

# **The Effect of Board Gender Diversity on The Performance of Commercial Banks: Evidence from Bangladesh**

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## **Abstract**

In today's corporate world, board diversity is a much-talked-about topic, and gender diversity is an important appearance of board diversity. Gender diversity refers to the existence of women on corporate boards of directors. This paper aimed to analyse the effect of board gender diversity on the performance of commercial banks in Bangladesh for the period 2017-2022. This study uses an instrumental variables regression analysis to investigate the relationship between board gender diversity and commercial banks' performance in Bangladesh. The results indicate that the inclusion of male and female directors is positively related to the financial performance of firms, as measured by the return on assets and the return on equity. Limited empirical studies have been conducted on the relationship between board gender diversity and commercial banks' financial performance in the emerging banking sector. Therefore, there is still no consensus regarding the link between board gender diversity and commercial banks' financial performance based on the mixed and sometimes inconsistent results in prior research. Therefore, this study extends the current literature in the context of Bangladesh, showing that a male and female board member can enhance the banks' financial performance.

**JEL classification:** G21, G34

**Key Words:** Board diversity, Gender diversity, Board of Directors, Financial Performance, and Commercial banks.

## **1. Introduction:**

Board diversity of men and women on the board of directors is a momentous topic in current corporate world. It relates to the different nationalities, races, religions and ages on the board of directors. Gender diversity refers to the presence women on the board of directors. It is an important aspect of board diversity because there are few women serving on boards of directors. Today's corporate boardrooms are not yet very gender diverse. Some examples are included here, In Canada, from 2001 to 2003, 51.4 percent companies had no women directors (Jenner

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et al., 2007) and Britain, 31 percent of the FTSE 100 had no women directors, in 2004 (Jenner et al., 2007). According to data from the Ethical Investment Research Service (2004), women board directors were less than 10 percent of the total number of directors of companies headquartered in Australia, the United Kingdom, Germany, France, Singapore, Hong Kong, Spain, Italy, and Japan. Only Norway (greater than 25 percent), where federal legislation requires all boards to have at least two women by 2006 and to have 40 percent women by 2008. In the same time, Sweden (almost 20 percent) had percentages of women directors greater than those in the United States.

But the situation has started changing. There is a slow but steady rise in female presence on boards of directors. A census conducted by Catalyst (2005) reports an average increase of 0.5 percentage points or approximately 21 new board seats for women, per year. A joint survey conducted by Heidrick & Struggles and Women Corporate Directors (2006) reveals that women are continuously making inroads into the boardroom. According to a Heidrick & Struggles analysis of proxy reports of Fortune 500 companies, women hold 18.4 percent of nominating committee seats, as opposed to 15.1 percent of board seats overall. "Progress, however slight, is being made, though. The 15.1 percent of Fortune 500 board seats held by women represents an increase of 0.7 percent since 2003" (Jenner et al., 2007). The board of directors serves as an internal control mechanism by overseeing top managers, remuneration, and strategy formulation in organizations (Campbell & Minguez Vera, 2010). Studies have examined the impact of board composition on firm performance, focusing on factors like the proportion of non-independent directors, board tenure, and shares held by directors, board size, and board meetings.

In Bangladesh, corporate boards, including those of commercial banks, are mostly male-dominated due to appointments being made through an old boy network (Business Daily, 2010). This practice involves male directors recommending their friends for board positions before they retire, which often leaves little opportunity for women to be selected to corporate boards. This lack of gender diversity may affect the firm's value, as suggested by various studies (Carter et al., 2003), but the situation could change with the introduction of a new constitution that requires more female participation in all aspects of life. This paper aims to examine the effect of gender diversity on corporate boards in light of these developments.

## 2. Literature Review

### **A brief overview of the banking sector in Bangladesh**

While significant research has been conducted in the general areas of diversity, corporate boards and firm performance, relatively limited number of gender diversity studies has been undertaken. Studies on the relationship between gender diversity and firm performance have produced conflicting results. Zahra and Stanton (1998) examined the relationship between gender diversity and firm financial performance. They worked with 100 Fortune 500 firms and they used return on equity, profit, earnings per share, dividend per share and profit margin on sales as performance variables. Zahra and Stanton did not find a statistically significant relationship between gender diversity and bank financial performance. Examined the relationship between board gender- diversity and firm value for the Fortune 1000 (Carter et al., 2003). Using ROA and ROE as a measure of firm value, they found statistically significant positive relationships between the percentage of women on the board of directors and firm value.

(Shrader et al., 1997) Reported a negative relationship between the percentage of female board members and firm financial performance. They analysed around 200 Fortune 500 firms. They used return on equity (ROE) and return on assets (ROA) as measures for firm financial performance. (Robinson & Dechant, 1997) Built a case for the importance of corporate diversity. They believe that diversity affects a firm's financial value in both the short and long run. They postulated that: (a) corporate diversity promotes a better understanding of the marketplace; (b) diversity increases creativity and innovation; (c) diversity produces more effective problem solving; (d) diversity enhances the effectiveness of corporate leadership; and (e) diversity promotes effective global relationships. If one accepts that women add to the diversity of corporate leadership, then the proposed benefits can be reaped by having women in the boardroom. They would lead to argue that diversity in board composition via greater female representation improved board governance and top management control.

### **Board gender diversity**

Board gender diversity is the presence of female directors in corporate boards of directors (Dutta & Bose, 2007); (Campbell & Mínguez-Vera, 2008). The participation of women in the labour market has grown since 1980 although this has not been matched with the improvement in quality of employment (International Labour Office. Director-General, 2007). In many European countries the participation of women in the labour market is lower as compared to men. This is a common phenomenon in majority of countries including Spain (Campbell & Mínguez-Vera, 2008). Alongside this, gender representation in boardrooms gained impetus in the early 2003 after the release of Higgs Report on good corporate governance in the UK. Despite the release of the Higgs Report, company boards remain largely male dominated (Grosvold et al., 2007). Of late this has come to change especially in developed economies. For example, in the US, female representation in boards increased from 3.7% to 8.6% from 1993 to 2003 (Singh & Vinnicombe, 2004). Such an increasing trend has also been experienced in UK where female directors have doubled since 1999 (Grosvold et al., 2007). It is believed that the change in board gender diversity is as a result of partly the implementation of equal opportunity programs which are a bit problematic to implement in senior management (Grosvold et al., 2007).

Globally, there have been a number of studies which paid attention on the gender diversity of corporate boards recently e.g., (Sheridan & Milgate, 2003); (Farrell & Hersch, 2005). Burke's (1999) study of the leading three hundred and fifty companies in Canada showed that small number of women was being represented on Canadian boards and the relationship between female presence on the corporate board and firm size, where larger boards had far more women. (Sheridan & Milgate, 2003) surveyed Australian listed companies and found that men favoured homogeneity at the board level, while women were advocating diversity. At the time of (Sheridan & Milgate, 2003) study, a paltry 3.4% of Australian board directors were women. (Farrell & Hersch, 2005) studied Fortune 500 and Service 500 companies to establish how gender influenced board selection. It was found out that women were added to the board until the company's diversity goal was met and that once they were pleased that bare minimum adequate female board representation was ensured, they no longer looked to increase the number of female directors.

Gender representation in boardrooms has been determined to vary by country. In countries where affirmative action is already in place like Norway and Sweden, female directors are higher than those countries without. In fact, compared with UK, Norway has European

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50% more female directors (Grosvold et al., 2007).

### **Why board gender diversity?**

The impact of gender diversity on organizational performance is inconclusive given the results of various studies conducted around the world. Although the effect is not clear, many theories have been put forward to explain why gender diversity affects corporate value. First, (Robinson & Dechant, 1997) argue, through intuitive reasoning, that firms with more diverse boards tend to outperform firms with less diversity. Balancing board diversity with client and employee diversity, they argued, diversity promotes a better understanding of the market, thereby promoting market penetration. It is also argued that gender diversity leads to creativity and innovation, and that these traits are not randomly distributed within populations (1997), resulting in changes in firm performance. (Carter et al., 2003) builds on agency theory to explain the relationship between board gender diversity and organizational performance and hypothesize that board gender diversity enhances the board's ability to oversee management. In addition, they argue that increasing the number of female directors could increase board independence. Further, Smith (2006) suggests that gender diversity on boards improves problem solving as different perspectives emerge and more alternatives are evaluated in the process. In addition, gender diversity on boards can also enhance a company's competitive advantage if it improves a company's image and has a positive impact on customer behaviour and company performance Smith (2006). In Western economies, the issue of diversity is highlighted for the following reasons: First, many institutional investors make diversity considerations part of their investment practices, and diversity initiatives in employment are part of the Socially Responsible Investment Index (Grosvold et al., 2007). Gender diversity on boards is also desired by customers, employees and other stakeholders. This is to demonstrate management's sensitivity to stakeholder preferences, aspirations, and concerns (2007).

Finally, gender diversity on boards has been the subject of discussions on corporate governance best practices. There is also the argument that greater gender diversity on boards can lead to lower corporate performance. (Earley & Mosakowski, 2000) argue that members of homogeneous groups tend to hold similar opinions and thus communicate more frequently. (Hillman et al., 2007)

### **Theoretical framework**

#### *Resource dependence theory*

The resource dependence theory proposes that boards of directors link their corporations to other external organizations to address environmental dependencies (Hillman et al., 2007). In this context, board diversity expands the channels of communication, networks and linkages of the companies and improves relations with competitors and customers. For instance, some entities appoint female directors on their boards to sustain good relations with their female clients or customers. Hence, the connections provided by female directors to external resources of dependency have the potential to increase critical resourcing, thus enhancing firm performance (Carter et al., 2003). In addition to the provision of access to resources, female representation in the boardroom improves a firm's legitimacy by signalling that the firm promotes gender equality (Isidro & Sobral, 2015). Therefore, female directors on a board may send positive signals to various stakeholder groups, such as investors, customers and communities, thereby developing the firm's image (Huse & Grethe Solberg, 2006).

#### *Agency theory*

Agency theory focuses on the conflicts between the principal and the agent. This theory also suggests that the board of directors fulfils a crucial role in monitoring and controlling managers, as well as in solving agency problems (Lazzaretti et al., 2013). Agency theory is one the main theories used to explain the positive impact of board gender diversity on firm performance. From the agency theory viewpoint, gender diversity is one of the most important corporate governance mechanisms for companies (Gallego-Álvarez et al., 2010). Prior literature also shows that strong corporate governance can improve financial performance by reducing agency problems and by enhancing board monitoring (Carter et al., 2003); (Isidro & Sobral, 2015).

**Table 1** Summary of two theoretical perspectives and implications for boards

<b>Theory</b>	<b>Role of Board</b>	<b>Implications for board</b>
Agency theory	Managerial control	Independent boards are a mechanism for shareholders to retain ownership control rights and monitor performance
Resource dependency theory	Co-optation	Board with strong external links is a co-optation mechanism for firms to access external resources

### **Empirical Studies**

(Pathan et al., 2007) examine the relationships between independent members of BOD and board size and the performance of local commercial banks in Thailand from 1999 to 2003. They discovered negative and statistically significant results between ROA and ROE indicators and the size of the board of directors of Thai banks because of their studies, which included data from 64 banks.

(Setiyono & Tarazi, 2018) analyse the influence of board members' diverse characteristics on the efficiency and risk of banking activities. Using data from Indonesian banks from 2001 to 2011, including 4,200 observations of five individuals and 21 ethnic groups, the authors estimate diversity by looking at different dimensions and find that it has a significant effect on bank performance. Diversity is generally positively related to bank performance, excluding ethnicity. The presence of gender (women) and occupational diversity reduce risk, but national and ethnic diversity is associated with higher risk. Diversity in education levels leads to higher volatility and higher leverage risk.

(Tariah, 2019) examines the relationship between gender and ethnic diversity on the board of directors and firm performance (ROA). The study explains the endogeneity problem by conducting regression using a fixed-effects model to examine this relationship. The results show a positive relationship between gender diversity and CEO diversity and firm performance.

In (Brahma et al. 2020), the authors study gender diversity in BOD and firm performance (measured by ROA and Tobin's Q) in the UK. Results show that BOD with three or more female members substantially affect a company's performance. In addition, (Brahma et al. 2020) also show the effects of age, education, and job position that have a positive impact on companies' performance.

(Kanakriyah, 2021) examines the effects of board characteristics on the firm performance of listed companies on the Amman Stock Exchange (ASE) from 2015 to 2019 in Jordan. The board of directors' characteristics includes ownership of the manager, CEO duality, BOD independence, gender diversity, diversity of nationalities, educational level, board meetings, the board size, firm size, and firm age that affect the return on assets and return on equity. The results find firm age and education level hurt performance.

(Nguyen, 2015) shows the effects of BOD components on firms' performance. The BOD components include the board size, female members, the percentage of capital owned by BOD, duality and non-executive members of BOD. The Tobin's Q and ROA indices measure firm performance. The study uses FEM with Robust Error correction to overcome the variable variance to estimate the regression model. The results show that dual and female members of BOD affect performance positively, while non-executive BOD members hurt performance. However, the size and percentage of capital owned by BOD's members have not affected the firms' performance.

In conclusion, by examining the relevant empirical studies summarily, the author finds that most studies focus on estimating the effects of BOD's characteristics on the performance of firms and commercial banks. These characteristics include gender, nationality, ethnicity, CEO diversity, occupational diversity, academic education, legal environment, and age of female BOD members, job position of female BOD members, CEO diversity, the board size, CEO duality, management style, and percentage of capital owned by the BOD. However, those studies are conducted in the absence of another characteristic of BOD, namely ownership structure and macro-economic variables, so the author modifies the research model by adding these variables.

From literature review, it was found that, no previous researchers conducted their research including gender diversity of board of directors on the performance of commercial banks in Bangladesh.

### 3. Research Methodology

#### 3.1 Sample Selection and Data Collection

The study focuses on examining whether there exists any statistical association between gender diversity within commercial banks and their financial performance, making it a correlational analysis. Further to this, the study is explanatory in nature as it establishes whether gender diversity, in combination with other controlled variables, causes banks performance to change. The effect of gender diversity on the bank's performance is analysed over a five-year period from 2017-2021. The data for this paper was obtained from secondary sources. Secondary sources encompassed financial data from financial statements of the commercial banks. This was taken because this type of data was easily accessible from the Bangladesh Bank (BB) and the Bangladesh Bureau Statistics (BBS) Reports.

The banking system of Bangladesh is composed of a variety of banks. Presently there are Sixty-one scheduled banks including nationalized commercial banks, private banks, foreign banks, specialized banks and development banks. Out of these sixty-one banks, six state-owned commercial banks, three specialized banks, thirty-three conventional private commercial banks, ten Islamic Shariah based private commercial banks, nine foreign commercial banks. Consequently, this study is considered 30 commercial banks including 3 State-owned

commercial banks, 18 conventional private commercial banks, 6 Islamic Shariah based private commercial banks, and 3 foreign commercial banks in Bangladesh. Being all the selected banks in the country, they are likely to possess greatest potential to attract and employ skilled and competent individuals on the board of directors and gain a pay-off from such well-constructed boards.

**Table 2** List of all selected commercial banks

Sl. No.	Banks Name
I.	<p><i>State-Owned commercial banks</i></p> <ol style="list-style-type: none"> <li>1. Agrani Bank Limited</li> <li>2. Janata Bank Limited</li> <li>3. Sonali Bank PLC</li> </ol> <p><i>Foreign commercial banks (FCBs)</i></p>
II.	<ol style="list-style-type: none"> <li>1. Habib Bank Limited (Pakistan)</li> <li>2. Standard Chartered Bank (United Kingdom)</li> <li>3. Citibank N.A</li> </ol> <p><i>Islami Shariah Based PCBs</i></p>
III.	<ol style="list-style-type: none"> <li>1. Al-Arafah Islami Bank Limited</li> <li>2. First Security Islami Bank Limited</li> <li>3. Global Islami Bank PLC</li> <li>4. Islami Bank Bangladesh Limited</li> <li>5. Shahjalal Islami Bank Limited</li> <li>6. Social Islami Bank Limited</li> </ol>
IV.	<p><i>Conventional private commercial banks</i></p> <ol style="list-style-type: none"> <li>1. AB Bank Limited</li> <li>2. Bank Asia Limited</li> </ol>

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3. BRAC Bank Limited
  4. City Bank Limited
  5. Dhaka Bank Limited
  6. Dutch-Bangla Bank Limited
  7. Eastern Bank Limited
  8. Jamuna Bank Limited
  9. Meghna Bank Limited
  10. Mercantile Bank Limited
  11. National Bank Limited
  12. NRB Bank Limited
  13. One Bank Limited
  14. Premier Bank Limited
  15. Prime Bank Limited
  16. Pubali Bank Limited
  17. Shimanto Bank Limited
  18. Trust Bank Limited
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### **3.2 Research variables**

*Dependent variables:* There are a variety of financial performance measures, such as ROA and ROE. These measures are mainly categorized into two groups: accounting-based measures and market-based measures. The performance measurements used in this study were the ROA and the ROE being accounting-based performance measures. These profitability ratios are most commonly used to indicate the ability of an entity to produce accounting-based earnings and returns to shareholders (Shrader et al., 1997).

According to agency theory, managers are likely to slight profits and misappropriate earnings, thus leaving fewer returns for the shareholders. The ROA shows the capacity and capability of the management to use the corporate assets which belong to the shareholders (Muzhar Javed et al., 2013). A lower rate of the ROA will reflect the inefficiency of firm management (Muzhar Javed et al., 2013). The ROA has been widely used as a performance indicator in prior gender diversity studies (Erhardt et al., 2003); (Adams & Mehran, 2003). The ROE is one of the most commonly used accounting measures in performance evaluation, indicating the return on shareholder investments (Ellinger et al., 2002)

*Independent variables:* The representation of gender diversity is the independent variable which is divided into proportion of female directors and proportion of male directors in the board. Gender diversity on corporate boards has become an increasingly important topic in recent years, as organizations strive to foster inclusive and equitable workplaces. In the context of research, gender diversity is often considered as the independent variable, meaning it is the factor that researchers manipulate or categorize to examine its potential effects on other variables.

The proportion of female directors indicates the number of women serving as directors in relation to the total number of board members. It reflects the level of gender balance and inclusivity in decision-making positions within the organization. On the other hand, the proportion of male directors represents the number of male board members in relation to the total number of directors. It provides insights into the extent of male dominance or overrepresentation in the boardroom.



*Instrument variables:* Four variables; leverage ratio, independent directors, board size and EPS are controlled for their impact on firm financial performance.

Independent directors have been referred to as “outside directors” or as “non-executives” in previous research (Hossain & Reaz, 2007); (Ararat et al., 2010) . The presence of independent directors on the board is seen as a control mechanism on the discretionary behaviours of managers (Yurtoglu, 2003) and on the actions of majority shareholders (Ararat et al., 2010). In other words, they are the check-and-balance mechanism: not only ensuring that companies act in the best interests of their owners but also in the best interests of the stakeholders. Several arguments in favour of the existence of independent directors on the board have been proposed in previous studies. For instance, independent directors can improve the supervision of management (De Andres & Vallelado, 2008), reduce conflicts of interest amongst the stakeholders (De Andres & Vallelado, 2008) and foster board effectiveness (Kathy Rao et al., 2012). Hence, independent directors contribute to the effective management of entities by maintaining different perspectives and representing the stakeholders. Board independence is typically determined as a percentage of independent members to the total number of members on the board.

Leverage, typically measured as a percentage of the book value of total debt to total assets, determines firm-specific risks. That is, the higher the leverage, the closer it is to breaching debt covenants and exposing the firm to the risk of bankruptcy (Abdullah, 2014). A high level of bankruptcy costs may be associated with a high level of debt. Thus, a negative association is expected between leverage and firm performance (Campbell & Mínguez-Vera, 2008); (Isidro & Sobral, 2015).

Board size was also included in the models to control the monitoring quality differences between firms. Board size is the most significant characteristic that has been evidenced to influence the effectiveness of the boards. The vast majority of prior evidence supports the notion that large-sized boards are related to greater firm performance.

**Table 3** Operational definition of variables measurement

<b>Types of Variables</b>	<b>Name of the Variables</b>	<b>Measurement of variables</b>
Dependent Variables (Financial Performance)	Return on Assets (ROA)	Net profit after tax by Total assets
	Return on Equity (ROE)	Ratio of net income divided by shareholders' equity.
Independent Variables (Gender diversity)	Male Ratio (MR)	% Of Male Directors in a Board
	Female Ratio (FR)	% Of Female Directors in a Board
Control variables	Leverage (LEV)	Ratio of total debts of the firm to total assets of the firm.

Independent directors (ID)	Proportion of independent directors on the board
Board size (BS)	Total number of directors
Earnings per share (EPS)	Net profit divided by the outstanding shares of its common stock

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In addition, earnings per share (EPS) is a company's net profit divided by the number of common shares it has outstanding. EPS indicates how much money a company makes for each share of its stock and is a widely used metric for estimating corporate value. A higher EPS indicates greater value because investors will pay more for a company's shares if they think the company has higher profits relative to its share price.

This study measured firm performance using return on equity (ROE), and return of assets (ROA) as the dependent variable. ROE and ROA were also used in this research as an indicator of the management efficiency of utilizing banks' assets. Gender diversity used as predictor variable, whereas some sets of variables that have been shown to have an impact in prior research, i.e., leverage, independent directors, board size and EPS were used as control variables to avoid biased results. Table 3 below depicts the measurement of the variables.

### 3.3 Measures of financial performance

In the present study, return on equity (ROE) and return on assets (ROA) have been used as financial performance measures for banks. ROE has been calculated for each year from 2017 to 2021 as a ratio of net profit after tax to average shareholders' equity. ROA has been calculated for each year from 2017 to 2021 as a ratio of net profit after tax to average assets.

### 3.4 Hypothesis development

In the light of the existing literature and in line with the objective of the study, the following hypothesis has been developed:

*Hypothesis 1(H1)*. Male ratio of the board is positively associated with the financial performance of banks.

*Hypothesis 2(H2)*. Female ratio is positively associated with the financial performance of banks.

### 3.5 Empirical model

This study advocates that the panel data approach is appropriate to examine board diversity because it provides more informative data, more variability, less collinearity among the variables, more degrees of freedom, and more efficiency, and it accounts for more observable firm-level heterogeneity in individual-specific variables. Panel data are better able to identify and measure effects that are simply not detectable in pure cross-section or pure time-series data. In this study, descriptive statistics, a pairwise correlation matrix tests were selected to choose random effects models. The study specifically modelled the effect of gender diversity on the financial performance of commercial banks in Bangladesh as follows:

$$\text{Firm performance}_{it} = \alpha_0 + \alpha_1 \text{Gender diversity}_{it} + \sum \alpha_i \text{Controls}_{it} + \epsilon_{it}$$

Where firm performance is measured by ROA and ROE for banks  $i$  at time  $t$  and are the dependent variables used as a firm performance proxy. The term  $\alpha_0$  is constant; gender diversity (male and female ratio) is independent variable. The control variables are leverage (LEV), independent directors (ID), board size (BS) and earnings per share (EPS). The controls will help reduce any potential omitted variable bias. The last term  $\epsilon_{it}$  is the model error for firm  $i$  at time  $t$ .

## 4. Result and Discussions

### 4.1 Descriptive statistics result

This study employed descriptive statistics to summarize, to report the behaviour of the main variables of the selected Bangladeshi commercial banks, and to permit the measurement of central tendency and dispersion. In Table 4, the mean Return on Assets (ROA) is .729 with a standard deviation of .431 and a range of -.08 to 2.02. Similarly, the average Return on Equity (ROE) is 10.215 with a standard deviation of 5.168 and a range of -1.15 to 22.14. The table shows that the average male ratio is 16.833 with a standard deviation of 66.161 and a range of 4.000 to 820 the average female ratio is 1.827, with a standard deviation of 1.509 and a range of 0 to 5. The table also indicates that the average Independent Directors (ID) is 2.133, and the standard deviations 1.432 and a range of 0 to 7, respectively. The average leverage ratio (LR) is 6.701, while the minimum is 2.380 and the maximum is 50.54. Also have, average board size (BS) of the sample banks is 13.313, while the minimum and maximum members of the boards are 6 and 26 members. Last but not least, the mean of earnings per share (EPS) is 3.557, with standard deviation of 4.513 and the range of -.680 to 32.62 in the selected Bangladeshi commercial banks.

**Table 4** Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	150	0.729	0.431	-0.080	2.02
ROE	143	10.215	5.168	-1.150	22.14
EPS	150	3.557	4.513	-0.680	32.62
Independen~s	150	2.133	1.432	0.000	7
Leverage	150	6.701	5.403	2.380	50.54
Male	150	16.833	66.161	4.000	820
Female	150	1.827	1.509	0.000	5
Boardsize	150	13.313	4.398	6.000	26

*Source: Author calculation, based on data (2017–2021).*

### 4.2. Testing for multicollinearity

A pairwise correlation matrix was examined in this research in testing for multi-collinearity. The correlation between any pair of variables should not be greater than 0.80. Therefore, before undertaking the regression analysis, the correlations were computed among the model variables to explain the association between the dependent and independent variables, whether negative or positive. Table 5 below displays the results of the Pairwise correlation that comprised the effect of male ratio, female ratio, independent directors, leverage ratio, board size and EPS on banks' performance. An array of the above matrix showing the correlations suggested a low correlation between almost all variables. Therefore, no special attention was needed when including the variables in the model since the highest correlation was .747 between ROA and ROE, which is below the threshold. It should be noted that the high correlation between performance attributes did not affect the research result since they were tested in separate regression models.

**Table 5** Correlation matrix

	ROA	ROE	EPS	Indepe~s	Leverage	Male	Female	Boards~e
ROA	1							
ROE	0.747	1						
EPS	0.153	0.296	1					
Independen~s	0.269	0.368	-0.195	1				
Leverage	0.154	-0.201	-0.133	-0.221	1			
Male	0.001	0.006	-0.046	0.074	-0.008	1		
Female	-0.046	0.084	-0.105	0.225	-0.206	0.117	1	
Boardsize	0.011	0.058	-0.377	0.482	-0.081	0.188	0.145	1

*Source: Author calculation, based on data (2017–2021).*

#### 4.3. Regression results and discussion

This section reveals the analysis results and discussion part of this research. Table 6.1 and 6.2 below shows the panel fixed effect estimation results of all the independent and control variables and their impact on the bank's performance (ROA and ROE). The essence of the two regression models is to show consistency in the statistical results or outcome. Following Empirical model, this study also adopted research methodology to ascertain the relationship between board diversity and commercial banks performance.

The use of these two alternative measures of bank performance indicates the consistency and stability of the results. These results provide evidence relating to the relationship between male ratio in gender diversity and commercial banks performance. The empirical results show that having male ratio on Bangladeshi commercial banks' corporate boards has a significant positive relationship with their financial performance using ROE and ROA as a measure of financial performance. This means an increase in gender mix may lead to an increase in bank performance. It can be deduced that the presence of men in the boardroom can influence decision-making, which in turn influences the bank performance, especially when they are

given the opportunity to work with their female counterparts. This finding is consistent with previous empirical studies, which found a positive association between male ratio in board gender diversity and performance. Theoretically, it does support the agency theory and resource dependency theory that men on boards are argued to be more risk-averse than women. Therefore, based on the empirical and theoretical evidence mentioned above, the hypothesis of this study (H1) was accepted, which proposes that male ratio in board gender diversity has a positive influence on banks' financial performance.

**Table 6.1** The random fixed-effect regression results

*ROA Dependent*

ROA	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
EPS	0.033	0.006	5.050	0.000	0.020	0.045
IndependentDirectors	0.031	0.029	1.080	0.281	-0.025	0.088
Leverage	-0.006	0.008	-0.710	0.475	-0.022	0.010
Male	0.000	0.000	0.180	0.857	-0.001	0.001
Female	-0.019	0.028	-0.680	0.496	-0.074	0.036
Boardsize	0.006	0.011	0.560	0.576	-0.016	0.029
_cons	0.535	0.166	3.230	0.001	0.211	0.860

*Source: Author calculation, based on data (2017–2021).*

**Table 6.2** The random fixed-effect regression results

*ROE Dependent*

ROE	Coef.	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
EPS	0.551	0.067	8.230	0.000	0.420	0.682	
IndependentDirectors	0.380	0.317	1.200	0.230	-0.241	1.000	
Leverage	-0.148	0.089	-1.660	0.097	-0.323	0.027	
Male	0.000	0.004	-0.020	0.987	-0.007	0.007	
Female	-0.327	0.305	-1.070	0.284	-0.926	0.272	
Boardsize	0.115	0.134	0.860	0.390	-0.147	0.377	
_cons	7.406	1.887	3.920	0.000	3.707	11.105	

*Source: Author calculation, based on data (2017–2021).*

In a similar vein, the analysis revealed that female ratio in board gender diversity also has a positive significant influence on bank financial performance. This finding implies that the existence of directors with degrees and diverse knowledge on the board increases its

performance. This result is consistent with the majority view of the previous empirical studies that support the notion that the director's knowledge is related to greater firm performance. Thus, based on the above empirical evidence, Hypothesis (H2) was accepted, which proposes that female ratio in board gender diversity is positively associated with banks' financial performance. In addition, these results are consistent with agency and resource theoretical dependence expectations, where board members with diverse skills, dissimilar cultural backgrounds, and different genders, among others, will perform as a strategic resource to the company, which may result in higher performance.

The empirical results for the control variables indicate that leverage ratio and board size significantly positively influence the firm's performance. This implies that these factors are conclusive drivers of commercial banks' financial performance in Bangladesh. Independent directors significantly negatively affect bank performance measured by ROA and ROE.

Overall, the results indicate that both male ratio and female ratio in the board gender diversity have a strong incentive to influence more financial performance of Bangladeshi commercial banks. This finding raises an important board diversity issue from developing countries' perspectives, especially male and female ratio diversity. Maybe emphasis should be placed on the male directors and female directors' issues and business environment and their roles in the corporate governance framework. The results also highlight the importance of other factors such as board size, leverage ratio, and independent directors which are major predictors of commercial banks performance in Bangladesh.

## 5. Conclusion and Recommendations

### Conclusion

In the present study, a paradoxical relationship between male ratio and female ratio diversity in the boardroom and financial performance of commercial banks in Bangladesh has been found to exist. Recently, gender diversity is the most imperative issues on policymakers' agendas that have charmed growing research interests. For instance, Spain has promulgated in its listing requirement that the gender proportion for female directors shall be 40% since 2015. Nevertheless, as many empirical investigations on board diversity concentrate on developed nations, their findings cannot be generalized to other developing nations due to disparity in their economic viability, legal effectiveness, and governance apparatuses bedeviling corporate board diversity among the nations. Against this background, this study empirically explored the effect of male ratio and female ratio in board gender diversity on commercial banks' financial performance.

Using data from selected commercial banks in Bangladesh from 2017–2021, it was found that both male ratio and female ratio in board gender diversity had a significant positive influence on the performance of commercial banks in the presence of some important control variables. Therefore, it is concluded based on the findings of this study, which is supported by a panel data analysis, that the existence of male ratio and female ratio participation in the boardroom has a positive and significant influence on the overall financial performance of commercial banks in Bangladesh. These findings suggest that male ratio and female ratio in board gender diversity could be an important corporate governance concept in other business facets as opposed to boardrooms. Whatever measure that could be taken to improve gender diversity in boards may be seen positively by the business community since it does not have any effect on the bottom-line of banks.

## Recommendations

For policymakers, the study's results support a rising number of regulations calling for corporate board diversifications. Beyond the ethical and moral arguments motivating such regulations, the study's findings add economic arguments to this type of legislation. Therefore, it is recommended that a diverse board in terms of male ratio and female ratio in board gender diversity should be encouraged in the banks for better performance, which invariably boosts all shareholders' confidence and enhances their market value. In addition, the findings would greatly benefit management in the directors' selection process, as they revealed the importance of gender diversity. Hence, it is imperative that Bangladeshi commercial banks access a pool of suitably qualified female nominees to fill boardroom positions so that progress in bank performance is defensible. In the same vein, governments should initiate policies that enhance women's participation in the workforce to change traditional views of the people, so that they can perform their roles on the corporate boards' diligently. New researchers can additionally focus on government officer on board, board meetings, relatives on board, professional degree holder on board etc. to find the influences of these gender diversity on corporate performance. However, some control variables like age of company, size of the company etc. are also need to be tested to explore the relationship between gender diversity and commercial banks financial performance. And also recommended that, the regulatory body needs to take effective and timely measures to bring back the glory days to the institutions. In order to minimize the existing information asymmetry, the BFIs should be encouraged to increase the number of voluntary disclosures and restrict any kind of insider trading. Another important issue is the appointment of independent directors on the board. Regulatory authorities like BSEC and Bangladesh Bank needs to ensure that the true independence of the appointed independent directors is maintained. Although it is a very challenging thing to do given the existing situation in Bangladesh, strict enforcement of laws and proper monitoring can help in this regard. Finally, the corporate governance structure should be reformed based on the existing corporate culture and business environment of Bangladesh instead of merely imitating the corporate governance pattern of other countries.

## 6. Conclusion

This study suffered some limitations, in which the secondary data were extracted manually from annual reports. In addition, it covered only thirty commercial banks in Bangladesh. Moreover, many board variables are missing, and the study did not differentiate boards with the gender diversity from those with more than one. The study did not consider the board independence, meetings, and audit committee attributes, which may have an important impact on the performance. And also, the present study suffers from certain limitations, e.g., small sample size and unavailability of data for a period longer than 2017-2021, the finding needs to be interpreted with some caution.

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