**	−0.006	−0.006*	−0.005	−0.006*
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
divPD2	−0.028***		−0.019**		−0.017**	
	(0.009)		(0.008)		(0.008)	
divMasculinity2		0.007		0.009		0.009
		(0.009)		(0.009)		(0.009)
Constant	0.264***	0.271***	0.267***	0.270***	0.266***	0.270***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
Observations	2,749	2,749	2,749	2,749	2,749	2,749
Industry dummy	Yes	Yes	Yes	Yes	Yes	Yes
Country dummy	Yes	Yes	Yes	Yes	Yes	Yes

Note(s): ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$
This table presents the findings of the fixed effect estimation for the gender diversity–firm performance relationship. The signs ***, ** and * indicate the statistical significance level at 1, 5 and 10%, respectively

Table 5.
Impact of board gender diversity on ROA

considers the role of women and the moderating effect of the global gender gap index as the driving factor of the firm's value.

The findings of this study have important practical implications for managers, investors and policymakers. The study clearly shows that different cultural setting suggests a different proportion of women to be present on the corporate board to ensure an effective corporate

Variables	ROE (1)	(2)	(3)	(4)	(5)	(6)
GD2	0.084***	0.054***				
	(0.017)	(0.017)				
GD3			0.052***	0.034**		
			(0.014)	(0.014)		
GD4					0.035***	0.023**
					(0.010)	(0.010)
PIBM	−0.001	−0.001	−0.000	0.000	0.000	−0.000
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
BSize	−0.000	−0.001	−0.001	−0.000	−0.001	−0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Duality	0.001	0.000	0.001	0.001	0.001	0.001
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
AEB	0.003***	0.004***	0.003***	0.004***	0.003***	0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Lev	0.050***	0.054***	0.050***	0.048***	0.050***	0.050***
	(0.014)	(0.013)	(0.013)	(0.014)	(0.013)	(0.013)
FSize	−0.013***	−0.013***	−0.013***	−0.014***	−0.013***	−0.013***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
GGG	−0.029***	−0.029***	−0.018**	−0.022**	−0.016*	−0.020**
	(0.010)	(0.010)	(0.009)	(0.009)	(0.009)	(0.009)
divPD2	−0.067***		−0.041*		−0.036*	
	(0.022)		(0.021)		(0.021)	
divMasculinity2		0.007		0.014		0.018
		(0.023)		(0.024)		(0.023)
Constant	0.323***	0.316***	0.320***	0.328***	0.318***	0.321***
	(0.043)	(0.040)	(0.042)	(0.043)	(0.041)	(0.041)
Observations	2,764	2,764	2,764	2,764	2,764	2,764
Industry dummy	Yes	Yes	Yes	Yes	Yes	Yes
Country dummy	Yes	Yes	Yes	Yes	Yes	Yes

Note(s): ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

This table presents the findings of the fixed effect estimation for the gender diversity–firm performance relationship. The signs ***, ** and * indicate the statistical significance level at 1, 5 and 10%, respectively

Table 6. Impact of board gender diversity on ROE

governance mechanism. Firms with a low power distance environment and an increased proportion of women on board may attract investors by making a profitable investment. Policymakers may find important findings from this study to take initiative to formulate policies in a different context to contribute to women's empowerment in an organizational setting to shove the economy depending on different aspects of the existing legislation.

References

Abad, D., Lucas-Pérez, M.E., Minguez-Vera, A., & Yagüe, J. (2017). Does gender diversity on corporate boards reduce information asymmetry in equity markets? *BRQ Business Research Quarterly*, *20*(3), 192–205, doi: 10.1016/j.brq.2017.04.001.

Al-dhamari, R., Ku Ismail, K.N.I., & Al-Gamrh, B. (2016). Board diversity and corporate payout policy: Do free cash flow and ownership concentration matter?. *Corporate Ownership and Control*, *14*, 375–376, doi: 10.22495/cocv14i1c2p9.

Blau, P.M. (1977). *Inequality and heterogeneity: A primitive theory of social structure*. New York, NY: The Free Press.

Daniels, M., & Greguras, G. (2014). Exploring the nature of power distance. *Journal of Management*, *40*, 1202–1229, doi: 10.1177/0149206314527131.

EmadEldeen, R., Elbayoumi, A., Basuony, M., & Mohamed, E. (2021). The effect of the board diversity on firm performance: An empirical study on the UK. *Corporate Ownership and Control*, *18*, 337–347, doi: 10.22495/cocv18i3siart8.

Farooq, U., Ahmed, J., & Khan, S. (2019). National culture and firm financial performance: A mediating role of firm financing decision. *Cogent Business and Management*, *13*, 1–18, doi: 10.1080/23311975.2020.1858640.

Galia, F., Lentz, F.-M., Max, S., Sutan, A., & Zenou, E. (2017). Selecting board members: The impact of common knowledge on gender diversity - an experimental investigation. *Managerial and Decision Economics*, *38*, 806–821, doi: 10.1002/mde.2818.

Hauff, S., & Richter, N. (2015). Power distance and its moderating role in the relationship between situational job characteristics and job satisfaction: An empirical analysis using different cultural measures. *Cross Cultural Management: An International Journal*, *22*, 68–89, doi: 10.1108/CCM-11-2013-0164.

Hillman, A., & Dalziel, T. (2003). Boards of directors and firm performance: Integrating agency and resource dependence perspectives. *The Academy of Management Review*, *28*, 383, doi: 10.2307/30040728.

Hussein, S., Mohammed Mahmood, S., & Alkasb, A. (2020). Hofstede's cultural dimensions (masculinity vs. Femininity) and its impact. *On Earnings Management*, *34*, 2887–2899.

Jedi, F., & Nayan, S. (2018). An empirical evidence on the effect of women board representation on firm performance of companies listed in Iraq Stock Exchange. *Business and Economic Horizons*, *14*, 117–131, doi: 10.15208/beh.2018.10.

Joecks, J., Pull, K., & Vetter, K. (2012). Gender diversity in the Boardroom and firm performance: What exactly constitutes a 'critical mass'? *Journal of Business Ethics*, *118*, doi: 10.2139/ssrn.2009234.

Kılıç, M., & Kuzey, C. (2016). The effect of board gender diversity on firm performance: Evidence from Turkey. *Gender in Management: An International Journal*, *31*(7), 434–455, doi: 10.1108/GM-10-2015-0088.

Lakhal, F., Amel, A., Lakhal, N., & Malek, A. (2015). Do women on boards and in top management reduce earnings management? Evidence in France. *Journal of Applied Business Research*, *31*, 3, doi: 10.19030/jabr.v31i3.9236.

Lückerath-Rovers, M. (2013). Women on boards and firm performance. *Journal of Management and Governance*, *17*(2), 491–509, doi: 10.1007/s10997-011-9186-1.

Martín-Ugedo, J.F., Minguez-Vera, A., & Rossi, F. (2019). Female directors and firm performance in Italian and Spanish listed firms: Does masculinity matter?. *Academia Revista Latinoamericana de Administración*, *32*(3), 411–436, doi: 10.1108/ARLA-06-2018-0124.

Maxfield, S., Shapiro, M., Gupta, V., & Hass, S. (2010). Gender and risk: Women, risk taking and risk aversion. *Gender in Management: An International Journal*, *25*, 586–604, doi: 10.1108/17542411011081383.

Mellado, C., & Saona, P. (2019). Real earnings management and corporate governance: A study for Latin America. *Economic Research-Ekonomska Istraživanja*, *33*(1), 2229–2268. doi:10.1080/1331677X.2019.1691930.

Olaoye, F.O., & Adewumi, A.A. (2020). Corporate governance and the earnings quality of Nigerian firms. *International Journal of Financial Research*, *11*(5), 161–171, doi: 10.5430/IJFR.V11N5P161.

Perrault, E. (2014). Why does board gender diversity matter and how do we get there? The role of shareholder activism in deinstitutionalizing old boys' networks. *Journal of Business Ethics*, *128*, doi: 10.1007/s10551-014-2092-0.

Salloum, C., Azzi, G., Mercier-Suissa, C., & Khalil, S. (2016). The rise of women and their impact on firms' performance. *International Journal of Entrepreneurship and Small Business*, *27*, 213–246, doi: 10.1504/IJESB.2016.073976.

Saona, P., Muro, L., San Martín, P., & Baier-Fuentes, H. (2019). Board of director's gender diversity and its impact on earnings management: An empirical analysis for select European firms. *Technological and Economic Development of Economy*, *25*(4), 634–663, doi: 10.3846/tede.2019.9381.

Shannon, C.E. (1948). A mathematical theory of communication. *Bell System Technical Journal*, *27*(3), 379-423. doi: 10.1002/j.1538-7305.1948.tb01338.x.

Simkins, B., & Simpson, W. (2003). Corporate governance, board diversity, and firm value. *The Financial Review*, *38*, 33–53, doi: 10.1111/1540-6288.00034.

Terjesen, S., Couto, E., & Francisco, P. (2015). Does the presence of independent and female directors impact firm performance? A multi-country study of board diversity. *Journal of Management and Governance*, *20*, doi: 10.1007/s10997-014-9307-8.

Corresponding author
Md. Abul Kalam Azad can be contacted at: kalam@iut-dhaka.edu