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Board Gender Diversity and Financial Reporting Quality

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Abstract
We analyze the impact of board gender diversity on financial reporting quality using Kanter's framework of group composition. Specifically, we classify boards into skewed, tilted, and balanced categories, and examine how each type influences reporting quality. Using ordinary least squares regression for hypothesis testing and, for robustness, apply critical mass theory and the generalized method of moments estimation. Our findings indicate that gender diversity is positively associated with financial reporting quality. Notably, highest influence is observed in balanced boards with more than 35% female directors. Furthermore, female directors' presence in audit committee increases financial reporting quality. Overall, our results support Kanter's framework and critical mass theory, underscoring their significant positive influence.
Keywords: Gender Diversity, Financial Reporting Quality, Kanter's Framework, Critical Mass Theory

1. Introduction

According to agency theory, the separation of ownership and control in listed corporations creates agency conflicts between principals (shareholders) and agents (managers). A key factor in this conflict is low information asymmetry. Providing timely and accurate information to investors helps reduce information asymmetry, thereby mitigating agency conflicts (Dobija et al., 2021). Choi and Wong (2007) emphasize that in emerging economies with developing financial institutions and weak regulatory frameworks, the provision of high-quality financial information, such as audited financial statements, is crucial. In these contexts, high-quality financial information compensates for limited information channels and less stringent governance rules (Abernathy et al., 2017)(Khan et al., 2022).

Another prominent conflict in emerging markets is the principal-principal conflict, where concentrated owners, such as family owners, exploit minority shareholders for personal gain (Armitage et al., 2017). Weak governance regulations in these markets further enable controlling shareholders to pursue their interests, but providing timely and high-quality information can help alleviate this conflict(Khalil & Khan, 2019).

The board of directors plays a critical role in corporate governance, tasked with monitoring management actions and aligning management interests with those of shareholders (Barnhart et al., 1994). Presence of female directors on board is an important determinant of independent board and notable characteristic of the board (Amin et al., 2021). Therefore, the presence of female directors on boards may lead to improved financial reporting quality through better supervision, independence, and active involvement in business affairs. Their significant impact on boards has led policymakers worldwide to implement gender quotas to increase female participation in decision-making (Terjesen and Sealy, 2016). For example, Norway, France and USA, regulations recommend fair representation of women directors on board of listed firms (Mirza et al., 2012(Ansari et al., 2024)).

Our study contributes to the literature by examining the role of female directors on the corporate boards of firms listed on the Pakistan Stock Exchange (PSX). Reflecting global efforts to enhance governance mechanisms, Pakistan's Governance Code 2019 mandates one female director on board of listed firms (Mirza et al., 2012). We enrich literature through examination of the female directors' role on firms listed on PSX. Previous research has documented the positive influence of gender diverse board and FRQ. For instance, Ud Din et al. (2021) observed women chairperson presence in board committee improves FRQ in Pakistan. In a similar vein, Dobija et al. (2021) showed that improved financial reporting quality is linked to a greater proportion of women on corporate boards in Polish listed companies. While our study also examines the impact of female directors on FRQ, it differs in two important aspects from their findings.

First, while Ud Din et al. (2021) focused on gender diversity in board committee chairs with accounting expertise, our study examines their impact on FRQ. Boards are responsible for a broader range of tasks and are more involved in strategic decision-making than audit committees, making board gender diversity a more significant factor to consider(Khan et al., 2017).

Second, Dobija et al. (2021) conducted their study in Poland, a developed country. Governance literature distinguishes between developed and developing countries due to the different types of agency conflicts. Overall, we believe there is a significant gap in understanding the role of gender-diverse boards on FRQ which we attempts to address(ur Rehman et al., 2024).

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In this context, the research aims to address the following queries. First, if the quality of financial reporting is impacted through top executives. Second, whether their large number leads to improved financial reporting quality. To investigate these questions, we utilize Kanter's (1977) framework of board composition, categorizing boards into skewed, tilted, and balanced. A skewed board has an 85:15 ratio with males as the majority and females as the 'token' minority. A tilted board has up to a 65:35 ratio, with males as the majority and females as the minority. A balanced board has ratios from 60:40 to 50:50, where both groups are nearly equal.

We also analyze agency difficulties in various businesses, apply agency theory, and investigate ways that female directors can lessen this conflict. Additionally, we analyze the external advantages that companies receive from having female directors, such as counsel, legitimacy, and enhanced lines of communication, using resource dependence theory (Hillman and Dalziel, 2003). We use the OLS method to test our hypotheses, and we handle endogeneity for robustness using the generalized method of moments estimation. We also apply the critical mass perspective, categorizing gender diversity by the presence of different female directors. We use dummy variables for each scenario in our empirical analysis(Khan et al., 2020; Khan, Yaseen, et al., 2019).

Our sample includes PSX listed companies over 2006 to 2021. Pakistan, as an emerging economy with a predominantly male-dominated corporate culture (Mirza et al., 2012). The 2019 regulations mandating at least one female director on corporate boards further underline the relevance of our research. Our findings indicate that the presence of female directors is positively associated with higher financial reporting quality, and this relationship strengthens with an increased number of female directors on the board(Khan & Ali, 2018; Khan, Hussain, et al., 2019).

Our study contributes to the literature in several ways. First, it provides novel evidence on the role of gender diversity in financial reporting quality within an emerging economy. While Dobija et al. (2021) examined this relationship in Poland, a developed economy, their findings cannot be generalized to emerging markets due to key differences. In developed countries, corporate ownership is often dispersed among small shareholders, leading to principal-agent conflicts. Conversely, emerging markets typically have concentrated ownership, such as family firms, resulting in principal-principal conflicts. Furthermore, emerging markets generally have weaker governance regulations, providing less protection for shareholders and allowing concentrated owners to exploit minority shareholders (Gugler and Yurtoglu, 2003).

Second, we use Kanter's framework to examine how the number of female directors affects financial reporting quality, categorizing boards based on the percentage of women directors. As a robustness check, we use critical mass theory, analyzing the impact of having at least one, two, and three or more female directors on boards.

Finally, we add to the body of literature on gender diversity by emphasizing its benefits for corporate governance and the caliber of financial reporting. Our findings back up efforts by international regulators to impose gender quotas on corporate boards and recommend that Pakistani officials think about raising the minimum directors.

The study's remaining sections are organized as follows: The literature review and hypothesis development are presented in Section 2, the research technique is covered in Section 3, the results are shown and discussed in Section 4, and the study is concluded in Section 5.

2. Literature Review

2.1. Kanter's theoretical framework

The study applied Kanter's theoretical framework of group composition to explore the benefits of gender-diverse corporate boards. According to Kanter (1977), four types of groups can be identified based on the proportional representation of different types of people: uniform, skewed, tilted, and balanced groups. Uniform groups consist of a 100:0 ratio, indicating the complete absence of one group. Skewed groups have a ratio up to 85:15, where the majority group dominates the group's culture, and the minority group members are considered 'tokens'. Tilted groups have a ratio up to 65:35, with the majority group still dominant but with a significant minority presence. Balanced groups have ratios ranging from 60:40 to 50:50, where the groups are more equally represented. In line with this framework, we categorized gender diversity on corporate boards into these four groups. A uniform board is defined as having no female directors. A skewed board has at least 15% female directors. A tilted board includes more than 15% but less than 35% female directors. Finally, a balanced board has more than 35% female directors.

2.2. Resource dependence theory

According to resource dependence theory, an organization's increased social legitimacy is correlated with the women directors. The theory emphasizes the significance of female directors in improving corporate governance mechanisms by safeguarding shareholders' interests through efficient management oversight and by establishing important external connections through the provision of high-quality information to investors, ultimately optimizing shareholder wealth. According to this theoretical framework, we therefore expect improved financial reporting quality when a gender-diverse board is present.

2.3. Gender diversity and financial reporting quality

According to Courtis (1993), the primary role of financial reporting is to provide relevant and reliable information that is useful for decision-making by various users in their resource allocation processes. Financial reporting is a crucial tool for minimizing information asymmetry between shareholders and managers, thereby reducing agency

conflict. Governance literature, therefore, views financial reporting quality as an essential mechanism for monitoring management, enabling shareholders to control managerial behavior (Chung et al., 2013). Shahzad et al. (2019) also emphasize that financial reports offer vital strategic information to capital suppliers regarding a company's operations.

It is widely acknowledged that the board of directors plays a crucial role in corporate governance by keeping an eye on management and so reducing agency conflict. Nevertheless, a board is deemed more efficacious when it operates independently and offers unbiased counsel (Ain et al., 2021). The presence of an independent board can provide openness and protect against unwarranted managerial influence, as they are more vigilant about safeguarding their reputation and status (Nadeem, 2020). Similarly, female directors are regarded as more stringent monitors of management's actions (Amin et al., 2022). According to Johl et al. (2013), the board is crucial in guaranteeing the caliber of financial reporting. According to Liu et al. (2014), boards function better when they are unbiased and independent. Since independent boards are more concerned with upholding their status and reputation than with bucking excessive management pressure, they guarantee transparency (Nadeem, 2020). The assumption that the board of directors is primarily responsible for implementing corporate governance systems that balance the interests of managers and shareholders is supported by empirical literature (Weisbach, 1988).

One of the key elements of an effective board is thought to be a gender-diverse composition (Milliken and Martins, 1996). According to postulations, maximum female executives encourages debate and idea sharing among members. Women are frequently viewed as more effective leaders because of their cooperative and sympathetic tendencies (Eagly et al., 2007). Compared to men, they are more responsible (Li and Li, 2020). They are connected to the network's expansion (Bass, 2019). According to Carter et al. (2003), female CEO monitors are also more strict, which improves attendance and lowers agency conflicts. A gender-diverse board's effective oversight so reduces agency conflict and raises shareholder confidence.

The participation of female directors on corporate boards is linked to better financial reporting quality because of their independence and proficient monitoring skills. This perspective is supported by empirical research, some of which (Krinan and Parsons, 2008; Labelle et al., 2010) show a favorable correlation between gender diversity and the quality of earnings. Nevertheless, some research (Smith et al., 2006; Ge et al., 2011) indicates that the impact of female CEOs on the quality of reports is negligible. Overall, we argue that gender-diverse boards are associated with higher-quality financial reporting because they are more independent and closely monitored.

2.4. Dominants, tokens, and financial reporting quality

We applied Kanter's (1977) framework of group composition to investigate how varying levels of gender diversity on corporate boards influence financial reporting quality. Specifically, we categorized corporate boards into skewed, tilted, and balanced groups based on the proportion of women directors. According to Kanter (1977), groups can be classified into four types based on their proportional representation: uniform, skewed, tilted, and balanced. In this context, corporate boards can similarly be categorized. Uniform boards have no female directors. Skewed boards consist of at least 15% female directors. In these boards, women are considered 'tokens' with minimal influence, while the 'dominant' male group shapes the board's culture. Tilted boards include at least 35% female directors. Here, women are no longer tokens but are still a minority.

Balanced boards have at least 40% female directors, creating a balance where both genders are considered subgroups, with women having significant influence.

Empirical studies on the influence of a higher number of female directors on boards yield mixed findings. For example, Fan et al. (2019) found that greater female representation on boards results in fewer reporting restatements and less tax avoidance. Dobija et al. (2021) reported that an increased presence of female directors correlates with higher financial reporting quality. Amin et al. (2021) indicated that a higher number of female directors is associated with lower agency costs. Conversely, Singh et al. (2019) did not find a significant impact of a higher proportion of female directors on firm performance. Similarly, Yang et al. (2019) found no significant effects of a greater number of female directors on fulfilling corporate social responsibility.

In conclusion, we argue that the presence of female directors on corporate boards enhances financial reporting quality due to their independence and rigorous monitoring of management. However, the maximum benefits of gender diversity are realized when there is a higher percentage of women on the board. Therefore, we hypothesize that:

H1: The skewed board positively affects the financial reporting quality

H2: The tilted board influence the financial reporting quality more than skewed board

H3: The influence of female directors on financial reporting quality is strongest in case of balanced board

3. Research Methodology

3.1. Sample selection

The Pakistan Stock Exchange website and the websites of the individual companies provided the annual reports of the companies from which the data for this study was gathered. Since complete data was unavailable before to

2006, non-financial listed enterprises from 2006 to 2021 make up the sample. We did not include the financial sector's companies. These firms has different financial characteristics. Table 1 displays our final sample.

Table 1: Sample selection

Procedure of sampling	
Preliminary observations of all listed firms for the period 2006 to 2021	9570
Observations related to financial firms	(2641)
Missing observations	(2362)
Sample used	4567

3.2. Variable measurement

Prior studies (Bajra and Čadež, 2018; Lobo et al., 2018; Muttakin et al., 2020) have used discretionary accruals as a proxy for measuring financial reporting quality, which is the dependent variable in our study. Other studies (Abernathy et al., 2017; Dobija et al., 2021) have considered audit report lag as an important determinant of financial reporting quality. While both measures are widely used in the literature, relying on a single proxy does not generalize the results effectively since no single proxy can encompass all aspects of financial reporting quality. Using both proxies is advantageous because the biases in one proxy can be offset by the other. Therefore, this study employs both discretionary accruals and audit report lag to measure financial reporting quality (FRQ).

Following Bajra and Čadež (2018), discretionary accruals are calculated by subtracting non-discretionary accruals from total accruals. The calculations are performed in three steps. First, total accruals are determined using Equation 1. Second, the relative total accruals are estimated using Equation 2. Finally, using the residuals from the estimation in Equation 2, the discretionary accrual component is calculated by subtracting non-discretionary accruals from total accruals using Equation 3. Since discretionary accruals are inversely related to FRQ, a positive coefficient indicates lower FRQ, while a negative coefficient indicates higher FRQ. The equations are provided below, and the variables used in these equations are described in the appendix.

$$\boldsymbol{Total\ accruals_{i,t}} = (\Delta \boldsymbol{CA_{i,t}} - \Delta \boldsymbol{CF_{i,t}}) - (\Delta \boldsymbol{CL_{i,t}} - \Delta \boldsymbol{IL_{i,t}}) - \boldsymbol{DA_{i,t}} \qquad (\boldsymbol{equation\ 1})$$

$$\boldsymbol{Total\ accruals_{i,t}} = \boldsymbol{\alpha_{i,t}} + \boldsymbol{\beta_1}(\boldsymbol{1/TA_{i,t-1}}) + \boldsymbol{\beta_2}(\Delta \boldsymbol{REV_{i,t}} - \Delta \boldsymbol{REC_{i,t}})/\boldsymbol{TA_{i,t-1}} + \boldsymbol{\beta_3 PPE_{i,t}}/\boldsymbol{TA_{i,t-1}} + \boldsymbol{\varepsilon_{i,t}} \quad (\boldsymbol{equation\ 2})$$

$$\boldsymbol{Discretionary\ accruals_{i,t}} = (\boldsymbol{TACC_{i,t}/TA_{i,t-1}}) - \boldsymbol{\beta_1}(\boldsymbol{1/TA_{i,t-1}}) + \boldsymbol{\beta_2}(\Delta \boldsymbol{REV_{i,t}} - \Delta \boldsymbol{REC_{i,t}})/\boldsymbol{TA_{i,t-1}} + \boldsymbol{\beta_3 PPE_{i,t}}/\boldsymbol{TA_{i,t-1}} + \boldsymbol{\varepsilon_{i,t}} \qquad (\boldsymbol{equation\ 3})$$

Audit report lag is the second proxy used to measure FRQ, after Dobija et al. (2021). Accordingly, Abbott et al. (2012) defined audit report lag as a significant indicator of the quality of financial reporting. It is calculated as a natural logarithm of the number of days that pass between the firm's financial year end and the external auditor's signature on the audit report. The earlier signing of the audit report is seen favorably since it suggests that the auditors encountered less problems throughout the audit; as a result, the positive effects of FRQ will be emphasized by the negative coefficient.

Continuing in line with De Masi et al. (2021), three proxies were used to measure the independent variable gender diversity: a skewed board (having at least 15% of female directors), a tilted board (having at least 35% of female directors), and a balanced board (having more than 35% of female directors). Every proxy is just a fake variable that means "0" otherwise and "1" if the necessary conditions are not met.

Lastly, in accordance with earlier research (e.g., Bajra and Čadeō, 2018., 2017; Dobija et al., 2021), the study used five control variables—board size, board independence, return on assets, leverage, and business size—that could have an impact on the FRQ. The latter three factors are connected to the company characteristics, whereas the first two control the board characteristics.

Table 2: Variables

Variable	Proxy	Represented by	Definition
Dependent variable			
Financial reporting quality	Discretionary accruals	DA	Residuals obtained from equation 3
	Audit report lag	ARL	Natural log of number of days between the closure of financial year and date of signing of audit report
Independent Variable			
	Skewed board	SKW_BD	Dummy variable, '1' if the board has at least 15% female directors on the board, '0' otherwise

Gender diversity	Tilted board	TLT_BD	Dummy variable, '1' if the board have more than 15% and less than or equal to 35%
	Balanced board	BAL_BD	Dummy variable, '1' if the board has more than 35% female director on the board, 0 otherwise
Control Variable	Board independence	BD_IND	Number of independent directors on the board
	Board size	BD_SIZE	Total number of directors on the board
	Return on assets	ROA	Net profit divided by total assets
	Leverage	LEV	Total debt divided by Total assets
	Firm Size	F_SIZE	Log of Total assets

3.3. Econometric model

The following is the development of the basic regression model to test the hypotheses:

$$\sum_{j=1}^{2} FRQ_{i,t} = \alpha_{i,t} + \sum_{k=1}^{3} \beta_k GD_{i,t} + \beta_l BD\_IND_{i,t} + \beta_m BD\_SIZE_{i,t} + \beta_n ROA_{i,t} + \beta_o LEV_{i,t} + \beta_p F\_SIZE_{i,t} + \sum_{r=1}^{s} \beta_q Industrydummy_{i,t} + \sum_{t=1}^{u} \beta_s yeardummy_{i,t} + \varepsilon_{i,t} \qquad (Model)$$

4. Results and Discussion

4.1. Descriptive statistics

We show descriptive statistics of all the variables in table IV. The mean of our dependent variables DA and ARL are 0.69 and 2.01, respectively. Our other variable of interest is the gender diversity which is categorized into three groups. Our first group, SKEW, has a mean of 0.34, whereas, TILT and BAL groups has a mean of 0.07 and 0.02. As expected, our main sample lies in SKEW as there exist a mandatory requirement of having at least one female director on the board. Nevertheless, some of the sample firms does not have even a single woman on the board, which is not surprising because the regulation for the compulsory appointment of one female director comes into force in 2019 and our sample period includes the period prior to the enforcement of this law.

Table 3: Descriptive statistics

Variable	N	Mean	SD	Min	Max
DA	4567	0.69	0.09	-0.62	0.57
ARL	4567	2.01	0.04	1.93	2.08
SKEW	4567	0.34	0.07	0.00	1.00
TILT	4567	0.07	0.05	0.00	1.00
BAL	4567	0.02	0.04	0.00	1.00
FD1	4567	0.37	0.08	0.00	1.00
FD2	4567	0.06	0.04	0.00	1.00
FD3	4567	0.05	0.01	0.00	1.00
BD_SIZE	4567	7.96	0.02	7.00	13.00
BD_IND	4567	0.12	0.05	0.00	0.56
ROA	4567	6.96	0.08	-18.51	26.14
LEV	4567	0.21	0.09	0.01	0.53
F_SIZE	4567	22.88	0.08	19.03	26.56

4.2. Pearson correlation

We report correlations in below table. As expected, the relationship between all proxies of gender diversity (SKEW, TILT, BAL) and financial reporting quality (DA, ARL) were negatively associated extending partial support to our hypotheses.

Table 4: Pearson correlation

Variables	DA	ARL	SKEW	TILT	BAL	BD_SIZE	BD_IND	ROA	LEV	F_SIZE
DA	1									
ARL	-0.029	1								
SKEW	-0.020*	-0.019*	1							
TILT	-0.025*	-0.025*	0.037*	1						

BAL	-0.028**	-0.027*	0.101*	0.007	1					
BD_SIZE	-0.073**	0.004	0.019	0.026	0.027	1				
BD_IND	-0.003	-0.010	0.070*	0.000	0.046**	0.020	1			
ROA	0.065	0.016	0.003	0.027	0.035*	0.009	0.059*	1		
LEV	0.012	0.005	0.010	-0.007	0.038*	-0.005	-0.010	-0.051**	1	
F_SIZE	0.056*	0.006	0.026	0.019	0.018	0.020	0.042**	0.003	0.119**	1

4.3. Regression analysis

In order to verify the results and present them in Table VI, we used the OLS technique. According to hypothesis H1, the presence of at least 15% female directors on the skewed board is expected to positively improve the quality of financial reporting. Support for our hypothesis H1 was discovered. Significant negative correlations were discovered between ARL and SKEW (-0.013*) and DA and SKEW (-0.029*). The results were significant at the 10% significance level in both cases. Hypothesis H2 posited that a tilting board with a minimum of 35% female directors results beneficial impact on FRQ. Once more, we discovered a strong negative correlation between DA and TILT (-0.033*) and ARL and TILT (-0.022*), supporting hypothesis H2. Our findings were significant at 10% level of significance in both cases.

Lastly, we proposed under H3 that a balanced board with a minimum of 35% female directors would have a good impact on the caliber of financial reporting. We discovered a substantial negative correlation in the cases of DA and BAL (-0.037**) and ARL and BAL (-0.027**), which validated our hypothesis H3. At the 5% threshold of significance, we discovered noteworthy findings.

Overall, we contend that, in accordance with Kanter's (1977) paradigm, the presence of female directors on the board affects the quality of financial reporting in a way that yields the greatest influence in the case of a balanced board with the largest proportion of female directors. Our position was validated. According to our findings, having female directors on the board always improves the quality of the financial reports; nevertheless, a balanced board produced the greatest coefficient and significant results. Our findings are similar to findings shown by Amin et al. (2021) and Fan et al. (2019). Both reported about gender diversity has the greatest impact on boards with the greatest proportion of female directors.

Table 5: Ordinary least squares regression-gender diversity and financial reporting quality

Variables	**DA**			**ARL**		
SKEW	-0.029*			-0.013*		
	(0.006)			(0.001)		
TILT		-0.033*			-0.022*	
		(0.052)			(0.013)	
BAL			-0.037**			-0.027**
			(0.021)			(0.005)
Board Size	-0.015**	-0.016**	-0.018**	-0.011	-0.013	-0.013
	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)
Board independence	-0.010	-0.010	-0.011	-0.002	-0.003	-0.003
	(0.020)	(0.020)	(0.020)	(0.005)	(0.005)	(0.005)
ROA	0.001*	0.001*	0.002*	0.003	0.002	0.003
	(0.004)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)
LEV	0.003	0.002	0.003	0.002	0.002	0.001
	(0.003)	(0.003)	(0.002)	(0.001)	(0.001)	(0.001)
F_SIZE	0.010*	0.010*	0.011*	0.002	0.001	0.001
	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)0	(0.001)
Constant	0.432**	0.430**	0.431**	2.012**	2.013**	2.012**
	(0.049)	(0.049)	(0.045)	(0.011)	(0.011)	(0.011)
Industry dummy	Included	Included	Included	Included	Included	Included
Year dummy	Included	Included	Included	Included	Included	Included
Observations	4567	4567	4567	4567	4567	4567

Number of groups	307	307	307	307	307	307
R-square	0.29	0.27	0.27	0.31	0.32	0.32

4.4. Robustness check

4.4.1. Critical mass perspective

We check the robustness using the framework of critical mass theory (CMT). In line with the theory, three dummy variables were created. FD1 shows presence of one female director. FD2 shows presence of two or more women directors. FD3 should more than three female directors. The results reported in table VII shows that most significant influence is in case of FD3.

Table 6: OLS-gender diversity and financial reporting quality

VARIABLES	DA	DA	DA	ARL	ARL	ARL
FD1	-0.012*			-0.022*		
	(0.006)			(0.001)		
FD2		-0.014*			-0.026*	
		(0.012)			(0.003)	
FD3			-0.019**			-0.031**
			(0.014)			(0.003)
BD_SIZE	-0.005**	-0.006**	-0.005**	-0.004	-0.003	-0.003
	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)
BD_IND	-0.011	-0.012	-0.011	0.002	0.002	0.003
	(0.020)	(0.020)	(0.020)	(0.005)	(0.005)	(0.005)
ROA	0.001*	0.001*	0.001*	0.002	0.002	0.003
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
LEV	0.001	0.002	0.002	0.003	0.003	0.004
	(0.003)	(0.003)	(0.003)	(0.001)	(0.001)	(0.001)
F_SIZE	0.010*	0.010*	0.010*	0.011	0.012	0.013
	(0.002)	(0.002)	(0.002)	0.000	0.000	0.000
Constant	0.435**	0.436**	0.430**	2.012**	2.013**	2.013**
	(0.049)	(0.049)	(0.049)	(0.011)	(0.011)	(0.011)
Industry dummy	Included	Included	Included	Included	Included	Included
Year dummy	Included	Included	Included	Included	Included	Included
Observations	4567	4567	4567	4567	4567	4567
Number of groups	307	307	307	307	307	307
R^2	0.29	0.28	0.28	0.31	0.30	0.31

4.4.2. System generalized method of moments

In accordance with Ullah et al. (2018), we verify the robustness of the results using the generalized method of moments (GMM). It's possible that the OLS method we used to get our earlier results was skewed. The findings presented in Table 7 validate the data we previously acquired.

Table 7: System generalized method of moments-gender diversity and financial reporting quality

Variables	DA	DA	DA	ARL	ARL	ARL
L.DA	1.094***	1.112***	1.106***			
	(0.018)	(0.009)	(0.015)			
L.ARL				0.027**	0.021**	0.025**
				(0.043)	(0.021)	(0.021)
SKEW	-0.120*			-0.029*		
	(0.042)			(0.031)		
TILT		-0.131*			-0.032*	
		(0.062)			(0.011)	

BAL			-0.135**			-0.038**
			(0.046)			(0.005)
BD_SIZE	-0.001	-0.002	-0.003	-0.001	-0.002	-0.002
	(0.003)	(0.002)	(0.002)	(0.003)	(0.001)	(0.001)
BD_IND	-0.004	-0.005	-0.002	-0.008	-0.004	-0.003
	(0.023)	(0.015)	(0.023)	(0.024)	(0.005)	(0.005)
ROA	0.004	0.002*	0.001	0.002	0.002	0.003
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
LEV	0.004	0.003	0.002	0.002	0.002	0.001
	(0.003)	(0.003)	(0.004)	(0.003)	(0.001)	(0.001)
F_SIZE	0.001	0.002	0.003*	0.001	0.002	0.002
	(0.002)	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)
Constant	0.178	0.158	0.153	2.136	2.046	2.083
	(0.314)	(0.128)	(0.280)	(0.132)	(0.116)	(0.116)
Observations	4260	4260	4260	4260	4260	4260
Number of instruments	127	127	127	127	127	127
Arellano-Bond test (AR2) p value	0.526	0.247	0.318	0.415	0.345	0.311
Hansen j test p value	0.254	0.214	0.356	0.221	0.247	0.259

4.4.3. Additional measure

The responsibility of monitoring the financial statement's quality is placed on audit committees in listed businesses (Amin et al., 2021). Additionally, their presence guards against financial irregularities and guarantees the transparency of financial statements (Pucheta-Martínez et al., 2016). Therefore, it is reasonable to draw the conclusion that higher-quality financial reporting is linked to the participation of female audit committee members. We also looked at the impact of having female directors on the audit committee on the caliber of financial reporting as a backup measure. The variable audit committee was determined, in accordance with Amin et al. (2021). We divide the total number of female directors (PFD_AC) by the number of female members of the audit committee. In this perspective, Table IX data support our previous conclusions.

Table 8: Female directors in audit committee-alternate measure

Variables	**DA**	**ARL**
PFD_AC	-0.018*	-0.025*
	(0.007)	(0.005)
Constant	0.165**	0.182**
	(0.049)	(0.011)
Controls	Included	Included
Industry dummy	Included	Included
Year dummy	Included	Included
Observations	4567	4567
Number of groups	307	307
R-square	0.22	0.23

5. Summary and Conclusion

We investigate the impact of gender diversity on financial reporting quality utilizing Kanter's (1977) framework of group composition. Our research fulfills following objectives. Inititally, we offer novel results of how gender diversity affects financial reporting quality in an emerging economy, extending Dobija et al.'s (2021) work conducted in a developed economy. Given the significant differences between emerging and developed economies, our findings hold crucial implications for prospective investors in such contexts. Secondly, employing Kanter's (1977) framework, we underscore that women directors are influential on financial reporting quality and it occurs when the board achieves a balance with more than 35% female representation. This underscores global efforts by regulators advocating for gender quotas on the boards of listed firms. Furthermore, we lend empirical support to the critical mass theory, showing that the most effective outcomes from female representation are seen when there are three or more women directors on the board. Thirdly, as an additional measure, our results demonstrate that FD are beneficial in AUD_COMM towards FRQ. Lastly, we contribute to the gender diversity literature by highlighting the favorable influence of female directors in corporate governance.

Our research observes positively impacts financial reporting quality, with the highest effect observed in balanced boards with over 35% female representation. We categorize boards as skewed, tilted, and balanced to test our hypotheses. Under hypothesis H1, our argument was that that a minimum 15% presence of women positively influences financial reporting quality. Similarly, under hypothesis H2, we contend that on tilted boards, a minimum of 35% female directors exerts a more significant influence on financial reporting quality compared to skewed boards. Finally, under hypothesis H3, we hypothesize that women directors and their influence on quality

of reporting is strongest in balanced boards with over 35% female representation. All our hypotheses find support, with a higher impact of females observed in tilted boards, and strongest impact seen in balanced boards. Empirically, our results align with prior studies in this domain.

Our sample of study was listed firms of PSX from 2006 to 2021. We employed OLS for hypotheses testing and used critical mass theory as a robustness check. We also use generalized method of moments estimation to address biases that may not be detected by OLS regression. Overall, our findings offer empirical backing to Kanter's (1977) framework of group composition and critical mass theory, with the highest influence of female directors on financial reporting quality observed in balanced boards with a maximum number of women directors. Additionally, we shed light on better impact of females when they are present in audit committees.

Given Pakistan's status as an emerging economy dependent over both domestic and foreign investment to address balance of payment deficits, our findings carry significant implications for investors and regulators. For investors, we underscore the better impact of female directors on financial information quality, critical for enhancing understanding of business operations and reducing information asymmetry. Regulators and policymakers are urged to increase gender quotas on boards of listed firms, while also focusing on developing skill-building programs for the female workforce, given their positive role.

Despite our contributions, we have limitations in our research. These limitations may serve guidance for future research. Firstly, we focused solely on non-financial firms in our sample construction; future studies may extend this model to financial firms. Additionally, while discretionary accruals and audit report lag are crucial determinants of financial reporting quality, future studies may explore other proxies such as audit opinions and the presence of Big 4 audit firms.

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