

## Does Ownership Structure Matter for Firm Innovation and Firm Performance? A Case of PSX-Listed Firms

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### Abstract

This study tries to analyze the ownership dynamics, especially in the context of firm innovation and firm performance with the inclusion of ownership structure as a moderating variable. The existing research lacks a comprehensive analysis of ownership structure, so this study fills this research gap. For that purpose, data is collected for 50 non-financial firms listed at PSX, the data period is 2017-2022 which leads to a total of 300 firm-year observations. Firm Innovation (FI) positively relates to Firm Performance (FP) and ownership concentration has a positive but insignificant relationship with FP, while insider ownership shows a negative and insignificant relation. This interplay between innovation, ownership structure, and FP leads to some suggestions for policymakers, business leaders, and investors to enhance innovation and FP.

**Keywords:** Ownership Structure, Firm Innovation, Firm Performance, and Pakistan Stock Exchange (PSX)

### Introduction

Investment decisions in innovation are usually riskier than commercial decisions, particularly when it comes to investing in research and development, but they are certainly an essential component of decision-making (Vendrell-Herrero, Bustinza, & Opazo-Basaez, 2021). When it comes to spending money on research and development, innovation investment choices are always limited and riskier. However, they are an important part of making decisions that lead to growth and sustainability (Paramati, Alam, Hammoudeh, & Hafeez, 2021). There are many factors which have effects on the intentions of a firm toward innovation but the way a business is owned, especially how independent the board is and how many intellectual people are on it, has a big impact on the link between new ideas and increased shareholder wealth (Ali & Oudat, 2021).

A firm possesses unique technological skills and know-how that have developed over time through learning experiences. These skills, combined with specific ways of doing things, help the firm adapt to market changes, ensuring its survival and potentially leading to consistent profits in the long run. Essentially, these competencies represent valuable assets for the company that contribute to its competitiveness and financial success (Zahra, 2021). Environmental initiatives, such as the use of green technology, may promote investment in

research and development that improves company profitability (Ullah, Jiang, Elamer, & Owusu, 2022). Several studies investigated the link between FI and FP (YuSheng & Ibrahim, 2020; Latifi, Nikou, & Bouwman, 2021; Le & Ikram, 2022), but there are not enough studies which include ownership structure especially when it comes to Pakistan's unique economic and governance situation. Innovating firms might not be more profitable, but they will be more sustainable and better growth rate (Shakeel, Mardani, Chofreh, Goni, & Klemeš, 2020). Innovation is influenced by both internal and external market factors, as well as the capabilities of the firm's human resources. These factors include emerging technologies, actions taken by competitors, ideas from customers, collaboration with strategic partners, the competence of employees, and changes in the external environment. Responding to customer feedback and perceptions is crucial for generating distinctive innovations. Recognizing and leveraging these factors can contribute to the financial success and sustainability of the organization (Busru & Shanmugasundaram, 2017; Vendrell-Herrero et al., 2021).

The present study aims to fill the gap by investigating the connections between business new ideas and business profitability with the moderating role of ownership structure in Pakistan. A representative sample of businesses from different industries were used to provide statistics using quantitative research methods. This study tries to explain how ownership structure affects the association between innovation and profits by investing in these elements. Corporate governance serves as the oversight system for the actions, plans, policies, practices, and decisions made by a company's management. This oversight is crucial because management acts on behalf of shareholders who are widely dispersed. Essentially, corporate governance ensures that the interests of shareholders are safeguarded by monitoring and evaluating the activities of those managing the company. This helps maintain transparency, accountability, and the overall financial health of the business (Busru & Shanmugasundaram, 2017).

This study is important because it could give business leaders, policymakers, and investors in Pakistan useful information. In this research paper, the ownership structure is a key way for companies to get the resources they need for growth when outside institutions aren't working well. In particular, having a variety of ownership types leads to better innovation, and having more concentrated ownership has the same effect, but only up to a point (Chen, Li, Shapiro, & Zhang, 2014). The research results are likely to make several important contributions. The main idea behind this study is to find out if there are any connections between a company's financial health and its ability to invest in new ideas through R&D. The study also looks at what role some of the corporate governance variables play in these relationships (Busru & Shanmugasundaram, 2017). They will help us learn more about how ownership structures affect the success of new strategies in Pakistan. This will give us a better idea of how companies in countries that are changing build "indigenous" innovation skills. We also talk about how insider ownership can hurt innovation in a market that is changing. The results are especially important for innovation strategy and policy, especially in transitional economies that are still growing (Choi, Lee, & Williams, 2011). The study is also likely to lead to more academic research into the complex relationship between ownership, creativity, and profitability. This will help us get a better sense of how these things work in emerging market economies. Eventually, this study will have effects on business practices,

policies, and investment plans in Pakistan that go beyond the academic world. Increased profitability results from having available Free Cash Flows and discretionary income, fostering innovation. This innovation, in turn, enhances market share, achieves economies of scale, and improves cost-effectiveness, thereby contributing positively to overall financial performance (Hall & Mairesse, 1995).

Pakistani firms are going through a huge transformation, which is not only bound by global tendencies but also the shift that has taken place in the economy of this area. The individual needs to understand how these complicated factors interrelate to navigate within the changing business environment of Pakistan. Contemporary Pakistani businesses are subject to a substantial transformation owing to the fluctuations in global trends and regional economic shifts; navigating this evolving landscape necessitates a thorough comprehension. Through comprehension of the latest innovative trends and their influence on Firm performance. In particular, strategic action towards investigating the impact of firm innovation on firm performance, this relationship becomes more vital if ownership structures act as moderators. Moreover, to optimize financial performance and maintain adaptability in the incumbent needs of the Pakistani business environment it becomes vital to recognize these dynamics expediently and strategically

#### Literature Review and Hypotheses

To investigate the critical dimension of organizational dynamics, several studies on firm innovation and its relationship with firm performance taking among different ownership structures have been conducted. The purpose of this review is to provide a general understanding of the process through which innovation tends to affect firm performance regarding ownership structure as a moderator. The literature review indicates that innovative firms seem to perform better than their counterparts do in terms of increased levels of profitability and market competitiveness. In the literature review, one of the aims is to understand how innovation and ownership structure affect the performance within a firm. Busru and Shanmugasundaram (2017) conducted a study relationship between R&D expenditure and profitability in 255 Indian listed firms from 2008 to 2015. Granger causality tests reveal unidirectional causality from R&D to profitability. A multiple regression model indicates a negative impact on current profitability but a positive impact with lags. Corporate governance variables moderate the relationship, with family ownership significantly affecting the R&D profitability (Busru & Shanmugasundaram, 2017). Previous studies exploring the connection between innovation and profitability within organizations consistently indicate that companies embracing innovation tend to sustain higher levels of profitability compared to those that do not prioritize innovation. Basically, organizations that actively engage in innovative practices are found to be more financially successful than their non-innovative firms (Cefis & Ciccarelli, 2005). In modern approach to innovation emphasizes a company's need to develop and accumulate its specific technological capabilities. These capabilities are built through learning experiences and various stages of development. This uniqueness enables the company to adapt to market changes successfully, ensuring its survival and the potential for consistent profits over time (Cohen & Klepper, 1992).

The focus is on ownership structure, emphasizing diversity in ownership concentration. Using transaction cost and agency theories in an emerging market setting, the

argument develops where it is proposed that ownership structure acts as a critical institution through which firms can mobilize resources to innovate within institutional constraints. The diversity in ownership type has positive impacts on the innovation performances and increasing ownership concentration has a similar effect, up to a certain threshold (Chen et al., 2014). Our argument is based on the fact that from an agency perspective and taking into consideration issues distinctive to emerging markets from a principal-principal viewpoint, moderate levels of ownership concentration enable a firm to lower costs of expropriation associated with not only controlling owners but also unmonitored top management. This, in turn, facilitates a more efficient allocation of resources toward innovation (Chen et al., 2014). The concept of separating ownership and management, along with the associated agency conflicts and costs, is best explained by agency theory. According to this theory, shareholders may have concerns about managers' actions leading to conflicts of interest. To address this, they may implement compensation and control mechanisms to align the interests of both parties and mitigate potential agency conflicts (Fama, 1980). Chinese-listed firms, akin to many Asian counterparts, exhibit high ownership concentration. The impact of this concentration on R&D investment has a dual nature. Firstly, it can foster incentive alignment by linking CEO compensation to performance, promoting an innovative environment. Secondly, based on recent agency theory, managerial entrenchment may arise when minority shareholder rights are inadequately protected, leading to conflicts (Hess, Gunasekarage, & Hovey, 2010). The study confirmed a significant positive impact on pay-for-performance sensitivity in the discussed relationship. Additionally, it proposed that concentrated shareholders' monitoring role tends to reduce agency problems (Hartzell & Starks, 2003).

### **Agency Theory**

Agency Theory examines the relationship between principals (owners) and agents (management) within an organization. In the context of innovation and firm performance, you can explore how ownership structure influences the alignment of interests between owners and managers. Consider how different ownership structures (e.g., concentrated ownership) may impact the incentives for innovation and how this, in turn, affects firm performance.

### **Ownership Concentration and Firm Innovation**

Prior research has indicated that companies characterized by concentrated ownership tend to exhibit superior performance. This is attributed to the effectiveness of concentration in addressing and resolving agency problems (Claessens & Djankov, 1999). From an agency standpoint, concentrated ownership plays a crucial role in promoting innovation by offering effective monitoring mechanisms. This implies that concentrated ownership serves as a valuable tool for overseeing and ensuring innovation activities within a firm (Belloc, 2012). Major shareholders, who own a lot of the company, have strong reasons and the ability to keep a close eye on and impact management decisions. When they control voting, they can put pressure on the company by suggesting the possibility of a takeover. In accounting terms, this underscores how influential large shareholders are in overseeing the company and influencing management choices. As a result of all these discussions stated above, we developed the following hypothesis.

**H1.** The ownership concentration strengthens the positive association between firm innovation and firm performance.

### Insider Ownership and Firm Innovation

Ownership is characterized by the close association of individuals tied to management who hold the shares of firm equity which has unique voting rights. Insiders or owners are made up of founders, families affiliates managers the executive director and employees (Xu & Wang, 1999). Usually, firms tend to focus on the interests of insiders such as employees, managers and founders rather than the dispersed outsider ownership shareholders. Insiders, being better informed about the actual situation in the company, are considered to have a positive impact on firm performance. Studies in the past show that an increased insider ownership link with a firm's performance improves by cutting down on agency costs connected to managerial or employee commissions (Meckling & Jensen, 1976). There are two main reasons why insider ownership is associated with firm innovation. First, insiders are more likely to make investments into R&D projects that may require many years until they provide some returns and have the preference of having stability over long-term profit. Founders and their families support long-term goals that are not only about making profits. Secondly, employees aim to secure long-term employment as they become more technologically innovative this means that their interests become high in ensuring sustained growth rather than getting short-term returns (Choi et al., 2011). Based on the above discussions following hypotheses are developed. H2. Insider ownership strengthens the positive association between firm innovation and firm performance

### Methodology

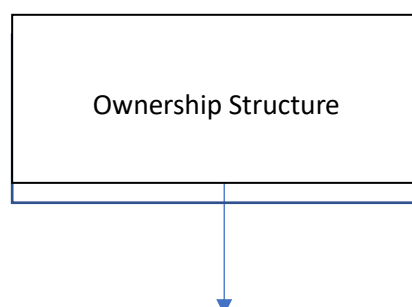
#### Research design

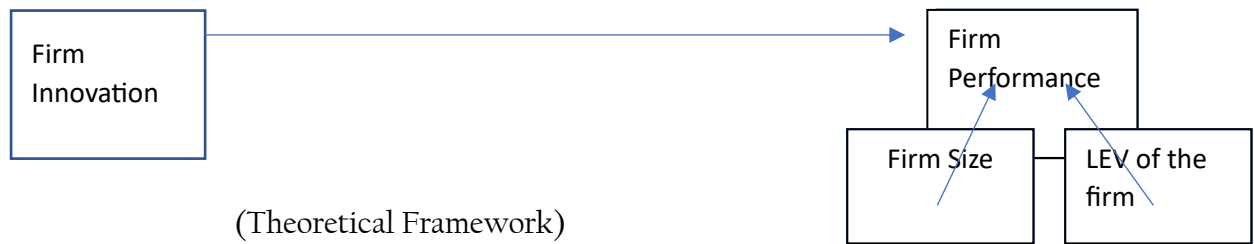
This quantitative research study aimed to assess the effect of firm innovation on FP. This section of this paper provides information regarding the sample and data collection. A model development framework is also created in this section. The hypotheses testing is also done in this section supported by statistical instruments Stata.

#### Sample and data collection

In this research, the target population was 396 non-financial firms listed at Pakistan Stock Exchange (PSX) out of which sample of firms 50 non-financial firms was selected using the Convenience sampling method. Firm innovation, ownership and FP data were collected for the years 2017–2022 from the State Bank of Pakistan (SBP) and annual reports of firms.

Our study exclusively considered large enterprises listed on the PSX. The emphasis on larger Pakistani firms was motivated by their presence in industries where innovation stands as a critical determinant of success. This approach ensures an understanding of the Pakistani corporate scenario, mirroring the structure and dynamics of the sectors represented on the Pakistan Stock Exchange.





(Theoretical Framework)

In the above figure firm innovation is the independent variable and firm performance is the dependent variable, while ownership structure is included as a moderator. FP is measured through three proxies Return on Assets (ROA), Return of Equity (ROE) and Return on Sales (ROS). Firm Size (FS) and Leverage (LEV) are treated as control variables.

**3.3 Mathematical Models**

$$ROA_{it} = \beta_0 + \beta_1 R\&D_{it} + \beta_2 CONOWN_{it} + \beta_3 INSOWN_{it} + \beta_4 R\&D * CONOWN_{it} + \beta_5 R\&D * INSOWN_{it} + \beta_6 FS_{it} + \beta_7 LEV_{it} + \epsilon_{it}$$

$$ROE_{it} = \beta_0 + \beta_1 R\&D_{it} + \beta_2 CONOWN_{it} + \beta_3 INSOWN_{it} + \beta_4 R\&D * CONOWN_{it} + \beta_5 R\&D * INSOWN_{it} + \beta_6 FS_{it} + \beta_7 LEV_{it} + \epsilon_{it}$$

$$ROS_{it} = \beta_0 + \beta_1 R\&D_{it} + \beta_2 CONOWN_{it} + \beta_3 INSOWN_{it} + \beta_4 R\&D * CONOWN_{it} + \beta_5 R\&D * INSOWN_{it} + \beta_6 FS_{it} + \beta_7 LEV_{it} + \epsilon_{it}$$

b = coefficient

$\epsilon$  = Error term

ROA = return on assets

ROE=return on equity

ROS= return on sales

R&D = Research and development

OWNCON=Ownership concentration

STAOWN = State shares

INSOWN= insider ownership

LEV= LEV of the firm

FS firm size.

**Variable Measurements**

Firm performance is measured by taking three different proxies namely ROA, ROE and ROS. In this study, LEV and FS are treated as control variables. OWNCON was measured as the total percentage of shares held by the five largest shareholders (Xu & Wang, 1999). Insider ownership is the overall percentage of company shares owned by managers, directors, members of the supervisory board, and employees (Chang & Hong, 2000).



Table 1  
Variable's Calculations

Variables	Definitions	Calculations	Authors
<b>Dependent variables</b>			
ROA	Return on assets	Net Income / total assets	(Wang & Sarkis, 2017)
ROE	Return on equity	Net Income / total equity	(Rasheed, Arshed, Malik, & Mahmood, 2018)
ROS	Return on sales	Net Income / total sales	(Rasheed, Malik, Haider, & Shakeel, 2023)
<b>Moderators</b>			
CONOWN	Concentrated ownership	percentage of shares owned by the largest shareholder	(Nashier & Gupta, 2023)
INSOWN	Insider ownership	Number of shares owned by managers, directors, supervisory board members, and workers	(Anderson & Puleo, 2020)
<b>Independent variable (Claessens &amp; Djankov)</b>			
R&D	Research and development	"1" for expenditures on research and development otherwise "0"	(Cheah, 2016)
<b>Control variables (CS)</b>			
FS	Firm size	Natural log of total assets	(Maenuddina, Hussain, Hafeez, Khan, & Wahi, 2020; Rasheed & Ahmad, 2022)
LEV	Leverage	Total debts/shareholder's equity	(Ahmed, Burhan, Zohair Farooq, Syed Taha Fraz Haider, & Amer, 2021)

## Results and Discussions

Table 2

## Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	300	9.266	10.198	-18.722	57.966
ROE	300	25.434	44.443	-264.893	269.382
ROS	300	8.036	10.628	-68.322	63.746
RD	300	.6	.491	0	1
INSIDOWN	300	5.068	12.684	0	62.49
CONOWN	300	29.356	33.83	.033	99.97
RDINSIDOWN	300	1.79	7.37	0	44.779
RDCONOWN	300	18.723	31.055	0	99.97
FirmSIZE	300	24.438	1.303	20.545	27.869
Leverage	300	1.267	2.437	.149	21.488

In Table 2, the dataset contains a range of financial performance metrics (ROA, ROE and ROS) and ownership characteristics across 300 observations. Returns such as Return on Assets (ROA), Return on Equity (ROE), and Return on Sales (ROS) explain varying levels. Research and Development investment, on average, accounts for 60% of firms' resources, while Insider Ownership remains relatively low with an average of 5.07%. Concentrated ownership, indicated by Concentrated Ownership Percentage, suggests significant ownership control, with an average of 29.36%. Interaction terms, including concentrated ownership with R&D and Insider ownership with R&D, explain moderate levels of variation, indicating potential complexities within the dataset. Firm Size exhibits a relatively stable distribution, with a mean of 24.438, while Leverage suggests moderate financial risk with a mean of 1.267. Overall, the dataset shows diverse financial and ownership structures among the sampled firms. This table details characteristics, including innovation, firm performance, managerial ownership and other control variables. Sufficient representation across top companies allows us to control to check the effects of innovation. Some top companies of KSE including electronics and chemical industries dominate in patents and knowledge stock, with higher R&D spending in electronics and power KSE 100 aligns with the least technologically intensive sector in terms of overall innovation activities.



Table 3  
 Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) ROA	1.000									
(2) ROE	0.579***	1.000								
(3) ROS	0.645***	0.289***	1.000							
(4) RD	-0.228***	-0.057	-0.143**	1.000						
(5) INSIDOWN	0.119**	0.016	0.046	-0.202***	1.000					
(6) CONOWN	0.315***	0.252***	0.025	0.067	-0.036	1.000				
(7) RDINSIDOWN	-0.013	0.025	-0.065	0.199***	0.518***	-0.030	1.000			
(8) RDCONOWN	0.010	0.133**	-0.111*	0.493***	-0.127**	0.728***	0.051	1.000		
(9) FirmSIZE	-0.168***	-0.048	0.075	0.442***	-0.311***	-0.161***	-0.092	0.024	1.000	
(10) Leverage	0.116**	0.603***	-0.037	0.127**	0.033	0.332***	0.137**	0.337***	0.010	1.000

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

In Table 3, presents inter-correlations among the variables, indicating no apparent issues with multicollinearity among independent variables. There is a significant relative correlation between managerial ownership and concentrated ownership, particularly in the context of innovation.

ROA (Return on Assets) has a strong positive correlation with ROE (Return on Equity) ( $r = 0.579, p < 0.01$ ) and ROS (Return on Sales) ( $r = 0.645, p < 0.01$ ). This suggests that companies with higher returns on assets tend to have higher returns on equity and sales. ROE (Return on Equity) also shows a strong positive correlation with ROS ( $r = 0.289, p < 0.01$ ), showing that companies with more returns on equity tend to have higher returns on sales, although the correlation is weaker compared to ROA. RD (Research and Development) exhibits negative correlations with most variables, although weakly. This suggests that there might be a slight inverse relationship between R&D spending and other variables such as financial performance measures and ownership structure. INSIDOWN (Insider Ownership) shows a positive correlation with CONOWN (Concentrated Ownership), suggesting that companies with an increase in insider ownership tend to also have higher concentrated ownership.

RDINSIDOWN (Interaction term between Research and Development and Insider Ownership) has a positive correlation with INSIDOWN ( $r = 0.518, p < 0.01$ ) and a positive but weaker correlation with CONOWN ( $r = -0.030, p < 0.01$ ), indicating that the relationship between R&D spending and insider ownership might be moderated by concentrated ownership. RDCONOWN (Interaction term between R&D and Concentrated Ownership) shows a strong positive correlation with CONOWN ( $r = 0.728, p < 0.01$ ), suggesting that the relationship between R&D spending and concentrated ownership is statistically significant. Firm SIZE (Firm Size) exhibits negative correlations with ROA, ROS, and leverage, showing that larger firms tend to have less returns on assets and sales but more leverage. Leverage shows a strong positive correlation with ROE ( $r = 0.603, p < 0.01$ ), explaining that companies with higher leverage tend to have higher returns on equity.

Table 4

VARIABLES	(F.E) ROA	(F.E) ROE	(R.E) ROS
RD	2.482 (2.119)	11.31 (9.525)	0.509 (2.518)
INSIDOWN	-0.0446 (0.177)	-0.00534 (0.796)	0.0729 (0.110)
CONOWN	0.0654 (0.261)	0.0828 (1.175)	0.0974 (0.0655)
CONOWN*R&D	0.0309 (0.269)	0.258 (1.208)	-0.0783 (0.174)
INSIDOWN*R&D	-0.00215 (0.302)	0.577 (1.357)	-0.0856 (0.0627)
FirmSIZE	2.080*** (0.358)	3.547** (1.610)	0.0995 (0.192)
Leverage	-1.029***	-2.234**	-0.480

	(0.232)	(1.043)	(0.330)
Constant	-24.56***	-46.66	5.324
	(7.086)	(31.85)	(4.676)
Observations	300	300	300
R-squared	0.189	0.048	0.045
Number of ID	50	50	50

Standard errors in parentheses

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

In Table 4, the regression results, carried out to gain insights into the relationships between financial variables, highlighted the impact of research and development expenditures, the interaction terms of ownership concentration and Research and Development and Insider Ownership and Research and Development and control variables on various performance metrics. However, certain variables, such as insider ownership and concentrated ownership, do not show statistically significant relationships in this model. There are three models used in this study with three different dependent variables. Fixed effect used in first and second equation with dependent variable ROA and ROE. Finding suggests, no autocorrelation. In the third equation, dependent variable ROS shows the results run on Stata where insignificant Housemen test suggests to use random effects model and showed the significant results. Findings are without any multicollinearity. In the fixed effects model for Return on Assets (ROA), the positive coefficient for RD ( $\beta = 2.482$ ) signifies that increased investment in research and development is linked to higher ROA, a statistically insignificant finding. Firm size exhibits a positive and significant relationship with ROA ( $\beta = 2.080$ ,  $p < 0.01$ ), suggesting that larger firms typically yield higher ROA values. The negative coefficient for Leverage ( $\beta = -1.029$ ,  $p < 0.01$ ) implies that higher levels of leverage are associated with lower ROA, a statistically significant result. The intercept term ( $\beta = -24.56$ ,  $p < 0.01$ ) holds statistical significance, representing the expected value of ROA when all other variables are held constant.

In the fixed effects model for Return on Equity (ROE), Leverage demonstrates a negative and statistically significant relationship ( $\beta = -2.234$ ,  $p < 0.05$ ), indicating that higher leverage is associated with lower ROE. Firm size exhibits a positive and significant relationship with ROE ( $\beta = 3.547$ ,  $p < 0.05$ ), implying that larger firms tend to have higher ROE values. The interaction term INSIDOWN\*R&D is statistically insignificant ( $\beta = 0.577$ ), suggesting that the interaction between insider ownership and RD expenditure has a significant positive effect on ROE. In the Random effects model for Return on Sales (ROS), the positive coefficient for RD ( $\beta = 0.509$ ) indicates that an increase in research and development expenditure is associated with higher ROS, a statistically insignificant finding. Concentrated ownership demonstrates a positive and statistically insignificant relationship with ROS ( $\beta = 0.0974$ ), suggesting that firms with higher concentrated ownership tend to have higher ROS values. The intercept term ( $\beta = 5.324$ ) holds statistically insignificant, representing the expected value of ROS when all other variables are held constant.

So, according to the above hypothesis H1 there is a positive relation between firm innovation and firm performance and ownership structure strengthens this positive

relationship. The finding explained in Table 4 proposes that ownership concentration positively but insignificantly moderates the relationship between Firm Innovation and Firm Performance. H2 states that Insider ownership strengthens the positive relationship between firm innovation and firm performance. However, the results in Table 4 show mixed results as insider ownership negatively but insignificantly moderates the association between Firm Innovation firm performance (ROA and ROE) but positively and insignificantly moderates the relationship between insider firm innovation and firm performance (ROS). The study finds that INSOWN has limited influence on firm innovation performance. Employee ownership in both Shanghai and Shenzhen stock markets in 2002 amounted to only 6% of all shares (Shan & Round, 2012). Consequently, employees lack strong financial incentives to shape important investment decisions. Another possible explanation is that incentive-alignment mechanisms, such as equity-based compensation, are less developed in transition economies. Consequently, managers may prioritize establishing and making stronger political connections to secure their future positions, rather than focusing on improving firm performance (Peng, 2000).

### Conclusion

Under agency theory, the study emphasizes the significance of an optimal alignment between ownership, control, and monitoring mechanisms for effective firm responses in rapidly evolving environments. The research results underscore the importance of a specific ownership structure to boost innovation performance within the Pakistani economy. The objective of this study is to check the impact of research and development with dependent variables of firm performance with the role of ownership in terms of concentration and insider. So, the results are positive for independent variables and moderators with ROA and ROE but all are insignificant. However the negative and insignificant relationship of insider ownership with ROA and ROE. Results show that there is a positive relationship between research and development with firm performance so companies should invest in innovative structures that bring firm or company profits. Innovation and concentrated ownership bring probability to a company. The strong financial status of a company will attract more investors which shows future stability.

### Implications and Limitations

The study presents limitations and implications for future research. The use of data to measure innovation performance may overlook firms employing alternative protection methods and only 50 companies from the index. Additionally, the study does not explore how industry types or different ownership levels impact innovation strategies. Differentiating ownership types, such as managers vs. workers or family vs. non-family, could offer valuable insights. Moreover, the findings' generalizability is constrained by the focus on a single country (Pakistan). Future research should consider alternative innovation metrics, investigate industry-specific impacts, on ownership differentiations, and broaden the study's context to enhance the applicability and robustness of the results. The study acknowledges limitations related to innovation measurement (Cai & Tylecote, 2008), firm visibility (Guan, Richard, Tang, & Lau, 2009), high-technology status, and diversification strategy within business groups. Future research should address these constraints by employing diverse innovation metrics and conducting a more detailed breakdown of various ownership forms. Additionally, exploring transitioning economies beyond the current focus on a single country would

enhance our comprehension of firms' innovation performance in transition economies from ownership.

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