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Does family ownership increase the resilience of firm performance? The moderating role of risk-taking behaviour and leverage in emerging economies

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ABSTRACT

This study aims to examine the relationship between family ownership (FAMOW) and a firm's financial performance, including return on assets (ROA), return on equity (ROE), and Tobin's Q. Additionally, it seeks to determine whether, in the case of non-financial enterprises in Bangladesh, the relationship between FAMOW and firm performance is moderated by risk-taking behavior and leverage. Secondary data from 2010 to 2021 were collected from 228 listed non-financial firms on the Dhaka Stock Exchange (DSE). The study's findings indicate that while Tobin's Q (TQ) is negatively significant with family ownership, return on equity (ROE) and return on assets (ROA) are positively significant. FAMOW has a positive and statistically significant relationship with both ROA and ROE, with coefficients of 0.008 and 0.005, respectively. The moderating influence of risk-taking behavior and leverage was not examined in the previous study; however, this study expands on the findings by including risk-taking behavior and leverage as moderators. Taking into consideration the findings of the inquiry, it is recommended that family firms operating in economies that are still in the process of growth prioritize the establishment of a robust corporate governance structure. As a result of implementing suitable governance measures, it has been established that the impacts of familial ownership on business performance are either amplified or moderated.

Contribution/Originality: This study contributes to the existing literature and academic field by analyzing the moderating impact and factors influencing the financial performance of firms in Bangladesh.

1. INTRODUCTION

Family ownership (FAMOW) influences a firm's performance (FIRP), and the real scenarios when risk-taking behavior and leverage intervene between them are particularly relevant for listed nonfinancial firms in the Bangladesh stock market. Over the past two decades, contradictory findings regarding FAMOW and business performance have been explored (Ahmad, Najam, & Mustamil, 2025; Saba, Sarker, & Gow, 2022).

The most significant research area remains the relationship between FAMOW and FIRP. Family-owned businesses possess considerable potential for innovative thinking, which can enhance business performance and competitiveness (Gërguri-Rashiti, Ramadani, Abazi-Alili, Dana, & Ratten, 2017; Gong & Liu, 2025).

Family-owned businesses are key entrepreneurs who create new ideas for business frameworks and receive rewards for taking risks (Dana, Ratten, & Honyenuga, 2018; Tajeddini & Ratten, 2020). According to Muttakin, Khan, and Subramaniam (2014), the research findings in this field of study provide contradictory information.

The question is: why is the study of family-owned businesses so important? Saidat, Alrababa'a, and Seaman (2022) reported that the motivation behind family businesses is 85% and (Datapoints, 2012) indicated that 70 to 90 percent of companies globally across various economic sectors are family businesses. Asian nations' financial strategies are heavily influenced by FAMOW (Sunon, Islam, & Kabir, 2022).

This is further supported by earlier studies, such as (Muttakin, Monem, Khan, & Subramaniam, 2015), which demonstrated that 68 percent of ownership is held in Indonesia, and 57 percent in Malaysia and Thailand. Limited research has focused on the association between FAMOW and companies' output in developing economies (Sunon et al., 2022). Although entrepreneurship is widely recognized (Anggadwita, Ramadani, Alamanda, Ratten, & Hashani, 2017), very few studies on family-owned businesses are available in Bangladesh. Previous research has primarily investigated family firms and performance based on one or two dependent variables, such as ROA, Return on Equity, or Tobin's Q.

Despite the significant impact of family-owned businesses on the corporate landscape, little research has been conducted on the relationship between FAMOW and a firm's profitability in this geographical area (Rashid, 2020; Uddin, Majumder, Akter, & Zaman, 2022). Despite sharing political, cultural, legal, social, and institutional structures with Pakistan and India, as well as firm ownership, Bangladesh stands out as a unique entity within the South Asian region in terms of its national economic territory.

Therefore, this research aims to analyze the three most important returns within organizations to investigate whether FAMOW has a more significant influence than ownership. It also examines the relationship between FAMOW and firm performance, considering risk-taking behavior and leverage as moderating variables, specifically for listed firms in Bangladesh.

The motivation for this study stems from Bangladesh's status as a rapidly growing economy and the most densely populated country. However, the country has largely overlooked the critical aspects of risk-taking and leverage factors as moderating behaviors. Performance measurement has often relied on accounting and market-based ratios. This study considers both accounting ratios and market-based ratios simultaneously to assess the FIRP. The large population of Bangladesh has been advantageous, attracting investments from several developed countries such as the USA, Australia, Canada, the UK, Japan, Russia, China, and India (Zheng, Moudud-Ul-Huq, Rahman, & Ashraf, 2017). The current study aims to overcome the limitations of previous research and assist investors in making informed decisions, thereby contributing to the existing literature.

However, this study simultaneously evaluated firm ownership with the three most important dependent variables. Another important issue in our research is that we further examined the direct relationship between FAMOW and firm performance, with risk-taking behavior and leverage as moderating variables, which were not included in previous studies in this area.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1. Return on Asset (ROA)

ROA (Return on Assets) is one of the most popular and widely used measures of a firm's financial performance. (Dash & Raithatha, 2019) describe ROA as a key indicator that assesses a company's ability to efficiently utilize its assets to generate profits.

It is calculated by dividing net profit or profit after tax by total assets, and is expressed as a ratio. A ROA of 10% to 12% has been suggested as a standard percentage for a profitable firm, according to (Majumder & Rahman, 2017). Khalifa and Shafii (2013) assert that any ratio below this range indicates inefficiency and ineffectiveness in asset utilization over the period considered. Consequently, the calculation of ROA provides valuable insights into a

company's operational efficiency and asset management effectiveness, serving as a benchmark for assessing financial health and performance.

$$\text{ROA}=\frac{\text{Net Income}}{\text{Average Total Assest}}$$

2.2. Return on Equity (ROE)

Return on equity (ROE) is an accounting-based performance measure and is widely used in prior literature to analyze the relationship between ownership structure and firm performance (Dash & Raithatha, 2019). They have recommended that ROE measures financial performance. ROE is a primary concern for all shareholders and investors because they can invest their money in the best portfolio in the money market and capital market. If they retain the stock, they have financial incentives, such as preferences and reliance on firms generating returns (Dash & Raithatha, 2019).

ROE is an index in which a company can measure returns and assess the risk associated with an investment (Yan & He, 2018). The return on equity is considered in the following way.

$$\text{ROE} = \frac{\text{Net Income}}{\text{Total Shareholder's Equity}}$$

2.3. Tobin's Q (TQ)

Kaldor (1966) described TQ as a Kaldor's V ratio and Q ratio, specifically in the context of his work "Marginal Productivity and the Macro-Economic Theories of Distribution: Comment on Samuelson and Modigliani" (Kaldor, 1966). After a decade, it was popularized by James Tobin as TQ in 1977, representing a market-based measure of performance (Dash & Raithatha, 2019).

In previous research (Hooy, Hooy, & Chee, 2020), TQ was used to examine the connection between a company's performance and its ownership structure. To determine the direct and interaction effects of risk-taking behavior and leverage on the relationship between FAMOW and FIRP, this study employed TQ as a measure of firm performance. According to Dess and Robinson Jr (1984) and Glick, Washburn, and Miller (2005), performance is a multidimensional construct, and no single measure is sufficient for all contexts. Therefore, TQ has been calculated using multiple approaches to capture its comprehensive nature.

$$\text{TQ} = \frac{\text{Market Value of shares +Book Value of Laibility}}{\text{Book Value of Total Assets}}$$

2.4. FAMOW and FIRP

It has been extensively applied in studies examining ownership structures, family firms, and firm performance (Kao, Hodgkinson, & Jaafar, 2019; Poletti-Hughes & Williams, 2019; Sakawa & Watanabel, 2019). By introducing the concepts of contracts and incentives, Jensen and Meckling (1976) opened the "black box" of the firm and framed it as a nexus of contracts among different stakeholders, each driven by individual interests. This structured approach to analyzing conflicts of interest and their impact on company profitability and efficiency revolutionized corporate governance research. However, since its assumptions may not fully reflect the realities of businesses in emerging economies, agency theory has faced criticism for being too Western-centric and context-sensitive (Hasan, Riaz, & Nakpodia, 2023).

In contexts such as Bangladesh, FAMOW and socio-cultural values often reshape the traditional principal–agent conflict. Family members with leadership roles may blur the distinction between agents and residual claimants by acting in both capacities. Nonetheless, newer theories like stewardship and behavioral agency broaden the discussion by incorporating trust, long-term orientation, and socioemotional wealth concerns. Despite this, agency theory remains a crucial foundation for examining ownership-performance relationships. Consequently, while scholars increasingly combine multiple theoretical perspectives to understand family business dynamics, agency theory continues to serve as the cornerstone of this literature due to its ability to explain contractual relationships, incentive

structures, and the economic consequences of ownership patterns in both developed and emerging markets (Filatotchev, Ireland, & Stahl, 2022; Hashemi, Rajabi, & Brashear-Alejandro, 2022).

The family-owned business is a globally recognized and conventional enterprise aimed at enhancing business performance. (Ahmed, Elsayed, & Chen, 2023; Hasan et al., 2023; Musallam, Fauzi, & Nagu, 2019; Watkins-Fassler, Rodríguez-Ariza, Fernández-Pérez, & Briano-Turrent, 2023) linked with the philosophy of agency conflict theory. The impact of family ownership on business performance begins with discussions on two aspects of corporate operation: nominal risk-taking and executive compensation control. It is explained that family shareholders without controlling power hold diversified portfolios and prefer more risk (Yang, Shang, Li, & Lan, 2024), supported by signaling, stakeholder, and agency theories. However, the consequences of coordination problems among individuals, who often cannot monitor effectively, lack a collective voice, and manipulate executive compensation, pose significant challenges. Therefore, it is believed that family shareholders, as a group, have limited influence on firm risk and executive compensation unless it concerns a family-dominated firm (Yang et al., 2024). In such cases, a positive direct effect and a negative effect of FAMOW on firm risk-taking are prominent. Further, we can infer from Charbel, Elie, and Georges (2013) that family-owned firms have personal wealth and non-economic objectives related to their firms, as demonstrated by their goal of transmitting and transmuting the organization to their family and undiversified human resources. The agency theory also covers firms owned by a family (Passetti, Battaglia, Bianchi, & Annesi, 2021; Pourmansouri, Mehdiabadi, Shahabi, Spulbar, & Birau, 2022). Under this theory, the family is treated as another stakeholder structure whose interests must also be protected. Typically, FAMOW is reviewed as having the greatest motivation to control management, especially when a family member is also involved in the firm; this creates a slim link between ownership and leadership in the firm's administration (Hashmi, Abdullah, & Brahmana, 2023; Kaimal & Uzma, 2024). The agency theory is suitable for the present research because it provides insights into the interrelationships among different ownership structures, which can improve firm performance by mitigating conflicts between principals and agents. Based on the literature review, the proposed hypotheses are outlined below.

"H_{1a}: FAMOW has a significant effect on the ROA of non-financial institutions; H_{1b}: FAMOW has a significant effect on the ROE of non-financial institutions; H_{1c}: FAMOW has a significant effect on the TQ of non-financial institutions."

2.5. Risk- Taking Behavior

The dynamism and variability in the current business environment worldwide lead to the theory of risk as a significant element in any exploration involving business activities and their achievement. Risk is defined as a possibility of financial loss, whether in absolute terms or relative to expectations, and is inseparable from the opportunity for financial gain. The *chance of financial loss* or, more formally, the variability of returns associated with a given asset, is a core concept in risk management (Gitman, 2009). However, risk-taking behavior has garnered increasing attention across various fields, not solely by choice but due to the complexity of risk inherent in existence. Consequently, risk-taking behavior is analyzed and calculated within this context.

$$\text{CRT} = \text{Standard Deviation of ROA}$$

It is assumed that risk-taking behavior will moderate the relationship between FAMOW and a FIRP. The previous literature helps to develop the following hypotheses. Thus, the expected moderating hypotheses of risk-taking behavior are as follows.

"H_{2a}: Risk-taking moderates the relationship between FAMOW and ROA in non-financial institutions; H_{2b}: Risk-taking moderates the relationship between FAMOW and ROE in non-financial institutions; H_{2c}: Risk-taking moderates the relationship between FAMOW and TQ in non-financial institutions."

2.6. Leverage

According to Modigliani and Miller (1963), leverage is a significant component of the capital structure that impacts both ownership structure and company performance. Modigliani and Miller (1963) introduced capital

structure theory in 1958, and they initially found no link between leverage and company performance. However, subsequent research argued that firm performance is influenced by leverage, especially considering the tax shield, which is an essential part of capital structure (Ali, Qiang, & Ashraf, 2018; Hirshleifer, 1966; Modigliani & Miller, 1963; Stewart, 1984). In most cases, the term capital structure refers to the combination of equity, preferred stock, debt, and retained earnings. In this context, "debt" refers to leverage. Leverage is a financial strategy used by businesses to increase assets, cash flows, and returns, but it also entails increased risk of losses. There are two fundamental forms of leverage: financial and operational. A company can borrow money directly from a lender or issue bonds to increase its financial leverage. Operating leverage can be applied to improve cash flows and dividends, often through increased income or profit margins. Both approaches carry risks, such as insolvency, but can significantly benefit a corporation. Leverage is employed in the capital structure to enhance cash flow, reduce the cost of capital, gain tax shields, and increase profitability, thereby maximizing the firm's value (Alipour, Mohammadi, & Derakhshan, 2015). Therefore, leverage is calculated as follows.

$$\text{LEV} = \frac{\text{Total Debt}}{\text{Total Asset}}$$

It is assumed that leverage will moderate the relationship between FAMOW and the FIRP. However, the proposed moderating hypotheses are as follows.

"H_{3a}: Leverage moderates the FAMOW and ROA connection of non-financial institutions; H_{3b}: Leverage moderates the FAMOW and ROE connection of non-financial institutions; H_{3c}: Leverage moderates the FAMOW and TQ connection of non-financial institutions".

2.7. Controlled Variables

Firm size: Perhaps larger enterprises' higher demand, efficiency, and skill are a result of their greater involvement in campaigns than smaller ones (Muttakin et al., 2014). Hence, greater board size is anticipated by larger firms. This study measures firm size as the natural logarithm of total assets (Yeh, 2019).

Board size: Board size influences firm performance fluctuations (Rashid, 2018). The size of the board is a determinant of effective governance and potential failure.

Firm Age: Muttakin et al. (2014) suggest that complexity increases with firm age. As a result, it is anticipated that the link between firm age and firm performance would be uncertain. The firm's age is calculated by taking the logarithm of the years since the firm's establishment (Muttakin, 2012).

From the above literature, the literature gap indicates that most research has been conducted in developed economies where there is greater stability in institutional and governance frameworks and in financial markets. However, relatively little has been written about emerging markets, where family businesses are the norm, and institutional voids present both challenges and opportunities. Particularly, moderating factors such as risk-taking and leverage remain under-investigated. Risk can lead to increased performance by promoting entrepreneurial activities, or it can harm performance by making companies more vulnerable to financial fluctuations. It is important to note that leverage can magnify returns but also increase the risk of bankruptcy, especially when economic stability is less predictable. The combined effect of these variables with FAMOW is not sufficiently covered in the literature, making it unclear how family-controlled firms balance tradition and control with strategic risk-taking in environments characterized by weak investor protection, underdeveloped capital markets, and high environmental uncertainty. Therefore, it is essential to explore how family property influences firm performance in the presence of the moderating roles of risk-taking behaviors and leverage in developing countries.

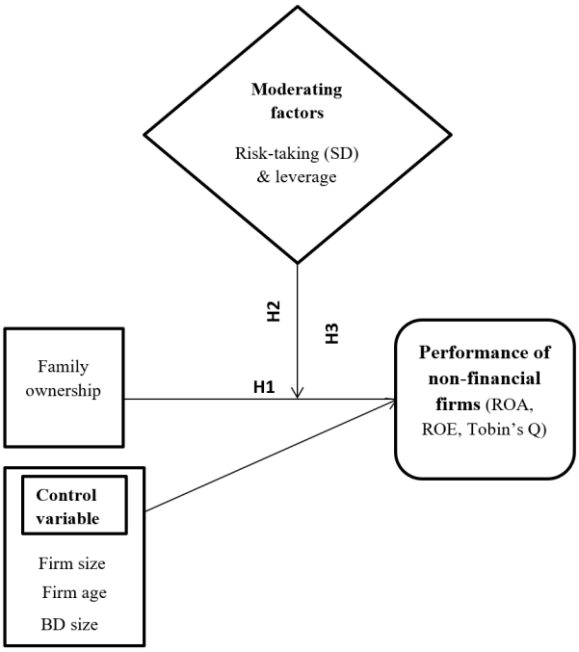

Figure 1. Conceptual framework of econometric model.

3. METHODOLOGY

3.1. Data and Sample

All data has been collected from secondary sources such as Annual Reports, Closing Price reports, prospectuses, Monthly reviews, and company websites. A total of 228 listed non-financial companies on the Dhaka Stock Exchange (DSE) were selected from 653 listed firms in Bangladesh. Only non-financial listed firms with available data were included. During the period from 2020 to 2022, when the global economy was affected by the COVID-19 pandemic, Bangladesh maintained smooth business activities. A few firms and years were excluded due to missing data. Consequently, the research utilized the recent 12 years of balanced panel data from 2010 to 2021, comprising a total of 1,631 observations. FAMOW, which indicates the percentage held by family owners, is provided in the monthly review.

3.2. Model Selection

It was found that the data has no endogeneity or multicollinearity problems. Therefore, the models for H1a, H1b, and H1c (for the direct connection) are as follows, and Table 2 is followed by equations 1, 2, and 3.

$$ROA_{i,t} = \beta_0 + \beta_1 FAMOW + \beta_2 Firm\ Size + \beta_3 Firm\ Age + \beta_4 BD\ Size + e_{i,t} \quad (1)$$

$$ROE_{i,t} = \beta_0 + \beta_1 FAMOW + \beta_2 Firm\ Size + \beta_3 Firm\ Age + \beta_4 BD\ Size + e_{i,t} \quad (2)$$

$$TQ_{i,t} = \beta_0 + \beta_1 FAMOW + \beta_2 Firm\ Size + \beta_3 Firm\ Age + \beta_4 BD\ Size + e_{i,t} \quad (3)$$

Here, e is the error term, i indicates cross-sectional unit, and t means time. β_0 is the intercept term, and β_1 *to* β_4 are the parameter of the selected variables.

3.3. Measuring Family Ownership

FAMOW was found to be 60.74 percent in Bangladesh (Muttakin et al., 2014), while a minimum of 20 percent of voting right shares are held by a single shareholder (directly or indirectly), which is known as blocking shareholders. At least one shareholder holds a managerial position, such as CEO or Chairman of the Board (Cascino, Pugliese, Mussolino, & Sansone, 2010; Muttakin et al., 2014). This study calculated the FAMOW from DSE annual reports, prospectuses, monthly reviews, and the company's website, showing family relationships (directly or indirectly). These relationships may include spouse, parents, children, parent companies, etc. Therefore, FAMOW is calculated as follows.

$$\text{FAMOW}=\frac{\text{SV held by family}}{\text{Total number of shares}}\times 100$$

4. RESULTS ANALYSIS

4.1. Descriptive Analysis

Descriptive statistics analysis involves mean, standard deviations, minimum, maximum, and correlation analysis of all variables. The initial purpose of descriptive summary analysis findings is to guide and inform the subsequent empirical research. It indicates the status of individual variables in terms of volume, and to a lesser extent, the scatter of variables, based on the mean of the firms over the period considered. The statistical discussion focuses on all focusing and non-focusing (controlled) variables, excluding regression analysis for simplicity and specificity. Table 1 depicts the outcomes. We calculated the mean, standard deviation, minimum, and maximum values for individual variables to perform the descriptive statistics. For data normalization, we used a logarithm transformation on all dependent variables (ROA, ROE, and TQ) in the descriptive statistics but not in the regression analysis. In the descriptive statistics, all variables are shown in their actual figures. Except for Firm Age and Board Size, all values are expressed in millions. ROA has a mean of 0.0588, a standard deviation of 0.1863, and minimum and maximum values of -1.07296 and 4.790884, respectively. The mean of Return on Equity (ROE) is -0.7727 with a standard deviation of 19.0006; minimum and maximum values are -694.93 and 3.7672, respectively. The TQ has a mean value of 101.9235, a standard deviation of 1421, and minimum and maximum values of 0.00296 and 53281.26, respectively. Similarly, the mean values of FAMOW (Famow), CR, and Lev are 5.9083, 0.1696, and 0.2849, respectively.

Table 1. Descriptive statistics of variables.

Variables	Mean	Std. dev.	Min.	Max.
ROA	0.06	0.19	-1.07	4.79
ROE	-0.77	19.00	-694.93	3.77
TQ	101.92	1421.23	0.00	53281.26
Famow	5.91	13.69	0.00	75.04
CRT	0.17	0.07	0.07	0.26
Lev	0.28	0.93	0.00	34.94
FirmSize	9.41	0.75	6.45	11.67
Firm Age	26.01	13.96	1.00	70.00
BDSize	7.49	2.35	2.00	20.00

The descriptive statistics for a number of important variables for a sample of businesses are presented in detail in the Table 1. The fact that the mean of the ROA is 0.06 indicates that, on average, businesses in this sample receive a modest return in comparison to their total assets. However, the standard deviation of 0.19 indicates a wide variation in ROA across the sample, with the minimum value being -1.07, suggesting that some firms may experience significant negative returns on their assets. The maximum ROA is 4.79, which reflects a relatively high level of profitability in some firms. ROE, with a mean of -0.77, indicates that, on average, firms in the sample are generating negative returns relative to their equity. The large standard deviation of 19.00 implies that the ROE varies significantly across firms, with some experiencing extreme negative returns, as shown by the minimum value of -694.93, likely representing outliers or extreme financial distress in a few firms. The maximum ROE of 3.77, while still negative on average, indicates that some firms do achieve positive returns on equity. The mean of TQ, which measures a company's market value in relation to its asset replacement cost, is extremely high at 101.92. This suggests that firms, on average, are valued much higher than their asset replacement cost, which could indicate investor optimism or a significant intangible value. However, the standard deviation is extremely large at 1421.23, and the range is vast, with a minimum of 0.00 (indicating some firms may be undervalued) and a maximum of 53,281.26, suggesting some firms are valued extremely high relative to their assets. Famow, with a mean of 5.91, indicates that

FAMOW is moderate on average across the sample, but there is widespread variation, as indicated by the standard deviation of 13.69. A value of 0.00 indicates that some businesses have no FAMOW at all, while a value of 75.04 indicates that some businesses have a lot of family ownership. The fact that CRT has a mean of 0.17 and a very low standard deviation of 0.07 suggests that most businesses in the sample have reputation scores close to this average, with little variation. The minimum value of 0.07 and the maximum of 0.26 further confirm that the reputation scores are clustered around low values. Lev, which indicates the proportion of debt in a firm's capital structure, has a mean of 0.28, suggesting that, on average, firms use a relatively low level of debt. The standard deviation of 0.93, however, suggests significant variability in leverage, with firms ranging from using no debt (0.00) to a high level of debt (34.94). Firm Age has a mean of 26.01, indicating that the firms in this sample are generally well-established, with a wide range of ages from 1 year (minimum) to 70 years (maximum). The significant age disparity between the businesses is shown by the standard deviation of 13.96. Finally, BDSize has a mean of 7.49, which suggests a moderate board size across firms. The standard deviation of 2.35 indicates some variation in the number of board members, with a minimum of 2 and a maximum of 20. FirmSize has a mean of 9.41, indicating that firms, on average, are of moderate size. With a minimum size of 6.45 and a maximum size of 11.67, the standard deviation of 0.75 indicates that the sample firms do not significantly differ in size.

4.2. Descriptions of Correlation Statistics

The correlation coefficients between the various variables used in the analysis are shown in Figure 2. These coefficients represent the strength and direction of the linear relationship between pairs of variables, providing insights into how closely variables move together. However, one of the primary concerns in multivariate analysis is multicollinearity. When multicollinearity is present, it becomes unclear which variable is driving the results, making it difficult to isolate the individual effect of each independent variable on the dependent variable. Typically, correlations higher than 0.80 between explanatory variables may indicate multicollinearity problems (Gujarati, 2022). The standard errors of the coefficients can be inflated by multicollinearity, resulting in unreliable statistical tests. In cases of high multicollinearity, it may be necessary to remove or combine variables or to use alternative techniques such as principal component analysis or ridge regression to address this issue.

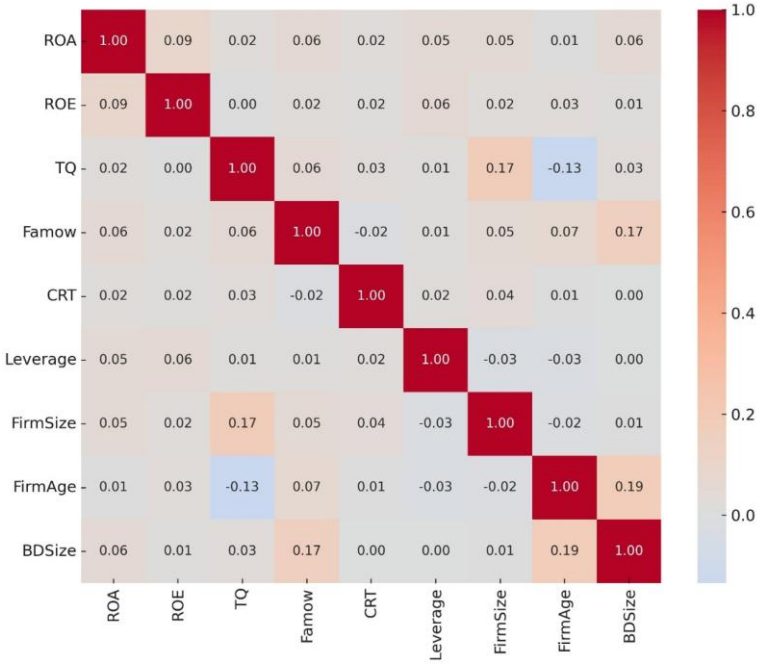

Figure 2. Correlation heatmap.

Note: "ROA= Return on Asset, ROE= Return on Equity, TQ= Tobin's Q, Famow = Family Ownership, CRT=Risk- Taking Behavior, and BDsize= Board size."

Additionally, the correlation matrix can provide valuable insights into how variables interact with each other. For example, if two variables, such as Firm Size and Tobin's Q, show a very high positive correlation, it suggests that firms with larger sizes tend to be valued higher in the market. This information can help in developing a more comprehensive understanding of the underlying dynamics and inform the selection of variables to include in regression models. It also highlights potential areas for more in-depth research, such as determining whether the relationship between market valuation and firm size is causal or if both are influenced by a third factor. Analyzing the correlation matrix is a fundamental step in ensuring the robustness of statistical models and in understanding the relationships between the variables being studied. Researchers can guarantee regression results that are both more accurate and meaningful by focusing on potential multicollinearity and identifying strong correlations. From Figure 1, correlation coefficients among all variables do not reach the threshold since all coefficients are less than 80% (Gujarati, 2022). The dependent variables ROA, ROE, and TQ have a low positive correlation of 0.0572, 0.0209, and 0.0592, respectively, with family ownership. Risk-taking behavior also has a low positive relationship with ROA, ROE, and Tobin's Q, while leverage has a low negative association with them. At the same time, Firm Size has a very weak positive (.0505) relationship with ROA but a low negative relationship with ROE (-.0208), and TQ (-.1739). Firm Age is a poor positive association with ROA (.0056) and TQ (.1346) but is low negatively related to ROE (-.0263). Again, Board Size is low positively associated with ROA (.0600), ROE (.0121), and TQ (.0309). The correlation coefficient in Table 2 is proportionately weak, implying no strong correlation among the other variables. However, a few weak correlations are introduced that can provide intuition for further study.

4.3. Results and Hypothesis Testing

Table 2 describes that ROA (Return on Assets), ROE (Return on Equity), and TQ (Tobin's Q) are the three independent variables used in multiple regression analysis to explain variations in dependent variables. FAMOW has a positive and statistically significant relationship with both ROA and ROE, with coefficients of 0.008 and 0.005, respectively, and significance levels of 1%, indicating that a higher proportion of FAMOW is associated with slightly better financial performance in terms of profitability. This result aligns with previous studies (Kao et al., 2019; Shawtari, 2018; Wang & Shailer, 2018).

Table 2. Multiple regression outputs.

Variable	ROA	ROE	TQ
Family ownership	0.008***	0.005**	-0.003*
	(0.002)	(0.002)	(0.001)
Firm size	-0.147*	-0.051	-0.470***
	(0.080)	(0.073)	(0.048)
Firm age	-0.024***	-0.020***	0.002
	(0.006)	(0.005)	(0.003)
Board size	-0.006	-0.003	0.000
	(0.014)	(0.013)	(0.008)
_cons	0.570	-0.156	4.657***
	(0.683)	(0.616)	(0.405)
N	1392	1411	1588

Note: Reader's inferential discretion is advised * p < 0.1, ** p < 0.05, *** p < 0.01.

The results provide valuable insights into how FAMOW and firm characteristics influence performance. The negative coefficient for Tobin's Q is -0.003, which is weakly significant at the 10% level, indicating that FAMOW is slightly associated with lower market valuation. This suggests that investors may be cautious about family-run firms in Bangladesh, possibly due to concerns over concentrated control, succession planning, or limited transparency. Although the effect is small, it demonstrates that the market does not always reward family ownership. Regarding firm size, the findings are clearer and more consistent. All three performance measures show a significant negative

correlation with larger firms. For ROA, the coefficient of -0.147 (significant at the 10% level) suggests that larger firms tend to generate lower returns on assets, likely due to inefficiencies, diseconomies of scale, or challenges in managing large operations. The same pattern is observed with ROE (-0.051) and TQ (-0.470), both highly significant at the 1% level. This indicates that as firms expand, they may face difficulties in maintaining profitability and market valuation, possibly because of reduced adaptability, increased bureaucracy, or perceptions of limited growth potential. Concerning firm age, the results again show a negative impact on financial performance. Coefficients of -0.024 for ROA and -0.020 for ROE, both significant at the 1% level, suggest that older firms tend to have lower profitability. This may be due to challenges in adapting to market changes or reliance on outdated systems and practices. Interestingly, age has a small positive effect on TQ (0.002), although this is not statistically significant. This implies that older firms may still retain some market value because of their reputation or long-standing relationships, even if they struggle with profitability. This aligns with Yasser, Mamun, and Rodrigs (2017), who found that the market can still value older businesses despite weaker financial returns. The impact of board size differs; although the coefficients for ROA and ROE are -0.006 and -0.003, respectively, the effect on TQ is negligible and insignificant. This suggests that, in this context, increasing board size does not significantly influence company performance. It may be that once boards reach a certain size, adding more members does not improve decision-making or oversight and could even create coordination problems. The constant terms in the regressions represent baseline performance when all other variables are zero. While these constants lack practical meaning alone, they help the model adjust and produce unbiased results. The constant for ROA is 0.570, for ROE is -0.156, and for TQ is 4.657, with the latter being significant at the 1% level, indicating high market valuation when other factors are not considered.

4.4. Result of Moderating Effect

The data in Table 3 provide support for the second and third sets of objectives. The findings related to our second objective suggest that risk-taking plays an important moderating role in the relationship between family-owned businesses and firm performance, particularly when performance is measured by market-based indicators. Regarding TQ, ROA, and Return on Equity (ROE), the coefficient of CrtFamow is 0.026, which is positive and significant at the 1% level. This outcome implies that while risk-taking behavior does not significantly alter the influence of FAMOW on traditional accounting profitability indicators, it does strengthen the impact of FAMOW on the firm's market valuation. This difference can be interpreted in several ways. First, investors' perceptions and expectations of future growth and firm value, which are frequently influenced by strategic choices and risk-taking decisions, are captured by market-based measures like TQ. Family-owned firms in Bangladesh that exhibit higher risk-taking tendencies may engage in more ambitious investment projects, innovative activities, or diversification strategies, which are viewed favorably by the market, thereby increasing their TQ. On the other hand, accounting-based measures (ROA and ROE) focus on short-term profitability derived from past or current operations, which may not immediately reflect the benefits of such risk-oriented strategies. Consequently, the impact of risk-taking on ROA and ROE is weaker or insignificant. The conclusion suggests that the stock market rewards risk-taking for the positive aspects of family ownership, such as long-term orientation, concerns about reputation, and resource commitment. Investors may perceive risk-taking family businesses as more proactive and competitive than their risk-averse counterparts in Bangladesh's emerging economy, leading to increased market confidence and valuation. Conversely, the absence of significant effects on ROA and ROE indicates that such strategic risk-taking might not always translate into immediate operational efficiency or profitability, possibly due to longer gestation periods of risky projects, inefficiencies in execution, or resource constraints. When performance is evaluated from an external, market-based perspective (TQ), it amplifies the influence of family ownership, whereas when performance is evaluated from an internal, accounting-based perspective (ROA and ROE), it does not. These findings highlight that the moderating effect of risk-taking is asymmetric across performance measures. This underscores the importance of distinguishing between different dimensions of firm performance when evaluating the role of ownership structures and strategic

behaviors in non-financial firms in Bangladesh. As a result, the following are the models for the interactions between risk-taking behavior and leverage: Table 3, followed by Equations 4, 5, and 6.

$$ROA_{i,t} = \beta_0 + \beta_1 FAMOW + \beta_2 CRT + \beta_3 (CRT * FAMOW) + \beta_4 Lev + \beta_5 (LEV * FAMOW) + \beta_6 Firm\ Size + \beta_7 Firm\ Age + \beta_8 BD\ Size + e_{i,t} \quad (4)$$

$$ROE_{i,t} = \beta_0 + \beta_1 FAMOW + \beta_2 CRT + \beta_3 (CRT * FAMOW) + \beta_4 Lev + \beta_5 (LEV * FAMOW) + \beta_6 Firm\ Size + \beta_7 Firm\ Age + \beta_8 BD\ Size + e_{i,t} \quad (5)$$

$$TQ_{i,t} = \beta_0 + \beta_1 FAMOW + \beta_2 CRT + \beta_3 (CRT * FAMOW) + \beta_4 Lev + \beta_5 (LEV * FAMOW) + \beta_6 Firm\ Size + \beta_7 Firm\ Age + \beta_8 BD\ Size + e_{i,t} \quad (6)$$

Table 3. Moderating result of risk-taking and leverage effect.

Variable	ROA	ROE	TQ
Family ownership	0.006*	0.005	-0.008***
	(0.003)	(0.003)	(0.002)
Risk-taking Behavior (CRT)	0.161	0.019	0.007
	(0.185)	(0.171)	(0.110)
Risk × Family ownership	0.013	0.010	0.026***
	(0.013)	(0.012)	(0.008)
Leverage	-0.017	0.029**	0.027***
	(0.014)	(0.013)	(0.009)
Leverage ×Family ownership	0.001	-0.003	0.004*
	(0.003)	(0.002)	(0.002)
Firm Size	-0.170*	-0.016	-0.412***
	(0.087)	(0.078)	(0.050)
Firm Age	-0.023***	-0.022***	-0.002
	(0.006)	(0.006)	(0.004)
Board Size	-0.006	-0.004	-0.000
	(0.014)	(0.013)	(0.008)
_cons	0.755	-0.438	4.211***
	(0.732)	(0.656)	(0.422)

Note: "Reader's inferential discretion is advised * p < 0.1, ** p < 0.05, *** p < 0.01."

In relation to Tobin's Q (TQ), the interaction term between leverage and FAMOW (LevFamow) has a positive coefficient of 0.004, which is statistically significant at the 10% level. However, leverage does play a role in the relationship when measured through market valuation. As a result, the findings support hypotheses H2c and H3c, but do not support hypotheses H2a, H2b, H3a, or H3b. The results are mixed when examining the broader connection between FAMOW and company performance. Prior studies suggest that family-owned firms often enjoy superior profitability and stronger financial outcomes compared to non-family firms, largely because of their long-term orientation, resource commitment, and closer monitoring mechanisms. This trend typically manifests as a positive impact of FAMOW on ROA and ROE. However, in the current results, FAMOW demonstrates a weak or even negative association with Tobin's Q, implying that such firms may encounter challenges in convincing investors of their growth potential or in enhancing their market valuation.

The significance of moderating factors such as risk-taking and leverage is another important aspect emphasized by the analysis. FAMOW impacts performance in both market-based outcomes (TQ) and accounting returns, with a greater effect on TQ. This suggests that while FAMOW may promote operational efficiency and profitability, external perceptions of firm value in the capital market depend on how these firms balance financial risk and leverage. In other words, the ability of family businesses to translate their ownership structure into increased market value relies not only on internal performance but also on their strategic approach to risk-taking and capital structure. FAMOW contributes positively to accounting-based performance measures, such as ROA and ROE, but its influence on market-based valuation is limited or potentially negative unless moderated by financial and behavioral factors like leverage and risk appetite, according to the evidence. This highlights the importance of capital structure decisions and risk management strategies in shaping investor perceptions and market value. The results indicate the favorable

effects of family ownership on accounting-based performance indicators, demonstrating the success of family owners in controlling and maximizing profitability. The absence of a positive correlation between FAMOW and market-based performance (TQ) reveals possible challenges in generating market value, which may stem from the specialized needs of family-owned businesses or restricted access to external capital. The importance of considering these characteristics when analyzing the impact of ownership on market value is underscored by the interacting effects of risk-taking behavior and leverage on the relationship between family ownership and business returns, particularly on TQ. These findings enhance our understanding of how agency theory relates to the financial effects of family ownership. By highlighting the advantages and disadvantages of FAMOW in terms of profitability, market value, and its interaction with risk-taking behavior and leverage, the findings provide valuable insights for investors and stakeholders.

5. DISCUSSION AND IMPLICATIONS

The specific theoretical implications based on the research findings under Agency theory indicate that FAMOW in non-financial institutions in Bangladesh positively influences accounting-based profitability (ROA and ROE). Family owners' close involvement and strong alignment of interests with the firm's success contribute to improved financial performance (Ahmad et al., 2025). However, under the lens of Agency theory, the negative significant effect of FAMOW on market value (TQ) suggests the presence of agency conflicts. These conflicts may arise due to the potential entrenchment of family owners or a preference for non-market goals that may not resonate with external investors, leading to a lower market valuation.

This theoretical implication highlights the importance of understanding the dual impact of FAMOW on firm performance under the Agency theory framework. While FAMOW can enhance profitability through effective monitoring and long-term orientation, the existence of agency conflicts may limit the firm's attractiveness to market investors, impacting its market value. Future research under the Agency theory could delve deeper into exploring specific mechanisms and governance mechanisms that address agency conflicts within family-owned firms. Additionally, investigating the role of executive compensation, board structure, and shareholder rights can provide further insights into how agency issues manifest in the context of FAMOW and firm performance in non-financial institutions.

In practical implications, this study on FAMOW and financial performance in Bangladesh offers insightful information for investors, stakeholders, and government officials. Based on the favorable correlation between FAMOW and ROA/ROE, investors may evaluate the profitability of family-owned companies. The negative correlation with TQ, however, emphasizes how crucial it is to consider market value generation. The financial dynamics of family-owned enterprises may be better understood by stakeholders, highlighting the need for transparent governance and risk management (Din, Arshad Khan, Khan, & Khan, 2022; Muttakin et al., 2014). In addition, the concept of family businesses is practiced by Villalonga and Amit (2006) and Chow (2021). Government representatives may use these results to create policies supporting the expansion and competitiveness of family-owned businesses. Our study advances prior research by focusing on the specific function of FAMOW and its effect on company performance in developing nations.

In contrast to other research that employed just one or two proxies, we consider accounting metrics (ROA, ROE) and market indicators (TQ). Additionally, we explore the interaction between risk-taking behavior, leverage, and family ownership, which previous researchers often overlooked. While Bangladesh's institutional setting impacts our findings, more study in other countries is required to determine how broadly applicable our findings are.

6. CONCLUSION AND RECOMMENDATIONS

The study's conclusions imply that FAMOW significantly affects business performance, as indicated by several measures. Because there is a considerable connection between FAMOW and ROA/ROE, these businesses are more

likely to perform well and be financially lucrative. This aligns with the ideas of agency theory, which focuses on how family-owned enterprises should align their interests, be long-term oriented, and practice conservative financial management. However, the lack of an effective, meaningful link between family-owned businesses and TQ suggests that family-owned businesses may struggle to create market value compared to non-family enterprises. This outcome may be explained by factors such as uncertainty over parental authority, possible agency conflicts, or information asymmetry. The inverse association with TQ indicates that investors perceive family-owned businesses as constrained in developing and creating market value.

Following the implications generated by the investigation, family enterprises located in emerging markets are urged to prioritize the establishment of a robust corporate governance apparatus. The effects of familial ownership on corporate performance are shown to be either magnified or moderated, contingently upon the implementation of sound governance arrangements. By embedding transparency, accountability, and unambiguous delineation of roles within the family firm, potential conflicts can be moderated, and the divergent aims of familial and non-familial stakeholders may be harmonized. Introducing an independent board or advisory members charged with furnishing strategic counsel and objective oversight can be invaluable. Such bodies may avert the concentration of authority within a few family hands, a circumstance that frequently constrains the adaptability and agility requisite in swiftly evolving markets.

In parallel, once prudently supervised, calibrated risk-seeking conduct has been identified as a catalyst of innovation and a source of competitive distinction within family enterprises. It consequently falls to the firms concerned to articulate a comprehensive risk governance framework that permits the calibrated evaluation of hazards in conjunction with attendant prospects. Subjecting prospective actions to such a framework can elevate the quality of decisional processes and cushion possible damaging sequelae that conventionally accompany undisciplined risk profiles. Furthermore, cultivating a corporate ethos that acknowledges, and rewards, calculated risk-taking, while treating failure as an invaluable educational moment, can conserve the firm's adaptability when confronting pronounced economic flux.

The judicious employment of debt as a mechanism for deepening performance results remains an additional focal point that warrants exhaustive supervision. Although moderate leverage can catalyze rapid expansion by providing the requisite capital for horizontal and vertical growth, proprietorships closely held by families must judiciously calibrate their debt-to-equity ratios to obviate the latent perils of excessive financing by liabilities. Constructively, proprietorships to which families are intimately attached ought to formulate capital policies commensurable with their intrinsic appetite for risk, securing autonomous liquidity during episodes of pronounced cyclical adversity and when index prices remain unstable.

Furthermore, proprietorships with familiarly fixed bases should remain circumspect of a disproportionate conscription of external debt financing, given that sustained leverage exceeds prudent limits and imperils the continued vitality of the enterprise, ultimately constricting the enterprise's capacity for internal reinvestment and long-run performance.

More broadly, the authorities of jurisdictions undergoing accelerated growth can catalyze the vitality of family enterprises by engaging instruments of incentive dispensation directed at the inculcation of superior administration practices, prudentially conceived risk calculation, and technologically informed liquidity provisions. The government ought to consider programs which subsidize the longitudinal dispersion of policies within imperfectly diversifiable family schemes, which promote prolonged strategic reviews of portfolios, and which underwrite training directed at the advancement of the human and associated capital of the collective fiat. Initiatives of this compositional design will impart enhanced durability to family enterprises, which must absorb the rigors of global cyclical economies, thereby multiplying the proportionate contribution of those policies to the expanded wealth of the polity and to the tested capacity of the political budget to underwrite growth.

By engendering a legislative architecture that sponsors practices of growth coincident with prudent risk calibration, the latest economies can, undoubtedly, securitize the competitive expansion of family enterprises when considered internationally. Finally, our sample includes only DSE-listed business firms; future studies may consider the following contexts: more investigation of agency conflicts; comparative analysis tailored to a particular industry.

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