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Board gender diversity and voluntary disclosure: moderation of family ownership in India

Moderation of
family
ownership in
India

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Abstract

Purpose – Given the dominance of family ownership in India, this paper aims to examine whether the impact of board gender diversity (BGD) on voluntary disclosure (VD) is moderated by family ownership.

Design/methodology/approach – Based on a panel data set of the top 100 listed Indian firms for five years, this study examines the impact of BGD on VD by segregating the sample between family-owned and nonfamily firms. For empirical analysis, we use appropriate panel data models. For robustness, we employ a three-stage least square (3SLS) model.

Findings – The findings reveal the significant positive impact of BGD in terms of its different measures on VD for family and nonfamily firms. However, the impact becomes insignificant for nonfamily-owned firms when female directors are not substantially represented on the board.

Originality/value – This study extends the ongoing debate about the outcomes of the mandatory gender quota on board by providing novel evidence on the difference between the impact of BGD on VD for family and nonfamily firms in the Indian context.

Keywords Board gender diversity, Voluntary disclosure, Panel data regression, India

Paper type Research paper

1. Introduction

The case for gender equality has never been more apparent. Despite representing half of the world's population, women and girls still face inequalities that stifle social and economic progress. Women are one-half of the world's population but only contribute to 37% of the global GDP. An economy cannot operate at its full potential if half of its population cannot fully contribute [1]. This reinforces Swami Vivekananda's famed observation that "there is no chance of the welfare of the world unless the condition of women is improved. It is not possible for a bird to fly on one wing". Given the burgeoning importance of gender equality in economic development, such an issue has also grabbed considerable attention at the corporate board level, as the contribution of corporations accounts for a staggering part of wealth creation in most developed and emerging economies.

The topic got more attention after the global financial crisis and corporate failures that ignited the contention on weak corporate governance practices and have stressed the regulators to probe into relevant reasons for the fallout. In re-examining corporate governance norms, one of the antecedents that came into the spotlight has been the male-dominant corporate boards that led to the breakdown of corporate giants such as Enron and



WorldCom (Erhardt *et al.*, 2003). The debate was accentuated on the premise that male-dominated boards suffer from suboptimal configuration syndrome, with less diverse viewpoints. Moreover, there appears to be a consensus on the fact that increasing the share of female directors is essential for corporate boards for reasons that range from competitive edge owing to better market insight, creativity, innovation, and improved problem-solving, the better quality of decisions (Duppatti *et al.*, 2020; Vafaei *et al.*, 2021). Despite women being the powerhouse of talent, they were consistently under-represented in the boardroom (Rose, 2007; Carter *et al.*, 2010; Joecks *et al.*, 2013; Liu *et al.*, 2014; Brahma *et al.*, 2021; Saha, 2023).

Governments have responded to the under-representation of females on corporate boards at the country level by introducing gender quotas between 30% and 40% of women on board in countries like Germany, Norway, Spain, France, Iceland, Italy, Belgium, and Finland. India is one of the few Asian countries to mandate a minimum of one female director on board under the Companies Act 2013. Good corporate governance practices involve how corporations are being run, and gender-diverse boards could act as a substitute mechanism for corporate governance (Gul *et al.*, 2011). A sound corporate governance system also calls for adequate disclosure of information as it acts as a dialogue between a firm and its fund providers. Corporate disclosure is categorized as mandatory and voluntary disclosure. While mandatory disclosure requires firms to disclose information prescribed by country-specific reporting regulations, Voluntary Disclosure (VD) is supplementary, which augments the mandatory disclosure (Saha and Kabra, 2021). The term VD, as defined by the Financial Accounting Standards Board (FASB, 2001), “primarily includes the statements that are not explicitly required by Generally Accepted Accounting Principles (GAAP) or specific country rules.”

In recent years, researchers have observed a substantial gap between the information disclosed by firms per the regulatory standards and the information required by investors (Eng and Mak, 2003; Saha, 2023). Investors have now started looking for information that goes beyond traditional reporting and requires information that portrays a picture of whether firms recognize the importance of investing in employees, fostering diversity in the workplace, dealing ethically with suppliers and customers, extending support to the local community, and protecting the environment [2]. While mandatory disclosure regimes focus on disclosing financial information, various nonfinancial information on corporate background, vision, policies, strategies, corporate initiatives regarding employees, environmental, social, and governance perspectives, etc. though equally important in the rational decision-making process of investors, are largely ignored under the mainstream reporting regulations. Interestingly, equity markets are observed to discount/premium the way companies communicate their nonfinancial information [3]. Despite mandatory disclosure requirements like accounting standards and listing regulations of different stock exchanges that are being modified occasionally to promote complete and transparent disclosure, their adoption only improves the quality of financial statements. In contrast, the quality of nonfinancial disclosure largely depends on management’s discretion and attitude (Ernstberger and Grüning, 2013). Moreover, researchers have a wide consensus on the pivotal role played by internal corporate governance mechanisms in general and gender-diverse boards, in particular in augmenting overall disclosure in the form of VD (Saha, 2023). As rightly stated by Christine Lagarde, IMF Managing Director, “What if Lehman Brothers had been Lehman Sisters?”. Perhaps things would have been different if more women ran corporations in the U.S. and worldwide (Adams and Funk, 2012). Hence, to promote corporate transparency through disclosure, examining the impact of a gender-diverse board on VD is pertinent to provide valuable insights about the watchfulness of suspicious pursuits of management.

Theoretically, the agency perspective advocates that board composition with more women directors exhibits better monitoring behavior and consequently creates a better informative environment (Adams and Ferreira, 2009; Rhoades and Packel, 2014). The resource-based perspective also contends that including women directors on the board brings varied perspectives, leadership styles, and better expertise in board affairs that will influence disclosure decisions (Hillman and Dalziel, 2003). Similarly, signaling theory implies that board gender diversity assists firms in building a reputation in the market (Saggar and Singh, 2017). In addition, the feminist ethics perspective underlines some fundamental features of women like interpersonal sensitivity, affection, kindness, helpfulness, sympathy, nurturing, etc. enable them to adopt a more trustworthy leadership style in contrast to their counterparts, which probably leads them to have better information intermediation (Srinidhi *et al.*, 2011).

Following the slew of legislation promoting board gender diversity, empirical research is particularly concentrated on its impact on firm performance (Rose, 2007; Ntim and Soobaroyen, 2013; Liu *et al.*, 2014; Ntim, 2015; Sarhan *et al.*, 2019; Duppati *et al.*, 2020; Nguyen *et al.*, 2020; Maji and Saha, 2021). Though some prominent theories like the agency and feminist ethics perspective strongly emphasize the monitoring skills of female directors, empirical research on the impact of board gender diversity on the quality of firm-level monitoring or the quality of firm-level disclosures is scanty at the global level and unexplored at the national level. Moreover, few studies conducted at different country levels cannot provide unequivocal evidence on the monitoring effect of board gender diversity. For instance, De Masi *et al.* (2021), for a sample of 40 Italian-listed companies from 2005 to 2017, observed that female directors have a significant impact on a firm's ESG disclosure only when they are represented by a critical mass while, Bravo and Alcaide-Ruiz (2019) for a sample of 100S&P firms for the year 2016 found that the mere presence of women on board does not make any significant contribution toward VD. Nevertheless, some studies observe a significant positive association between female directors and different types of VD (Jizi, 2017; Rahman *et al.*, 2023).

The absence of parallel evidence on the positive effects of BGD on firm-level monitoring brings into question the ongoing quota-based regulations to promote BGD. A possible reason for contradictory findings might be the use of different measures of BGD. Moreover, scrutiny of BGD literature reveals that much of the relevant body of research is confined to analyzing the role of female directors in widely held corporations with separation of ownership and control. In particular, extant literature ignores the publicly listed firms that are characterized by closely held ownership structures with solid dominance of families in terms of ownership and control, even though the concentration of ownership (especially family ownership) has become a rule rather than an exception around the world, except for the US (La Porta *et al.*, 1999). The countries facing increased institutional pressure to constitute more gender-balanced boards are dominated not by widely held firms but by firms with concentrated family ownership, like Spain, Denmark, Belgium, India, Kenya, Hong Kong, and Brazil. Even with this, evidence on whether there is any variation in the impact of BGD on corporate monitoring in terms of disclosure for firms with concentrated ownership structure, particularly between family and nonfamily firms, could be more extensive globally and unexplored nationally.

Against this backdrop, the present study aims to explore whether there is any variation in the impact of BGD on the quality of corporate monitoring represented by firm-level voluntary disclosure (VD) between family and nonfamily Indian firms. The rationale for exploring the variation in the impact of BGD on corporate monitoring in terms of VD for family-owned and nonfamily firms is dictated by some considerations. First, given the growing concern about corporate governance (CG), family firms have governance structures

that are distinctly different from those of nonfamily firms, giving rise to CG challenges that are specific to such firms (DeMott, 2007). In particular, family firms are considered unique compared to nonfamily firms in terms of agency problems as manifested in ownership patterns, governance structure, management, motivation, objectives, and social value systems (Pieper, 2010). Ahmed *et al.* (2023), in a study of Taiwanese listed firms from 2008 to 2018, support the notion that family ownership is a value creator for firms since such firms receive positive market reactions for corporate actions like mergers and acquisitions as compared to nonfamily firms owing to their different governance structure. Considering the distinct governance issues of family firms, it becomes pertinent to study whether BGD in these firms impacts corporate monitoring differently than in nonfamily firms. Second, encompassing the first consideration, the larger quest is to find whether the effect of BGD on corporate monitoring is sensitive to the CG structure of firms since the literature on governance of family firms suggests that board of directors (BODs) of such firms may require different strategies and skills as well as incentives to impart their fiduciary monitoring and advisory role (DeMott, 2007). Finally, because female directors mainly constitute a minority group on board owing to their underrepresentation, the regulatory gender quota of family-owned firms is generally asserted to be occupied by female family members of the substantial owners' group that is likely to provide them the requisite comfort and power to raise their voice in board discussion, which female directors in case of nonfamily firms might be lacking. Hence, it necessitates investigating the difference in the monitoring impact of BGD between family and nonfamily-owned firms.

Our study makes several contributions to the extant literature. First, departing from prior works primarily focused on examining the impact of BGD on firm performance, we investigate the impact of BGD on another critical function of the board, i.e. corporate monitoring proxied by corporate VD. Second, it extends the current gender diversity literature by investigating the impact of BGD on VD by considering the family capitalism context characterized by different (CG) mechanisms compared to nonfamily firms. Third, while existing work mainly uses the absolute number or percentage of female directors as a proxy measure of BGD, we have used three constructive measures of BGD and obtained analogous results using different measures. Thus, our study provides more robust findings. Finally, our findings ratify the prediction of agency, resource dependency, signaling, and critical mass theories in the context of BGD for family-owned firms in India.

The rest of the paper is organized as follows: Section 2 outlines the background of the study; Section 3 states the theoretical framework; Section 4 discusses the empirical literature and formulates the hypotheses; Section 5 discusses the research design adopted in this study. Section 6 presents the results and discussion of findings; Section 7 concludes the paper.

2. Background

India provides an ideal setting for pursuing the objective of this study for specific reasons. First, the most obvious reason for choosing India as a platform to conduct this research is the ancient history of the family business in the country, which is still pervasive in the majority of publicly listed firms, as about 73% of the top 500 companies listed on Bombay Stock Exchange (BSE) are family-owned. In contrast, top 100 of them are second or third-generation family businesses [4]. Second, considering the family dominance in Indian firms, it is often asserted that female representation of the board in India has resulted in tokenism and nepotism, which makes the requirement of gender quotas less effective (Sanan, 2016; Duppati *et al.*, 2020). Hence, it is necessary to investigate whether tokenism and nepotism equally influence female directors' monitoring effectiveness by exploring such differences between family and nonfamily-owned firms. Finally, unlike developed and other emerging

countries, Indian society is traditionally male-dominated, and females are expected to follow stereotypical gender roles like performing domestic chores. Thus, there needs to be more skepticism about the ability of females to understand the technicalities of business (Sanan, 2016). Given India's exceptional features, it would be interesting to address the objective mentioned above to enrich the empirical literature on BGD.

As corporate voluntary disclosure is one of the key variables of interest in this study, it is necessary to understand the regulatory framework of corporate disclosure in India. The disclosure practices of Indian companies are governed by three statutes: the Companies Act, the Institute of Chartered Accountants in India (ICAI), and the Securities and Exchange Board of India (SEBI). The Indian Companies Act came into existence in 1882, has undergone several amendments to adapt the UK-based law to Indian conditions, and is finally being phased out in the Companies Act, 2013. The new act prescribes Schedule III, which underlines the disclosures to be made in financial statements. In addition, financial reporting in India is supplemented by the pronouncements of the ICAI, a body established through the Chartered Accountants Act of 1949. Further, the Indian stock exchanges, BSE and National Stock Exchange (NSE) require all listed companies to follow specific disclosure rules across different market segments.

Concerns about corporate disclosure in India were realized soon after announcing a new economic policy in 1991, coupled with the waves of corporate scandals witnessed by the market. This led the government to confer statutory recognition to SEBI in 1992 as a stock market regulator. Subsequently, some committees were constituted by SEBI to assist it in including significant governance and disclosure requirements for Indian corporations. Following their recommendations, SEBI introduced Clause 49 in the listing agreement in 2000, which specified some crucial disclosure requirements such as including a management discussion and analysis section in the annual report, preparation of separate corporate governance reports, and disclosure on subsidiaries and related party transactions, etc. Further, Clause 49 was revised in 2004, wherein it emphasized the quality of financial disclosure and mandated additional disclosure requirements such as performance evaluation of the independent directors, whistle-blower policy, etc. In response to the nonfinancial information needs of stakeholders, SEBI introduced the Business Responsibility Report (BRR) in 2012, which mandates the top 500 listed entities to disclose information about their environmental, social, and governance initiatives.

Parallel with the Organization for Economic Co-operation and Development (OECD) principles, SEBI introduced Listing Obligations and Disclosure Requirement (LODR) Regulations in 2015, replacing Clause 49 to ensure better enforceability of the existing regulations. Thus, it is evident that the corporate reporting standard for Indian companies is gradually being raised to make companies comparable with international standards. However, a report on the Indian Disclosure Index, 2023, which tracks corporate disclosure practices amongst India's 100 leading publicly listed corporations by Forensic Technologies International (FTI) Consulting Ltd., reveals that Indian companies have an average corporate disclosure score of 6.5 out of a maximum of 10 indicating compliance with 50–60% of the overall benchmark. Commenting on such a report, Amrit Singh Deo, a Senior Managing Director in the Strategic Communications segment at FTI Consulting and author of the report, said:

As investors and regulators are demanding more demonstrable, metrics-based progress on various non-financial parameters from companies, a higher standard of voluntary disclosure is a good proxy for governance and risk management.

Considering the inadequate disclosure practices of Indian companies, it is pertinent to examine their VD. Moreover, linking VD with BGD and observing such relationships for

family and nonfamily-owned firms will assist in gaining insight into the nuances of VD under different governance structures.

3. Theoretical framework

The prime assertion in this study is that the impact of BGD on corporate monitoring can be distinct in the case of family-owned firms from that of nonfamily firms. This assertion is built by blending the literature on the differences between family and nonfamily firms along with the literature on gender attributes that highlight how female directors are unique in terms of their leadership style, monitoring attributes, and skill sets from their male counterparts (Nielsen and Huse, 2010). As already stated, family-owned firms are fundamentally different from nonfamily firms in terms of the way they are governed.

The agency perspective emphasizes the conflict of interest between owners and managers, wherein the theory suggests a sound CG mechanism for aligning owners' interests with managers, which collectively assists in maximizing the overall value of firms (Jensen and Meckling, 1976). However, the nature of the conflict that CG mechanisms try to solve varies for firms with closely held and diffused ownership structures. In the case of the scattered ownership structure, which is prevalent mainly in developed countries like the US and the UK, control mechanisms seek to reduce the vertical/type-I agency problem that entails working on behalf of the shareholders to minimize managerial opportunism (Roe, 2004). Contrary to this, when the ownership structure becomes concentrated with few controlling shareholders, which is prominent primarily in emerging markets like India, the type-I agency problem gets reduced as controlling shareholders usually take an active part in managing corporate affairs (Shleifer and Vishny, 1997). However, another type of conflict arises between dominant and minority shareholders (type-II/horizontal agency problem), wherein control mechanisms work to prevent the expropriation of the latter by the former (Sarkar, 2009).

Further, the concentration of ownership may be in the form of family ownership, state holding, or foreign institutional holdings, yet again creating variation in the horizontal agency problem. Concentration in the form of family shareholding, i.e. in the case of family-owned firms, leads to the subordination of minority shareholders' interest over the personal interest of substantial family owners (Singh and Gaur, 2009), thus intensifying the horizontal agency problem. On the contrary, when the concentration of ownership takes place in the form of majority state shareholding, it generates pressure for firms to look after the interest of minority shareholders because the government is a body trusted by the public (Ghazali, 2007). Similarly, firms operating under the dominance of foreign institutional investors (FII) demand greater transparency due to the geographical difference between FII and firm (Craswell and Taylor, 1992), thus indirectly making a better disclosure environment for the minority shareholders, who otherwise barely access inside information. Thus, the concentration on family ownership may exaggerate the horizontal agency problem. At the same time, the same may get moderated in the case of nonfamily firms, even if the state or FII closely holds their ownership structure.

Parallel with the uniqueness of family-owned firms, if we consider the various theoretical advocacies for BGD, as underlined by agency, resource dependency, signaling, feminist ethics, and critical mass theory, it becomes reasonable to assert that the impact of BGD on corporate monitoring represented by corporate VD is likely to be different for family-owned and nonfamily-owned firms. For instance, the agency theory emphasizes the monitoring role of the board (Fama and Jensen, 1983). It suggests that a gender-diverse board assists in mitigating agency problems between managers and shareholders due to the inquisitive nature of women, which makes them much more active monitors relative to their counterparts. This assertion is supported by prior works like Israeli (2000); Huse and Solberg (2006), who provide evidence of

higher attendance of women in board meetings and vigilant scrutinization of management's information by female directors before attending meetings, which reduces the likelihood of accounting irregularities and leads to better information disclosure (Al-Mudhaki and Joshi, 2004; Pucheta-Martinez and Bel-Oms, 2016). Likewise, Issa and Hanaysha (2023), in a study of 13 European countries between 2004 and 2021, revealed that higher representation of women on boards is correlated with a reduction in the number of ESG controversies. As the intensity of horizontal agency problems varies for family and nonfamily-owned firms, diligent monitoring of the behavior of female directors can be asserted to impact their VD differently.

Similarly, the resource-based perspective posits that female directors possess unique skills, competencies, knowledge, and leadership styles that are different from those of male directors, which help to improve the quality of board decisions and enhance the legitimacy of firm practices (Hillman *et al.*, 2007). Likewise, signaling theory contends that female directors act as reputational capital for firms; thus, having BGD will likely boost corporate transparency in the form of VD (Saggar and Singh, 2017). In a similar vein, feminist ethics theory highlights some essential personality traits of women, like affectionate, nurturing, helpful, kind, sympathetic, interpersonally sensitive, trustworthy and tenderness, bringing a sense of responsibility for the stakeholders and encouraging better information intermediation (Abdullah and Valentine, 2009; Kyaw *et al.*, 2017). Moreover, women are more likely to apply stricter ethical standards (Pan and Sparks, 2012). For instance, Issa and Zaid (2021), in a study of cross-country panel data analysis of the MENA region, unveiled that female directors positively contribute toward environmental performance, reflecting ethical concerns of females for eco-friendly activities.

Given the exceptional qualities of female directors, it may not be right to assume that family-owned and nonfamily-owned firms are equally effective in reaping the benefits of BGD. The reason is that the monitoring effectiveness of BGD is contingent upon the CG structure of firms and the CG of family firms essentially differs from that of nonfamily firms. In addition, the critical mass theory implies that the benefits of gender-diverse boards are primarily determined by the representation of female directors since female directors, as a minority group, experience several behavioral challenges, which limits their contribution toward the performance outcomes of firms (Kanter, 1977). Hence, such challenges experienced by female directors are probably different for family and nonfamily-owned firms owing to their different cultures. Accordingly, their contribution toward corporate monitoring in terms of VD may differ.

4. Empirical literature and hypotheses development

It is a well-acknowledged fact that adequate disclosure of information signals good CG as it acts as a dialogue between a firm and its fund providers (OECD Organization for Economic Co-operation and Development, 2015). In this regard, corporate voluntary disclosure (VD) has received considerable attention from academia in the recent past owing to the prevailing gap between the information disclosed by firms as per the regulatory standards and the information that is required by investors (Guay *et al.*, 2016). Accordingly, researchers broadly agree on VD's effectiveness as a corporate monitoring tool (Salem *et al.*, 2021). As gender diversity on the corporate board is primarily motivated by two key propositions – *firstly*, “meticulous monitoring” and secondly, “resource-based view,” linking BGD with VD becomes pertinent to know its effectiveness in promoting better corporate transparency. Following the theoretical linkage, some researchers examine the monitoring effect of BGD through its impact on VD. For instance, Elmagrhi *et al.* (2019), in a study of 383 Chinese-listed firms from 2011 to 2015, observed a positive impact of BGD on environmental disclosure. Likewise, Jizi (2017) and Rahman *et al.* (2023), for a sample of FTSE 350 firms for the period

2007–2012 and 300 nonfinancial Pakistani listed firms from 2012 to 2021, respectively, observe a significant positive association between female directors and different types of VD. However, [De Masi et al. \(2021\)](#) for a sample of 40 Italian-listed companies from 2005 to 2017 found that female directors have a significant impact on a firm's ESG disclosure, only when they are represented by a critical mass while, [Bravo and Alcaide-Ruiz \(2019\)](#) for a sample of 100 S&P firms for the year 2016 found that the mere presence of women on board does not make any significant contribution toward VD. Similarly, some studies suggest that the inactive participation of women on corporate boards leads to no significant influence of BGD on VD ([Shamil et al., 2014](#); [Cucari et al., 2018](#)). On the contrary, other strands of the literature suggest a positive association between BGD and VD ([Barako and Brown, 2008](#); [Nalikka, 2009](#); [Srinidhi et al., 2011](#); [Rodrigues et al., 2017](#); [Saha and Kabra, 2021](#)).

It is evident that extant literature does not provide a clear picture of the relationship between BGD and VD. Such inconsistencies are primarily caused by using a conventional measure of BGD, i.e. the percentage of female directors on boards. Though such a measure is most used in the literature, it does not reveal the variations caused by female directors' impact due to their representation level. Another parsimonious measure of heterogeneity, i.e. the Blau index ([Blau, 1977](#)), considers all categories within the group, and also the uniformity in the distribution of group members is least used in the BGD literature. Moreover, though existing studies are based mainly on firms characterized by highly concentrated ownership structures with close holdings of family or nonfamily owners like state or institutional ownership, extant literature has not distinguished between such firms in examining the impact of BGD on any performance parameters. The absence of such classification is likely to give contradictory findings as a substantial difference exists between the corporate governance structure of family and nonfamily-owned firms (discussed in the Introduction and background section).

In the Indian context, given the prevalence of horizontal agency problems owing to the high concentration of ownership, which is especially pervasive in the case of family firms causing information asymmetry for the minority shareholders, we posit that the significant positive impact of BGD on VD of family-owned firms. At the same time, the same relationship is presumed to be insignificant for nonfamily-owned firms. This assertion is further supported by critical mass theory, which contends that female directors, as a minority group, are subjected to specific behavioral issues on board, and it is appropriately stated by [Kirsch \(2018\)](#) that "one is a token, two is a presence and three is a voice" in the context of gender diversity in the boardroom. In the case of family-owned firms in India, the gender quota is mainly occupied by female family members of the substantial owners' group, which is likely to provide them the requisite comfort and power to actively participate in board discussion, which female directors in case of nonfamily firms might be lacking. Accordingly, the following hypotheses are formulated:

- H1.* There is a significant positive impact of board gender diversity on voluntary disclosure for family firms.
- H2.* There is no significant impact of board gender diversity on voluntary disclosure for nonfamily firms.

5. Research design

5.1 Population and sample of the study

The population for the study comprises the top listed BSE 500 firms based on market capitalization as of 31st March 2014, which is subject to the exclusion of financial and utility

firms. Financial and utility firms are excluded from this study as different regulations and reporting requirements apply to them (Banking Regulation Act, 1949; Electricity Act, 2003). The sample for the study includes the top 100 nonfinancial and nonutility BSE-listed firms based on market capitalization as of 31st March 2014. The rationale for selecting top 100 nonfinancial and nonutility firms lies in sample firms' contribution to the market capitalization of top 500 BSE listed nonfinancial and nonutility firms (81.56%) and overall market capitalization of BSE (76.06%). Moreover, it is also evident from the past decade that new Corporate Governance (CG) regulations and corporate disclosure requirements have always been applied by regulators to the top listed firms, possibly on the assumption that good governance and better disclosure practices are more likely to be adopted by large firms as they have better access to resources. The selection process of sample firms is presented in Table 1.

To investigate the difference in the impact of BGD on VD and FP for family-owned and nonfamily-owned firms, we have segregated the sample firms based on the categories above, wherein, 75 firms fall under family-owned firms. In comparison, 25 firms belong to nonfamily-owned firms. We have used the common definitions of family-owned firms in the literature (Anderson and Reeb, 2003), i.e. members of the founding family (referred to as promoters in India) owning at least 20% of voting equity.

The study is based on a period of five years from 2013 to 14 to 2017–18. The initial year is selected because the gender quota on the corporate board is imposed under the Companies Act 2013, which becomes applicable from 29th October 2014. In addition, many CG reforms, such as the revision of Clause 49 of the listing agreement of the Securities Exchange Board of India (SEBI) replacement of Clause 49 with Listing Obligation and Disclosure Requirement (LODR), Regulation, 2015 were implemented during the mentioned period for betterment of overall governance structure of corporate, which can be expected to promote BGD. The last year of the study period, i.e. 2017–18, is decided owing to the constitution of the Uday Kodak Committee to further raise the standard of corporate governance in India, and its recommendations got implemented in 2019. It has further introduced some new CG regulations like reducing the maximum number of directorships in the listed entity, expanding eligibility criteria for independent directors, mandating the presence of an independent female director, etc. Thus, we have opted for a period wherein CG regulations related to the listed firms were not dynamic to observe the effect of landmark regulation about board gender quota along with other CG variables. The data relating to BGD, VD, and CG variables are collected from annual reports of sample firms. On the other hand, the financial information of the sample firms over the study periods is obtained from the "CapitalinePlus" corporate database.

Population of the study	Top 500 nonfinancial and nonutility firms BSE listed firms based on market capitalization as on 31st March 2014
Selection of Sample based on its representation of the overall population	Top 100 nonfinancial and nonutility firms BSE listed firms (81.56% of the population)
Firms with missing data	There were no firms with missing data, as the sample includes top-performing firms for which data were available in the relevant sources
Final sample of the study	As there were no firms with missing data, the top 100 nonfinancial and nonutility firms BSE listed firms represent the final sample

Source: Created by authors

Table 1.
Selection of sample
firms

5.2 Measurement of variables

The variables employed in our study can be grouped into four categories:

- (1) Dependent variable, which includes voluntary disclosure (VD);
- (2) Explanatory variables, including the measures of board gender diversity;
- (3) Moderating variable, which includes measurement of family-owned firms; and
- (4) Control variables describing the overall CG structure and observable characteristics of the firm that may affect its performance.

5.2.1 Dependent variable. As already mentioned, we have considered VD as the dependent variable, accordingly its way of measurement is described below:

Measurement of Voluntary Disclosure:

VD is considered an abstract concept difficult to measure directly (Wallace and Naser, 1995). However, prior work has used chiefly voluntary disclosure index (VDI) as a proxy measure to capture this abstract concept objectively and systematically. Accordingly, following the extant literature, we have also developed a VDI as a surrogate measure to capture VD. To formulate VDI, the following steps have been undertaken as discussed below:

- At the outset, an extensive review of relevant literature (Meek *et al.*, 1995; Eng and Mak, 2003; Barako *et al.*, 2006; Patelli and Prencipe, 2007; Charumathi and Ramesh, 2015) is undertaken to develop a comprehensive list of items, which generated a list of 131 items.
- To ensure that the list includes only discretionary items, it is checked against prevailing Indian Regulations which influence the reporting requirements of sample firms over the study period, such as the Companies Act, 2013, SEBI (LODR), 2015, Converged Indian Accounting Standards (Ind AS), 2016. This process leads to the elimination of 52 mandatory items
- In addition, five items are incorporated in the list as they are considered as discretionary disclosure under SEBI (LODR), 2015 [Regulation 27(1), specified in Part E of Schedule II].

Following the above steps generates a list of 69 VD items. Regarding the scoring of VD items, most of the earlier approaches to scoring are made on a dichotomous basis, indicating the presence or absence of such information (Meek *et al.*, 1995; Charumathi and Ramesh, 2015). Accordingly, we also captured VD using a binary coding of “0” and “1”, wherein “1” denotes the presence of a VD item and “0” otherwise. Thus, each firm’s VDI score is calculated as a percentage of the actual disclosure score obtained against the maximum score:

$$VDI_{it} = \frac{\sum_{i=1}^n X_{ijt}}{N_j} \times 100$$

where “N_j” is the maximum expected score, “j” refers to the company, “i” stands for VD items, and “t” refers to time. To capture VD “X_{ij}” assumes the score of “0–1”.

5.2.2 Explanatory variables. The key explanatory variable of interest in this study is BGD. To capture it, we have employed three measures, one of which is the most common measure of BGD, while the other two are barely used. These measures are presented below:

- The first measure of BGD used in this study is the percentage of women directors to total board size, which is the most common measure of BGD in the prior studies (Adams and Ferreira, 2009; Ahern and Dittmar, 2012).

- The second measure of BGD that we have used is the Blau's index (BI) (Blau, 1977). The BI is computed as $1 - \sum_{i=1}^K P_i^2$, where P_i includes the percentage of each group member in the gender categories and K is the total number of members in the group. The value range of BI varies from 0 to $(K-1)/K$. The maximum value of BI indicates an equal proportion of members from both gender categories in the group. The maximum value of BI indicates equal proportion of members from both genders in the group. Though, this measure is not widely used in the empirical literature, except few (Campbell and Mínguez-Vera, 2008; Sanan, 2016; Maji and Saha, 2021), it can be regarded as a superior measure to capture BGD as it considers both the gender categories in computing diversity and also the uniformity in distribution of group members among them.
- The third measure of BGD used in this study is the three sub-groups of female directors, which can form a board based on their level of representation. We have opted for this measure following the critical mass propounded by Kanter as it suggests that contributions of female directors toward any board activities or overall FP are determined by their level of concentration on the board. Accordingly, we have identified three types of sub-groups based on the level of concentration of female directors in the Indian context such as (1) skewed groups dominated by males in which, female comprise below 10%; (2) tilted groups where the percentage of the female is between 10% to 20%; and (3) groups with sizeable female representation [where the percentage of the female is above 20%].

5.2.3 Moderating variable. The moderating variable used in this study is family ownership. To measure it, we have used the common definitions of family-owned firms in the literature (Anderson and Reeb, 2003) i.e. members of a founding family (referred to as promoters in India) owning at least 20% of voting equity, wherein a dummy variable indicates a value of "1" if a firm is family-owned, otherwise "0."

5.2.4 Control variables. Following the extant literature, we consider several control variables that are supposed to influence firms' VD. We have developed a corporate governance index (CGI) based on OECD methodology (OECD, 2008). CG is widely recognized as a significant predictor of VD (Saha and Kabra, 2021). For instance, the agency perspective advocates for CG mechanisms for the alignment of owners' interests with those of managers, which collectively assists in reducing information asymmetry between them through VD (Saha, 2023).

The OECD methodology for computing composite index is based on the principal component analysis (PCA), a technique of factor analysis that helps reduce the dimensionality of the data set and helps identify new meaningful underlying variables. For conducting PCA, we consider seven variables-board size, board independence, percentage of directors with professional qualifications (like Chartered Accountant, Cost and Work Accountant, Lawyer, Administrative Service Official), Audit committee independence, promoters' shareholding, FII ownership and Govt. ownership. Before conducting PCA analysis, we compute Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity. We find the KMO test value of 0.697, and the chi-square value of Bartlett's test is significant at a 1% level. The observed results, thus, advocate in favor of conducting PCA. To select the number of factors, we adopt two criteria: eigenvalue more significant than one and individual contribution of the factor to the explanation of overall variance by more than 10%. We use varimax rotation to maximize the shared variance to identify the factor upon which data is loaded. After obtaining the factor loadings, we employ

OECD methodology (OECD, 2008) for the construction of the composite index (CG index) using the following steps:

In the first step, we compute the normalization of factor loadings by dividing the square of factor loading by the summation of the square of factor loadings of all the variables. Next, factors are aggregated by assigning a weight to each equal to the proportion of the explained variance in the data set. The weight is computed by:

$$weight = \frac{\text{maximum normalized factor loading}}{\text{ratio of explained to total variance of the respective factor}}$$

where the ratio of explained to total variance = $\frac{\text{explained variance of the respective factor}}{\text{total explained variance}}$

Finally, the composite index is estimated by applying the following formula:

$$Composite\ index = \sum_{i=1}^n (weight\ of\ each\ variable \times original\ value\ of\ the\ variable)$$

where, *n* is the number of variables.

In addition, firm-specific factors like SIZE can be expected to have a positive influence on VD since large firms enjoy better competitiveness and intensive monitoring by regulators (Singh and Gaur, 2009). Similarly, LEV also acts as a monitoring mechanism since interest burden of debt precommit managers to perform better (Sarkar, 2009). Likewise, profitability represented by ROA can be anticipated to positively contribute toward VD, owing to its signaling impact (Arora and Sharma, 2016). The detailed measurement of all variables is presented in Table 2.

Table 2.
Measurement of
variables

Variables	Acronyms	Measurement
<i>Dependent variable</i>		
Voluntary disclosure index	VDI	Voluntary Disclosure Index
<i>Independent variables</i>		
Share of Female Directors (BGD1)	SFD	Percentage of female directors to total number of directors on board
Board Gender Diversity (Blau Index) (BGD2)	BGD(BI) FD1	Blau Index for board gender diversity It is a dummy variable that assumes the value 1 if a board has less than 10% of female directors; 0 otherwise
Board Gender Diversity represented by various groups (BGD3):	FD2	It is a dummy variable that assumes the value; 1 if the percentage of female directors is between 10–20%; 0 otherwise.
Skewed group of female directors	FD3	It is a dummy variable that assumes the value 1 if the percentage of female directors is above 20%; 0 otherwise
Tilted group of female directors	FO	It is a dummy variable that assumes the value 1 if a firm is family-owned; 0 otherwise
Sizable Representation of Female Directors		
Moderating Variable:		
Family-ownership		
<i>Control variables</i>		
Corporate governance index	CGI	CGI based on OECD methodology
Firm size	SIZE	Natural logarithm of total sales
Leverage	LEV	Ratio of total debt by total asset
Profitability	ROA	Ratio of earnings before interest and taxes by total asset

Source: Created by Authors

5.3 Empirical models

To examine the impact of BGD on VD after controlling firm-specific variables, we use the fixed effect model based on the outcomes of two widely used tests – Breusch-Pagan test and Hausman test.

The general form of fixed effect regression model used here is:

$$Y_{it} = \beta_0 + \alpha_i + X'_{it} \beta + v_{it} \quad (i)$$

where, V_{it} is the reverses tilde operator, N , open paren 0, sigma sub v . squared, Here $v_{it} \sim N(0, \sigma_v^2)$.

In particular, we use the following fixed effects regression model for family-owned and nonfamily firms:

$$VDI_{it} = \beta_0 + \alpha_i + \beta_1 BGD_{it} + \beta_2 CGI_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 ROA_{it} + v_{it} \quad (ii)$$

5.4 Model for robustness

Extant literature suggests that there may be an endogeneity issue between CG variables and VD (Saha and Kabra, 2022; Saha, 2023). Although we use the CG index instead of employing the CG variables separately in the regression model, for the robustness of the results of the panel data regression model, three-stage least square (3 SLS) model is used. 3 SLS model provides consistent results in correlation between regressors and disturbances.

6. Results and discussions

6.1 Analysis of the difference between family-owned and nonfamily firms in terms of board gender diversity and voluntary disclosure

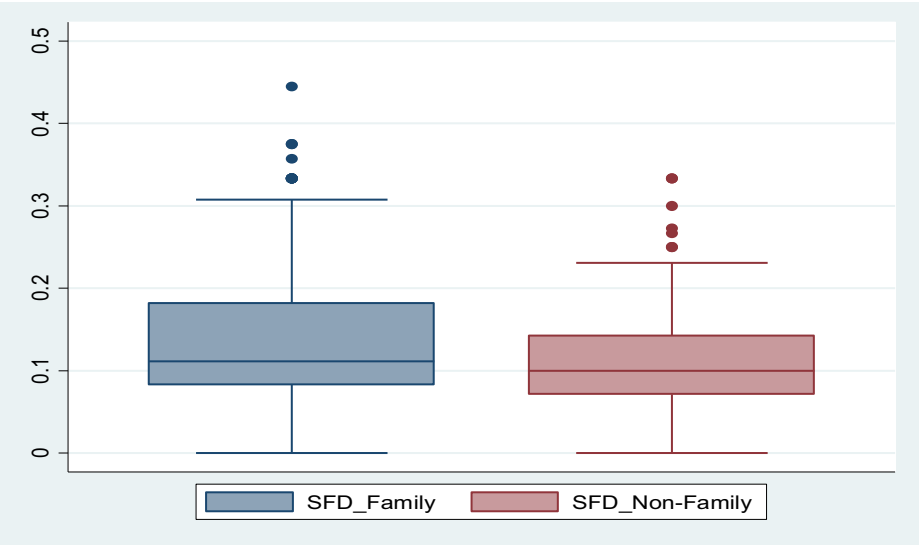
The boxplots for BGD measured in terms of the overall percentage of female directors on board (Figure 1) show that size of the box for nonfamily firms is small as compared to family-owned firms, which implies that the range of female directors for the former is less than the latter, thus suggesting that nonfamily firms are mainly complying with the regulatory imposition of only one female director on board, while family-owned firms are having a wide range of female representation starting from minimum one to maximum four, which indicates that some family-owned firms are considering BGD as strategic priority rather than mere regulatory compliance. Moreover, the position of the median line within the exhibits a normal distribution of female directors for nonfamily-owned firms, while a median line of family-owned firms exhibits a negatively skewed distribution of female directors, possibly due to some observation of family-owned firms having identical and minimum presence of female directors.

Figure 2 exhibits the difference between family-owned and nonfamily firms regarding VDI_Score. The size of the box reveals that family-owned firms are less scattered in terms of VD as compared to nonfamily-owned firms, thus implying uniformity among them in terms of VD, yet the presence of some outliers above the maximum value indicates the existence of some out-performing family-owned firms in the respect VD. In the case of nonfamily firms, though their range of VD is a bit wider than that of family-owned firms, there are no outliers above the maximum value, thus implying that all the nonfamily firms have moderate VD_Score.

6.2 Descriptive statistics

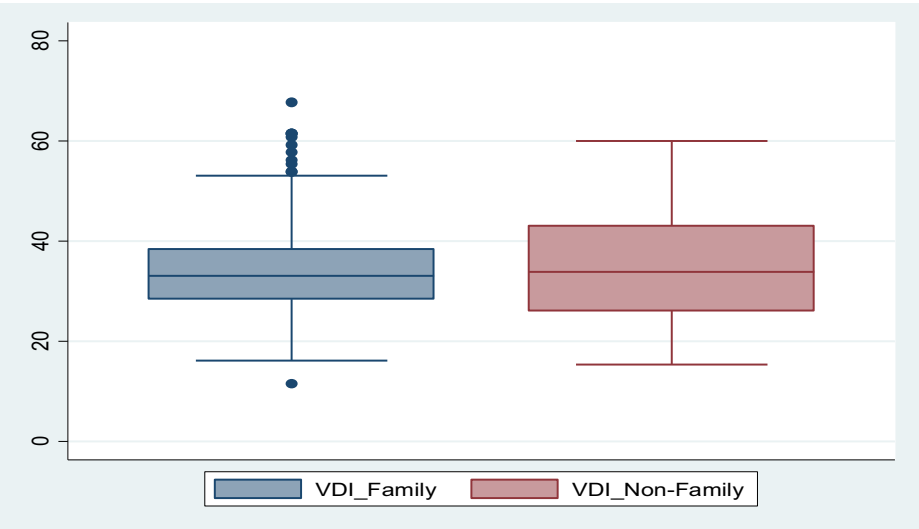
Table 3 and 4 summarize the descriptive statistics of all the variables under consideration for family-owned firms (Panel A) and nonfamily firms (Panel B), respectively. Family-owned firms

Figure 1.
Difference between family-owned and non family firms in terms of board gender diversity



Source: Created by authors

Figure 2.
Difference between family-owned and non family firms in terms of voluntary disclosure



Source: Created by authors

reveal wide variability among them in terms of VD as indicated by their standard deviation and skewness values compared to their counterpart firm. The BGD, in terms of the percentage of female directors, reveals that the average representation of female directors in the case of family-owned firms is more as compared to nonfamily firms. This observation is also

Table 3.Descriptive statistics
(Panel-A) (375
observations)

Variables	Min.	Max.	Mean	SD	Skewness
VDI	11.53	67.69	33.95	8.58	0.70
BGD (% of Female Directors)	0	0.44	0.13	0.07	0.91
BGD (BI)	0	0.49	0.21	0.10	0.24
FD1	0	1	0.38	0.72	8.41
FD2	0	1	0.46	0.49	0.12
FD3	0	1	0.16	0.36	1.82
CGI	28.13	52.58	41.23	5.09	-0.18
SIZE	2.59	5.59	3.89	0.52	0.28
LEV	0	2.29	0.29	0.39	1.90
ROA	-23.11	161.16	23.87	22.64	2.31

Source: Created by Authors**Table 4.**Descriptive statistics
(Panel-B) (125
observations)

Variables	Min.	Max.	Mean	SD	Skewness
VDI	15.38	60.00	34.76	9.65	0.30
SFD (% of Female Directors)	0	0.33	0.10	0.07	0.73
BGD (BI)	0	0.44	0.17	0.10	0.06
FD1	0	1	0.48	0.50	0.04
FD2	0	1	0.42	0.49	0.30
FD3	0	1	0.07	0.25	3.31
CGI	0.01	46.51	35.46	7.46	-2.25
SIZE	2.31	5.68	4.14	0.70	0.14
LEV	0	2.29	0.35	0.55	1.78
ROA	-12.16	85.81	19.80	16.03	1.80

Source: Created by authors

supported by other BGD measures, thus implying that family-owned firms are more proactive toward having BGD than nonfamily-owned firms. This finding supports the assertion of agency theory, which suggests that as the intensity of agency problem is much higher for family-owned firms as compared to nonfamily-owned firms (Fama and Jensen, 1983; Sarkar, 2009), the former consider BGD as a strategic priority rather than quota fulfillment. In addition, it also supports the critical mass theory, which suggests that the behavioral issues faced by female directors owing to their under-representation are likely to be marginal in family-owned firms as they provide requisite comfort and power to them owing to their interrelations with substantial family owners, which largely prevails in the Indian context. Hence, more female directors are likely to be associated with family-owned firms than nonfamily firms.

Consistent with the agency perspective, substantial difference exists between family and nonfamily firms in terms of their internal governance and control (Fama and Jensen, 1983; Sarkar, 2009) as indicated by their respective CGI mean values. The variation between family and nonfamily firms is not high regarding other firm-specific variables. Thus, it can be inferred that family-owned firms are remarkably different from nonfamily-owned firms owing to how they are being governed, possibly creating variations in their strategic decisions.

6.3 Result of panel data models

The results of panel data regression models for *H1* and *H2* are presented in Tables 5 and 6, respectively. The observed result indicates that BGD, represented by its three constructive

Variables	BGD1(% of Female Directors)		BGD2 (BI)		BGD 3 (3 groups)	
	Coefficient	Z stat.	Coefficient	Z stat.	Coefficient	Z stat.
SFD	26.34***	5.14				
BGD (BI)			18.39***	5.21		
FD1					-0.334	-0.74
FD2					1.644*	1.84
FD3					2.901**	2.39
CGI	0.074**	2.75	0.751**	7.77	0.084***	2.57
SIZE	19.62***	8.25	19.52***	8.21	20.25***	8.27
LEV	4.53***	2.82	4.56***	2.84	4.031**	2.43
ROA	-0.064**	-2.32	-0.062**	-2.27	-0.073**	-2.62
Constant	-45.77***	-4.95	-45.93***	-4.98	-45.39**	-4.35
R ²	0.827		0.828		0.8184	
F-statistic	29.72***		29.94***		16.15***	

Table 5.

Results of panel data model for family-owned firms

Notes: ***, ** and * indicate significant at 1, 5 and 10% level respectively; Model used: Fixed-effect panel data model
Source: Created by authors

Variables	BGD1(% of Female Directors)		BGD2 (BI)		BGD 3 (3 groups)	
	Coefficient	Z stat.	Coefficient	Z stat.	Coefficient	Z stat.
SFD	28.05***	4.71				
BGD (BI)			18.76***	4.75		
FD1					-3.087	-1.44
FD2					2.218	1.01
FD3					4.071*	0.27
CGI	0.021	1.05	0.002	1.06	0.001	0.86
SIZE	4.132	0.773	4.31	0.80	5.977	8.76
LEV	-5.104	-2.267	-4.80*	-2.12	-7.080**	-3.08
ROA	-0.045	0.056	-0.03	-0.67	-0.055	-0.95
Constant	17.35	0.787	15.99	0.72	15.75	0.69
R ²	0.8871		0.8875		0.8853	
F-statistic	26.96***		27.05***		24.20***	

Table 6.

Results of panel data model for nonfamily-owned firms

Notes: ***, ** and * indicate significant at 1, 5 and 10% level respectively; Model used: Fixed-effect panel data model
Source: Created by authors

measures under consideration, has a highly significant positive impact on VD, thus supporting *H1*. This finding is consistent with the theoretical notion that having BGD is highly effective for family-owned firms for reducing information asymmetry for the minority shareholders in the form of VD, which is one of the significant constituents of horizontal agency problems (Shleifer and Vishny, 1997; Izraeli, 2000; Huse and Solberg, 2006). It also supports the assertions of multiple theories like resource dependency, signaling, and feminist ethics (Hillman *et al.*, 2007; Abdullah and Valentine, 2009; Saggarr and Singh, 2017), which suggests multiple unique qualities of females like leadership styles, reputational capital, multi-tasking, affectionate, nurturing, helpful, kind, sympathetic, interpersonally sensitive, and trustworthiness makes them highly effective in better dissemination of information. Our finding particularly supports the assertion that female

directors are highly effective in addressing the intense horizontal agency problems of Indian family-owned firms by disclosing information in the form of VD. It also upholds the claim of critical mass theory, which suggests that the effectiveness of female directors as a minority in a group of male-dominated boards is determined by their level of representation (Kanter, 1977). As female directors of the family-owned firms in India are asserted to have personal association with the substantial owners, it provides them the audacity to raise their voice in making strategic decisions, including VD (Maji and Saha, 2023). This finding is consistent with the empirical observations made by Jizi (2017), Elmagrhi *et al.* (2019), and Rahman *et al.* (2023) in the context of both developed and developing countries.

Regarding nonfamily firms, our result reveals that BGD measured by SFD and BI documents a significant positive impact on VD, thus discarding H2. It suggests that the overall representation of female directors positively contributes toward VD for nonfamily firms. Interestingly, when BGD is represented by FD1 and FD2, i.e. the percentage of female representation on board ranges between 0 and 10% and 10–20%, respectively, it does not significantly impact VD. However, when the percentage of female representation on board is above 20%, i.e. FD3, it reports a marginal positive impact on VD. This finding further supports the assertion of critical mass theory, which implies that to raise voice in board decisions, female directors should be represented by a critical mass, i.e. FD3 in the present context (Kanter, 1977). This issue is significant for nonfamily firms as behavioral challenges experienced by female directors as a minority group in such firms are acute as they are generally not associated with any substantial groups, thereby lack the requisite comfort and power that female directors of family-owned firms mostly enjoys, leading to such insignificant impact. This finding is also consistent with the observation of De Masi *et al.* (2021) and Maji and Saha (2023), who find that female directors can only make a significant impact on a firm's disclosure or performance only when a substantial number represents them.

Among the control variables, CGI documents a significant positive impact on VD for family-owned firms, while the same is insignificant for nonfamily-owned firms (Saha and Kabra, 2021). SIZE and LEV reports significant positive impact on VD (Patelli and Prencipe, 2007); while ROA exhibits significant negative impact imply that profitable firms make less VD, probably they assume that investors of such firms are satisfied with the reported profit, thus they opt for less disclosure (Wallace and Naser, 1995).

6.4 Result of three-stage least square model

To ensure the robustness of the results obtained from the panel data regression model, we use the 3SLS model to examine the impact of BGD on VD for family and nonfamily firms after controlling firm characteristics. The findings, as presented in Tables 7 and 8, reveal that the results are mainly in consensus with that of the panel data model. The impact of BGD on VD is positive and significant for family-owned firms for all its measures, while for nonfamily firms BGD has a significant impact on VD, for its first two measures i.e. BGD1 and BGD2. BGD3's impact becomes insignificant for FD1 and FD2, marginally significant in the case of FD3, thus supporting the panel data results.

7. Conclusion

7.1 Summary of findings

Given the questionable outcomes of the mandatory gender quota on board, the present study enriches the extant literature by providing first empirical evidence on the difference between the impact of BGD on VD for family and nonfamily firms in Indian context. Our result of the panel data regression model reports a significant positive impact of BGD in terms of its two measures on VD for both family and nonfamily firms. However, when BGD is captured

Table 7.
Results of 3SLS
model for family-
owned firms

Variables	BGD1(% of Female Directors)		BGD2 (BI)		BGD 3 (3 groups)	
	Coefficient	Z stat.	Coefficient	Z stat.	Coefficient	Z stat.
SFD	18.798***	3.78				
BGD (BI)			13.687***	3.68		
FD1					-0.207	-0.28
FD2					0.837	1.17
FD3					2.071*	1.69
CGI	0.016***	6.32	0.016***	6.24	0.017***	7.21
SIZE	6.924***	9.35	6.926***	9.34	6.917***	9.11
LEV	1.191	1.07	1.196	1.07	0.935	0.82
ROA	-0.033*	-1.77	-0.033*	-1.74	-0.034*	-1.75
Constant	4.942*	1.63	4.439	1.44	6.923**	2.12
R ²	0.226		0.225		0.226	
F-Statistic	67.50***		108.77***		96.99***	

Notes: ***, ** and * indicate significant at 1, 5 and 10% level respectively; Model used: 3 stage least square
Source: Created by authors

Table 8.
Results of the 3SLS
model for nonfamily-
owned firms

Variables	BGD1(% of Female Directors)		BGD2 (BI)		BGD 3 (3 groups)	
	Coefficient	Z stat.	Coefficient	Z stat.	Coefficient	Z stat.
SFD	27.982***	2.93				
BGD (BI)			18.394***	2.88		
FD1					-2.523	-0.68
FD2					2.905	0.79
FD3					5.017*	1.67
CGI	0.010	3.11	0.010	3.07	0.075	2.75
SIZE	10.062***	9.01	10.178***	9.03	-0.053	-0.04
LEV	0.369	0.27	0.287	0.21	0.286***	6.01
ROA	0.289***	6.02	0.288***	5.99	-8.519	-1.43
Constant	-15.807***	-2.98	-16.547***	-3.04		
R ²	0.432		0.431		0.438	
Chi-square	95.10***		94.55***		97.24***	

Notes: ***, ** and * indicate significant at 1, 5 and 10% level respectively; Model used: 3 stage least square
Source: Created by authors

based on different levels of female representation on board, it documents no significant impact on VD for nonfamily firms. It implies that for nonfamily firms, minimal representation of female directors makes no significant contribution to the board’s strategic decisions, and to have a say in the board discussion, they should be sizably represented. It is particularly evident in the case of nonfamily firms as female directors are generally not associated with any substantial groups, thereby subject to specific behavioral challenges as a minority group, leading to such insignificant impact. Thus, the impact of BGD on VD is not the same for all measures of BGD.

7.2 Implications

Our findings should be of interest to regulators, practitioners, and other related groups as stated below:

- First, the central concept arising from the present study is that BGD adds a sense of relatedness, trustworthiness, and benevolence for the diverse stakeholders, which indeed play an essential role in how a board operates toward information dissemination in the form of VD. Moreover, diligent monitoring of the behavior of female directors also gives a boost to VD. Hence, in a country like India, which closely held firms dominate, they should give more emphasis on BGD to reduce information asymmetry for the minority groups, under family and nonfamily firms.
- Secondly, the study shows a highly significant positive impact of all measures of BGD on VD for family-owned firms, while different levels of BGD document insignificant impact for nonfamily firms. This outcome is particularly relevant due to the typical agency problems of family firms that the presence of female directors can mitigate due to their attitudes and behavior (Rhode and Packel, 2014), which could result in a better balance for the typical governance issues of family firms. Moreover, it also suggests to the regulators that, though female directors of many prominent Indian firms are related to substantial owners' groups, such interconnections provide them the requisite comfort and power to raise their voices in board discussions.
- Third, the potential benefits of BGD signal the nonfamily firms to acknowledge the presence of female directors and perceive them as equal to their male counterparts, to enable them to contribute their unique skills and expertise toward improving corporate transparency.
- Finally, by analyzing this phenomenon regarding Indian firms, this paper provides empirical evidence of the relationship within a specific type of ownership structure typical in many other countries around the world.

7.3 Limitations and avenues for further research

We also acknowledge some limitations of our study, which provides the pathway for future research:

- First, to improve the analysis of the effects of female directors, future studies could investigate the characteristics of females (i.e., age, nationality, educational background) on corporate boards in greater depth and their impact on VD.
- Second, future studies could analyze the difference in the impact of BGD between family and nonfamily-owned firms by using independent and executive female directors as proxy measures of BGD.
- Finally, a cross-country analysis could identify cultural and governance aspects that might differ among contexts characterized by the strong presence of family businesses, such as in India.

Notes

1. www.worldbank.org
2. Corporate Governance in the 21st Century [info.machenmcchesney.com](http://info.machenmcchesney.com/blog/corporate-governance-in-the-) blog corporate-governance-in-the-.
3. www.oecd.org/corporate/ca/corporategovernanceprinciples/1932028.pdf
4. www.economicstimes.com

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