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Role of Gender Diversity in Explaining Financial Distress: A Dynamic Panel Data Approach

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Keywords: Financial Distress, Gender Diversity, Board Characteristics.

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The purpose of the paper is to examine how board gender diversity can be used to explain financial distress over the span of 9 years, from 2013 to 2021, using a sample of 58 non-financial companies listed publicly on the Pakistani equity market. The study employs the dynamic generalized method of moment estimator, using the Altman Z-score model as a proxy for financial distress, where a higher Z-score indicates lower distress. Findings reveal that gender diversity on boards improves board performance and protects firms from financial instability and bankruptcy. Female directors, both independent and insider, play a crucial role in reducing financial distress, and their effect strengthens with greater board independence. This research is the first study to analyze the association between gender diversity in boards and the probability of facing financial distress from the perspective of the emerging economy (Pakistan).

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Contents

Introduction

Financial distress risk is a term used in reference to a business status whereby a company cannot settle its debts or debt obligations until it is out of Pocket. Perhaps, this is a mere disadvantage, and in fact, there are cases when companies do not manage to meet this obligation with time. It is this stage of critical entry into insolvency of companies. Financial troubles are part of the business systems, and therefore, we cannot avoid them, meaning that they are a systemic risk (Khan et al., 2020). Looking at the distress risk, you can probably notice that the financial collapse is possible. Ever since the 2008 financial crisis, a frenzy of debates have been occurring on how corporate governance (CG) has contributed to the financial troubles of the companies, with supporters of gender diversity arguing that female board members enhance a competitive advantage of an organization by increasing board effectiveness, lowering costs, and enhancing communication among board members at any corporate tier (Karim, 2021). The board's gender diversity influences the financial performance of the firms. Corporate governance has put this topic into the limelight after the COVID-19 pandemic, when various researchers, including Ferrat et al. (2022); Lobato et al. (2021), reported that the new business environment that has emerged after the COVID-19 pandemic requires businesses and regulatory authorities to embrace new practices to ensure process sustainability. According to Garcia and Herrero (2021), the number of female directors on the board is negatively correlated with the level of leverage and financial distress (FD) of an organization. Equally, Mittal (2018) conjectures that the likelihood of FD will be reduced by the presence of a higher number of female directors on the board due to the risk-averse perspective of the female members.

Moreover, the gender diversity in board composition (BGD) has come to the focus of politicians, policymakers, and the media. The European Union has adopted some measures to guarantee gender equality at the corporate board level. Some European nations established at least 40 percent of female membership, whereas some countries had established voluntary quotas in their corporate codes (Garcia and Herrero, 2021). The Government of Malaysia suggested that decision-making and board composition of publicly listed companies should have 30% women representation (Al-Dhamari et al., 2016). Nevertheless, the proportion and inclusion of females on boards throughout the world is low. Davies (2011) reports that the lowest women's representation was registered in the Asia-Pacific at 3.6% and the highest in Sweden at the rate of 23%. The percentage of women representation in corporate boards in Pakistan is 6.4, and this number should be raised to 25% by 2025 (Asghar, 2021). The parliament of Italy has enacted legislation requiring gender-based quotas among companies that are listed on the Italian Stock market, according to which the directors of the underrepresented gender should occupy at least a third of the company board members.

Some of the studies have indicated that women on boards reduce the risk of financial distress because of the risk-averse nature of female members (Garcia & Herrero, 2021; Darrat et al., 2016). However, various studies have also shown that there is no relationship or, on the contrary, an inverse relationship between female board members' involvement and financial disclosure (Santen and Donker, 2009). Moreover, the former studies in this field focused on the context of industrialized countries (Garcia and Herrero, 2021; Darrat et al., 2016; Santen and Donker, 2009). We have poor knowledge of the impoverished countries, and the effect of BGD on the likelihood of FD is a research field that is still untapped. Pakistan has not been mentioned in the literature.

This paper aims to elucidate the role of female directors on boards in terms of the financial performance of Pakistani enterprises. The present study is contributing to the existing literature in a number of ways. To begin with, it highlights the research gap through the focus on how BGD could enhance board performance and minimise the risks of FD. Secondly, the research is subject to the board attributes, where the research also determines other effects of BGD on FD. The research also endeavored to find out all the potential implications of BGD on the probability of FD on different traits of the board, such as the size of the board, board independence, and the executive director on the board. The findings of the study can be in the most optimal interest of other stakeholders who are keen to know the impact of the presence of women directors on the board, which further translates to an impact on the FD of the firm.

The following paper has the following structure: Section 2 provides the overall literature review and outlines the research hypotheses; Section 3 provides the research methodologies that will be used to analyze the collected data; Section 4 provides the results of the analysis and discussion; and Section 5 provides a conclusion of the whole study.

Literature Review

Board diversity is the heterogeneity of the board, with regard to gender and age, education and expertise, level of confidence and independence, ethnicity and religion, tenure, and nationality. BDG and corporate FD are connected, but it is possible to explain the relationship in two ways. One of them is the agency theory, the other is the resource-based opinion (Youseif et al., 2021).

The agency theory offers a fundamental theoretical framework in the context of which board diversity can have an impact on the value of a firm. Shareholders represent their managers, who are the ones who carry out their activities. The agency theory dictates that agency problems are caused in cases where the manager fails to act in the best interest of the shareholder. The agency theory presupposes that board diversity increases the level of monitoring and the role of overall management of the organization since it includes directors with different backgrounds, knowledge, and varied opinions (Erhardt et al., 2003; Carter et al., 2003). Moreover, UlAin et al. (2021) undertook a study on Chinese-owned companies to test the effects of BGD on the agency cost, and the results suggest that the presence of women board directors lowers the agency cost and therefore the agency theory is valid. The female directors in boardrooms perform better than male directors in terms of monitoring functions, audit activities, and risk aversion (Gul et al., 2008; Adams and Ferreira, 2009). Board gender diversity improves monitoring in the reason that female members are more likely to ask questions and have a lower propensity of overturning the desired output of both shareholders and owners, hence reducing the agency conflict and maximizing management performance (Adams and Ferreira, 2009).

Furthermore, Francis et al. (2008) write that there is a difference in risk preferences by men and women, where females are risk-averse in corporate decision-making compared to males, thus reducing the risk of bankruptcy. Barber and Odean (2001) expound to explain that portfolios held by female investors are presumed to be less risky compared to the male counterparts. The level of leverage and financial distress of any organization has a negative correlation with the number of women on the board (Garcia and Herrero, 2021). The cost of debt is negatively correlated to BGD, in the sense that females are risk-averse; therefore, they are more careful than their male counterparts when making investment decisions (Barber & Odean, 2001).

Resource dependence theory is based on the fact that gender-diverse boards bring new skills, abilities and expertise to the organization, which provides a good knowledge of the market environment and a rich supply of literature including; Hillman et al.,(2001); Pfeffer (1972); Luoma & Goodstein (1999); Gales and Kesner (1994); Johnson & Greening (1999) are in support of the latter. It presupposes that the companies rely on the resources that are held by external parties in order to survive. This reliance on the outside world presents a significant threat to the companies. Nonetheless, the threat of external forces can be addressed and countered by the development of appropriate connections between them (Nadeem et al., 2017). BGD presents the capability to manage problematic situations and to cope with the external forces (Huse & Solberg, 2006; Kravitz, 2003). Moreover, Loukil et al. (2019) assume that BGD influences the reduction of illiquidity costs directly and has a positive and significant impact on market liquidity. It has also been suggested that good corporate governance practices reduce the risk of FD; an example of this comes in the postulations of Daily and Dalton (1994), who argue that there is a direct and significant relationship between the risk of financial meltdowns and the likelihood of corrupt corporate governance practices. This would enhance the financial and social performance of the organization by having more women members on the boards (Boulouta, 2013). According to Liu et al. (2014), as the number of female members serving on corporate boards increases, they are able to influence the performance and value of the firm positively.

As studies cited above indicate, the presence of female representatives on the corporate board might be a positive indicator to investors and might result in a good operational and financial performance (Sanders & Boivie, 2004; Kang, 2008). Board diversity as a gender increases information disclosure and decreases information asymmetry, with an improved leveraged environment of improved governance mechanisms (Ahmed & Ali, 2017).

H1: Board gender diversity produces a negative and significant influence on the financial distress of a firm.

Economically, different researchers have attempted to analyze the impact of GD on the performance of a firm (Francoeur et al. 2008; Mahadeo et al. 2012). These studies, however, disregard factors in between, such as the Board characteristics. Since they have great influence over the decision-making process, the board attributes can help in comprehending as well as elucidating their role in the company's productivity (Adams & Ferreira, 2009; Francoeur et al., 2008). The board of the company is the focal point of the governing and supervisory rules; thus, a number of studies have been conducted to examine the impact that a particular board feature can impose on the oversight and the organization of upper-level management compensation (Core et al. 1999). However, regarding GD, the majority of the research has concentrated only on exploring the pay gap between male and female members, and neglected the role of female board members in the monitoring process (Adams and Ferreira, 2009). The characteristics of a board of directors can have an influence on decision-making because the board of directors makes crucial business decisions (Fodio & Oba, 2012). The provision of considerable resources, including prestige and legitimacy, is possible due to an increased number of board members, since the diversity of opinions, knowledge, and expertise will be broader. These can also be used in linking the organization to the outer world (Mintzberg, 1993; Pearce & Zahra, 1989). Independent directors are more objective in their decisions. The independent directors provide a different insight that varies from the more traditional perspectives held by internal managers, who are more focused on financial matters. Board independence is a valuable control mechanism for businesses (Zahra & Stanton, 1988).

H_2: Board attributes enhance the correlation between board gender diversity to a company's financial problems.

Theoretical Model

Figure 1

Demonstrate the correlation between dependent and independent variables:

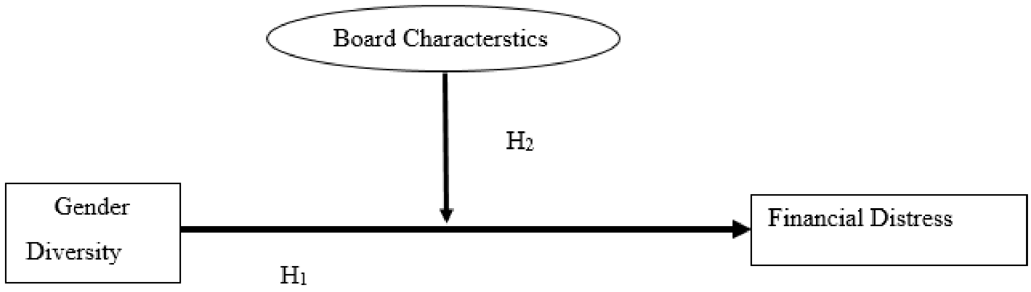

Figure1: Theoretical Framework

Research Methodology

The purpose of the study is to investigate how BGD of the firms affects the probability of FD, and the data used in the research were acquired in non-financial firms that are listed in the Pakistan Stock Exchange (PSX). Financial firms are not included in this research as they belong to different regulations and various financial periods compared to non-financial firms. The chosen samples of the study were 58 firms, and the study period covers nine years between the year 2013 and 2021.

Econometric Model

$$FD_{i,t} = \rho + \varphi_1 FD_{i,t-1} + \varphi_2 GENDER_{i,t} + \sum_{j=3}^{5} \varphi_j \, BOARD_{i,t} + \sum_{j=6}^{10} \varphi_j CONT_{i,t} + \varepsilon_{i,t} \qquad (1)$$

$P_{i,t}$ is the dependent variable, denoting the anticipated likelihood of financial distress for the ith organization by means of the Z-score. In equation (2), in order to control the problem of endogeneity, one lag of FDit is included. To observe other minimal effects of GD subjected to board characteristics, we require the following empirical models:

$$FD_{i,t} = \partial + \pi_1 FD_{i,t-1} + \pi_2 GENDER_{i,t} + \sum_{j=3}^{5} \pi_j \, BOARD\_CHAR_{i,t} + \sum_{j=6}^{8} \pi_j GENDER_{i,t} \times BOARD\_CHAR_{i,t} + \sum_{j=9}^{13} \pi_j CONT_{i,t} + \varepsilon_{i,t} \qquad (2)$$

The term "BOARD_CHAR" represents the board's characteristics, such as its size, independence, and executive director. Simultaneously, the interaction term "GENDER × BOARD_CHAR" shows how gender also affects the likelihood of financial distress (FD) by defining the board's attributes.

Variable Description and Measurement

Financial Distress (FD)

FD determines the probability that a firm may default in the future, hence determining the firm's future performance as well as identifying FD risk in Pakistani manufacturing firms; Altman's (1968) model is employed in the study. Altman's (1968) model is given by

$$Z - Score = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5 \qquad (3)$$

Where,

X_1 denotes working capital(WC) to total assets(TA).

X_2 denotes retained earning(RE) to TA.

X_3 denotes earnings before interest and taxes(EBIT) to TA.

X_4 denotes market value equity(MVE) to the book value of total debt(BVD).

X_5 denotes sales to TA.

There exists an inverse relation between the value of the Z score and the likelihood of FD. The greater the value of the Z-score, lesser will be the chances of bankruptcy of a firm and vice versa. The Z-score value can be interpreted as:

Table 3.1

categorization of firm's

Z Score value	Category
Z-score value less than 1.81	Distress zone
1.81 < Z-score value < 2.99	Grey zone
Z-score value greater than 2.99	safe zone

Thus, firms are divided into three categories based on the values of the Z-score. Firms that fall either in the distress zone or grey zone are regarded as distress firms, while firms that fall in the safe zone are considered non-distress firms.

Table 3.2

List of Variables

Sr. N	Variable Name	Measurement	Reference
Dependent Variable			
1	Financial distress	Altman Z-score	(UlAln et al., 2020)
Independent variables			
2	Women on board	Ratio of women on the board	(Guizani and Abdalkrim, 2022)
3	Female as an independent director	Percentage of female independent directors on the board	(Guizani and Abdalkrim, 2022)
4	Board independence	Percentage of independent directors on the board	(Sharma, 2011)
5	Board size	Total number of directors on the board	(Uddin et al., 2019)
6	Executive director	The proportion of executive directors on the board	(Shakir, 2008)
Control variables			
7	Firm size	Ln(total assets)	(Doğan, 2013)
8	Leverage	Total debt divided by total assets	(Uddin et al., 2019)
9	Liquidity	Current assets divided by current liabilities	(Sikveland, et al., 2022)
10	Book-to-market ratio	Book value divided by market value	(Aboud and Diab, 2022)
11	Profitability	EBIT divided by total sales	(Guizani and Abdalkrim, 2022)

Estimated methods

In order to address the endogeneity problem, the generalized method of moments (GMM) has been used. GMM is employed to eliminate the issue of endogeneity as a result of unobservable heterogeneity and contemporaneity of a firm. The differenced equation in the GMM used by Blundell and Bond (1998) was lagged level, and the level equation tools were lagged difference. When estimating GMM, one normally assumes that there is no correlation between error and independent variables in the data set (Arellano and Bond, 1991). The GMM model is effective in selecting the estimated parameters in a way that the value of correlation between the error terms and the independent variables is almost equal to zero.

Analysis and Discussion

Descriptive statistics

Table 4.1 is a summary of the response and explanatory variables. According to Table 4.1, 20132021, the financial distress is 3.66 (as it is seen in Table 4.1), which exceeds the threshold of 1.81, and thus most of the businesses fall within the healthy zone as well as the significantly healthy organizations. Moreover, as mentioned above, gender diversity is utilized as the main explanatory variable, and two alternative proxies are also implemented to measure women on the board and women as independent directors.

Table 4.1

Descriptive statistics

	Mean	St. Deviation	Minimum	Maximum	Count
FD	3.66	17.83	-24.49	17.64	522.00
WB	0.11	0.12	0.00	0.57	522.00
FID	0.03	0.07	0.00	0.29	522.00
ID	0.26	0.20	0.00	1.29	522.00
BS	8.26	1.55	4.00	14.00	522.00
ED	1.78	0.90	0.00	6.00	522.00
Liq	2.40	8.39	0.01	138.52	522.00
FS	10.18	0.68	7.14	11.98	522.00
LEV	0.10	0.11	0.00	0.66	522.00
BTM	7.62	54.71	-24.18	544.83	522.00
Pro	0.11	0.14	-1.85	0.70	522.00

Note: FD is the financial distress, WB is the women on board, FID is the female independent director, ID is the independent director, BS is the board size, ED is the executive director, LIQ is the liquidity, FS is the firm size, LEV is the leverage, BTM is the book to market ratio, and PRO is the profitability.

Summary statistics

The outcomes of the summary statistics show that the mean value of women on the board is 11% ranging from 0 to 0.57. In comparison, the women as independent directors' mean values are 3% with minimum and maximum values of 0 and 0.29, respectively. Additionally, board characteristics indicate that the mean values of the independent director, board size, and non-executive director are 0.26, 8.26, and 1.78, respectively. Moreover, the mean value of firm characteristics such as liquidity, size, leverage, book-to-market ratio, and profitability is 2.40, 10.18, 0.10, 7.62, and 0.11, respectively.

Pearson Correlation

The Pearson correlation analysis assists in identifying any multicollinearity between the parameters. It is noted that earlier scholars have expressed worry about potential multicollinearity across variables, which might skew the regression findings. Table 4.2 displays the correlations.

Table 4.2

Pearson Correlation

	FD	WB	FID	ID	BS	ED	LIQ	FS	LEV	BTM	PRO
FD	1										
WB	-0.02	1									
FID	-0.01	0.44***	1								
ID	-0.03	0.08**	0.24***	1							
BS	0.02	-0.00	0.14***	0.44***	1						
ED	0.03	0.02	0.06*	-0.11***	0.17***	1					
LIQ	0.00	-0.05*	-0.03	-0.04	-0.03	-0.06*	1				
FS	-0.02	-0.12***	-0.02	0.26***	0.22***	-0.08**	-0.17***	1			
LEV	-0.03	-0.06*	0.10**	0.19***	0.17***	-0.12***	0.09**	-0.06*	1		
BTM	-0.00	0.14***	-0.05	-0.06*	-0.11***	-0.11**	-0.01	-0.03	0.07*	1	
PRO	0.04	0.198***	0.16***	0.10**	0.09**	0.07*	0.02	0.07*	0.00	-0.03	1

*Note: FD is the financial distress, WB is the women on board, FID is the female independent director, ID is the independent director, BS is the board size, ED is the executive director, LIQ is the liquidity, FS is the firm size, LEV is the leverage, BTM is the book to market ratio, PRO is the profitability, ***significant level at $p < 0.01$; ** significant level at $p < 0.05$; and *significant level at $p \leq 0.10$*

Between the response variable, financial distress, and the explanatory variables, which are gender diversity, board characteristics, and firm characteristics. In addition, the correlation coefficient demonstrated in

Table 4.2 suggests that multicollinearity is not critical for the explanatory variable. According to Kennedy (1999, p. 187), Gujarati (1995, p. 335), the correlation among explanatory variables is "harmful" when it is above the threshold of 0.90 or 0.80. However, in the given study, the correlation between explanatory variables ranged between 0.00 to 0.22, which doesn't exceed the threshold of 0.90 or 0.80. Independent directors, firm size, leverage, and the book-to-market ratio correlation are negative, while board size, executive director, liquidity, and profitability correlation are positive.

Empirical findings

In this section, regression models are used to explain the predictive ability of gender diversity, firm characteristics, and board characteristics on FD. The statistical results are presented in Table 4.3, which contains ambivalent findings of the role of the explanatory variable on financial distress, and the majority of the explanatory variables have statistical significance in model 1 and model 2, respectively. The effect of women on board on FD is analyzed in model 1 of this study followed by the effect of female independent directors on FD in model 2 and finally the joint effect of gender diversity (women on board, and female independent directors) on FD is also analyzed in model 3 and further the moderating role of board characterstics is also examined in this model.

Table 4.3 results depict that the results of the board gender diversity on the probability of FD are consistent with H1, and the results indicate that the women on the board have significant and negative (0.00) effects on the FD, which means that the women on boards could reduce the probability of the organization being excessively exposed to financial distress. Based on these results, female board members aggressively monitor administrative activities and deter the firm from FD, and it can be assumed that the female directors are the agents to reduce the risk of a financial crisis in Pakistan. Typically, this evidence is indicative of the agency hypothesis and sheds light on the fact that female directors are putting in more effort to avoid financial collapse so that the board itself increases its level of oversight. The study results reveal that women directors operate as efficient checking bodies, and they are perceived to be very productive as they enhance the control of management behavior. Besides these, to state the findings of the study and the hypothesis of the resource dependency theory, we can note that the presence of women on the board may serve as a resource that can be used to enhance the management oversight and control (Benkraiem et al., 2017; Adams and Ferreira, 2009; UlAin et al., 2020). Moreover, female directors can bring a variety of skills, knowledge, and understanding that can enhance the governance of a business board Loukil et al., 2019; Hillman and Dalziel, 2003). This is likely to influence the decision-making process, which reduces the risk of FD.

The research evaluates how the features of the board affect the FD, and the study can feel the impact of the independent directors is good and significant (β= 1.28, P-value= 0.00); (β= 1.16, P-value= 0.00) on the FD. Such results suggest that an independent director could not offer an efficient counterbalance and limitation to management. These results are consistent with the research of Hsu and Wu (2014), stating that independent directors increase the probability of corporate failure and are harmful to the existence of firms. Likewise, the board size positively and significantly (β= 4.70, P-value= 0.00); (β= 2.73, P-value= 0.00) impacts the FD, implying that the probability of FD is greater when the company has a large board of directors and that including more board members would increase the time of the decision-making process (Younas et al., 2021). According to Manzaneque et al. (2016), a giant board can be at fault for a lack of balance where its members have greater freedom to pursue their own interests at the expense of the overall business's best interests.

Table 4.3

Board gender diversity's impact on financial distress

	M(1)	M(2)	M(3)
FD(-1)	-0.00***	0.00**	-0.06***
	(0.00)	(0.00)	(0.00)
WB	-7.26***		7.17***
	(0.84)		(1.44)
FID		-10.32***	-11.26***
		(1.20)	(3.36)
ID	1.28***	1.16***	-0.17
	(0.37)	(0.20)	(0.15)
BS	4.70***	2.73***	0.40**

	M(1)	M(2)	M(3)
	(0.57)	(0.46)	(0.15)
ED	3.73***	4.41***	-0.21
	(0.90)	(1.41)	(0.23)
WB*ID			-054***
			(0.14)
FID*ID			-0.75**
			(0.31)
WB*BS			-102***
			(0.19)
FID*BS			1.85***
			(0.35)
WB*ED			0.29
			(0.39)
FID*ED			-0.69
			(0.52)
LIQ	-0.00	0.02***	0.04***
	(0.01)	(0.00)	(0.00)
FS	2.75***	3.41***	4.61***
	(0.67)	(0.53)	(0.35)
LEV	-28.98***	-34.71***	-35.92***
	(5.07)	(2.84)	(2.01)
BTM	-0.01***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)
PRO	1.55	3.94***	2.38***
	(1.13)	(0.58)	(0.58)
J-statistics	24.46	24.49	40.07
Prob(J-statistics)	0.70	0.70	0.05
Instrument Rank	39	39	44
Wald test (F-statistic)	437.65***	653.16***	1962.96***

*Note: FD is the financial distress, WB is the women on board, FID is the female independent director, ID is the independent director, BS is the board size, ED is the executive director, LIQ is the liquidity, FS is the firm size, LEV is the leverage, BTM is the book to market ratio, PRO is the profitability, ***significant level at $p < 0.01$; ** significant level at $p < 0.05$; and *significant level at $p \leq 0.10$*

Also, the findings suggest that the executive director increases (= 3.73, = 0.00); (= 4.41, = 0.00) the likelihood of FD, indicating that FD was more likely because insiders could not keep an eye on the CEO and were not participating in strategic key decisions, and distressed organization seem to have the boards with a lessened proportion of unbiased directors (Elloumi and Gueyie, 2001; Charbel et al., 2013). Furthermore, it is found that leverage declines (FD) (b= -28.98, P= 0.00); (b= -34.71, P= 0.00), indicating that there is minimal debt usage, and as such, business operations will not be disrupted easily, which reduces the risk of the financial crisis, which is the findings in Table 3. Likewise, the book-to-market has a considerable negative (= -0.01, P-value= 0.00); (= -0.01, P-value= 0.00) associated with FD, indicating that the probability of going bankrupt is smaller with a decrease of this ratio, indicating that the market valuation and market risk are relatively high. Although the firm size correlates with the FD in a positive and significant (b= 2.75, P-value= 0.00), (b= 3.41, P-value= 0.00) way, the fact that the smaller the firm size, the more likely to be FDI can be concluded. The impact of the size of the company on the financial distress is positive and significant, and therefore, smaller companies stand a higher chance of experiencing greater financial distress. This is due to the fact that small businesses will be able to experience greater expansion, and there will then be increased conflict of interest between the principal and the agent. Consequently, more money will be borrowed by smaller businesses to reduce the agency cost of debt (Oktasari, 2020). Interestingly, liquidity and profitability are preferable and significant in model 2, and overall outcomes of the firm characteristics are similar to the research by Guizani and Abdalkrim (2021).

Another issue explored in the research is whether the reverse effect of female directors on the FD has increased. The decision of M3 is provided in Table 4.3, which suggests that when marginal impact is added using moderation, gender diversity has a significant influence on financial distress. Nonetheless, the coefficient of the change of the women on board is no longer negative (-7.26); it became 7.17 (see Table 4.3). The correlation between the moderation variable of GD and the independent directors is significantly negative, which means that the additional impact of gender diversity on the likelihood of financial distress is enhanced by the independence of the board. The research results indicate that there are significant correlations between the moderating variables of GD and board size, as female director correlations of the probability of financial distress depending on the board size are found to be significant. The findings show that the coefficients of the moderating factors of the executive director are insignificant.

Conclusion

Diversity has become one of the governance strategies that has the potential to influence board dynamics and strategic decisions. This paper discusses the relationship between FD and gender diversity. Moreover, this research paper covers a problem that researchers overlook because the marginal effects of GD on FD vary under different onboard features. In addition, the study uses a sample size of 58 non-financial companies listed on the Pakistani equity market over nine years from 2013 to 2021. Besides, the researchers concluded that the existence of a more diverse board has the potential to enhance board performance through risking businesses with unjustifiable risk of FD and insolvency. Overall, it can be seen that female directors will reduce the possibility of FD irrespective of whether they are inside or independent directors. Moreover, the female presence on the board may be one of the resources that will be used to enhance managerial management and control.

Recommendation and limitation

This research implicates a number of implications, both practical and theoretical. Theoretically, the paper expands the argument on the significance of gender-diverse of boards by looking at their effects on the observation of management behaviour. In a practical perspective, the study can provide useful information to decision-makers because it will help them assess the design of the board in terms of responsibilities and board structure that would promote governance mechanisms in preventing firm FD. Moreover, the research result can be useful to regulators because it underscores the importance of adopting policies and modifications to promote the performance of the board through gender diversity. The study also explains possible implications of the study to society, wherein increasing diversity in organizations can greatly protect the interests of those who invest in the company and other stakeholders by avoiding overexposure to financial distress; yet, the study also suffers from many limitations.

The study uses the Altman Z-score of FD; hence, researchers can examine the topic through other proxies of FD, like M-distance to default, O-score, and Shumway models. Moreover, other board characteristics, including compensation committee, audit committee, etc., could be applied in future research. Finally, though not the last, to get a better insight into the given issue, scholars can undertake a comparative study that would entail the involvement of the countries of the Asia Pacific region.

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