REGULAR ARTICLE

Family ownership, control, and firm performance: Does gender diversity matter?

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Abstract

This study investigates the influence of family ownership and family control on firm performance while considering the moderating effect of gender diversity. Utilising a dataset of 226 nonfinancial firms listed on Pakistan Stock Exchange spanning from 2008 to 2019, the paper employs the Generalized Method of Moments (GMM) estimation to test the proposed hypotheses. Additionally, the paper uses ordinary least squares regression (OLS) analysis, industry-adjusted measures of firm performance, difference-in-difference (DID) estimation, and Blau and Shannon index to confirm the results. The findings indicate that family ownership and control positively affect firm performance. This relationship is further enhanced by the presence of female directors on the board. Using the agency theory and stewardship theory frameworks, the paper delves into the dynamics of agency conflict and family owner behavior within family firms, highlighting the role of gender-diverse boards. Overall, the analysis reveals that family owners, motivated by a strong attachment to their businesses and a desire to preserve socio-emotional wealth, tend to adopt a stewardship role, thereby mitigating principal-principal conflicts within our sample firms. The study contributes to the literature on family businesses by elucidating the behavior of such firms within an emerging economy context and revealing the role of gender diversity in the presence of family ownership. The findings suggest useful implications for investors regarding the positive influence of family owners on firm performance and underscore the importance for policymakers to prioritize female career development and professional growth. This, in turn, can yield economic benefits through the integration of female directors in boardrooms, thereby reducing agency costs and enhancing overall governance structures within firms.

Keywords Family ownership · Family control · Gender diversity · Firm performance

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1 Introduction

According to the corporate governance literature, the business's ownership structure is an essential factor that determines firm performance. From one point of view, distributed ownership creates principal–agent conflict since the managers' goals may not be aligned with the interests of the shareholders (Ain et al., 2020). Managers who are utility maximizers may choose short-run profit-making initiatives to generate rapid returns and seek high perks above long-term endeavors that result in the long-term maximization of the firm's wealth sought by shareholders (Jensen & Meckling, 1976). In this circumstance, the existence of concentrated ownership is seen as an effective strategy to reduce this issue since it leads to intense managerial supervision. The existence of block holders, such as family owners, however, causes another kind of agency conflict, principal–principal conflict, in which big shareholders take private gains while exploiting minority via tunnelling of corporate resources. On the contrary, for the sake of the firm's image and integrity, they might be seen as an alternative governance mechanism for less protected minorities in poorly regulated marketplaces. As a result, the firm's ownership structure has a significant impact on its performance and is an important field of study in corporate governance.

Family ownership differentiates from other types of ownership structure because of the large shareholding and effective involvement of a single family in ownership and control of the business. According to Armitage et al. (2017), large shareholders and dominant business groups in emerging markets present unique challenges for corporate governance due to weak investor protection and poor regulatory frameworks in such markets. According to Villalonga and Amit (2006), greater family ownership provides family owners with the authority and control to influence board composition and determine the firm's strategic goals based on the family agenda and reasons. The family business literature (Ghalke et al., 2022; Purkayastha et al., 2019) mostly uses the agency theory and stewardship theory when evaluating the strategic behaviour of family owners. According to the agency framework, the presence of family owners may limit managers' divergent behaviour owing to effective engagement in the business's activities, and their presence may minimize the principal-agent conflict, resulting in better firm performance (Amin et al., 2021). On the other hand, the dominating influence and drive to expand family wealth may exacerbate this tension, resulting in the firm's resources being tunneled towards family objectives. The pursuit of a family agenda and the desire to expand family wealth at the cost of minority shareholders may lead to principal-principal conflict. However, in a low-regulation economy, family ownership may replace minority shareholder legal protection for the sake of the firm's brand (Yoshikawa & Rasheed, 2010). Similarly, Purkayastha et al. (2019) claimed that the behavioural characteristics of family owners may compensate for the conflicts that arise under the agency theory paradigm. According to this concept, family owners' drive to achieve the family's objectives and strong attachment to the family may lead to goal alignment, resulting in greater firm performance.

As a result, this research employs agency theory and stewardship theory to investigate the impact of family ownership on business performance.

Moving forward, agency theorists see gender diversity as an important feature of a successful board that decreases agency conflict via intense and independent management oversight (Amin et al., 2021). According to the corporate governance literature, women are more independent and conscientious than males, and their successful presence on the board is associated with lesser agency conflicts. Females' economic advantages have led in their required appointment on company boards in some nations (Terjesen et al., 2009). For example, federal rules in Norway and France require boards of public companies to include at least 40% female directors. The laws mandate adequate participation of female directors on corporate boards (Carter et al., 2003).

Similarly, in accordance with worldwide initiatives to enhance equitable representation of female directors on boards, the Code of Corporate Governance (CCG) 2017 required corporations listed on the Pakistan Stock Exchange to nominate at least one female director to the board (Mirza et al., 2012). Several studies have shown that female directors had a beneficial impact on a variety of business outcomes, including firm performance (Amin et al., 2021), dividend payout (Ain et al., 2021), and corporate social responsibility (Yarram & Adapa, 2021). Similarly, the existing research investigates the impact of female directors on business performance in cases of family ownership and yields inconsistent results. For example, Ararat et al. (2015) discovered favorable impacts of female directors in family businesses in Turkey. Similarly, Berrone et al. (2012) noted that in family-controlled enterprises, female directors' interests are linked with the objectives of the family owners. Similarly, Martínez-García et al. (2023) discovered that family ownership had a beneficial influence on board gender diversity. Mustafa et al. (2020), on the other hand, found a detrimental impact of gender diversity in the presence of family ownership in Asian countries. The influence of female directors on firm performance in family businesses is an important topic of research that this study aims to investigate. Overall, this research addresses two critical research questions. Does the presence of family owners in PSX-listed companies promote business performance? Second, does the presence of female directors on boards of family-owned enterprises attenuate this link and enhance company performance?

Our research contributes to the family literature by examining the impact of family-controlled enterprises on company performance in an emerging market environment. In two ways, our study addresses the research gap noted by Martínez-García et al. (2021). First, in keeping with the author's approach to investigating the impact of corporate governance on this connection, we examined the moderating behaviour of gender diversity on corporate boards, an important governance device for reducing agency conflict. Second, the authors solely utilized the businesses' industry-adjusted market-to-book ratio to estimate company performance. This research, however, employed three measures of business performance in accordance with the author's guidelines for alternative measures of firm performance: Tobin's Q (TOBIN_Q), Return on assets (ROA), and Basic earning price ratio (BEPR). While the stock-based measure (TOBIN_Q) reflects shareholders' expectations of the firm's performance and is less susceptible to management manipulation, the

accounting-based measures (ROA and BEPR) show the company's profitability and provide an accurate picture of management's performance (Hutchinson & Gul, 2004). We also respond to Armitage et al. (2017)'s research call by investigating the relationship between family companies and company performance in the setting of a developing economy. To analyse agency conflict in business enterprises, we use agency theory and also apply the lens of stewardship theory to the idea that family owners show steward conduct as a consequence of socio-emotional ties and strong attachments, which leads to improved company performance.

The investigation of this relationship in Pakistan is critical for the following reasons. First, Pakistan is an intriguing research site for this study because of its weak investor rules and less strict corporate governance procedures (Mirza et al., 2012). Furthermore, like in other emerging and developing economies, the majority of PSX-listed enterprises are owned and managed by families (Yasser & Mamun, 2017). According to Armitage et al. (2017), family ownership and dominating corporate groupings in developing economies make these nations an excellent study site for researching agency conflict. While existing research shows varied impacts of family owners' presence and control on business performance and minority shareholder protection, examining this link in the context of Pakistan would have crucial consequences for investors considering investing in this area. Second, Pakistani culture varies greatly from Western culture in terms of female inheritance difficulties and other social factors such as educational and professional chances for the female gender. Although inheritance rules allow for the transfer of a dead person's assets to females based on property inheritance rights, male family members are sometimes hesitant to transfer ownership rights to female family members. As a result, attaining the firm's directorship by inheritance is difficult for females in family businesses. Third, Pakistan's male-dominated culture prevents females from obtaining formal and professional education, lowering their prospects of ascending the corporate ladder and reaching the highest echelons. In such conditions, the efforts of female directors in obtaining professional education and their effect on the firm's strategic conduct while serving on the boards of publicly traded companies is an essential topic addressed by this research. Finally, in accordance with worldwide initiatives to increase the number of female directors on corporate boards, the CCG 2017 mandated the appointment of female directors to corporate boards of publicly traded companies. The economic advantages of female representation on corporate boards, as well as their role in preserving shareholders' rights, are critical issues that must be addressed.

This work adds to the literature in the following ways. To begin, we contribute to the current discussion on ownership concentration in the form of family ownership and its impact on company performance in an emerging economy setting. In this setting, our research offers empirical evidence by investigating this link in Pakistan, which varies greatly from other developing countries owing to various social, cultural, and economic characteristics. Pakistan's social norms are characterised primarily by strong collectivism, with family honour acting as a cornerstone to many ethnic groups. Furthermore, the concentration of authority in the hands of a few notable family members or a single-family leader increases the likelihood that family companies will be seen as a long-term source of financial wealth for the whole

family. Furthermore, Pakistan's general society is male-dominated, with men enjoying superior and authoritative position. Females, on the other hand, are denied their rights and educational opportunities, stifling their advancement and professional development. Investigating family business practices and the effect of female directors on firm performance in the presence of family owners is an important field of study that needs to be investigated in such situations. Second, we compare a few recent studies that employed cross-sectional data (Wu, 2020) and a small sample size (Martínez-García et al., 2021; Purkayastha et al., 2019). This research employed a 12-year panel data collection, which provided additional variability, information, and efficiency. Overall, our results support family owners' stewardship role and the favourable effect of gender-diverse boards in increasing company performance and safeguarding investors in our sample businesses.

The rest of the paper will proceed as follows. Section 2 provides theoretical context and hypothesis development. The research approach is discussed in Sect. 3. Section 4 presents and discusses the findings, while Sect. 5 concludes.

2 Theoretical background and hypotheses development

2.1 Family firms and firm performance

Family ownership, characterized by the amalgamation of control and ownership steered by a single family's role in business direction, presents a distinct ownership structure. As mentioned by Zellweger et al. (2013), family-owned businesses prioritize non-financial objectives and the safeguarding of socio-emotional wealth. For many family owners, businesses are viewed as legacies to be bequeathed to future generations (Miller et al., 2022). This inherent focus frequently places family-driven agendas and objectives at the forefront. Historically, the realm of corporate governance has acknowledged the pivotal role of family ownership. The overarching influence family members exert over business operations has been a topic of investigation (Amin et al., 2023). Jensen and Meckling (1976)'s agency theory delves into potential conflicts between shareholders and managers. It postulates that family ownership, a form of concentrated ownership, can mitigate such conflicts by restricting managerial self-interest. However, there exists a nuanced challenge: family members, in their quest for personal gains, might inadvertently sideline the interests of minor shareholders, creating a new type of conflict, highlighted as principal–principal conflict (Yasser & Mamun, 2017). On the flip side, Solarino and Boyd (2020) propose that for family businesses, reputation is paramount. As such, they often invest company resources in stakeholder well-being to garner societal recognition, potentially aligning mutual interests. Thus, from agency theory's point of view, family ownership and control can either mitigate agency conflict through the intensive monitoring and alignment of interest with the minority group for protection of firm's credibility or make the conflict worse by extracting private benefits by expropriating minority shareholders (Amin et al., 2022).

From Purkayastha et al. (2019)'s point of view, family ownership results in reduced agency conflicts due to intense monitoring of management. However, the

main issue lies in balancing between the monitoring and expropriation effect (Nashier & Gupta, 2020). On one side, a large controlling shareholder can effectively monitor the managers and minimize the free rider problem, thus reducing the probability of making business losses and improving the firm performance (monitoring hypotheses) (Altaf & Shah, 2018). But the counter-risk is them bypassing controls for personal gains, a move detrimental to overall performance (Hu & Izumida, 2008). Sacristán-Navarro et al. (2015) echoed this sentiment, pointing to the propensity of family owners to align decisions with family-centric objectives, occasionally overshadowing the needs of other shareholders. The pursuit of the family agenda and fulfilment of the family's objectives may compel the family owners to tunnel the firm's resources for the benefit of the family at the expense of minority shareholders, thus exacerbating the principal-principal conflict (Purkayastha et al., 2019). However, on the other side, Yoshikawa and Rasheed (2010) argued that for the sake of socio-emotional wealth and the firm's reputation, the family owners' interests may be aligned with the interests of minorities leading to lesser agency problems.

Similarly, from the stewardship theory's perspective, the founding family members identify themselves closely with the firm and consider the firm's health an extension of their well-being (Gomez-Mejia et al., 2003). In contrast, the agency theory considers managers opportunistic, self-serving, and lacking a sense of social responsibility. Conversely, the stewardship theory assumes an agent is a "steward whose behaviour is ordered such that pro-organizational, collectivistic behaviours have higher utility than individualistic, self-serving behaviours" (Donaldson, 1990). The theory posits that due to collectivistic behaviour, the manager seeks to achieve high profits, and maximize shareholder's wealth through better firm performance thus reducing the agency conflict. In this context, the organizational and family identification of family owners leads to economic benefits and firm's wealth maximization. Hence, the firm's objectives precede the family's interests resulting in the alignment of interest (Zellweger et al., 2013).

Empirical studies investigating the relationship between family ownership, control, and business performance present mixed results. While some studies, like Ciftci et al. (2019) and Galve-Górriz and Hernández-Trasobares (2015), highlights a positive influence, the others, including Kouki and Guizani (2015) and Li and Ryan (2022), suggest a negative relationship. Moreover, these findings oscillate across economic settings. Nguyen et al. (2015) observed positive effects in a developed economy, Singapore, whereas Murtinu (2015) documented contrary outcomes in Italy.

Zooming into Pakistan, the PSX listed firms are dominated by family firms (Yasser & Mamun, 2017). Family ownership, as Federo et al. (2020) contend, brings along socio-emotional wealth, longevity and control preservation to the firm. Further, the academic literature suggests that due to early socialization in business, the family owners possess rich business experience and knowledge that facilitate effective monitoring and provision of resources for the firm. The socio emotional consideration and firm's legacy urge the family owners to take business decisions for the long-term continuity of the firm (Miller et al., 2022). Thus, we may assume better

governance and management's monitoring in family firms due to strong family identity. We therefore hypothesize that:

Hypothesis 1 Family firm control is associated with higher firm performance.

2.2 Moderating role of gender diversity

The corporate governance mechanisms significantly benefit from the board of directors as they play a crucial role in mitigating agency conflicts, as evidenced by various studies (Fan et al., 2019; Ruigrok et al., 2007). According to Stiles and Taylor (1993), "the board of directors has four main functions: to provide direction; executive management; accountability; and supervision". The governance literature believes that the independent and diverse board provides more protection to shareholders through stringent monitoring of top management, thus making the board more effective by mitigating agency conflict (Li et al., 2015). Such boards, valuing their reputation and prestige, strive for transparency and resist undue pressures from management (Nadeem, 2020). Adams and Ferreira (2009) postulated, within the agency theory framework, that board diversity, particularly with the inclusion of female directors, bolsters its efficacy through greater autonomy and rigorous oversight. This, in turn, aligns the interests of managers and shareholders.

Similarly, study by Baixauli-Soler et al. (2016) indicates that female directors, due to their superior monitoring capabilities relative to their male peers, can effectively check any misuse of power by family owners. As such, a gender-diverse board stands as a safeguard against the whims of family owners, ensuring the rights of minority shareholders (Ararat et al., 2015). Multiple empirical studies, including those by Ain et al. (2020) and Amin et al. (2022), emphasize the integral role a gender-diverse board plays in refining corporate governance mechanisms to serve both shareholders and managers' interests.

From the lens of agency theory, female directors enrich board discussions with diverse insights. Their innate empathetic and cooperative tendencies position them as exemplary leaders (Amin et al., 2021). Moreover, their qualities of independence, diligence, and responsibility (Li & Li, 2020) combined with their potential to eliminate systemic biases and widen social networks (Bass, 2019) make gender-diverse boards more effective. The effective monitoring of gender-diverse boards, therefore, mitigates agency conflict and increases shareholder confidence (Amin et al., 2021). Overall, these studies support that female directors' presence on boards attracts economic benefits for the firm. Their presence reduces the agency conflict and increases shareholders' protection.

According to Altaf and Shah (2018), an independent and effective board is imperative to facilitate the business's strategic operations and curb the dominant owners' undue influence to protect shareholders. Similarly, academic studies highlight the positive outcomes resulting from female representation on corporate boards in terms of enhanced control and decision-making (Ararat et al., 2015). However, the firm ownership structure provides a corporate environment where female directors are involved in decision-making. From the stewardship theory's point of view, Berrone et al. (2012) noted that the interests of female directors are usually aligned with

the interests of family owners. Therefore, the collectivistic behaviour of the family members and female directors may result in better firm performance.

Regarding family businesses, literature underscores the alignment of objectives between female directors and family owners. Martínez-García et al. (2023) observed a preference among family owners to appoint female directors from within their kin. Family literature highlights the inclusion of female directors in family firms, attributing this to familial ties. In the Australian context, appointments of female directors predominantly occur based on family connections (Sheridan & Milgate, 2005). Similarly, Nekhili and Gatfaoui (2013) mentioned that social ties in appointing female directors are a positive signal to the public, and their placement on the board indicates women's expertise. Poletti-Hughes and Martinez Garcia (2022) mentioned that female directors' roles depend on their affiliation with family owners and the family's objectives. The motivation among family businesses to preserve the socio-emotional wealth leads to the alignment of female directors' objectives with the interests of the family owners and higher representation of female directors on boards.

Empirical evidence underscores the advantages of gender diversity in corporate performance. Carter et al. (2003) and Jurkus et al. (2011) revealed that boards with female representation effectively reduce agency conflicts in listed firms. Ain et al. (2020) noted reduced agency costs in Chinese listed firms in presence of female directors. Brahma et al. (2021) also reported a positive association between gender diversity and firm performance in FTSE 100 firms in the UK. The gender-diverse board, therefore, facilitate creativity within the group, provide diverse perspective and facilitate better decision-making. Saeed et al. (2021) articulated that family firms primarily induct female directors from their families, ensuring alignment with family owners' interests. In this scenario, the interests of the female are aligned with the interests of the family owners. However, the literature exploring female directors in family firms presents varied outcomes. While some studies like Nadeem et al. (2020) highlight the positive impacts of gender-diverse boards on stakeholders' value in family firms, others, such as Mustafa et al. (2020) and Sarkar and Selarka (2021), indicate the weakened role of women directors in family firms.

In conclusion, our contention is that female directors, within the context of family businesses, can mitigate agency conflicts and enhance company performance through their rigorous oversight, independence, and alignment with family owner interests. This leads us to hypothesize that:

Hypothesis 2 The relationship between family control and firm performance is stronger in firms with gender-diverse boards.

3 Methodology

3.1 Sample

We collected information from different sections of published annual reports that are accessible on the PSX website in addition to information from the relevant business website to create the sample. There are 5952 observations in the initial sample, covering 2008–2019. Since almost all of the firms' corporate governance data was only accessible from 2008 onwards, we regard 2008 as the starting year of the sample. The financial businesses were left out since they are subject to various constraints that have an impact on their financial features. Our final sample is panel data with 2062 firm-year observations after excluding the financial firms and those with inadequate information. The sample selection process and its industry-by-industry makeup are reported in Table 1.

3.2 Variable measurement

Based on our hypothesis, we used three proxies to measure the dependent variable, firm performance: Tobin's Q (TOBIN_Q), Return on Assets (ROA), and Basic Earning Power ratio (BEPR). Consistent with previous studies (Adams & Ferreira, 2009; Nekhili et al., 2020), accounting- and stock-based firm performance measures were used to determine firm performance. The stock-based measure (TOBIN_Q) is less susceptible to managerial manipulation. However, the accounting-based indicators (ROA, BEPR) correctly represent the organization's profitability and management's performance (Hutchinson & Gul, 2004). According to Villalonga and Amit (2006), a block holder may take over a business with as little as 20% ownership. Therefore, we categorise a firm as a family-controlled business (FCF) if a family or an individual owns more than 20% of the shares and is the company's major shareholder. Consequently, a dummy variable was developed that would indicate '1' if the firm is family-controlled and '0' otherwise.

One commonly used method to evaluate gender diversity is to look at the proportion of female directors on the board (Adams & Ferreira, 2009). Another method is to use a dummy variable, where '1' means there is at least one female director and '0' means there is none female director on boards. This study solely used the first method of measuring gender diversity, which is the proportion of female directors on the board (PFD_BD). Finally, to avoid the endogeneity problem that might lead to biased conclusions, the analysis included four variables to control for firm characteristics and three control

Table 1 Sample composition

Sample selection	
Initial firm-year observations of financial and non-financial firms (2008–2019)	5952
Less: firm-year observations pertaining to financial firms	1344
Less: missing firm-year observations	2546
Final sample	2062

Sample composition used in the study

Table 2 Variable measurements

Nature	Variable	Symbol	Measure
Dependent variable			
Firm performance	Tobin's Q	TOBIN_Q	Market value of assets divided by book value of assets
	Return on assets	ROA	Net profit divided by total assets
	Basic earning power ratio	BEPR	Earnings before interest and tax divided by total assets
Independent variable			
Family ownership	Family controlled firm	FCF	Dummy variable equal to one if the firm's main shareholder is a family or an individual and he owns more than 20% of the company, zero otherwise
Moderator			
Gender diversity	Female directors on the board	PFD_BD	Female directors on board divided by total number of directors on the board
Control variable	Board size	BS	Total number of directors on the board
	Board independence	PID_BD	Independent directors on the board divided by total directors on the board
	CEO duality	CEO_DUAL	Dummy variable equal to one if CEO is also a chairman, zero otherwise
	Sales	SALES	Log of annual sales
	Leverage	LEV	Total debt divided by total assets
	Firm age	FAGE	Number of years since the firm is listed on stock exchange
	Firm size	FS	Log of total assets

The table displays the nature, symbol and measurement of all the variables used in the study

variables to account for board characteristics (Nekhili et al., 2020). Table 2 displays the type, measurement, and symbol of each variable used in the study.

3.3 Theoretical framework

3.3.1 Econometric model

Following the hypotheses, the basic regression model is developed as follows:

$$\sum_{x=1}^{3} FP_{i,t} = \alpha_{i,t} + \beta_k FCF_{i,t} + \beta_l PFD\_BD_{i,t} + \beta_m FCF_{i,t}*PFD\_BD_{i,t} + \sum_{n=1}^{7} \beta_n Controls_{i,t}$$

$$+ \sum_{o=1}^{r} \beta_o Industrydummy_{i,t} + \sum_{p=1}^{s} \beta_p yeardummy_{i,t} + \varepsilon_{i,t}$$

$$(1)$$

FP is the proxy for the dependent variable, firm performance, measured using TOBIN_Q, ROA and BEPR. α represents the model's intercept, and i and t represent the firm i at time t. In addition, the study employed a dummy variable, FCF, to measure the family control. Gender diversity is measured using PFD_BD. FCF*PFD_BD is the interaction term to determine the moderating effect of gender diversity. Further, the model also includes as listed in Table 2. To control for the industry and year effect, industry and year dummies are included where $r = 1,2,3....28$ represents the number of industries in the sample firm, and $s = 1,2,3...12$ represents the number of years. ε is the error term. β_k, β_l, β_m, β_n, β_o, and β_p represent regression coefficients of the respective variables.

4 Results and discussion

4.1 Descriptive statistics

The descriptive statistics of the variables used in the study are depicted in Table 3. The table depicts that the mean of TOBIN_Q in the case of full-sample firms is 2.62. Similarly, the mean for the ROA and BEPR is 7.03% and 13.03%, respectively. The mean for *FCF* is 0.76, that reflects 76% of our sample firms are family owned and controlled. These stats are in line with the study of Armitage et al. (2017), that argued that firms owned and controlled by families mainly characterize emerging markets. The PFD_BD lies between 0% and 38%, which indicates that while some companies does not have any female on boards, the other have around 38% of the representation. Concerning control variables, the mean of BS is 8.01, the average PID_BD is 11.10%, and CEO_DUAL has a mean of 0.02. The mean value of Sales is 21.74; LEV is 21.10%; the average FAGE in our sample is 26 years; and the mean of FS is 22.87.

Table 3 Descriptive statistics

Variables	Full sample					Family controlled firms					Non-family controlled firms					t-test
	N	Mean	SD	Min	Max	N	Mean	SD	Min	Max	N	Mean	SD	Min	Max	
TOBIN_Q (ratio)	2062	2.62	0.19	0.62	12.65	1569	1.84	0.14	0.62	12.65	493	2.49	0.17	0.68	8.24	2.89**
ROA (%)	2062	7.03	2.64	−28.51	36.14	1569	6.35	9.87	−28.51	36.14	493	6.01	8.82	−24.02	31.04	2.69**
BEPR (%)	2062	13.03	2.11	−12.01	27.51	1569	13.03	2.11	−10.11	27.51	493	11.31	2.02	−12.01	22.24	3.43**
FCF (frequency)	2062	0.76	0.33	0.00	1.00	1569	0.76	0.33	1.00	1.00	493	0.00	0.00	0.00	0.00	3.75*
PFD_BD (%)	2062	14.10	2.21	0.00	38.00	1569	17.04	2.10	0.00	38.00	493	4.03	2.06	0.00	29.00	0.03**
BS (number of directors)	2062	8.01	1.24	7.00	13.00	1569	8.01	1.04	7.00	13.00	493	7.81	1.24	7.00	13.00	2.04**
PID_BD (%)	2062	11.10	3.15	0.00	36.02	1569	11.10	3.14	0.00	36.02	493	10.03	2.16	0.00	28.16	−2.93*
CEO_DUAL (frequency)	2062	0.02	0.13	0.00	1.00	1569	0.01	0.11	0.00	1.00	493	0.01	0.17	0.00	1.00	0.75**
SALES (log of annual sales)	2062	21.74	2.75	0.00	27.80	1569	21.78	2.64	0.00	27.80	493	21.60	2.09	0.00	26.25	0.69*
LEV (%)	2062	21.10	3.89	3.21	58.91	1569	17.92	1.91	2.03	51.91	493	17.69	2.80	3.21	58.91	2.41*
FAGE (number of years)	2062	26.39	15.97	1.00	70.00	1569	26.86	16.32	1.00	70.00	493	24.88	14.71	1.00	65.00	1.17*
FS (log of total assets)	2062	22.87	1.54	19.03	26.56	1569	22.89	1.56	19.03	26.56	493	22.12	1.45	19.03	26.48	

The table reports the mean, standard deviation, minimum and maximum of all the variables used in the study

*, **, and *** repesent significance levels of 10%, 5%, and 1%, respectively

Table 4 Correlation matrix

Variables	TOBIN_Q	ROA	BEPR	FCF	PFD_BD	BS	PID_BD	CEO_DUAL	SALES	LEV	FAGE	FS	VIF
TOBIN_Q	1												
ROA	0.045*	1											
BEPR	0.027	0.825***	1										
FCF	0.064**	0.059*	0.075*	1									1.09
PFD_BD	0.226***	0.298***	0.217***	0.493***	1								2.25
BS	0.017	0.015	0.001	0.001	0.010	1							1.07
PID_BD	0.023	0.014	0.018	0.045*	0.015	0.132***	1						1.04
CEO_DUAL	−0.021	−0.017	−0.026	−0.064**	−0.068**	−0.051*	−0.026	1					1.04
SALES	0.011	0.094***	0.061**	0.017	0.048*	−0.017	0.070**	−0.041	1				1.02
LEV	0.022	0.085***	0.046*	0.015	0.005	0.018	0.038	−0.036	0.037	1			1.02
FAGE	0.028	0.043*	0.009	0.053*	0.015	0.011	0.062**	0.058**	0.015	0.021	1		1.01
FS	0.020	0.020	0.026	0.026	0.058***	0.077***	0.045*	0.094***	0.168***	0.124***	0.031	1	1.01

The table reports the Pearson correlation and Variance Inflation Factor (VIF) of all the variables used in the study

*, **, *** indicate significance at the 10%, 5%, and 1% level, respectively

4.2 Correlation matrix

The Pearson correlation analysis of all variables is presented in Table 4. In conformity with hypothesis, significant positive correlation between all measures of firm performance (TOBIN_Q, ROA, BEPR) and family ownership (*FCF*) was observed. The correlation was substantial with *FCF* at a 5% significance level in the case of TOBIN_Q and at a 10% significance in the case of ROA and BEPR. Similarly, we found a statistically significant positive correlation at a 1% significance level in the case of PFD_BD and all firm performance variables. Moreover, consistent with the prior literature, e.g., Sheikh et al. (2018) and Zaid et al. (2020), our firm performance measures were positively related to board size and negatively associated with CEO_DUAL.

According to Gujarati (2016) "multicollinearity is imminent if the correlation coefficient exceeds 0.8." Our analysis shows that in all cases, the coefficient of correlation was below 0.8 which reveals absence of multicollinearity. Moreover, we further check this issue using VIF and found that in all cases our values do not exceed 0.5 (Caramanis & Spathis, 2006). This again confirmed that our sample does not suffer from this problem.

4.3 Generalized method of moments estimation

The generalised method of moments (GMM) estimation is regarded as the preferred method of hypothesis testing in the existing literature because the GMM model can account for the three major sources of endogeneity: simultaneity, dynamic endogeneity, and unobserved heterogeneity (Amin et al., 2023; Huang et al., 2023). Consequently, we utilised it for hypothesis testing. Table 5 displays the GMM estimations for gender diversity, family ownership, and firm performance.

We contend that the presence of family owners enhances business performance because of efficient oversight and the family managers' stewardship function (H1). Therefore, we anticipate that the two variables will have a positive connection. We discovered a substantial positive relationship between FCF and all firm performance metrics (TOBIN_Q: 0.291***; ROA: 0.237***; BEPR: 0.192***), which is consistent with our hypothesis. In every instance, the association was significant at the 1% significance level, proving our hypothesis. Not only are our findings statistically significant, but they also have economic importance. As an example, coefficient estimate for TOBIN_Q is 0.291***, meaning that a one standard deviation rise in FCF corresponds to a 5.22% $(0.291 \times 0.33/1.84)$ increase in TOBIN_Q in relation to the sample mean (mean of TOBIN_Q = 1.84; SD of FCF = 0.33).

We suggested, based on the monitoring hypothesis, that agency conflict is decreased in family enterprises, leading to higher firm performance, because of effective monitoring and less information asymmetry. Our findings provide theoretical backing for our hypothesis. Our findings empirically corroborate previous research (Ciftci et al., 2019; Galve-Górriz & Hernández-Trasobares, 2015), which discovered a beneficial effect of family ownership on business performance in both

Table 5 Generalized method of moments estimation-family controlled firms, gender diversity, and firm performance

Variables	TOBIN_Q	ROA	BEPR
TOBIN_Q $_{t-1}$	0.519*** (0.034)	0.555*** (0.031)	
ROA $_{t-1}$		0.568*** (0.030)	0.514*** (0.034)
BEPR $_{t-1}$			0.559*** (0.032)	0.537*** (0.031)
FCF	0.291*** (0.011)	0.266*** (0.012)	0.237*** (0.005)	0.219*** (0.012)	0.192*** (0.013)	0.181*** (0.011)
PFD_BD	0.117** (0.022)	0.123** (0.021)	0.135** (0.017)
FCF*PFD_BD	0.187** (0.015)	0.191** (0.011)	0.193** (0.011)
Constant	0.361*** (0.011)	0.277*** (0.019)	0.319*** (0.011)	0.421*** (0.011)	0.326*** (0.017)	0.318*** (0.027)
Observations	1860	1860	1860	1860	1860	1860
Number of firms	226	226	226	226	226	226
Controls	Included	Included	Included	Included	Included	Included
Industry dummy	Included	Included	Included	Included	Included	Included
Year dummy	Included	Included	Included	Included	Included	Included
Instruments	49	49	49	49	49	49
Hansen j-test (p-value)	0.128	0.119	0.171	0.167	0.191	0.110
AR 2 (p-value)	0.217	0.274	0.219	0.279	0.282	0.271

The table reports the generalized method of moments estimations of family control, gender diversity and firm performance

*, **, *** indicates significance at 10%, 5% and 1% level of significance. Robust standard errors are reported in parenthesis

developed and developing nations. Interestingly, our results agree with those found in Western culture (e.g., Maury, 2006). The economic significance of our findings (5.22%) is larger than the outcomes (2.92% = 0.109** × 0.41/1.53; whilst the mean of TOBIN's Q is 1.53 and the standard deviation of FCF is 0.41), as stated by Maury (2006) in the context of Western European firms.

We do a panel regression with PFD_BD acting as a moderator in the model in order to test our hypothesis H2. Table 5 presents the findings. Our hypothesis was that having women on the board would enhance the effect of family ownership on business performance and lessen principal-principal conflict because of improved independence and monitoring. We discovered a positive impact of PFD_BD in all situations of firm performance (TOBIN_Q: 0.187**; ROA: 0.191**; BEPR: 0.193**), which provided credence to our claim. In every instance, the findings were significant at the 5% significance level. Our findings theoretically validate the claims made by agency theory about the value of female directors in reducing agency problems because of their impartial and efficient oversight. In the instance of TOBIN_Q, the high significance level suggests that the existence of a diverse board is seen favourably by the shareholders. Our findings empirically align with those of Nadeem et al. (2020) and Ararat et al. (2015), who found that gender diversity in family businesses had a favourable impact in the UK and Turkey. The findings we got, for instance in the case of TOBIN_Q (3.35% = 0.187 × 0.33/1.84), do not, however, have an economic magnitude that is greater than the results (4.76% = 0.23 × 11.41/55.13) found by Nadeem et al. (2020) in the setting of UK family companies. Overall, our findings confirm the robustness of family companies in developing countries and are in line with the literature. Notably, the validity of our model is shown by the negligible *p*-values of the Hansen *j* test and the Arellano bond (AR) two test. The Arellano bond test shows that the model does not have second-order autocorrelation, whereas the Hansen *j* test verifies the validity of the instruments.

4.4 Additional analysis

To confirm the results obtained from the generalized method of moments estimation, the study further applied OLS analysis for hypotheses testing. According to Hassan and Marimuthu (2016) "the panel data set is expected to produce regression results based on pooled, fixed, and random effects. However, by using diagnostics tests, researchers may have a choice for better selection between fixed and random effect methods." Consistently, to check for the appropriateness of the fixed effect method or random effect method, the Hausman test (Hausman, 1978) was applied. The null hypothesis of the Hausman test suggests that the random effect model is appropriate, whereas, in case of rejection of the null hypothesis, the fixed effect model is preferred. As reported in Table 6, in all the cases, the p-value of the Hausman test was significant at 1% and 5% levels of significance. Hence, we rejected the null hypothesis of the random effect model's appropriateness and used the fixed effect model. Consistent with our prior findings, positive association between FCF and all measures of firm performance (TOBIN_Q: 0.268**; ROA: 0.219*; BEPR: 0.231**) was observed. Similarly, in line with our

Table 6 OLS regression results–family controlled firms, gender diversity and firm performance

Variables	TOBIN_Q		ROA		BEPR	
	(1)	(2)	(3)	(4)	(5)	(6)
FCF	0.268** (0.048)	0.241** (0.027)	0.219* (0.043)	0.205* (0.021)	0.231** (0.016)	0.218** (0.019)
PFD_BD		0.184* (0.041)		0.178* (0.059)		0.154* (0.076)
PFD_BD*FCF		0.293** (0.081)		0.281* (0.039)		0.263* (0.081)
BS	0.018 (0.016)	0.015 (0.016)	0.044 (0.043)	0.027 (0.094)	0.023 (0.001)	0.031 (0.002)
PID_BD	0.034 (0.142)	0.031 (0.045)	0.004 (0.087)	0.047 (0.015)	0.001 (0.020)	0.003 (0.020)
CEO_DUAL	−0.107 (0.155)	−0.014 (0.055)	−0.126 (0.116)	−0.048 (0.017)	−0.003 (0.001)	−0.001 (0.020)
SALES	0.013 (0.004)	0.013 (0.004)	0.011* (0.053)	0.012 (0.053)	0.004* (0.003)	0.012 (0.001)
LEV	0.006 (0.021)	0.007 (0.021)	0.030* (0.024)	0.024* (0.024)	0.005* (0.000)	0.004* (0.003)
FAGE	0.002 (0.001)	0.002 (0.001)	0.006 (0.027)	0.005 (0.027)	0.001 (0.002)	0.002 (0.000)
FS	0.011 (0.014)	0.009 (0.014)	0.018 (0.069)	0.092 (0.011)	0.03 (0.053)	0.001 (0.002)
Constant	0.874 (0.062)	0.761 (0.064)	0.759 (0.033)	0.675 (0.051)	0.597* (0.050)	0.421* (0.049)
Year effect	Included	Included	Included	Included	Included	Included
Industry effect	Included	Included	Included	Included	Included	Included
Observations	2062	2062	2062	2062	2062	2062
Number of firms	226	226	226	226	226	226
Adjusted R^2	0.218	0.225	0.244	0.261	0.354	0.297
F-statistics	3.76	3.08	4.24	7.36	3.31	6.71
F-statistics (p-value)	0.001	0.001	0.001	0.001	0.002	0.001
Hausman Chi^2	27.18**	29.97**	13.50**	17.28**	12.17***	13.72***

The table depicts the regression analysis of family control, gender diversity and firm performance

*, **, *** indicates significance at 10%, 5% and 1% level of significance. Robust standard errors are reported in parenthesis

Table 7 OLS regression results-family controlled firms, gender diversity and firm performance (industry adjusted)

Variables	TOBIN_Q		ROA		BEPR	
	(1)	(2)	(3)	(4)	(5)	(6)
FCF	0.255** (0.049)	0.249** (0.031)	0.229* (0.047)	0.231* (0.025)	0.247** (0.018)	0.223** (0.021)
PFD_BD		0.189* (0.043)		0.183* (0.051)		0.159* (0.071)
PFD_BD*FCF		0.287** (0.072)		0.287* (0.044)		0.267* (0.087)
Constant	0.863 (0.051)	0.755 (0.061)	0.763 (0.031)	0.681 (0.043)	0.583* (0.048)	0.435* (0.041)
Year effect	Included	Included	Included	Included	Included	Included
Industry effect	Included	Included	Included	Included	Included	Included
Observations	2062	2062	2062	2062	2062	2062
Number of firms	226	226	226	226	226	226
Adjusted R^2	0.204	0.228	0.249	0.265	0.361	0.373

The table depicts the regression analysis of family control, gender diversity and firm performance using industry-adjusted firm performance measures

*, **, *** indicates significance at 10%, 5% and 1% level of significance. Robust standard errors are reported in parenthesis

Table 8 Difference-in-difference analysis

Variables	TOBIN_Q	ROA	BEPR
TREAT*POST	0.177***	0.186***	0.119***
Controls	Included	Included	Included
Firm fixed effect	Included	Included	Included
Year fixed effect	Included	Included	Included
Observations	351	351	351
Number of firms	37	37	37
Adjusted R^2	0.22	0.21	0.22

The table reports the difference-in-difference analysis results based on the introduction of gender quota in 2017

*,**,*** indicates significance at 10%, 5% and 1% level of significance

expectations, significant positive association between the interaction term FCF*PFD_BD (TOBIN_Q: 0.293**; ROA: 0.281*; BEPR: 0.263*) was evident.

Although the results obtained through OLS analysis and GMM estimations provide conformance for our hypotheses *H1* and *H2*, consistent with Sacristán-Navarro et al. (2015), we further confirmed our results using industry-adjusted firm performance measures. The findings reported in Table 7 show additional support for our hypotheses *H1* and *H2*.

Finally, to establish the influence of gender diversity on performance of the firm, we conducted a difference-in-difference analysis (DID) to confirm whether the introduction of gender quotas resulted in significant change before and after adding female directors to boards. Accordingly, we conduct the DID estimation using the following model:

$$\text{Firm performance}_{i,t} = \alpha_{i,t} + \beta_1 \text{TREAT*POST}_{i,t} + \beta_2 \text{FCF}_{i,t} + \sum_{n=1}^{7} \beta_n \text{Controls}_{i,t}$$
$$+ \sum_{o=1}^{r} \beta_o \text{Firm fixed effects}_{i,t} + \sum_{p=1}^{s} \beta_p \text{Year fixed effects}_{i,t} + \varepsilon_{i,t}$$

(2)

TREAT and POST are the dummy variables created to capture the difference before and after the promulgation of CCG 2017. Therefore, TREAT represents '1' if the firm experiences an addition in female directors and '0' otherwise. In contrast, POST is a dummy variable that indicates the post-event years and equals '1' if the year is post-2017 and '0' otherwise. Following Huang et al. (2023), we also include firm fixed effects to control for time-invariant company-specific features and year-fixed effects to control for potential changes due to the macroeconomic environments of each year; thus, TREAT and POST are absorbed. The positive and statistically significant coefficient estimates of the interaction term 'TREAT*POST', reported in Table 8, indicate that the performance of the treatment firms significantly increased following the implementation of the gender quota. These results confirm that female directors' presence significantly affects firm performance.

Table 9 Blau and Shannon index

Variables	TOBIN_Q		ROA		BEPR	
Blau	0.159** (0.013)		0.108* (0.021)		0.171** (0.013)	
Shan		0.137** (0.011)		0.183* (0.035)		0.206** (0.019)
Constant	0.317*** (0.039)	0.391*** (0.027)	0.295*** (0.013)	0.231*** (0.069)	0.355*** (0.051)	0.362*** (0.037)
Observations	2062	2062	2062	2062	2062	2062
Number of firms	226	226	226	226	226	226

The table reports the alternate measure of gender diversity using Blau and Shannon index

*, **, *** indicates significance at 10%, 5% and 1% level of significance

We further employed Blau index (Blau, 1977) and Shannon index (Shannon, 1948) to check the robustness of our results. The results reported in Table 9 aligned with those obtained through OLS regression, confirming our earlier results.

5 Summary and conclusions

The research investigates the influence of family firm control on firm performance and explores how gender diversity can moderate this relationship. This study aims to make several significant contributions to the existing body of knowledge. Firstly, it extends the family business literature by emphasizing the positive impact of family-owned firms on firm performance within an emerging economy, drawing upon agency theory and stewardship theory frameworks. This research underscores the absence of conflicts among principals within our sample firms and confirms the responsible stewardship behavior of family owners in these enterprises. Secondly, unlike previous studies that relied on cross-sectional data or smaller sample sizes, this study employs panel data spanning 12 years, allowing for a more comprehensive analysis of variation and information. Thirdly, it expands upon prior research by examining how gender diversity, measured through three performance proxies, moderates the family firm-control and firm performance relationship, addressing the Martínez-García et al. (2021)'s call for research in emerging economies. Finally, it advocates for the appointment of female directors on corporate boards, aligning with the reforms introduced in 2017 by the Corporate Governance Code (CCG 2017). This study highlights the economic benefits of having female directors on corporate boards in the context of family-owned firms.

In summary, this research finds that the presence of family owners is linked to improved firm performance, and the inclusion of female directors on the board enhances this association. In line with hypothesis H1, grounded in agency theory and stewardship theory, the study argues that the presence of family owners reduces principal-agent conflict and encourages steward behavior, ultimately leading to enhanced firm performance due to robust monitoring, firm commitment, and reduced information asymmetry. Empirical findings support this argument, aligning with previous research in this context. Similarly, hypothesis H2 posits that the presence of female directors on the board positively moderates the relationship and improves firm performance through effective monitoring and supervision. Again, empirical evidence supports this hypothesis, consistent with prior studies emphasizing the positive impact of gender diversity in family-owned firms.

This research offers several theoretical contributions. Firstly, it adds to the growing family business literature by highlighting the positive role of family ownership in emerging markets, where weak regulatory frameworks and dominant family businesses are common. The study demonstrates the absence of agency conflicts and highlights the superior performance of family-owned and controlled firms in this context. Secondly, it contributes to the gender diversity literature by emphasizing the positive impact of female directors in family-owned firms. These results align with previous studies highlighting the economic advantages of female directors and their positive influence on

firm outcomes. Finally, the research enriches existing literature by providing empirical support for both agency theory and stewardship theory in an emerging market context.

This study holds important implications for investors and policymakers. Firstly, in Pakistan, an emerging economy reliant on local and foreign investments, maintaining shareholders' confidence is crucial for economic stability. The research assures investors by highlighting the positive influence of family owners on firm performance and the absence of principal-principal conflicts in sample firms. It suggests that in an emerging economy characterized by weak regulations and institutional gaps, family owners serve as an effective governance mechanism for shareholders. Additionally, family owners can address information asymmetry and transparency issues prevalent in such contexts. Secondly, the study supports the global trend of advocating for gender-diverse boards, especially in the context of emerging markets. The empirical evidence underscores the benefits of gender diversity in improving decision-making, monitoring, and overall firm performance, signaling enhanced protection of shareholders' rights and wealth. Policymakers are urged to promote gender diversity on corporate boards and provide a supportive environment for female career development through fair corporate practices and professional training programs.

However, this study has its limitations, suggesting potential directions for future research. Firstly, it does not consider the post-pandemic period, which may have influenced the behavior of family firms. Future research could explore how family firms have adapted during and after the COVID-19 pandemic. Secondly, the study focuses solely on family ownership; examining other ownership patterns like lone founder, state ownership, institutional ownership, and foreign ownership could be a promising avenue for future research. Lastly, while the research examines gender diversity, future studies could explore the moderating impact of other board diversity aspects, such as age, qualifications, tenure, and ethnicity.

Declarations

References

Adams, R. B., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics, 94*(2), 291–309.

Ain, Q. U., Yuan, X., Javaid, H. M., Usman, M., & Haris, M. (2020). Female directors and agency costs: evidence from Chinese listed firms. *International Journal of Emerging Markets, 16*(8), 1604–1633.

Ain, Q. U., Yuan, X., Javaid, H. M., Zhao, J., & Xiang, L. (2021). Board gender diversity and dividend policy in Chinese listed firms. *SAGE Open, 11*(1), 1–19.

Altaf, N., & Shah, F. A. (2018). Ownership concentration and firm performance in Indian firms: does investor protection quality matter? *Journal of Indian Business Research, 10*(1), 33–52.

Amin, A., Ali, R., & Rehman, R. U. (2023). Departure of giants: Ownership transition in lone-founder owned firms. *Management Decision, 61*(11), 3361–3384.

Amin, A., Ali, R., Rehman, R. U., Naseem, M. A., & Ahmad, M. I. (2022). Female presence in corporate governance, firm performance, and the moderating role of family ownership. *Economic Research-Ekonomska Istraživanja, 35*(1), 929–948.

Amin, A., Rehman, R. U., Ali, R., & Ntim, C. G. (2021). Does gender diversity on the board reduce agency cost? Evidence from Pakistan. *Gender in Management: An International Journal., 37*(2), 164–181.

Ararat, M., Aksu, M., & Tansel Cetin, A. (2015). How board diversity affects firm performance in emerging markets: Evidence on channels in controlled firms. *Corporate Governance: An International Review, 23*(2), 83–103.

Armitage, S., Hou, W., Sarkar, S., & Talaulicar, T. (2017). Corporate governance challenges in emerging economies. *Corporate Governance: An International Review, 25*(3), 148–154.

Baixauli-Soler, J. S., Lucas-Perez, M. E., Martin-Ugedo, J. F., Minguez-Vera, A., & Sanchez-Marin, G. (2016). Executive directors' compensation and monitoring: The influence of gender diversity on Spanish boards. *Journal of Business Economics and Management, 17*(6), 1133–1154.

Bass, A. E. (2019). Top management team diversity, equality, and innovation: A multilevel investigation of the health care industry. *Journal of Leadership & Organizational Studies, 26*(3), 339–351.

Berrone, P., Cruz, C., & Gomez-Mejia, L. R. (2012). Socioemotional wealth in family firms: Theoretical dimensions, assessment approaches, and agenda for future research. *Family Business Review, 25*(3), 258–279.

Blau, P. M. (1977). A macrosociological theory of social structure. *American Journal of Sociology, 83*(1), 26–54.

Brahma, S., Nwafor, C., & Boateng, A. (2021). Board gender diversity and firm performance: The UK evidence. *International Journal of Finance & Economics, 26*(4), 5704–5719.

Caramanis, C., & Spathis, C. (2006). Auditee and audit firm characteristics as determinants of audit qualifications: Evidence from the Athens stock exchange. *Managerial Auditing Journal, 21*(9), 905–920.

Carter, D. A., Simkins, B. J., & Simpson, W. G. (2003). Corporate governance, board diversity, and firm value. *Financial Review, 38*(1), 33–53.

Ciftci, I., Tatoglu, E., Wood, G., Demirbag, M., & Zaim, S. (2019). Corporate governance and firm performance in emerging markets: Evidence from Turkey. *International Business Review, 28*(1), 90–103.

Donaldson, L. (1990). The ethereal hand: Organizational economics and management theory. *Academy of Management Review, 15*(3), 369–381.

Fan, Y., Jiang, Y., Zhang, X., & Zhou, Y. (2019). Women on boards and bank earnings management: From zero to hero. *Journal of Banking & Finance, 107*, 105607.

Federo, R., Ponomareva, Y., Aguilera, R. V., Saz-Carranza, A., & Losada, C. (2020). Bringing owners back on board: A review of the role of ownership type in board governance. *Corporate Governance: An International Review, 28*(6), 348–371.

Galve-Górriz, C., & Hernández-Trasobares, A. (2015). Institutional framework, concentration of ownership and results of large family corporations in Latin America and Spain. *Corporate Governance, 15*(4), 409–426.

Ghalke, A., Haldar, A., & Kumar, S. (2022). Family firm ownership and its impact on performance: evidence from an emerging market. *Review of Managerial Science, 17*(2), 493–512.

Gomez-Mejia, L. R., Larraza-Kintana, M., & Makri, M. (2003). The determinants of executive compensation in family-controlled public corporations. *Academy of Management Journal, 46*(2), 226–237.

Gujarati, D. N. (2016). *Basic econometrics (UK ed.).* Boston, USA: McGraw-Hill Europe.

Hassan, R., & Marimuthu, M. (2016). Corporate governance, board diversity, and firm value: Examining large companies using panel data approach. *Economics Bulletin, 36*(3), 1737–1750.

Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica: Journal of the Econometric Society, 46*(6), 1251–1271.

Hu, Y., & Izumida, S. (2008). Ownership concentration and corporate performance: A causal analysis with Japanese panel data. *Corporate Governance: An International Review, 16*(4), 342–358.

Huang, G., An, Z., & Li, D. (2023). Foreign institutional ownership and corporate risk-taking: International evidence. *Corporate Governance: An International Review, 31*(2), 260–284.

Hutchinson, M., & Gul, F. A. (2004). Investment opportunity set, corporate governance practices and firm performance. *Journal of Corporate Finance, 10*(4), 595–614.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305–360.

Jurkus, A. F., Park, J. C., & Woodard, L. S. (2011). Women in top management and agency costs. *Journal of Business Research, 64*(2), 180–186.

Kouki, M., & Guizani, M. (2015). Outside directors and firm performance: The moderating effects of ownership and board leadership structure. *International Business Research, 8*(6), 104.

Li, H., & Ryan, H. E., Jr. (2022). Founding family ownership and firm performance: Evidence from the evolution of family ownership and firm policies. *Journal of Business Finance & Accounting, 49*, 1391–1424.

Li, K., Lu, L., Mittoo, U. R., & Zhang, Z. (2015). Board independence, ownership concentration and corporate performance—Chinese evidence. *International Review of Financial Analysis, 41*, 162–175.

Li, X., & Li, Y. (2020). Female independent directors and financial irregularities in chinese listed firms: From the perspective of audit committee chairpersons. *Finance Research Letters, 32*, 101320.

Martínez-García, I., Basco, R., & Gómez-Ansón, S. (2021). Dancing with giants: Contextualizing state and family ownership effects on firm performance in the Gulf Cooperation Council. *Journal of Family Business Strategy, 12*(4), 100373.

Martínez-García, I., Sacristán-Navarro, M., & Gómez-Ansón, S. (2023). Soft gender diversity regulations for boards of directors: The moderating role of firm ownership and control structure. *Spanish Journal of Finance and Accounting/Revista Española de Financiación y Contabilidad, 52*(1), 93–124.

Maury, B. (2006). Family ownership and firm performance: Empirical evidence from Western European corporations. *Journal of Corporate Finance, 12*(2), 321–341.

Miller, D., Amore, M. D., Quarato, F., & Corbetta, G. (2022). Family ownership dispersion and dividend payout in family firms. *Journal of Family Business Strategy, 13*(3), 100436.

Mirza, H. H., Andleeb, S., & Ramzan, F. (2012). Gender diversity and firm performance: Evidence from Pakistan. *Journal of Social and Development Sciences, 3*(5), 161–166.

Murtinu, S. (2015). Debt maturity, ownership concentration, and firm efficiency. *Economics Bulletin, 35*(4), 2610–2616.

Mustafa, A., Saeed, A., Awais, M., & Aziz, S. (2020). Board-gender diversity, family ownership, and dividend announcement: Evidence from Asian emerging economies. *Journal of Risk and Financial Management, 13*(4), 62.

Nadeem, M. (2020). Does board gender diversity influence voluntary disclosure of intellectual capital in initial public offering prospectuses? Evidence from China. *Corporate Governance: An International Review, 28*(2), 100–118.

Nadeem, M., Gyapong, E., & Ahmed, A. (2020). Board gender diversity and environmental, social, and economic value creation: Does family ownership matter? *Business Strategy and the Environment, 29*(3), 1268–1284.

Nashier, T., & Gupta, A. (2020). Ownership concentration and firm performance in India. *Global Business Review, 24*(2), 353–370.

Nekhili, M., & Gatfaoui, H. (2013). Are demographic attributes and firm characteristics drivers of gender diversity? Investigating women's positions on French boards of directors. *Journal of Business Ethics, 118*, 227.

Nekhili, M., Gull, A. A., Chtioui, T., & Radhouane, I. (2020). Gender-diverse boards and audit fees: What difference does gender quota legislation make? *Journal of Business Finance & Accounting, 47*(1–2), 52–99.

Nguyen, T., Locke, S., & Reddy, K. (2015). Ownership concentration and corporate performance from a dynamic perspective: Does national governance quality matter? *International Review of Financial Analysis, 41*, 148–161.

Poletti-Hughes, J., & Martinez Garcia, B. (2022). Leverage in family firms: The moderating role of female directors and board quality. *International Journal of Finance & Economics, 27*(1), 207–223.

Purkayastha, S., Veliyath, R., & George, R. (2019). The roles of family ownership and family management in the governance of agency conflicts. *Journal of Business Research, 98*, 50–64.

Ruigrok, W., Peck, S., & Tacheva, S. (2007). Nationality and gender diversity on Swiss corporate boards. *Corporate Governance: An International Review, 15*(4), 546–557.

Sacristán-Navarro, M., Cabeza-García, L., & Gómez-Ansón, S. (2015). The company you keep: The effect of other large shareholders in family firms. *Corporate Governance: An International Review, 23*(3), 216–233.

Saeed, A., Mukarram, S. S., & Belghitar, Y. (2021). Read between the lines: Board gender diversity, family ownership, and risk-taking in Indian high-tech firms. *International Journal of Finance & Economics, 26*(1), 185–207.

Sarkar, J., & Selarka, E. (2021). Women on board and performance of family firms: Evidence from India. *Emerging Markets Review, 46*, 100770.

Shannon, C. E. (1948). A mathematical theory of communication. *The Bell System Technical Journal, 27*(3), 379–423.

Sheikh, M. F., Shah, S. Z. A., & Akbar, S. (2018). Firm performance, corporate governance and executive compensation in Pakistan. *Applied Economics, 50*(18), 2012–2027.

Sheridan, A., & Milgate, G. (2005). Accessing board positions: A comparison of female and male board members' views. *Corporate Governance: An International Review, 13*(6), 847–855.

Solarino, A. M., & Boyd, B. K. (2020). Are all forms of ownership prone to tunneling? A meta-analysis. *Corporate Governance: An International Review, 28*(6), 488–501.

Stiles, P., & Taylor, B. (1993). Maxwell—the failure of corporate governance. *Corporate Governance: An International Review, 1*(1), 34–45.

Terjesen, S., Sealy, R., & Singh, V. (2009). Women directors on corporate boards: A review and research agenda. *Corporate Governance: An International Review, 17*(3), 320–337.

Villalonga, B., & Amit, R. (2006). How do family ownership, control and management affect firm value? *Journal of Financial Economics, 80*(2), 385–417.

Wu, N. (2020). Small is beautiful or big is better: How much do industry and family ownership matter in firms of different sizes? *European Management Review, 17*(4), 977–991.

Yarram, S. R., & Adapa, S. (2021). Board gender diversity and corporate social responsibility: Is there a case for critical mass? *Journal of Cleaner Production, 278*, 123319.

Yasser, Q. R., & Mamun, A. A. (2017). The impact of ownership concentration on firm performance: Evidence from an emerging market. *Emerging Economy Studies, 3*(1), 34–53.

Yoshikawa, T., & Rasheed, A. A. (2010). Family control and ownership monitoring in family-controlled firms in Japan. *Journal of Management Studies, 47*(2), 274–295.

Zaid, M. A., Wang, M., Abuhijleh, S. T., Issa, A., Saleh, M. W., & Ali, F. (2020). Corporate governance practices and capital structure decisions: The moderating effect of gender diversity. *Corporate Governance: The International Journal of Business in Society, 20*(5), 939–964.

Zellweger, T. M., Nason, R. S., Nordqvist, M., & Brush, C. G. (2013). Why do family firms strive for nonfinancial goals? An organizational identity perspective. *Entrepreneurship Theory and Practice, 37*(2), 229–248.

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