

GENDER DIVERSITY IN LARGE LISTED INDIAN COMPANIES

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Abstract

This paper aims to examine the effectiveness of gender diverse boards on financial performance in large listed Indian companies by taking a resource dependency perspective. Gender diverse board is measured by presence of the independent female director on the board. Further, financial performance is measured by the market performance measure taking Tobin's Q. This relationship is examined by collecting information for eleven financial years from 2003 -13. Panel regression model is employed to assess the proposed relationship. The analysis confirms that independent gender diverse boards significantly affect financial performance. Another important revelation of the study is that the financial performance of company having gender diverse boards increases with board size.

Keywords: Gender Diversity, Tobin's Q, Panel Data, India

JEL Classification: G38, M14, J15, J16

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1 Introduction

Changing business environment around the globe has geared need for diverse boards. Diversity is widely accepted as a strategic component of the business as it brings more agility, innovation and aligns the organization towards the needs of the customers (Cox & Blake, 1991). Diversity in board stems from need for versatile talents, newer ideas vital for innovation, globalization, changing demographics and customer expectation (NASSCOM, 2011). Diversity enhances heterogeneity that fosters newer ideas (Johansson, 2005).

Diversity can be enhanced in the boards in two distinct ways namely cognitive and demographic diversity. Cognitive diversity are characterized by knowledge, education, values, perception, affection and personality characteristics whereas observable or demographic diversity may comprise of gender, age, race and ethnicity (Maznevski, 1994; Milliken and Martins, 1996; Pelled, 1999; Boeker, 1997; Watson et. al., 1998; Kilduff et. al., 2000; Peterson, 2000; Timmerman, 2000). It is in this background that the issue of gender diversity on corporate boards will be addressed in this paper.

India has been valued among the lowest worldwide in terms of women representation in business (Zahidi and Ibarra, 2010). Constituting 48% of Indian population and representing a mere 23% in work force in private companies is a worrisome picture. Women's role is limited to entry and middle

level positions predominately, with limited 5% directorships held by women in top 100 listed firms (Banerji et al., 2010). One billion women would be entering the workforce in the coming decade and are viewed as the drivers of economic growth. Booz and Co. (2012) refers to them as the "third billion" next to India and China. However, female inclusion at highest echelons is disturbing, with only one in eight management roles and one in twenty senior executive positions being held by Indian women (Schomer, 2010)

On an industry level, services sector employed the greatest percentage of female employees worldwide. This sector was dominated by financial services and insurance sector (60%), which had the highest percentage of women employed. Industry groupings replicated the similar trend as within countries (i.e.) women were scarce among senior position (Haldar et. al., 2014). Cranfield University conducted a study on Bombay Stock Exchange listed top 100 companies sponsored by Standard Chartered Bank, found that women represented 5.3% of all directorships and were on an average five years younger than their male counterparts. Their tenure in organization was twice as long as their male counterpart in executives positions (Banerji et. al., 2010).

The objective of this study is to examine the effects of gender diversity on firm's financial performance. This study contributes to the literature on women in the following ways. Firstly, wider

diversity among board has been advocated as a means of improving organizational performance as board gains by new insights and perspectives. This presents a business case for female participation on boards. Thus, our study which defines diversity as the representation of gender differences on board rooms is a boon for business. Secondly, majority empirical research on board gender diversity is based on U.S. data. This research adds to a growing number of Non-U.S. studies by investigating the link between the gender diversity of the board and financial performance in India, a country which historically has had minimal female participation in the workforce, but lately introduced legislation in Companies Act 2013 to improve equality of opportunities. Thirdly, our study is on large listed 500 companies from 2003 – 13. This eleven years' time span helps us to understand the growth pattern which might have risen or fallen due to market imperfections. Fourthly, instead of relying on any database, we hand collected the data on women directors. Fifthly, we studied the research from both the levels of board and firm wherein we investigated the board composition and performance before deriving our conclusions.

The organization of the paper is as follows: Section 2 provides an overview of the Women in Indian boardrooms followed by literature review in Section 3. Section 4 presents the research design and offers a discussion of the data, variables tested and the model development. Empirical Results are presented in Section 5. Section 6 concludes the study with discussion and summary of the findings.

2 Literature review

Academic research on women can be classified in three broad perspectives namely the corporate governance perspective, the institutional perspective and the resource dependency perspective. These three perspectives highlight the fiduciary responsibility, external legitimacy and competitive advantage of gender-diverse board.

Corporate governance perspective is argued by researchers claiming key demographic characteristics affecting director's cognition, behaviour, and decision making skills which later impacts firm level outcomes (Carpenter et. al., 2004; Joshi et. al., 2009; Forbes and Miliken, 1999).

Discussing the institutional perspective, Bilimoria (2000) argues that the presence of a female board member signals that the organization values their contribution. Their study builds on the institutional perspective of achieved legitimacy from the promotion of women to strategic positions in management. Further, they found a positive relationship between female corporate board members and number of women holding line jobs; critical mass

of women officers; women officers with high ranks and women among the top corporate earners.

According to the resource dependency perspective, boards of directors with their high level of linkages with the external environment play an important role. Pfeffer and Salancik (1978) discuss the external linkages that boards can develop for the organization. The boards provide provision for resources, create channels of communication, provision of commitment of support from important organizations, and finally develop external legitimacy for the organization. These board resources can be characterized as insiders, business experts, support specialists, and community influentials (Hillman et. al., 2000). These different types of directors provide varied resources which are beneficial to the organization. Therefore, a more diverse board will provide more valuable resources to the organization, leading to enhanced performance. Our study focuses on this perspective.

Studies addressing diversity and financial performance predominantly measure workforce diversity as opposed to diversity within board of directors. They found that workforce diversity impacts firm performance, but only scarce studies have investigated the potential linkage of diverse boards might have with financial performance. These researchers report mixed results, however recent papers demonstrate more positive relationship. Recent studies on Fortune 500 and FTSE 100 firms report a certain relationship between presence of women directors and higher market capitalization (Catalyst, 2004; Singh et. al., 2001; Singh and Vinnicombe, 2003). FTSE 100 study documented multiple women directors are likely in large firm with large board size (Burke and Mattis, 2000; Singh et. al., 2001). These firms have large internal talent pool which provides challenge and growth opportunities for women to reach the top echelons.

Varied performance measures are used by researchers to examine the linkage with gender diversity. However, the results are mixed. Researchers found negative relation between percentage of women and firm financial performance among 200 among the Fortune 500 firms, but positive relation with proportion of women in management (Shrader et. al., 1997). Later when this cross sectional study, extended to panel of five years for 112 Fortune listed firms suggested gender diversity (Gender and Ethnicity) impacts overall firm performance (Erhardt et. al., 2003). Danish study conducted by Rose (2007) reports no relationship between Tobin's Q and gender diversity. He reflected that poor women representation and closed culture at board level leads to domination by male; which negates the gender diversity advantage.

Study of 797 Fortune 1000 firms gender diversity found that firms with at least two women on board performed better than all male board on Tobin's Q and ROA (Carter et. al., 2003). Similarly, Catalyst (1995) reported that top 100 US companies (based on revenue) had at least one women director. Also among the 50 most valuable Fortune 500 firms had included at least one women board member (Catalyst, 1993). Burke and Mattis (2000) find a similar correlation. Recent study by Catalyst (2004) reports a positive link depicted by 35% increase in ROI and 34% increase in total returns to shareholder in firms having higher female representation in top management team.

Thus, as boards are involved in crucial strategic decision making, it is logical to expect that companies with higher levels of gender diversity would demonstrate higher levels of performance in contrast to boards with poor diverse executive boards. Thus, we hypothesize: Greater gender diversity increases organizational financial performance.

3 Research design

3.1 Data

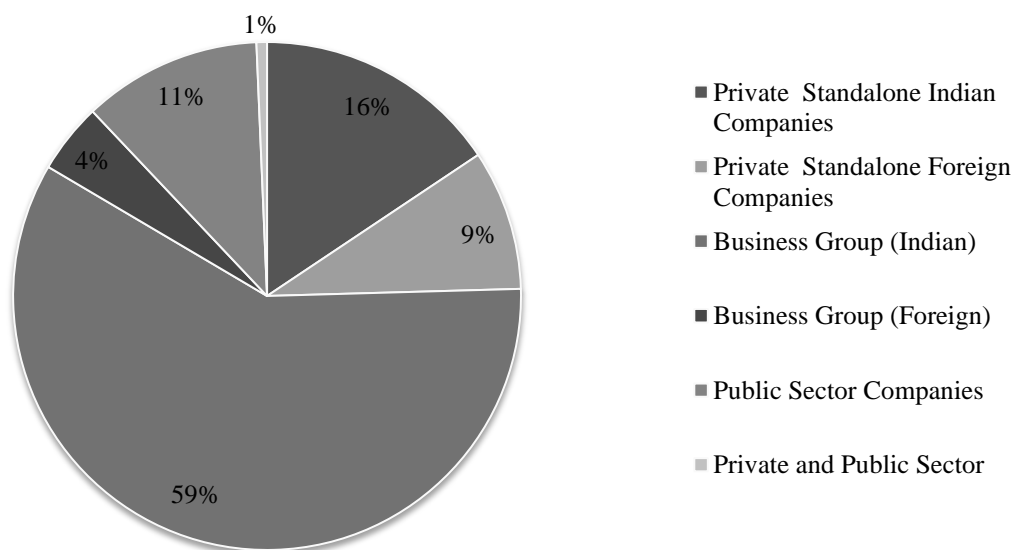
The data includes up to eleven annual observations for large listed 500 Indian firms with fiscal years ending in March 2003 to 2013. Our first screening excluded the companies for which information related to gender diversity was not available. We further excluded the financial companies. The resulting 448 large listed companies represent nearly 93% of the total market capitalization on Bombay Stock Exchange and cover 20 major industries of the economy. The resulting

sample has 4928 firm- year observations for 448 firms.

We hand collected the data on women directors by going through the Corporate Governance Report of 500 companies for eleven years from Prowess Database. The data had to be rechecked as the director information provided by Prowess was not correctly specifying the prefix and on enquiry, they replied that they do not provide information based on gender for board rooms. The annual reports of the companies for all the years have also been downloaded and were checked for cross references. The data was also checked in case of any names that have left out the process to ensure that all directors which had the standard prefix of Ms., Mrs., Smt. or Kum are included. Sufficient care has been taken to make sure that we had covered all the women in our data set. We also verified our sample from all the existing research papers on Indian women board members from 2003 – 2013.

The corporate governance variable such as Board Size, Women Independent Director was hand collected from Corporate Governance Reports. Tobin's Q and other control variables such as firm size were sourced directly from Prowess Database. Figure 1 depicts the ownership classification of the sample companies where 70 (16%) are private standalone Indian Companies, 40 (9 %) are private standalone Foreign Companies, 264 (59%) are Indian Business Group Companies, 20 (4%) are Foreign Business Group Companies, 51 (11%) are Public Sector Undertakings and 3 (1%) belong to both private and public sector companies. This corresponds to the major industries of the Indian Economy as per Prowess Classification (Appendix D).

Figure 3. Ownership classification



Source: Authors Computation

3.2 Variables

3.2.1 Dependent variable

3.2.1.1 Financial Performance

Financial performance is captured using stock market based returns as they are forward looking whereas accounting based returns are backward looking and may not be able to capture the effect of governance reforms, the effect of which is likely to take some time to realize. That is why, we proxy performance by Tobin's Q. Computing Tobin's Q is difficult in Indian context, primarily because a large proportion of the

corporate debt is institutional debt that is not actively traded in the debt market. Further, most companies report asset values to historical costs rather than at replacement costs. We therefore calculated a proxy for Tobin's Q following the works of Jackling and Johl (2009); Sarkar and Sarkar, (2000); Khanna and Palepu (2000). Tobin's Q is measured by computing a sum of market capitalization of equity, paid up preference share capital and borrowings divided by total assets.

3.2.2 Independent variables

Table 1 briefly describes our independent variables.

Table 3. Independent variables

S.No.	Independent Variables	Definition	
1	Women Independent Director	Dummy Variable that takes value 1 if Independent Women Director and 0 otherwise.	WID
2	Board Size	Total Directors on Board	BS
3	Firm Size	Natural Logarithm of Net Sales	FS
4	Organizational Age	Organization's Age computed from the date of incorporation	AGE

3.2.2.1 Women Independent Directors (WID)

This is an interaction term formulated by multiplying gender diversity and independent director. Gender diversity refers to the heterogeneous composition of the board. We consider demographic diversity which is measured in terms of gender representation on boards. The finance literature argues that boards with a majority of independent directors are efficient in monitoring management (Bhagat and Black, 2002) which is also grounded in agency theory (Fama and Jensen, 1983). Thus board with higher proportion of independent director with gender diversity aids in bringing varied perspectives and hence improving the monitoring function.

3.2.2.2 Board Size (BS)

Resource dependency perspective advocates that larger boards are associated with better performance of organizations (Pfeffer, 1972; 1973; Provan 1980). They are more capable of co-opting external influences, hence aid in obtaining valuable resources which are inevitable for company's success (Johnson et.al., 1996). Not only do more board members appear to increase the organization's access to external resources, but as Provan (1980) argued, larger boards would facilitate wide community representation.

3.2.3 Control variable

3.2.3.1 Firm Size (FS)

Firm Size has been measured by natural logarithm of net sales. Researchers report correlations between firm size, measured by revenue or market capitalization and the number of Women on Corporate Boards (Burke and Mattis, 2000; Hyland and Marcellino, 2002; Peterson and Philpot, 2007; Terjesen and Singh, 2008). Developed markets (UK and US) witnessed the decrease in female directors at the lower levels in the list of FTSE or Fortune listed Companies. This contradicts the myth that it is easier to succeed in smaller firms (Sealy et. al., 2008). International comparisons are difficult as firm size varies as per countries.

3.2.3.2 Organizational Age (AGE)

This is measured by computing the age of organization since incorporation.

3.3 Empirical model specification

Panel models provide a number of improvements over the separate analysis of time series by cross-section. First, panel data allow for considerably more flexibility in the modeling of the behavior of cross-sectional units than conventional time series analysis (Greene, 2003). Second, the panel framework allows for the analytical incorporation of significantly more

observations (and more degrees of freedom) than would a comparable analysis of individual time series.

In panel data, the same cross-sectional unit (say a family or a firm or a state) is surveyed over time. In short, panel data have space as well as time dimensions (Gujrati, 2011). We estimated a balanced panel where we have the same number of each cross-section units so that the total number of observation is $n.T$. When $n = 1$ and T is large, we have the familiar time-series data case. Likewise when $T = 1$ and n is large we have the cross-section data. Panel data estimation methods refers to data where $n > 1$ and $T > 1$ (Johnston and Dinardo, 1972).

We estimate the model using panel data analysis. We have compared Fixed Effects estimator with Random Effects estimator. We assume that the

unobserved effect is correlated with the explanatory variables. However, if the unobserved effect is not correlated with the explanatory variables then the Random Effects estimator is more efficient than the Fixed Effects estimator. We implemented the test proposed by Hausman (1978) and accepted the null hypothesis. We estimate fixed effects model. Then we computed the Breusch- Pagan (1979) statistic to check for heteroskedasticity and Wooldridge (2002) test for autocorrelation. Here, we fail to reject the null hypothesis and conclude that the data does not have first-order autocorrelation. Estimation in Panel Data is conducted with White (1980) heteroskedasticity-consistent standard errors and covariance.

From an econometric viewpoint, the following model is specified:

$$FP_{i,t} = \alpha + \beta_1 WID_{it} + \beta_2 BS_{it} + \beta_3 FS_{it} + \beta_4 AGE_{it} + \epsilon \quad (1)$$

Where

Performance_{it} = Financial Performance measured by Tobin's Q for firm i in period t

WID_{it} = Independent Women Directors for firm i in period t

BS_{it} = Board Size of firm i in period t

FS_{it} = Firm Size of firm i in period t

AGE_{it} = Organizational Age of firm i in period t

ϵ = Random disturbance term

5 Empirical results

Table 2 and 3 provides descriptive statistics and correlation matrix for our measures. Our table depicts that 11% of our sample firm had female directors who

are independent. On an average, board size and firm size (measured by log sales) is 9. Average age of the firm is 35 with a range of 11 to 148. Correlations among variables appeared to be low indicating the absence of multicollinearity among variables.

Table 4. Summary statistics (Obs =4928)

Variable	Mean	Std. Dev.	Min	Max
Log (Tobin's Q)	0.11	1.00	-3.50	4.02
WID	0.11	0.35	0	1
BS	9.39	4.92	0	30
FS (Log sales)	9.19	2.03	-2.30	15.37
AGE	35.32	27.24	11	148

Table 5. Correlation matrix

	Log (Tobin's Q)	WID	BS	FS	AGE
Log (Tobin's Q)	1.00				
WID	0.08	1.00			
BS	0.09	0.20	1.00		
FS	-0.04	0.11	0.18	1.00	
AGE	-0.01	0.00	0.06	0.21	1.00

Table 4 reports the results for the Panel regression of financial performance on gender diversity and control variables with robust option (White, 1980). Independent women directors significantly affect Tobin's Q at 1% level indicating that the presence of an independent women director

has a positive impact on the market measure of financial performance. This is in line with findings reported by Catalyst, 2004; Singh et al., 2001; Singh and Vinnicombe, 2003.

Board Size and Age are also positively related with Tobin's Q in the presence of independent women

director at 1% and 5% level of significance. Board Size is positive and significantly affecting Tobin's which argues in favor of resource dependency theory that a larger board has representation of people with diverse backgrounds. This might help improve quality

of strategic decisions by fostering more careful decision-making policy using their broad based knowledge and intellect (Dalton *et al.*, 1998; Zahra and Pearce, 1989).

Table 6. Panel regression

Dependent Variable	Tobin's Q
WID	0.08 (2.55)***
BS	0.01 (6.32)***
FS	-0.01 (-0.08)
AGE	0.01 (1.98)**
Intercept	-0.29 (-1.56)

***significant at 1% level, **significant at 5% level

6 Conclusion

The study has contributed by providing important information relating to effect of gender diverse independent directors on financial performance. Our study has significant theoretical and practical implications. Theoretically, results suggest that gender diversity may be associated with effectiveness in the oversight function of board of directors. This function can enhance from the diverse perspectives which allows for contemplation of broader range of opinions. Governance advocates that CEO's influence to the board of directors is immense and requires independent oversight (Halder *et al.*, 2013). This necessitates the board to have conflicting views which are common among diverse group dynamics. Thus, it makes business sense to have diverse boards.

The longitudinal study helped us to study the same company over a period of 11 eleven years. This aided in understanding the nuances among our gender diversity data. We hand collected data as we do not have any readily available values on Indian directors. This exercise helped us to go deep into the intricacies in boards at an individual level. This dataset created enabled us to identify women on the Boards of the 448 companies. This dataset can be readily used by future researchers to study women in corporate boards and gender related studies.

Our study tried to understand the phenomenon of gender diversity from both board level as well as firm level. Thus, this research provides the basis for bringing a more effective gender representation at the strategic level of corporate world which builds the business case for having independent women directors on the board room.

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