

### **BOARD CHARACTERISTICS AND FIRM VALUE: MODERATING ROLE OF HUMAN RESOURCE AND REMUNERATION COMMITTEE**

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#### **Abstract**

The purpose of this study is to investigate the effect of board characteristics (board size, board meetings, board independence, female directors, and CEO duality) on firm value. Another aim of this study is to examine the moderating effect of human resource and remuneration committee (HR&RC) on the associations between board characteristics and firm value. The theoretical frameworks of agency, resource dependence, and stakeholder theories are employed in this study. The sample comprises 329 nonfinancial companies listed on the Pakistan Stock Exchange (PSX) with 3136 firm-year observations from 2016 to 2025. The study employs a rigorous methodological framework and diverse estimation techniques. The results support the hypotheses that overall board characteristics positively influence firm value, and that the human resource and remuneration committee's moderating role enhances this positive effect. To the best of the authors' knowledge, the influence of board size, meeting frequency, board independence, gender diversity, and CEO duality on firm value in Pakistani firms has not been yet examined alongside the moderating effect of HR&RC. This study further contributes to board characteristics and HR&RC literature. This research highlights the significance of good governance structures, which may enhance overall performance and sustainability, potentially resulting in wider economic and social benefits for the country.

**Keywords:** Human resource and remuneration committee (HR&RC), Corporate governance, Board characteristics, Financial performance, Pakistan

### **Introduction**

Corporate Governance is a system that monitors and controls a company's operations. Additionally, it also improves resource allocation, lowers tax burden, regulates the firm's operations, and diminishes the impact of agency difficulties (Ahmad, Khan, & Zahid, 2020). The board of directors is essential to overseeing and managing the executives' actions for the business's operations. Corporate governance reduces surplus capital available for management expenditures, hence mitigating agency concerns (Sajid, Zahid, Saad, & Fayaz, 2021). Corporate governance or board of directors have an impact on several business decision-making processes that increase the value of the company. Performance, investment efficiency, and disclosure quality are just a few of the corporate outcomes and business decisions that have been studied in relation to board characteristics (Abobakr & Elgiziry, 2016).

The Human Resource and Remuneration Committee (HR&RC) is a board subcommittee that makes recommendations about the resources and compensation given to directors and senior management. The HR&RC has a major impact on the quality of governance by affecting director appointments, board composition, and performance-based compensation. It carries out the regulatory duty of deciding on the structure and pay of boards, which may have an impact on their characteristics and loyalty for the firm (Putra & Setiawan, 2024). Additionally, it tackles agency issues by creating executive remuneration packages and properly arranging the board to improve oversight. The effect of board characteristics on firm value may be regulated by the HR&RC. In literature, that there is currently a limited research on how board characteristics and the human resources and remuneration committee effect on a firm value particularly in developing economies.

Hence, this study has two objectives. The first objective is to analyze the relationship between board characteristics (board size, independence, frequency of meetings, CEO duality, and gender diversity) and firm value in Pakistan. The second objective is to examine the moderating effect of HR&RC existence on the relationship between firm value and five important board characteristics in the context of Pakistan. The Pakistani market has been selected because Pakistan's boards are still too undiversified and controlled by insiders or family members rather than independent experts (Muhammad, 2022). Political instability and inadequate leadership have led to Pakistan's

institutional underdevelopment and weakness (Khan, Kamal, Hussain, & Abbas, 2022). Consequently, Pakistan is distinguished from developed and emerging nations by its formal (legal and regulatory) and informal (cultural) frameworks, thereby justifying its selection for this study.

The sample of study are nonfinancial companies listed on the Pakistan Stock Exchange from 2016 to 2025 which are 541 firms in total. we first exclude 133 firms due to a lack of stock price information, 79 firms are eliminated due to insufficient board-level information. Following the implementation of these filters, 329 nonfinancial companies and 3,136 firm-year observations are the final sample. Annual reports, financial statements, corporate governance documents, and other public records are the sources of secondary data. To examine the association between variables, STATA is used to perform various regression analysis. Regression results support the hypothesis (1a-5a) and show that companies with board characteristics perform much better and increase firm value. The findings further support hypothesis (1b-5b), indicating that organizations with human resource and remuneration committees enhance the effect of board characteristics on firm value.

This research shows several notable contributions in literature. First, it offers new empirical proof of influence of HR&RC as moderating variable on the relationship between firm value and board characteristics. Secondly, it enhances governance literature by analyzing the relationship within the context of Pakistan. In order to increase transparency and provide favorable results in value creation, the study's conclusions are considered to have a significant impact on practice and policy concerning board reorganization and diversity enhancement. The findings may guide the decisions made by board members in the execution of HR&RC and in the formulation of governance rules.

### **Theoretical Framework**

Agency theory (Jensen, 1976) serves as the fundamental framework for analyzing how HR&RC might mitigate agency issues and improve monitoring efficiency across diverse board configurations by optimizing composition and aligning incentives. By shaping board composition and remuneration practices, HR&RC might possibly mitigate conflicts of interest between managers and shareholders, hence reducing agency costs and enhancing firm value through improved corporate governance (Sajid et al., 2021). Resource dependence theory (Pfeffer & Salancik, 1978) highlights the significance of HR&RC in addressing resource deficiencies and enhancing the delivery of

essential advice via appropriate director appointments. By appointing directors with varied skill sets, experiences, and network connections, HR&RC can augment boards' capacity to offer strategic guidance and access essential resources vital for organizational success (Davis & Cobb, 2010). Additionally, stakeholder theory (Freeman, 1984). emphasizes how HR&RC design can promote stronger governance that reflects stakeholder representation across various board configurations by taking into account the interests of stakeholder groups. Enhanced decision-making can be achieved by guaranteeing proportional stakeholder participation in HR&RC composition and aligning incentives with the risks and contributions of each group (Hamadamin & Atan, 2019).

### **Literature Review**

From an agency theory perspective, large board size facilitate effective oversight by diminishing CEO dominance within the board and safeguarding shareholder interests (Zona, Zattoni, & Minichilli, 2013). A larger board enhanced its negotiating leverage over the CEO, hence increasing its efficacy in overseeing management. More extensive boards facilitate improved representation of varied stakeholders, potentially increasing decision-making quality (Ahrens, Veltrop, Mulder, & Rink, 2025). Moreover, a large board size will facilitate the establishment of committees to assign specialized duties. Bahar and Herliansyah (2023) suggests, according to resource dependence theory, boards are selected in a way that allows the organization to make the most of its valuable resources. The more reliant a company is on external factors for its resource demands, the more advisory support the CEO would require. In this way, a larger board size strengthens the organization's relationships to its external environment and helps to obtain vital resources. When faced with regulatory demands and resource dependencies, organizations often form large boards that include directors from diverse backgrounds. In short, smaller boards enable CEO dominance and agency costs, whereas larger boards help firms by effectively overseeing management, providing resources, and representing different stakeholders (Kalsie & Shrivastav, 2016).

### ***H1a: There is a positive relationship between board size and firm value***

In order for a board to be effective, its members need to meet frequently to address the many challenges that a company faces. The level of supervision will increase, leading to better business performance, if boards are diligent

and hold meetings more frequently. It also involves being well-prepared, paying close attention during meetings, actively participating, and following up thereafter and so on (Lara, Osma, Mora, & Scapin, 2017). Oon, Hossain, and Yahaya (2025) find that boards that schedule regular meetings are more inclined to fulfil their duties successfully to protect shareholder interests. The number of board meetings is one sign of how careful the board is in keeping an eye on the business. Greater participation in strategic topics and faster solutions to company problems are both made possible by increasing the meeting frequency. Management oversight to reduce agency expenditure and appropriation is the board's primary duty from the agency's point of view. Regular board meetings and more diligence can increase a board's effectiveness. Qadorah and Fadzil (2018) suggest a well-functioning board relies on productive meetings. It would be easier to improve governance by increasing the frequency of board meetings as a monitoring mechanism for the agency than by changing the other characteristics of the board.

### ***H2a: Board meetings are positively associated with firm value***

A large body of literature in corporate governance has examined the link between an independent board and financial outcomes for businesses, and the findings have been mostly favorable (Al-Saidi, 2021). Independent directors improve oversight and decrease managerial opportunism. To ensure the monitoring and the safeguarding of shareholder interests, board independence is an important characteristic. More independence can improve performance while decreasing agency costs through reducing conflicts of interest and increasing objective oversight (Fuzi, Halim, & Julizaerma, 2016). On the other hand, it could slow down the flow of information and company-specific expertise, which would lower the quality of decisions in the long run. Board independence enhances firm value by improving oversight, mitigating agency issues and strengthening strategic decision-making. Shan (2019) find that board independence and corporate performance are positively and statistically significantly related. A more independent board can better protect minority shareholders' interests and improve monitoring effectiveness, according to agency theory.

### ***H3a: There is a positive relationship between board independence and firm value***

Scholars and business professionals are increasingly researching the benefits of having more women on company boards (Halliday, Paustian-Underdahl, & Fainshmidt, 2021). Post and Byron (2015) demonstrate a positive relationship

between gender diversity in boards on firm returns and strategic development. Siegel, Pyun, and Cheon (2014) find positive relationship between a 10% increase in female representation on corporate boards and a 1% enhancement in return on assets (ROA) within Korean multinational corporations. Kim and Hong (2015) identify having more women on a bank's board is associated with better financial performance. Mohsni and Shata (2021) show that the presence of competent women increases profits and improves debtor quality. Thams, Bendell, and Terjesen (2018) find that financial performance is better for boards of directors with increased female participation. Mirza, Majeed, and Ahsan (2020) find that female directors are better at making investment decisions because they have greater power to supervise, discipline management, use resources more effectively, reduce agency risks, and have symmetric information. Cambrea, Tenuta, and Vastola (2019) find that gender diversity on corporate boards improves their ability to monitor environmental, social, and ethical issues.

***H4a: There is a positive relationship between gender diversity and firm value***

Corporate scandals, such as bribery and fraud, are less likely to harm firms with a CEO duality. It appears that these companies are more likely to survive. By using the upper echelons theory to data from the Australian Securities Exchange, Luanglath, Ali, and Mohannak (2019) find that a diversified top management team is associated with higher efficiency and production. Kubo and Nguyen (2021) find that CEO duality contribute to increased profitability and that a relationship between the proportion of chairmen of boards who also serve as chief executive officers and in Tobin's Q is positive. Kim and Oh (2017) find that financial decisions are better made by chief executive officers in CEO duality. Faccio, Marchica, and Mura (2016) find that companies with CEO duality tend to take fewer risks.

***H5a: CEO duality has positive effect on firm value***

Literature shows that the presence of an HR&RC found to positively and significantly correlate with measures of profitability, efficiency, growth, and business value (Harymawan, Agustia, Nasih, Inayati, & Nowland, 2020). HR&RC can enhance decision-making quality and oversight effectiveness at various board levels by optimizing compensation and director appointments (Shortland & Perkins, 2023). Putra and Setiawan (2024) show that there is a positive relationship between board size and firm performance. This paper argues that HR&RC may increase the advantages of larger boards while

alleviating their possible disadvantages, drawing on agency and resource dependence theories. HR&RC can guarantee that larger boards consist of diverse, qualified individuals and that their decision-making procedures are efficient.

***H1b: The existence of HR&RC positively moderates the relationship between board size and firm value***

HR&RC developed financial incentives that link director compensation to attendance and performance, which can enhance focused engagement across varying board meeting frequencies. Evidence indicates that HR&RC effectiveness may positively moderate the association between board meeting and the quality of decisions related to firm worth (Sunny & Hoque, 2025). This study contends that HR&RC can improve the efficiency of board meetings by ensuring they are well-organized, concentrated on strategic matters, and attended by actively engaged directors. This can preserve the advantages of regular gatherings while mitigating their possible disadvantages (Aldegis, Ganesan, & Alorayni, 2023).

***H2b: The existence of HR&RC positively moderates the relationship between board meeting frequency and firm value***

In order to improve monitoring efficiency across different levels of board independence, HR&RC can play a significant moderating role by connecting suitable incentives and competences with director remunerations (Al-Saidi, 2021). Fuzi et al. (2016) demonstrate that the compensation of board directors positively moderates a relationship between independence and performance. However, Benkraiem, Hamrouni, Lakhal, and Toumi (2017) suggest that board committees can amplify the beneficial impacts of board independence by guaranteeing that independent directors are not only free from affiliations with the firm but also possess the requisite skills and expertise to effectively oversee and counsel management.

***H3b: The existence of HR&RC positively moderates the relationship between board independence and firm value***

The human resource and remuneration committee developed initiatives to promote suitable female candidates and incentives that connect director contributions with shareholder wealth, which can positively influence the relationship between gender diversity and business performance. Enhanced oversight of accountability and shareholder focus by female directors has also been documented (Nadem, Suleman, & Ahmed, 2019). This study asserts that HR&RC can amplify the beneficial impacts of gender diversity by

ensuring that female directors are recruited based on merit and qualifications, and are actively participate in board decisions. This can minimize any potential negative effects while maximizing the potential advantages of gender diversity.

***H4b: The existence of HR&RC positively moderates the relationship between the number of female directors and firm value***

In addition to reducing agency challenges, Jurkus, Park, and Woodard (2011) find that CEOs enhance business performance and have a negative link with agency conflict. Therefore, by lowering agency costs and managerial opportunism, CEO duality helps make the best investment judgments. Consequently, CEO duality excels in determining investment allocations. This study further asserts that HR&RC can amplify the beneficial impacts of CEO duality by guaranteeing their complete integration into the decisions by board. This can facilitate the realization of the potential advantages of both the CEO and COB while alleviating possible disadvantages.

***H5b: The existence of HR&RC positively moderates the relationship between the CEO duality and firm value***

### **Research Methodology**

Our sample selection procedure commences with 541 nonfinancial firms listed on the Pakistan Stock Exchange (PSX). We first exclude 133 organizations due to the lack of stock price data. Subsequently, 79 firms are excluded due to inadequate board-level data. The final sample for our analysis comprises 3,136 firm-year observations from 329 non-financial firms. Secondary data is obtained from annual reports, financial statements, corporate governance documents, and other public information. Various regression analyses are conducted using STATA to investigate relationships between variables. Pooled ordinary least squares (OLS) regression is predicated on the assumption of robust standard errors incorporating industry and year fixed effects (Hao, Chen, & Chen, 2022). Fixed effect regression is an effective method for enhancing detection and eliminating time-invariant omitted variable bias, the principal source of endogeneity in panel data (Dehaan, 2021). Simultaneity and dynamic endogeneity are two other biases that the Generalized Method of Moments (GMM) seeks to address (Naz, Bhutta, Sheikh, & Sultan, 2023). The relationship between the dependent variable, firm value measured as Tobin's Q (TQ) and return on assets (ROA) and the independent board characteristic

variables (board size, board meetings, board independence, gender diversity, and CEO duality) is examined using direct effects models (Model 1a and 1b).

$$TQ_{it} = \beta_0 + \beta_1 \text{Board\_Size}_{it} + \beta_2 \text{Board\_Meet}_{it} + \beta_3 \text{Board\_Indep}_{it} + \beta_4 \text{Female\_Dir}_{it} + \beta_5 \text{CEO\_Duality}_{it} + \beta_6 \text{Firm Size}_{it} + \beta_7 \text{Firm Age}_{it} + \beta_8 \text{Firm Leverage}_{it} + \varepsilon_{it} \quad (1a)$$

$$ROA_{it} = \beta_0 + \beta_1 \text{Board\_Size}_{it} + \beta_2 \text{Board\_Meet}_{it} + \beta_3 \text{Board\_Indep}_{it} + \beta_4 \text{Female\_Dir}_{it} + \beta_5 \text{CEO\_Duality}_{it} + \beta_6 \text{Firm Size}_{it} + \beta_7 \text{Firm Age}_{it} + \beta_8 \text{Firm Leverage}_{it} + \varepsilon_{it} \quad (1b)$$

Subsequently, the interaction effect is analyzed between the moderating variable HR&RC existence and each board characteristic to ascertain moderation influences on firm value (Model 2a and 2b).

$$TQ_{it} = \beta_0 + \beta_1 \text{Board\_Size}_{it} + \beta_2 \text{Board\_Meet}_{it} + \beta_3 \text{Board\_Indep}_{it} + \beta_4 \text{Female\_Dir}_{it} + \beta_5 \text{CEO\_Duality}_{it} + \beta_6 \text{HR\&RC (DUM)}_{it} + \beta_7 (\text{HR\&RC (DUM)} * \text{Board\_Size})_{it} + \beta_8 (\text{HR\&RC (DUM)} * \text{Board\_Meet})_{it} + \beta_9 (\text{HR\&RC (DUM)} * \text{Board\_Indep})_{it} + \beta_{10} (\text{HR\&RC (DUM)} * \text{Female\_Dir})_{it} + \beta_{11} (\text{HR\&RC (DUM)} * \text{CEO\_Duality})_{it} + \beta_{12} \text{Firm Size}_{it} + \beta_{13} \text{Firm Age}_{it} + \beta_{14} \text{Firm Leverage}_{it} + \varepsilon_{it} \quad (2a)$$

$$ROA_{it} = \beta_0 + \beta_0 + \beta_1 \text{Board\_Size}_{it} + \beta_2 \text{Board\_Meet}_{it} + \beta_3 \text{Board\_Indep}_{it} + \beta_4 \text{Female\_Dir}_{it} + \beta_5 \text{CEO\_Duality}_{it} + \beta_6 \text{HR\&RC (DUM)}_{it} + \beta_7 (\text{HR\&RC (DUM)} * \text{Board\_Size})_{it} + \beta_8 (\text{HR\&RC (DUM)} * \text{Board\_Meet})_{it} + \beta_9 (\text{HR\&RC (DUM)} * \text{Board\_Indep})_{it} + \beta_{10} (\text{HR\&RC (DUM)} * \text{Female\_Dir})_{it} + \beta_{11} (\text{HR\&RC (DUM)} * \text{CEO\_Duality})_{it} + \beta_{12} \text{Firm Size}_{it} + \beta_{13} \text{Firm Age}_{it} + \beta_{14} \text{Firm Leverage}_{it} + \varepsilon_{it} \quad (2b)$$

This study employs Tobin's Q (TQ) and return on assets (ROA) as measure of firm value. Bhutta, Naz, Sheikh, and Latif (2025) state that market-based measures Tobin's Q (TQ) is measured by multiplying share price by outstanding shares and adding total debt, which is then divided by total assets. Conversely, the accounting-based measure, return on assets (ROA), is determined by dividing net income after taxes by total assets. The independent variables comprise board size, frequency of board meetings, board independence, presence of female directors, and CEO duality. Board size ( $\text{Board\_Size}_{it}$ ), denotes the total number of directors on the board (Naz et al., 2023). ( $\text{Board\_Meet}_{it}$ ) denotes the number of board meetings held each year (Oon et al., 2025). Board independence is quantified as the proportion of

independent directors on the board (Fuzi et al., 2016).  $Female\_Dir_{it}$  is defined as the proportion of female directors on the board (Awan, Quddus, Naz, & Masood, 2025). The Human Resource and Remuneration Committee is quantified as a dummy variable, assigned a value of 1 if the company has an HR&RC, and 0 if it does not (Putra & Setiawan, 2024). The control variables are firm size, firm age, and firm leverage.  $Firm\ Size_{it}$  is defined as natural logarithm of total assets (Shahid & Abbas, 2019).  $Firm\ Age_{it}$  is defined as the duration in years from the date of establishment to the current year (Hartman & Barber, 2020).  $Firm\ Leverage_{it}$  is the ratio of a company's total debt to its total assets (Nadeem et al., 2019).

### Empirical Findings

#### Descriptive Statistics

All dependent, independent, moderating, and control variables are presented in Table 1 together with their descriptive statistics, including means, medians, and standard deviations. From 3,136 observations, the mean (median) values of TQ is 1.453 (0.972), the mean (median) values of ROA is 0.069 (0.053), and the mean (median) values for board size, board meetings, board independence, female directors, and CEO duality are 5.058 (3.920), 8.429 (7.650), 0.278 (0.201), 0.495 (0.354), and 0.4612 (0.4109), respectively. The moderating variable, human resource and remuneration committee, has a mean value of 0.4258, a median of 0.4872, and a standard deviation of 0.4946. The median of firm size is 0.0665 and the standard deviation is 0.3091 and the mean firm size is 0.2054. The median age of the firm is 15.7234 years, with a standard deviation of 1.532, and the average age is 15.8129. The mean (median) firm leverage is 0.1054 (0.0665), with a standard deviation of 0.1036 over 3,136 observations.

**Table I:** *Descriptive Analysis*

<i>Variables</i>	<i>N</i>	<i>Mean</i>	<i>Median</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
TQ	3136	1.453	0.972	1.5310	0.301	7.591
ROA	3136	0.069	0.053	0.1290	-0.286	0.309
Board_Size	3136	5.058	3.920	0.0690	2.000	13.972
Board_Meet	3136	8.429	7.650	0.4960	4.000	17.000
Board_Indep	3136	0.278	0.201	0.1327	0.209	0.4285
Female_Dir	3136	0.495	0.354	0.1209	0.002	0.75
CEO_Duality	1034	0.4612	0.4109	0.4362	0.000	1

HR&RC (DUM)	3136	0.4258	0.4872	0.4946	0.000	1
Firm Size	3136	0.1054	0.0665	0.3091	0.045	1.6126
Firm Age	3136	15.8323	15.7234	1.5320	11.8272	19.6513
Firm Leverage	3136	0.1054	0.0665	0.1036	0.0732	0.6126

### Correlation Matrix

Table 2 presents a correlation matrix comprising all variables. A significant positive correlation coefficient of 0.24 exists between TQ and ROA. The characteristics of the board, including board size, board meetings, board independence, female directors, and CEO duality, exhibit a positive and significant correlation with both market and accounting-based firm value. A positive association exists between firm size and firm value indicating that larger firms typically exhibit superior performance. Generally, long-standing companies outperform newer ones, evidenced by the positive association between firm age and firm value. A significant negative correlation exists between firm leverage and firm value, indicating that firms with high leverage exhibit reduced liquidity and inferior overall performance. The correlation matrix indicates the absence of significant relationships among the independent variables. The data exhibits no signs of multicollinearity, as indicated by the unreported variance inflation factor (VIF) table, which reveals an average VIF of 1.67 and all control variable VIF values below 2.

**Table 2: Correlation Matrix**

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) TQ	1.00										
(2) ROA	0.24*	1.00									
(3) Board_Size	0.92	0.05*	1.00								
(4) Board_Meet	0.25	0.26	-0.03	1.00							
(5) Board_Indep	0.79	0.15*	-0.03	0.80*	1.00						
(6) Female_Dir	0.98*	0.61*	-0.12*	0.02	0.04	1.00					
(7) CEO_Duality	0.47	0.20*	-0.11*	-0.05*	-0.16	0.02	1.00				
(8) HR&RC	0.56*	0.20*	0.56	0.32	0.10	0.29	0.87	1.00			

(DUM)												
(9) Firm Size	0.05*	0.23*	-0.03	-0.04	-	0.02	0.08*	0.34	1.00			
(10) Firm Age	0.39*	0.08*	0.05*	-0.01	-	-	0.12*	0.12	0.07*	1.00		
(11) Firm	-	-	-0.04	-0.02	-	-	0.14*	0.98	0.03	0.32*	1.00	
Leverage	0.26*	0.14*				0.04	0.30*					

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### Regression Results

#### Effects of Board Characteristics on Firm Value

Table 3 displays the regression results of models (1a and 1b) with dependent variables (TQ and ROA). Models 1 and 4 present the results of Ordinary Least Squares (OLS), models 2 and 5 show fixed effects regressions. In Models 3 and 6, we perform two-stage system GMM regressions with lag dependent variables (TQ and ROA).

In both the OLS and GMM models, the board size coefficient in Panel A is positive and significant with TQ; however, in the fixed effect model, it is positive but not significant. Panel B displays the similar relationship across three models that board size has significant and positive influence to ROA. In Panel A, all models show that board meetings have a positive and significant impact on TQ; however, in Panel B, board meetings have insignificant impact on ROA in the OLS model, while they have a positive and significant impact on ROA in the fixed effects and GMM models. However, board independence exerts a positive and significant impact on firm value across both panels (Panel A and Panel B) utilizing all three models (OLS, Fixed effects and GMM model). Female directors exert a positive and significant effect on firm value (TQ and ROA) throughout both panels (Panel A and Panel B), except for the GMM model in ROA (Panel B). CEO duality has a large and positive impact on firm value in both panels (except for TQ with the OLS model). The overall results indicate a favorable and significant relationship between board characteristics and firm value and these results support hypotheses (H1a to H5a). Results are supported by the agency and resource dependence theories (Sunny & Hoque, 2025).

The diagnostic results for GMM in Panel A's lagging TQ coefficient of 0.733 and Panel B's ROA coefficient of 0.698 are both positive and statistically significant; this shows that the models are dynamic and firm value is robust.

Since AR (1) has statistically significant results while AR (2) has non-significant ones in both panels, showing no second-order autocorrelation. The incomplete set of instruments and the over-identifying limitations are confirmed by the non-significant p-values (0.427 for ROA and 0.298 for TQ) according to the Hansen test.

**Table 3:** *Effect of Board Characteristics on Firm Value*

Variables	Panel A			Panel B		
	TQ	TQ	TQ	ROA	ROA	ROA
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged TQ			0.733*** (18.901)			
Lagged ROA						0.698*** (11.650)
Board_Size	0.389* (1.168)	0.830 (1.209)	0.658* (0.987)	0.150** 4.015)	0.150 (2.708)	0.450* (1.098)
Board_Meet	0.019** (0.291)	0.0151* (0.128)	0.348* (0.239)	0.003 (0.861)	0.193* (0.511)	0.670** (0.309)
Board_Indep	1.209* (2.894)	1.056* (2.055)	1.098* (1.983)	0.450** (1.506)	0.409*** (1.230)	0.870* (1.984)
Female_Dir	0.815** (4.192)	0.643* (1.872)	0.760* (1.340)	0.063** (6.261)	0.103* (3.416)	0.230 (1.650)
CEO_Duality	0.032 (0.014)	0.023** (0.005)	0.450* (0.129)	0.304** (3.641)	0.194* (1.843)	0.231* (1.098)
Firm Size	0.033* (0.602)	0.029* (0.458)	0.453* (0.349)	0.046** (3.704)	0.026*** (2.201)	0.018* (1.092)
Firm Age	3.590** (9.331)	2.201* (3.822)	0.451* (2.980)	0.373*** (18.752)	0.373*** (10.148)	0.239* (11.768)
Firm Leverage	0.618** (4.102)	0.709* (1.993)	0.612* (0.989)	0.053** (2.051)	0.0431** (1.432)	0.0891* (1.092)
Industry & Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Cluster by Firm	No	Yes	Yes	No	Yes	Yes
Constant	0.154 (0.623)	0.218 (0.316)	0.650 (0.198)	0.015 (0.736)	0.027 (0.420)	0.019 (0.406)

Observations	3136	3136	2247	3136	3136	2247
R-squared	0.293	0.213	0.245	0.497	0.401	0.561
AR (1) (z, p-val)			-3.871 (0.001)			-5.670 (0.000)
AR (2) (z, p-val)			-0.778 (0.436)			-0.549 (0.409)
Sargan Test (chi square, p-value)			198.3 (0.00)			39.76 (0.813)
Hansen Test (chi square, p-value)			75.1 (0.298)			49.39 (0.427)

Robust t-statistics in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### **Moderating Effect of the Human Resource and Remuneration Committee**

Table 4 shows the role of the human resource and remuneration committee as a moderating variable in the relationship between board characteristics and firm value, utilizing several regression analysis models, including OLS estimation, fixed-effect, and GMM estimation.

The results of board characteristics on firm value, across both measure, positively impact and support the hypothesis and baseline findings. The presence of a HR&RC is associated with a high market value and have positive effect on accounting-based performance, as shown by the HR&RC coefficients in the TQ model (Panel A) and the ROA model (Panel B) respectively. Moreover, both models show positive and significant coefficients between interaction term of HR&RC with board characteristics (board size, board meetings, board independence, female directors, and CEO duality) and firm value, which indicate that HR&RC enhances the positive impact of board characteristics on firm value. These results confirm the hypotheses (H1b to H5b) indicating that HR&RC positively moderates the effects of board size, board meetings, board independence, female directors, and CEO duality on firm value based on stakeholder and resource dependence theory (Al-Rubaiei, 2021).

**Table 4: Moderating Effect of HR&RC**

Variables	Panel A			Panel B		
	TQ	TQ	TQ	ROA	ROA	ROA

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	(1)	(2)	(3)	(4)	(5)	(6)
Lagged TQ			0.643*** (16.850)			
Lagged ROA						0.520*** (10.288)
Board_Size	0.109* (1.310)	0.830 (1.209)	0.658* (0.987)	0.150** (3.065)	0.090 (1.808)	0.750* (1.098)
Board_Meet	0.218** (0.181)	0.0623* (0.178)	0.287* (0.190)	0.004 (0.701)	0.266* (0.498)	0.670** (0.312)
Board_Indep	2.020* (2.2109)	1.066* (2.035)	2.045* (2.124)	0.450** (1.506)	0.309*** (1.430)	0.677* (1.604)
Female_Dir	0.420** (3.192)	0.303* (1.039)	0.660* (1.239)	0.063** (6.261)	0.189* (2.309)	0.281 (1.640)
CEO_Duality	0.022 (0.009)	0.024** (0.021)	0.308* (0.178)	0.304** (3.641)	0.560* (1.766)	0.391* (1.188)
HR&RC (DUM)	0.095** (1.254)	0.650** (1.309)	0.509** (1.981)	0.184** (1.032)	0.310* (1.029)	0.237** (1.709)
Board_Size * HR&RC (DUM)	0.155** (1.056)	0.331 (0.108)	0.492* (0.289)	0.607** (4.015)	0.174* (1.826)	0.608*** (0.207)
Board_Meet* HR&RC (DUM)	0.0340** (0.245)	0.034* (0.100)	0.356* (0.284)	0.003* (0.502)	0.209** (0.488)	0.409*** (0.398)
Board_Indep* HR&RC (DUM)	1.034** (1.323)	1.296* (3.109)	1.034** (1.666)	0.395*** (1.409)	0.355*** (1.109)	0.771** (1.723)
Female_Dir* HR&RC (DUM)	0.654** (2.122)	0.309* (1.481)	0.610** (1.244)	0.025*** (5.101)	0.123** (3.134)	0.890* (1.450)
CEO_Duality*	0.431**	0.273***	0.298*	0.209**	0.190*	0.221**

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HR&RC (DUM)						
	(0.023)	(0.004)	(0.478)	(2.091)	(1.509)	(0.438)
Firm Size	0.143*	0.027*	0.419**	0.078***	0.033***	0.018**
	(0.423)	(0.551)	(0.323)	(2.802)	(2.061)	(0.381)
Firm Age	1.569**	3.144*	0.371**	0.471***	0.398***	0.309*
	(3.56)	(3.482)	(3.910)	(16.722)	(9.159)	(8.340)
Firm Leverage	0.450**	0.276*	0.544*	0.051**	0.0987**	0.0562*
	(2.653)	(1.254)	(0.279)	(1.041)	(1.244)	(1.091)
Industry & Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Effects						
Cluster by No	Yes	Yes	Yes	No	Yes	Yes
Firm						
Constant	0.239	0.271	0.398	0.025	0.055	0.016
	(0.278)	(0.255)	(0.198)	(0.726)	(0.420)	(0.401)
Observations	3136	3136	2247	3136	3136	2247
R-squared	0.293	0.304	0.455	0.491	0.427	0.499
AR (1) (z, p-val)			-2.309			-4.487
			(0.002)			(0.001)
AR (2) (z, p-val)			-0.598			-0.630
			(0.436)			(0.502)
Sargan Test (chi square, p-value)			169.2			40.56
			(0.000)			(0.742)
Hansen Test (chi square, p-value)			62.3			43.07
			(0.319)			(0.398)

Robust t-statistics in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### Conclusion

This study examines the relationship between board characteristics (board size, frequency of meetings, board independence, presence of female directors, and CEO duality) and firm value. This research also investigates the moderating influence of the human resource and remuneration committee (HR&RC) on the relationship between board characteristics and firm value in nonfinancial companies listed on the Pakistan Stock Exchange. Utilizing agency theory, the resource-dependence perspective, and stakeholder theory

on 329 firms with 3136 firm-year observations from 2016 to 2025, the findings confirm hypothesis that overall board characteristics positively impact firm value, and that the moderating role of the human resource and remuneration committee strengthens this positive effect. This study's findings have important implications for enhancing performance and demonstrate the significance of corporate governance characteristics within the Pakistani sector. The findings emphasize the moderating role of HR&RC and can direct initiatives to promote diversity, align incentives, and reorganize board compositions for increased accountability, transparency, and value creation. This study also provides guidance to business investors, regulators, and scholars towards improvements in board governance and quality.

### References

- Abobakr, M., & Elgiziry, K. (2016). The effect of board characteristics and ownership structure on the corporate financial leverage. *Accounting Finance research*, 5(1), 1-14.
- Ahmad, S., Khan, A. S., & Zahid, M. (2020). The Impact of Corporate Governance on Earnings Management: The Case Of Pakistan Textile Industry. *Journal of Business & Tourism*, 6(1), 71-87.
- Ahrens, F. K., Veltrop, D. B., Mulder, L. B., & Rink, F. (2025). Board Size in Context: A Meta-Analysis on the Relationship Between Board Size and Firm Performance. *Corporate Governance: An International Review*, 4(2), 76-89.
- Al-Rubaie, Q. H. S. (2021). The Empirical Relationship between the Stakeholder Involvements, Project Manager Skills, Top Management Strategy and Project Scope Management: A Study on Government Projects in the Sultanate of Oman. *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, 12(3), 2675-2682.
- Al-Saidi, M. (2021). Board independence and firm performance: evidence from Kuwait. *International Journal of Law Management*, 63(2), 251-262.
- Aldegis, A. M., Ganesan, Y., & Alorayni, O. J. (2023). *Nomination and remuneration committee and firm performance: evidence from Jordan*.
- Awan, H., Quddus, M. A., Naz, A., & Masood, S. (2025). CORPORATE SOCIAL RESPONSIBILITY AND FIRM INVESTMENT EFFICIENCY:

- MODERATING ROLE OF FIRM SIZE. *Journal of Management Science Research Review*, 4(4), 127-148.
- Bahar, G. P., & Herliansyah, Y. (2023). The Effect of Board Size, Capital Structure, Political Connection and Firm Size on Firm Performance. *Management Analysis Journal*, 12(2), 175-186.
- Benkraiem, R., Hamrouni, A., Lakhali, F., & Toumi, N. (2017). Board independence, gender diversity and CEO compensation. *Corporate Governance: The International Journal of Business in Society*, 17(5), 845-860. doi:10.1108/CG-02-2017-0027
- Bhutta, A. I., Naz, A., Sheikh, M. F., & Latif, B. (2025). Corporate real estate investment and firm performance: moderating role of gender diversity. *Journal of Corporate Real Estate*, 27(4), 302-322.
- Cambrea, D. R., Tenuta, P., & Vastola, V. (2019). Female directors and corporate cash holdings: monitoring vs executive roles. *Management Decision*, 58(2), 295-312.
- Davis, G. F., & Cobb, J. A. (2010). Resource dependence theory: Past and future. *Stanford's organization theory renaissance, 1970-2000*.
- Dehaan, E. (2021). Using and interpreting fixed effects models. Available at SSRN 3699777, 3(1), 45-59.
- Faccio, M., Marchica, M.-T., & Mura, R. (2016). CEO gender, corporate risk-taking, and the efficiency of capital allocation. *Journal of Corporate Finance*, 39, 193-209.
- Freeman, R. E. (1984). Strategic management: A stakeholder perspective. In (Vol. 2, pp. 12-18): Englewood Cliffs, NJ: Prentice Hall.
- Fuzi, S. F. S., Halim, S. A. A., & Julizaerma, M. K. (2016). Board independence and firm performance. *Procedia Economics Finance*, 37(2), 460-465.
- Halliday, C. S., Paustian-Underdahl, S. C., & Fainshmidt, S. (2021). Women on boards of directors: A meta-analytic examination of the roles of organizational leadership and national context for gender equality. *Journal of Business and Psychology*, 36(2), 173-191.
- Hamadamin, H. H., & Atan, T. (2019). The impact of strategic human resource management practices on competitive advantage sustainability: The mediation of human capital development and employee commitment. *Sustainability*, 11(20), 5782.
- Hao, X., Chen, F., & Chen, Z. (2022). Does green innovation increase enterprise value? *Business Strategy and the Environment*, 31(3), 1232-1247.

# Journal of Management Science

## Research Review

<https://jmsrr.com/index.php/Journal/about>

Volume. 5 Issue No. 1 (2026)

Online ISSN: 3006-2047

Print ISSN: 3006-2039

- Hartman, R., & Barber, E. (2020). Women in the workforce: the effect of gender on occupational self-efficacy, work engagement and career aspirations. *Gender in Management*, 35(1), 92-98.
- Harymawan, I., Agustia, D., Nasih, M., Inayati, A., & Nowland, J. (2020). Remuneration committees, executive remuneration, and firm performance in Indonesia. *Heliyon*, 6(2), 27-39.
- Jensen, M. C. (1976). Reflections on the State of Accounting Research and the Regulation of Accounting.
- 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.
- Kalsie, A., & Shrivastav, S. M. (2016). Analysis of board size and firm performance: evidence from NSE companies using panel data approach. *Indian Journal of Corporate Governance*, 9(2), 148-172.
- Khan, S., Kamal, Y., Hussain, S., & Abbas, M. (2022). Corporate governance looking back to look forward in Pakistan: a review, synthesis and future research agenda. *Future Business Journal*, 8(1), 1-32.
- Kim, & Hong. (2015). The effects of the number of female directors on the board to corporate transparency. *Korea International Accounting Review*, 56, 69-100.
- Kim, & Oh. (2017). The effect of the ratio of female executives and staff members and female employee's tenure on the relevance of stock price. *Journal of Taxation and Accounting*, 18(4), 173-193.
- Kubo, K., & Nguyen, T. T. P. (2021). Female CEOs on Japanese corporate boards and firm performance. *Journal of the Japanese and International Economies*, 62(2), 101-163.
- Lara, J. M. G., Osmá, B. G., Mora, A., & Scapin, M. (2017). The monitoring role of female directors over accounting quality. *Journal of Corporate Finance*, 45(2), 651-668.
- Luanglath, N., Ali, M., & Mohannak, K. (2019). Top management team gender diversity and productivity: the role of board gender diversity. *An International Journal of Equality, Diversity and Inclusion*, 38(1), 71-86.
- Mirza, S. S., Majeed, M. A., & Ahsan, T. (2020). Board gender diversity, competitive pressure and investment efficiency in Chinese private firms. *Eurasian Business Review*, 10(3), 417-440.

# Journal of Management Science

## Research Review

<https://jmsrr.com/index.php/Journal/about>

Volume. 5 Issue No. 1 (2026)

Online ISSN: 3006-2047

Print ISSN: 3006-2039

- Mohsni, S., & Shata, A. (2021). Board Gender Diversity and Firm Performance: The Role of Firm Size. In *Hillsdale Investment Management*. CFA Society.
- Nadeem, M., Suleman, T., & Ahmed, A. (2019). Women on boards, firm risk and the profitability nexus: Does gender diversity moderate the risk and return relationship? *International Review of Economics & Finance*, 64, 427-442.
- Naz, A., Bhutta, A. I., Sheikh, M. F., & Sultan, J. (2023). Corporate real estate investment and firm performance: empirical evidence from listed non financial firms of Pakistan. *Journal of Corporate Real Estate*, 25(3), 246-262. doi:10.1108/JCRE-05-2022-0013
- Oon, E. Y. N., Hossain, M. A., & Yahaya, M. B. (2025). Board meeting frequency and firm performance: unpacking the moderating effects of monitoring and advisory roles. *Corporate Governance: The International Journal of Business in Society*, 3(2), 98-109.
- Pfeffer, J., & Salancik, G. (1978). A resource dependence perspective. In *Intercorporate relations. The structural analysis of business*: Cambridge University Press Cambridge.
- Post, C., & Byron, K. (2015). Women on boards and firm financial performance: A meta-analysis. *Academy of management Journal*, 58(5), 1546-1571.
- Putra, F., & Setiawan, D. (2024). Nomination and remuneration committee: a review of literature. *Journal of Capital Markets Studies*, 8(1), 126-168.
- Qadorah, A. A., & Fadzil, F. (2018). The effect of board independence and board meeting on firm performance: Evidence from Jordan. *Journal of Finance Accounting*, 6(5), 105-109.
- Sajid, U., Zahid, M., Saad, M., & Fayaz, M. (2021). Corporate governance and shareholders' confidence: A pre-post analysis of corporate governance code 2017 in Pakistan. *Journal of Applied Economics and Business Studies*, 5(4), 41-58.
- Shahid, M. S., & Abbas, M. (2019). Does corporate governance play any role in investor confidence, corporate investment decisions relationship? Evidence from Pakistan and India. *Journal of Economics and Business*, 105, 105839.
- Shan, Y. G. (2019). Managerial ownership, board independence and firm performance. *Accounting Research Journal*, 32(2), 203-220.

# Journal of Management Science

## Research Review

<https://jmsrr.com/index.php/Journal/about>

Volume. 5 Issue No. 1 (2026)

Online ISSN: 3006-2047

Print ISSN: 3006-2039

- Shortland, S., & Perkins, S. (2023). Resourcing remuneration committees: in the dark or on the dark side of professionalisation? *Employee Relations: The International Journal*, 45(2), 402-420.
- Siegel, J. I., Pyun, L., & Cheon, B. (2014). Multinational firms, labor market discrimination, and the capture of competitive advantage by exploiting the social divide. *Harvard Business School Strategy Unit Working Paper*(01-11).
- Sunny, S. A., & Hoque, M. (2025). The impact of board characteristics on financial performance in an emerging economy: the moderating role of nomination and remuneration committee. *European Journal of Management Business Economics*, 5(2), 105-124.
- Thams, Y., Bendell, B. L., & Terjesen, S. (2018). Explaining women's presence on corporate boards: The institutionalization of progressive gender-related policies. *Journal of Business Research*, 86, 130-140.
- Zona, F., Zattoni, A., & Minichilli, A. (2013). A contingency model of boards of directors and firm innovation: The moderating role of firm size. *British Journal of Management*, 24(3), 299-315.