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DIVERSITY ON THE BOARD: A CATALYST FOR ENHANCED FIRM PERFORMANCE

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ABSTRACT

The composition of the board is considered a key issue in corporate governance. Different theories provide various alternatives on how a board should be structured so that it can work efficiently. One major concern that arises in board composition is the consideration of diversity in the boardroom and how it affects the firm. Previous Literature provides the relationship between board diversity and firm performance either by using demographic diversity variables or cognitive diversity variables. The present research, on the other hand, tried to fill a vacuum in the literature by examining both demographic and cognitive diversity factors such as gender, age, tenure, and education on Indian boards. Also, this study has taken both accounting and market-based measures which are ROA and Tobin's Q respectively to measure firm performance. Control variables used in the study are board size, firm age, firm size, and firm leverage. The research utilized a sample of 500 listed companies on the National Stock Exchange from 2018 to 2022. This period was marked by significant changes in corporate governance, a greater focus on board diversity, and financial challenges such as the COVID-19 pandemic. The study discussed the conceptual framework on board diversity and then investigated its relationship with firm performance from both theoretical and empirical perspectives. The deductive approach has been used to estimate the generalized method of moments. The findings partially support board diversity for better firm performance. Empirical results show that gender, age, and tenure have no significant relationship whereas Education diversity is significantly affecting both Tobin's Q as well as ROA. The findings contribute to the existing arguments over the sorts of regulation setters who advocate for corporate board diversity. The results are valuable for management. They show the importance of board diversity in improving performance and market value. As a result, this research adds to the literature on the situation of board diversity in emerging nations.

Keywords*: Board Diversity; Firm Performance; Gender Diversity; Age Diversity; Tenure Diversity; Education Diversity*

1. INTRODUCTION:

The globalization of business operations has created a complex environment, characterized by market volatility, increased global competition, rapid technological advancements, and significant cultural shifts (Maznevski, 1994; Milliken & Martins, 1996; Shrader et al., 1997). Only those companies that can effectively navigate these challenges are likely to survive and thrive in the long run. These companies must develop strategies that enable them to gain a competitive advantage. The board of directors serves a pivotal role in molding these strategic decisions and overseeing governance to ensure long-term sustainability and accountability. As a result, the board is considered a critical decision-making body within any organization (Adams & Ferreira, 2009; Carter et al., 2003).As a result, one of the most fundamental elements of corporate governance is the makeup of the board. Taking diversity in the boardroom into account is one of the main issues that come up when choosing a board. Our personalities, histories, opinions, and life experiences are examples of our distinctive qualities, which are referred to as diversity. First, the idea of diversity in businesses has been examined in terms of teams, work groups, and people management in general (Cox & Blake, 1991). But over time, it has also been looked into in relation to the board of directors, which is the primary governing body. Boardroom consists of several individuals who have their own attributes and features which impact the way they interact and operate. For that reason, studies on directors' characteristics and how they impact firm value are gaining public attention, frequently debated among scholars, and being discussed by firms, institutional investors, and shareholders (Carter *et al.* 2003). Increasing concerns for board diversity in today's era are because of both political and moral reasons. They aim to promote fairness and equality and to resist discrimination in public.However, there are conflicting opinions on the diversity in the boardroom. On one hand, it leads decision-making more efficiently and strategically, which leads to higher productivity and profitability. It also enhances creativity and innovations (Hackman and Morris, 1975)On the other hand, some have an opinion that a director should be appointed with certain expertise and skills rather than selecting directors from each demographics (Burton, 1991).

So, this research is conducted to clarify these opinions regarding board diversity and how it affects a firm's performance by considering both demographics and skills. Over the years, board diversity encountered extensive attention among scholars who are trying to

find the relevant characteristics of directors that help organizations achieve positive outcomes. So, the study contributes to the prior research and helps in understanding the diversity in the boardroom in theoretical and empirical ways. Given the country's distinct socioeconomic background and changing corporate governance environment, research on the contribution of board diversity on business performance is especially important in India. Significant changes have been made to corporate governance in India, with regulators placing a strong emphasis on accountability and openness. Diversity on boards is seen to help make decisions better and lessen groupthink, especially when it comes to gender and ethnic representation. Understanding how diversity affects corporate performance can help promote innovation, risk management, and improved strategic decision-making, especially in light of mandates such as the inclusion of women on boards.

Furthermore, diversified boards can boost investor trust and promote long-term growth as Indian companies aim to draw in foreign investment and become globally competitive. Research in this field can also help advance more inclusive and socially responsible governance models, given India's diversity, family-owned enterprises, and complicated socioeconomic issues.Diverse boards give businesses a way to include different viewpoints, which helps them better handle difficult market issues. In India, where companies function in a dynamic socioeconomic context marked by regional differences and cultural uniqueness, this is especially pertinent. Boards can encourage creativity, foresee new trends, and make well-rounded decisions that appeal to a larger audience by include people from a range of genders, age groups, races, and professional backgrounds.Diversification at the board level helps lower the dangers of insular decision-making for family-owned businesses, which make up a sizable component of India's corporate sector. This is because diverse boards can bring outside experience and independent opinions. Additionally, board diversity serves as a clear indication of a company's commitment to inclusive and equitable policies, as global investors place a greater emphasis on Environmental, Social, and Governance (ESG) considerations.Long-term benefits of increasing board diversity include improved risk management, greater stakeholder engagement, and long-term wealth development. Additionally, it lays the groundwork for a governance model that not only conforms to international norms but also tackles India's particular difficulties, opening the door to a corporate environment that is more robust and socially conscious. To address the research gaps and gain a clearer understanding of the consequences of board diversity on firm performance, this research aims to examine the relationship between board diversity on both market and accounting performance of a company. The effects of various dimensions of diversity have been investigated namely gender diversity, age diversity, tenure diversity, and education diversity to present an in-depth knowledge of how different aspects of board diversity can affect firm performance.

2. LITERATURE REVIEW:

The impact of group diversity varies at different organizational levels like a board of directors, workforce, and management (Milliken and Martins, 1996). The existing literature encompasses a good deal of studies where analysis has been done on the link between workforce diversity and business performance. However, the impact of boardroom diversity on business performance has gained significance lately. Therefore, moving similarly in line with previous research works, this study has also assumed that board diversity has identical effects on firm performance as the workforce diversity has (Carter *et al.*, 2003; Erhardt *et al.*, 2003; Campbell and Mínguez-Vera, 2008).However, the impact of board diversity on firm performance has been a matter of debate for many years. Mixed results can be witnessed in established literature regarding the relationship between board diversity and firm performance.Different proxies to measure board diversity have been used by multiple giving varying results. Some literature found a significant relationship between board diversity and performance of firm (Carter *et al.*, 2003; Erhardt *et al.*, 2003; Campbell and Mínguez-Vera, 2008; Di, An and Yao, 2022) while others found a non-significant or negligible relationship between them (Carter *et al.*, 2010; Ahern and Dittmar, 2012; Chapple and Humphrey, 2013)

Some studies argue that only gender diversity is important in improving firm performance (Fraga *et al.*, 2012), some found heterogeneity in nationality is beneficial for the financial performance of a company and education and gender diversity is proven otherwise (Tarigan, Hervindra and Hatane, 2018). Others have found that firms with gender, nationality, and education diversity have superior firm performance. After reviewing the literature it is observed that the effect of board diversity on firm performance is impacted by the nature of economies as in Anglo –American economies are different from developing economies (Cambrea *et al.*, 2017).Researchers have used multiple attributes of board members in their research work. Multiple diversity variables have compounding effects on the performance of the firm which helps in supporting large

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perspectives for diversity and significantly impacting firms' performance compared to individual diversity (Ararat, Aksu and Cetin, 2015). The effect of different diversity variables on firm performance has been mentioned below.

2.1 Effect of Gender Diversity on Firm Performance

Gender diversity and its impact on firm performance are the most studied aspects of the board's characteristics. The reason could be the growing attention on gender equality in boardrooms among different nations. However, consistent results have not been found regarding the impact of gender diversity on firm performance. Previous studies show both positive (Campbell & Mínguez-Vera, 2008; Falk & Lidemar, 2012; Kabara et al., 2022; Smith et al., 2006; Terjesen et al., 2016) and negative (Adams and Ferreira, 2009; Darmadi, 2011) relation between gender diversity and firm performance. Also, there was evidence which had shown the detrimental influence of mandated women quotas on a firm's performance and risk (Yang *et al.*, 2019).

2.2 Effect of Age Diversity on Firm Performance

Conflicting results about the association between age diversity and firm value are found in previous literature. Some suggest a encouraging correlation between young directors and market performance (Darmadi, 2011), some suggest positive relation between average age and performance (Siciliano, 1996; Kim and Lim, 2010; Falk and Lidemar, 2012; Mahadeo *et al.*, 2012; Wellalage and Locke, 2013; Fernández-Temprano and Tejerina-Gaite, 2020) whereas others found negative impact of board's age on firm's value (Bonn, Yoshikawa and Phan, 2004; Horváth and Spirollari, 2012), on strategic consensus (Knight *et al.*, 1999) and on corporate social performance (Hafsi and Turgut, 2013). Even age diversity as disparity, variation, and separation showed a negative impact on firm performance (Petersson and Wallin, 2017). Few studies have found age diversity to be an insignificant variable in determining the firm performance (Bonn *et al.*, 2004; Mcintyre *et al.*, 2007; Jhunjhunwala and Mishra, 2012).

2.3 Effect of Tenure Diversity on Firm Performance

The positive impact of a director's tenure on a firm's present performance (Kaczmarek, Kimino and Pye, 2011), on past performance (Dikolli, Mayew and Nanda, 2013), and on strategic consensus (Knight *et al.*, 1999) is found in previous studies.An unfavorable connection between tenure diversity and firm performance has been seen in prior literature. It can be attributed to the fact that directors in their early years of service perform well but are deemed to be responsible and held accountable in later years for firm performance (Allgood and Farrell, 2000).Research has shown that when the tenure length of directors ranges from low to moderate, it has a positive effect on shareholders' returns. However, this effect turns negative if the tenure length exceeds the moderate level(Walters *et al.*, 2007; Clements *et al.*, 2018). The degree of the negative association depends on certain characteristics of a firm (Clements *et al.*, 2018). Additionally, investors tend to give less preference and value to organizations with long-tenured directors(Jindal and Jaiswall, 2015).

2.4 Effect of Education Diversity on Firm Performance

Literature reveals the negative impact of educational diversity on the strategic consensus of firms (Knight *et al.*, 1999). Studies also found that directors having Doctor of Philosophy degree affect firm performance positively (Fidanoski, Simeonovski and Mateska, 2014) as well as negatively (Bathula, 2008; Boadi and Osarfo, 2019). Studies have also shown the negative impact of educational diversity among supervisory directors on firm performance (Fernández-Temprano and Tejerina-Gaite, 2020).However, findings in previous research have also suggested a positive impact of educational diversity on firm performance (Kim and Lim, 2010; Di, An and Yao, 2022; Kabara *et al.*, 2022). Women directors with higher qualifications also elevate firm performance (Smith, Smith and Verner, 2006). Some researchers also stated an insignificant relationship between educational diversity and board performance (Rose, 2007; Falk and Lidemar, 2012).

3. METHODOLOGY:

The study, based on dynamic panel data analysis, examined the demographic and cognitive diversity factors of 500 listed companies on the National Stock Exchange (NSE), a prominent stock exchange that accounts for approximately 96.1% of the free float market capitalization of the shares traded on this exchange.The study employed data covering from 2017–18 to 2021–22, a window of time characterized by remarkable improvements in corporate governance and heightened regulatory emphasis on board diversity in India. Studying the changing effects of diverse boards on company performance is best done in this period because rules such as SEBI's gender diversity mandates gained traction during this time. This time frame also included the COVID-19 pandemic's economic disruptions, offering a rare chance to evaluate how diverse boards handled business difficulties and strengthened resilience. The data is especially pertinent for examining the impact of diversity on long-term sustainability and business performance since it was chosen during a period when environmental, social, and governance (ESG) criteria

were becoming increasingly important.

The deductive approach has been used to estimate the generalized method of moments.The study examined the conceptual framework of board diversity and its relationship with firm performance from theoretical and empirical perspectives.Although much research has been done on the same, based on cross-sectional analysis (Shrader *et al.*, 1997; Carter *et al.*, 2003; Mahadeo *et al.*, 2012), we consider dynamic panel data analysis as it contains more efficiency, more variability, and more information in comparison to cross sectional analysis or time series analysis. Figure 1 gives an overall view of the research variables and the expected relationship of diversity variables with firm performance. In the study board diversity includes different variables that affect the firm such as gender, age, tenure, and education. In this study, the attention on gender diversity is centered on the diversity of men and women in the boardroom, rather than simply the number of females on the board. Gender diversity has been measured using the Blau index, which accounts for the ratio of men to women in the boardroom, rather than just the total number of female directors. This approach allows for a more accurate measure of heterogeneity in gender diversity, as opposed to simply assessing gender homogeneity. Similarly, education diversity is also measured through the Blau index. Age and directors' tenure diversity is measured through the coefficient of variation (CV). Control variables included in the study are board size, firm age, firm size, and firm leverage. ROA and Tobin's Q have been used as a proxy for firm performance. The calculation of variables is given in Table I

Table I

Variables Description

	Variables	Measurement
Dependent Variables	Tobin's Q	$\frac{MVofEquity + BVofLiabilities}{TotalAssets}$
	ROA	Natural Logarithm of $(\frac{NetIncome}{TotalAssets})$
Independent Variables	Gender Diversity	Blau Index=1-[(proportion of male directors)^2+(proportion of female directors)^2]
	Age Diversity	CV=$\frac{StandardDeviation(\sigma)}{\text{Mean}(\bar{x})}$
	Tenure Diversity	CV=$\frac{StandardDeviation(\sigma)}{\text{Mean}(\bar{x})}$
	Education Diversity	Blau Index=1-[(proportion of science background directors)^2+(proportion of non science background directors)^2]
Control variables	Board Size	Total members in the boardroom at the closing of the financial year
	Firm Age	Years since the company's founding till Mar 31, 2022
	Firm Size	Natural Logarithm of Total Assets
	Firm Leverage	Natural Logarithm of $(\frac{Totaloutstandingliabilities}{TotalNetWorth})$

Source: Summarized by researcher

3.1 Econometric Model for Board Diversity and Firm Performance

The impact of board diversity on company success has been studied extensively, with conflicting findings. The reason could be the ignorance of the endogeneity problem (Hermalin and Weisbach, 1998; Yoshikawa *et al.*, 2020; Allemand *et al.*, 2022). Consistent with the prior literature (Dang A *et al.*, 2018; Khidmat, Khan and Ullah, 2020; Pandey *et al.*, 2022), this study has employed dynamic panel models to counteract the sources mentioned above of endogeneity.

So, in our analysis, we have used the Blundell and Bond model (1998) which is a two-step Systems Generalised Methods of Moments (GMM), more efficient than difference GMM, on a dataset of 500 companies for a period of five years from 2018 to 2022. This estimator helps in controlling the endogeneity issues that arise in board diversity and firm performance relationships. Also, it calculates

standard errors which are robust in the case of heteroskedasticity of unknowable form (Wooldridge, 2001).

Equation 1 and 2 shows our dynamic models to examine how board diversity affects the financial performance of an organization.

Tobin's Q $=ß_0 + ß_1(\text{Tobin's Q})_{it-1} + ß_2$ (Blau Index of Gender Diversity)$_{it}$ + $ß_3$ (Coefficient of Variation of Director's Age)$_{it}$+ $ß_4$ (Coefficient of Variation of Director's Tenure) $_{it}$+ $ß_5$ (Blau Index of Education Diversity)$_{it}$+ $ß_6$ (Board Size)$_{it}$ +$ß_7$(Firm Age)$_{it}$+ $ß_8$ (Firm Size)$_{it}$+ $ß_9$ (Firm Leverage)$_{it}$ + γ_i +ε_{it} Eqn. 1

Log of ROA $=ß_0 + ß_1(\text{Log of ROA})_{it-1} + ß_2$ (Blau Index of Gender Diversity)$_{it}$ + $ß_3$ (Coefficient of Variation of Director's Age)$_{it}$+ $ß_4$ (Coefficient of Variation of Director's Tenure) $_{it}$ + $ß_5$ (Blau Index of Education Diversity)$_{it}$+ $ß_6$ (Board Size)$_{it}$ +$ß_7$(Firm Age)$_{it}$ + $ß_8$ (Firm Size)$_{it}$ + $ß_9$ (Firm Leverage)$_{it}$ + γ_i + ε_{it} Eqn. 2

Where,

i- Firm

t- Time period

$ß_0$- Constant term

β_{it}- Regression coefficients

γ- Firm Fixed Effects

ε_{it}-Error term

4. RESULTS

4.1 Descriptive Statistics

Table II shows a total number of observations, minimum and maximum values, mean and standard deviation of all the variables used in this research.

Table II

Descriptive Statistics

Variables	Observations	Mean	SD	Min	Max
Tobin's Q	2005	2.9671	3.6992	-4.3926	61.1186
ROA	2005	7.7529	8.8851	-88.4100	78.8800
Log of ROA	1829	1.7762	1.0788	-4.6052	4.3679
Blau Index of Gender Diversity	2005	0.2633	0.0994	0.0000	0.5000
CV of Director's Age	2005	0.1520	0.0754	0.0137	1.6613
CV of Director's Tenure	2005	0.8022	0.2609	0.0000	2.3673
Blau Index of Education Diversity	2005	0.4020	0.1189	0.0000	0.5000
Board Size	2005	9.4334	2.4193	4	22
Firm Age	2005	43.9307	25.4597	3	159
Log of Firm Size	2005	9.0305	1.7132	5.1765	15.4246
Log of Firm Leverage	1983	-0.2392	1.0791	-4.6052	3.8480

Source: Analysis of research data (Stata output)

Due to the unavailability of data, the number of sample companies has been reduced to 401 companies for five years giving 2005 as the total number of observations. The market-based indicator which is Tobin's Q has a mean value of 2.97% and the accounting-based indicator i.e. ROA has a mean value of 7.75%. The standard deviation of firm performance variables is much larger than their respective means (3.70 and 8.89) indicating substantial variations in firm performance across Indian companies taken in our study.

The average heterogeneity of gender which is measured through the Blau index is 0.26 which shows that 26.3% board is multifarious. Also, low value of standard deviation (0.099) shows that data is more clustered around the mean. The minimum value of gender diversity is 0 which indicates that there are still some firms that do not include even a single female director in the boardroom. Maximum value of

Blau index of gender diversity is 0.5 which is a maximum diversity and indicates an equal number of male and female directors in some companies.
Age diversity shows a mean value of 15.3% indicating very less diversity in terms of age among the board members and this age diversity among boards varies from 0.0137 to 1.661. Education diversity shows that an average of 40.2% board is heterogeneous. This shows that there is enough diversity among directors in the boardroom in terms of qualifications.The average board size is 9.4334 and the maximum and minimum numbers of board members are 22 and 4 respectively. The standard deviation of 2.42 indicates variations in the number of board members in our sample. The firm's average age is 44 years (approx) since its incorporation and ranges from 3 years to 159 years. A high standard deviation of 25.46 indicates that sample data includes all types of firms i.e. from newly established to old firms. The log of firm size and log of firm leverage display the mean 9.0305 and 0.2392.

4.2 Pearson's Correlation Matrix

Table III displays the correlation matrix among all the variables studied in this research.

Table III

Pearson's Correlation Matrix

Source: Analysis of research data (Stata output)

Variables	Tobins' Q	Log of ROA	Blau Index of Gender Diversity	CV of Director's Age	CV of Director's tenure	Blau Index of Gender Diversity	Board Size	Firm Age	Log of Firm Size	Log of Firm Leverage
Tobin's Q	1									
Log of ROA	0.409	1								
Blau Index of Gender Diversity	0.0472	0.057	1							
CV of Director's Age	0.1124	0.1421	0.0972	1						
CV of Director's tenure	0.0168	0.0182	0.0881	0.0608	1					
Blau Index of Education Diversity	0.1	-0.0157	-0.005	0.1316	-0.0207	1				
Board Size	-0.0567	0.0017	-0.2301	0.0284	0.1521	0.0618	1			
Firm Age	-0.1074	-0.142	-0.0582	-0.0949	0.1624	-0.0379	0.1325	1		
Log of Firm Size	-0.3424	-0.4494	-0.1219	-0.2281	0.0013	-0.0754	0.3351	0.2503	1	
Log of Firm Leverage	-0.2519	-0.3387	-0.038	-0.0655	-0.0276	-0.0408	0.0524	0.0819	0.352	1

Log of ROA and Tobin's Q are two dependent variables studied differently in two models so the correlation among them is not a concern. Each independent variable in the table has a correlation less than 70% with other independent and control variables. This indicates no issue of multicollinearity among the variables used in the research. Also, none of the control variables shows a very high correlation with other control or independent variables.

4.3 Regression Results

To determine whether independent variables (board diversity) influence dependent variables (firm performance), the GMM approach has been performed on the dynamic panel data which is strongly balanced. In panel data, entities' behaviour is observed over time. The GMM model best fits with a small time period and large panels (Roodman, 2009). The study is divided into two models: The first model analyses the effect of board diversity on Tobin's Q and the second model analyses the effect of board diversity on the log of ROA.

4.3.1 Model 1: Effect of Board Diversity on Tobin's Q

Model 1 in table IV displays the results of our analysis on board diversity on Tobin's Q. Lag of Tobin's Q is significant at 1% level of confidence interval implying the consistency in dependent variable. This is in line with the steady-state premise for the validity of instruments and corporate performance studies, that past performance influences present performance (Raithatha & Komera, 2016) and confirms that the panel data is dynamic in nature.Blau index of education diversity is positively and significantly affecting Tobin's Q at 10% level of significance indicating that inclusion of directors with different educational backgrounds will improve the firm performance based on market measures. However, Blau index of gender diversity, coefficient of variation of director's age and director's tenure diversity are non significant in determining the firm performance. Log of firm size affect the Tobin's Q significantly and negatively at 1% level of significance suggesting that big organisations are difficult to manage as they are engaged in large complex activities and are difficult to monitor by investors (Adams & Ferreira, 2009). Log of firm leverage is also negatively and significantly affecting Tobin's Q at 1% level of significance as expected.

4.3.2 Model 2: Effect of Board Diversity on ROA

In model 2 the effect of board diversity variables along with the control variables on log of ROA has been analysed and presented in table IV. In this model lag of log of ROA is significant at 1% indicating that it is dependent on past firm's performance and ensures that the data set is dynamic panel data.Similar to the model 1, Blau index of education diversity has a significant effect on log of ROA at 1% level of significance. But it is impacting negatively which indicates that directors from different educational backgrounds may have conflicting views which may affect the accounting based firm performance. This model also reveals the non-significance of the blau index of gender diversity, coefficient of variation of age and tenure of directors while determining the relationship between board diversity and firm performance.Board Size is significantly and positively affecting the firm performance at 1% level of significance which shows that firms with more directors have better performance in terms of return on assets as compared to a small number of directors in the boardroom. Model 2 also finds log of firm size and log of firm leverage as negatively significant at 1% level of significance in determining accounting based measure of firm performance.

Table IV: Analysis related to Diversity in Boardroom and Performance of an Organisation: GMM Results

	Tobin's Q **(Model 1)**	**Log of ROA** **(Model 2)**
Lag of Tobin's Q	0.4470449 (0.1399869)***	-
Lag of log of ROA	-	0.4234505 (0.0781699)***
Blau Index of Gender Diversity	0.3467276 (0.6728505)	0.3391002 (0.2257852)
CV of Director's Age	0.3783157 (0.5869671)	0.1436251 (0.2722060)
CV of Director's Tenure	0.0851202 (0.2752327)	-0.0031613 (0.0858666)
Blau Index of Education Diversity	0.9269880 (0.5104017)*	-0.6818222 (0.1791162)***
Board Size	0.0320655 (0.0393436)	0.0496754 (0.0107184)***
Firm Age	-0.0021074 (0.0029017)	-0.0012862 (0.0013515)
Log of Firm Size	-0.3556217 (0.1099673)***	-0.1547374 (0.0284041)***
Log of Firm Leverage	-0.2707384 (0.0990390)***	-0.1287978 (0.0340781)***
Constant	4.0453750 (0.8595642)***	2.1585750 (0.3738305)***
Firm Fixed Effects	Yes	Yes
Prob > F	0.000	0.000
AR(1) (p-value)	0.027	0.000
AR(2) (p-value)	0.175	0.825
Hansen test (p-value)	0.753	0.598

*Note: Values in parenthesis are robust standard errors. Asterisks ***, ** & * shows significance at the 1%, 5% and 10% levels, respectively*

Consistency of the two step system GMM estimator has been checked through various tests. The F-statistic is statistically significant at 1%, 5% and 10% level of confidence, recommending significance of the overall model.

Table IV displays a significant p-value of the first-order autocorrelation, AR (1) at 1% level of significance, indicating failure to accept the null hypothesis of no autocorrelation in both the models. AR (2) p-values are 0.175 in model 1 and 0.825 in model 2, suggesting failure to reject the possibility of no serial correlation in second order difference. So the results of our analysis based on the GMM estimator are valid as well as free of endogeneity.

Hansen *J*-test in table 4.4, showing a p-value 0.753 in model 1 and 0.598 in model 2 implying failure to reject the null hypothesis which states that all the instruments as a group are exogenous.

5. FINDING AND DISCUSSIONS

Business firms require a wide range of resources, including capital, people, knowledge, infrastructure, and emotion, to effectively navigate the varied and complex markets. Human resources are crucial to a company's success because workers from a wide variety of skill sets and experiences are better able to navigate the nuances of competitive markets (Milliken and Martins, 1996). The board of directors can be of great assistance in gaining access to such funds. To gain an edge over the competition, a diverse set of board members is essential.Our findings reveal that gender diversity is not a significant variable in determining firm performance (Tobin's Q and ROA) which is in line with the research of Carter et al., 2010, Hassan & Marimuthu, 2016, Randøy et al., 2006 and Richard et al., 2003 and Rose, 2007. There could be several reasons for this non-significant effect. One reason could be that unconventional board members may decide to adopt the conventional board members' ideology and norms to improve their reputation in front of top-level decision-makers to

gain power and high position. Another could be the low level of gender diversity to have any meaningful impact. As a result, no effect is seen from female members in any given performance measure.

Age diversity also fails to discover any significant relationship with Tobin's Q and ROA which confirms the results of Randøy et al., 2006. However, while analyzing data of this study related to director's age, it is found that most of the directors lie in the age group of 58 years to 62 years implying more middle-aged directors in Indian boardrooms. Low diversity could be a cause of the absence of any significant relationship.Similarly, tenure diversity has also shown an insignificant influence on both Tobin's Q and ROA. This is similar to Kramarić & Miletić, 2022 which also found the insignificance of tenure diversity in measuring firm performance. This may be due to the ignorance of valuable suggestions by new directors. Moreover, when the directors are new, crucial tasks are not imposed on them rendering their performance ineffective to influence the company's performance.Education diversity is significantly affecting both Tobin's Q as well as ROA which is in alignment with prior research of Bathula, 2008; Fayyaz & Minguez-vera, 2023; Fidanoski et al., 2014 and Kabara et al., 2022. It seems to have a positive effect on Tobin's Q while negatively affecting ROA. These results are consistent with the results of Magnenelli & Pirolo, 2020. The reason behind the former can be cited as the preference that investors impart on the firms whose board comprises directors with diverse educational backgrounds while valuing firm's performance. Practically, a contradictory viewpoint can be witnessed as directors belonging to disparate backgrounds have dissimilar training and experiences leading to diverse perspectives which can make them lock horns rendering them unable to arrive at conclusive decisions.

This negative influence on ROA is probably due to inclusion of directors with different educational areas who may not give useful inputs in board meetings. These directors with some particular disciplines may not necessarily understand business activities of an organization. Another reason could be the conflicts that arise during the decision making process due to the personal interest among the various educational groups.Board size is insignificantly affecting Tobin's Q and significantly and positively affecting ROA which indicates that investors rarely give preference to the size of the board while analyzing firm value. However, in reality, board size does influence the firm performance.The positive effect of board size on ROA shows that larger boards with various members have access to resources to a great extent as compared to smaller boards as a result they possess wide information followed by effective decision making which ultimately improves the firm performance.Firm age is an insignificant variable in determining the relationship between board diversity and firm performance. This is in line with the findings of Kagzi & Guha, 2018; Oxelheim & Randøy, 2003. Firm size is significantly affecting both Tobin's Q and ROA which is consistent with the results of Adams & Ferreira, 2009; Darmadi, 2011; Hassan & Marimuthu, 2016; Kabara et al., 2022. However, the impact is negative which is conforming to the research of Campbell & Mínguez-Vera, 2008 and Magnenelli & Pirolo, 2020. This can be elucidated by the fact that bigger firms have more agency problems including information asymmetry. Further, larger firms are difficult to manage because of contradicting interest of the organization's employees. This results in declining firm performance.

We have also found a statistically significance relationship between firm leverage with Tobin's Q and ROA which is similar to the findings of Fernández-Temprano & Tejerina-Gaite, 2020; Kabara et al., 2022; Kramarić & Miletić, 2022. The coefficient of this variable is negative indicating indebtedness and risk level in business operations weakens the firm performance if it rises to a higher level. This is parallel with the analysis of Kramarić & Miletić, 2022.

6. Implications of the Study

This study contributes to prior literature on corporate boards' composition and performance particularly in emerging markets. This study might accommodate academics, firms, officials, investors, policymakers and all other stakeholders as it furnishes resourceful information with regards to board composition that builds up a firm's performance.The findings of this study have both theoretical and practical implications. Firstly, despite the fact that lawmakers around the world are primarily focused on gender diversity, market participants and stakeholders are giving a growing amount of attention to all firm internal policies that focus on protecting and representing minorities in their governing bodies, most notably the Board of directors. In other words, certain stakeholders, including investors and customers, are increasingly interested in forming connections with businesses that are adhering to codes of conduct demonstrating acceptance and openness with regard to the recruitment of people with diverse characteristics. Thus, policymakers should prioritise the institutional protection of these minorities as a means to guarantee more diverse

boardrooms in the future.Secondly, there is no evidence found which suggests that policy initiatives for women quotas system would improve corporate performance on an average. So, regulations and policies enforcing women quotas on boards should be motivated with reasons other than improvements in governance and corporate performance.

Thirdly, top management can use this research as a decision making tool specifically in board selection and decisions related to diversity. Fourthly, proper legal framework should be formulated by legislators on implementation of effective diversity in boardrooms. Firms should employ those diversity variables only that enhances their firm performance.Fifthly, the insignificant impact of gender diversity and significant impact of education diversity on Tobin's Q and ROA implying that to increase effectiveness, firms should prefer to nominate directors with higher qualifications which represent competencies and skill which are also necessary for good corporate governance rather than appointing women just for only improving one's public persona.Sixthly, significant influence of Blau index of education diversity implies preference of directors from different fields and areas in board selection to have vast knowledge rather than considering directors with higher degree of qualifications only. So, researchers should study board diversity in wider terms and efficiently analyse other characteristics of board members.

Findings of this research indicates that board diversity consists of many aspects but some have significant impact and other shows insignificant results which indicates that it is crucial for investigators to know the conceptual reasoning related to the impact of each diversity variable before investigating the effect of total diversity among directors in the boardroom.So the findings of present study help the policy makers to amend the current legal policies, regulations, and framework and to strengthen corporate governance and corporate performance.

7. CONCLUSION

The concept, of board diversity and its impact on various aspects of an organization, has been discussed by scholars and practitioners in the last few decades. But no consistent results have been accomplished yet. Therefore, board diversity and its impact on firm performance is a debatable issue. This study attempted to initially provide a conceptual framework on board diversity. It afterward investigated its relationship with a firm performance from both theoretical and empirical perspectives.The study has taken both accounting and market based measures in order to study the same case with different perspectives. However the study has shown different results under these two measures. Findings have shown a positive impact of board diversity on market based measure of firm performance and an opposite impact has been witnessed the case of an accounting based measure. This exhibits positive judgement given by financial markets when firms consider board diversity. The study has also investigated that board diversity includes other variables that affect the firm performance rather than gender and age. Additionally, gender diversity is not significantly affecting Tobin's Q and ROA indicating the researchers to study the concept of board diversity in broader terms and also, analyze other characteristics of board members rather than focus on only gender diversity.Age and tenure diversity do not significantly affect the firm's financial performance. However, this does not mean we should overlook these factors when appointing directors. Prior research suggests that diversity in the boardroom can enhance overall corporate efficiency (Carter *et al.*, 2010).Hence, it is imperative to study the effect of board diversity on board effectiveness due to continuous changes in the environment where firms operate. The boardroom is crucial for corporate governance. Studying the impact of board diversity on firm performance is important for selecting board members.

8. PROSPECTS FOR FURTHER RESEARCH

This study has been conducted with the best available information. However, several avenues for future research remain. Firstly, while this study is directed towards gender, age, tenure, and education diversity, future research could explore additional diversity variables to provide a more comprehensive understanding.Secondly, the scope of this research is limited to companies listed on the National Stock Exchange in India. Expanding the study to include other stock exchanges globally, as well as non-listed companies, could yield broader insights.Finally, the study's time frame is limited to five years, which may not capture all temporal variations. Future research could extend the period of analysis to amplify the precision of the findings.

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