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## **EXPLORING THE DYNAMICS OF LEVERAGE, PRODUCT DIVERSIFICATION, AND PERFORMANCE IN THE PAKISTANI INSURANCE SECTOR: A MODERATING ROLE ANALYSIS**

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Product diversification, leverage, financial performance, insurance firms, Pakistan

### **Abstract**

This study examines the moderating role of product diversification on the relationship between leverage and financial performance in the insurance sector of Pakistan. The data is collected from audited financial statements of insurance companies in Pakistan, covering the period from 2008 to 2018. The findings reveal contrasting results between the two performance proxies. With ROA, the interaction between leverage and product diversification shows a significant negative effect, supporting the agency theory. On the other hand, with Tobin's Q, the interaction between leverage and product diversification exhibits a significant positive effect, aligning with the co-insurance theory. The study provides insights for managers by highlighting the impact of product diversification on the leverage-performance relationship. It underscores the importance of considering the level of product diversity when making decisions related to leverage and diversification strategies. The findings also suggest that firms need to carefully manage the trade-offs between leverage, diversification, and performance outcomes.



## **1. Introduction**

In the increasingly globalized business landscape, firms are under pressure to make strategic decisions regarding diversification in order to maintain a competitive advantage. The relationship between product diversification, leverage, and firm performance has been a subject of ongoing research and debate. While numerous studies have been conducted in developed economies, there remains a gap in research conducted in developing economies, particularly in the context of the insurance sector (Goddard *et al.*, 2008). Product diversification offers several potential benefits for firms, including the expansion of market share, increased debt capacity, improved profitability, and risk mitigation (Slahudin *et al.*, 2008). By diversifying their product offerings, firms can achieve economies of scale and optimize resource utilization (Elango *et al.*, 2008; Schommer *et al.*, 2019). However, the decision to pursue diversification strategies is not without challenges. Managers may hesitate to diversify due to fears of job loss and concerns about resource constraints (Anderson *et al.*, 2000; Qian *et al.*, 2008). On the other hand, leverage plays a crucial role as a disciplinary mechanism for management and a governance tool within firms (Williamson, 1988; Jensen, 1986). It allows firms to mitigate fundamental risks through hedging actions and provides potential tax advantages. However, high levels of leverage can also increase financing costs and risk, potentially impacting firm performance (Jensen & Meckling, 1976). In the increasingly globalized business

landscape, firms face pressure to strategically navigate diversification for sustained competitiveness. While the relationship between product diversification, leverage, and firm performance has been extensively explored in developed economies, research in developing economies, especially within the insurance sector, is limited (Goddard *et al.*, 2008). Product diversification offers various benefits, including market share expansion, increased debt capacity, enhanced profitability, and risk mitigation (Slahudin *et al.*, 2008). This strategy enables firms to achieve economies of scale and optimize resource utilization (Elango *et al.*, 2008; Schommer *et al.*, 2019). However, diversification decisions are not without challenges, as managers may be hesitant due to concerns about job loss and resource constraints (Anderson *et al.*, 2000; Qian *et al.*, 2008). Leverage, as a disciplinary mechanism and governance tool, plays a crucial role in risk mitigation and tax advantages but can also impact firm performance negatively (Jensen & Meckling, 1976). In the unique context of the insurance sector in Pakistan, firms grapple with challenges such as low per capita income and a lack of awareness about insurance products. Despite recent growth, the sector's global market share remains modest, with regulatory requirements prompting structural changes and industry mergers (IAP, 2018). This paper aims to bridge the literature gap by exploring the relationship between leverage and performance in the Pakistani insurance industry. Specifically, it investigates whether the benefits of product

diversification are influenced by firms' leverage levels. By examining this moderating effect, the study aims to elucidate the conditions under which leverage significantly impacts performance and whether product diversity shapes this relationship. The research findings will offer insights to insurance industry managers for informed decision-making on diversification strategies. Additionally, the study contributes to the knowledge base by addressing the research gap on the interaction of diversification, leverage, and performance in developing economies. The methodology involves collecting and analyzing relevant data from financial statements and annual reports of insurance companies operating in Pakistan. The paper's structure includes an overview of theoretical background and empirical evidence in Section 2, detailing the data collection process and methodology in Section 3, presenting analysis findings and discussion in Section 4, and concluding with a summary of key findings, implications, and avenues for future research in Section 5.

### *1.1 Insurance Sector of Pakistan*

The insurance sector in Pakistan plays a pivotal role in the country's economic development, offering individuals and businesses a means to effectively manage risks. Despite this significance, the sector faces challenges, including a relatively small global market share due to factors such as low per capita income, limited awareness of insurance products, and cultural and religious beliefs impacting adoption. Comprising life insurance, non-life insurance,

and Takaful (Islamic insurance) companies, Pakistan's insurance sector operates under the regulatory framework of the Insurance Ordinance of 2000. The government oversees these entities to ensure compliance, with a focus on maintaining a minimum paid-up capital, leading to structural changes and mergers within the sector. Some companies have ceased operations due to challenges in meeting statutory requirements. The sector encounters hurdles in promoting insurance uptake, including low awareness, misconceptions about financial burdens, and religious considerations. Despite these challenges, positive trends are evident, with annual growth rates exceeding 13% in both life and non-life insurance sectors. Anticipated economic boosts, such as those from initiatives like the China-Pakistan Economic Corridor (CPEC), are expected to enhance opportunities, particularly for non-life insurance companies. The dynamic nature of the sector is reflected in mergers and closures, highlighting the industry's efforts to meet regulatory standards and ensure financial stability. Understanding the intricacies of Pakistan's insurance sector is vital for researchers, policymakers, and industry practitioners. Studying the sector's challenges provides valuable insights for developing strategies and policies that foster growth and enhance the role of insurance in risk management in the country.

## **2. Literature review**

### *2.1 Theoretical background*

The co-insurance theory, initially proposed by Lewellen (1971), suggests that diversified businesses can offset the risk of one business with the performance of others, mitigating bankruptcy risk. This theory posits that diversification not only reduces the threat of debt repayment but also enhances a firm's credit rating, facilitating access to leverage at lower costs. Consequently, firms with diversified product portfolios are hypothesized to exhibit higher leverage and larger debt sizes compared to their non-diversified counterparts (Lewellen, 1971). Supporting this idea, (Singh *et al.*, 2003) conducted a study and found evidence of a co-insurance effect in both capital structure and diversification strategy, reinforcing the interconnectedness of diversification, leverage, and financial performance. (Jensen & Meckling, 1976) argue that a contractual relationship exists between managers and owners within a company. Debt is considered a crucial governance tool by Jensen (1986), aligning the interests of managers and shareholders and minimizing agency conflicts. Debt financing also helps mitigate agency costs associated with free cash flows (Jensen & Meckling, 1976). However, escalating debt levels may negatively impact product diversification, subsequently influencing firm performance (Menendez-Alonso, 2003). Some researchers have suggested that agency problems within firms, arising from pursuing product diversification or employing diversification strategies, can lead to a reduction in firm performance (Kahloul and Hallara, 2010).

## *2.2 Leverage and Financial Performance*

The relationship between leverage and firm performance has been extensively investigated, yielding diverse findings. (Pouraghajan *et al.*, 2012) ; (Saeed & Badar, 2013) identified a negative link between leverage and financial performance, attributing this to weak regulations and high interest costs that elevate firm expenses, resulting in reduced profits. (Gunawardhane *et al.*, 2002); (Abebe & Abera, 2019) similarly discovered a negative effect of financial leverage on the performance of insurance firms, with (Msomi, 2022) corroborating a negative link for insurance companies in Sub-Saharan Africa. Conversely, studies such as Patrick (2012) in Nigeria found a significant positive relationship between leverage and performance, suggesting that increased performance could help balance debt levels and lead to improved firm outcomes. Several studies in Pakistan across various sectors, including those by (Rehman, 2013); (Ali, 2014); (Attaullah *et al.*, 2017), and Iqbal and Usman (2018), reported that higher leverage can enhance firm performance by providing tax shield benefits. (Batool & Sahi, 2019) conducted a comparative analysis of US and UK insurance firms, revealing that leverage positively determined US firm performance in contrast to the UK. (Ayuba *et al.*, 2019) demonstrated the positive role of short-term debt in enhancing the performance of Nigerian insurance firms compared to long-term debt. Given the diversity of results, study hypothesizes that:

H<sub>1a</sub>: There is a relationship between leverage and financial performance of insurance firms.

### *2.3 Product diversification and financial performance*

(Zheng-fend & Lingyan, 2012) and Oladele (2012) have illustrated the significant risks and structural challenges faced by organizations, impacting managerial decisions regarding operations' spin-offs or incorporation into a holding group structure. (Ugwuanyi *et al.*, 2012) assert that operational diversification can lead to value destruction and discounts due to agency problems between managers and shareholders, weakened corporate governance structures, and strained family relationships. (Ali *et al.*, 2016) highlight the potential retrogressive performance of diversification, particularly in less developed countries like Nigeria, plagued with instability, economic uncertainty, shutdowns of economic activities, lack of technology and resources, and deteriorating infrastructure. (Sahu, 2017) concluded that diversification is not an efficient strategy for increasing an organization's profit and may result in poor performance, while Santarelli and Tran (2016) revealed a curvilinear effect of diversification on a firm's financial performance. (Ugwuanyi *et al.*, 2019) identified diversification as a strategic tool for attaining competitive advantage and superior financial performance. (Krivokapić *et al.*, 2017) indicated that diversified insurance companies outperformed undiversified ones, suggesting a positive relationship between diversification and performance. (Mehmood *et al.*, 2019) suggested that diversification negatively affects financial performance due to managerial motivations. The

research advocated for prudent management of diversification decisions and emphasizes the importance of balancing debt and equity for optimal capital structure. (Sohl *et al.*, 2020) found that demand-related business model diversification is more profitable than demand-unrelated business model diversification. Furthermore, the study identifies that the effectiveness of demand-related BMD is contingent on factors such as demand heterogeneity and technological facilitation of consumer preferences, providing valuable insights for firms operating multiple business models simultaneously. (Arti & Larimo, 2022) indicated that firms with low/related product diversity exhibit higher performance, while those with high/unrelated product diversity experience lower performance, emphasizing the adverse impact of a dual-diversification strategy.

H<sub>2a</sub>: There is a relationship between product diversification and financial performance.

### *2.4 Leverage, product diversity and financial performance*

In the realm of diversification and leverage research, studies in developed economies have been more prevalent compared to those in developing countries. (Vu & Ha, 2021) and (Arte & Larimo, 2022) observed that highly product-diversified firms have lower financial performance, while those with low product diversity perform better. Kochhar and Hitt (1998) extensively explored the association between financing methods and product diversification. (Barton & Gordon, 1988), analyzing US data

from 1970-1974, provided support for the co-insurance theory, demonstrating a significant positive relationship between product diversification and leverage. (Menéndez-Alonso 2003), in a study on Spanish manufacturing firms, identified the co-insurance effect, agency costs, and transaction costs as factors influencing diversification, with transaction costs and co-insurance showing positive associations, and agency costs displaying a negative association with both diversification and leverage. In a study conducted on Malaysian insurance companies, (Foong & Idris, 2012) found a negative relationship between leverage and performance, while also observing a significant impact of product diversity. (Altaf & Shah, 2015), in their study on Indian firms, supported the agency theory and established a negative relationship between product diversity and performance. (Berger & Ofek, 1995) found that expanding product offerings allow for higher levels of debt, resulting in increased profitability and enhanced performance. (Sindhu *et al.*, 2014) discovered that undiversified firms tend to be less risky and have higher returns, accompanied by lower leverage compared to diversified firms. Benz and Hoang (2021) depicted that diversified firms have a financial advantage in taking a loan compared to focused firms. Cappa, Cetrini, and Oriani (2019) studied the effect of strategic decisions on capital structure and observed a significant

positive effect of product diversification on the firm's debt capacity. (Adam *et al.* 2023) highlighted that Brazilian family businesses display higher leverage, while Mexican counterparts have superior return on assets and greater industrial or international diversification. This indicates the strategic positive role of diversification on performance, with leverage serving as a crucial moderating factor.

H<sub>3a</sub>: Product diversification positively moderates the link between leverage and financial performance.

### **3. Research Methodology**

The present study collected secondary data covering the period from 2008 to 2018, encompassing both life and non-life insurance companies in Pakistan. The data was sourced from audited financial statements, including Annual Reports of the companies and the yearbook published by the Insurance Association of Pakistan (IAP). Companies established within the observation years and defaulted companies were excluded from the dataset. The study employed quantitative research methods, utilizing regression models and bootstrapping for moderation analysis, as proposed by (Hayes, 2012). The collected data were analyzed using the Statistical Package for the Social Sciences (SPSS) software to examine the relationship among different variables. The econometric equations are provided below:

$$\text{Performance}_{it} = \beta_0 + \beta_1 \text{Leverage}_{it} + \beta_2 \text{Product diversity}_{it} + \beta_3 (\text{Leverage} * \text{Product diversity})_{it} + \beta_4 \text{Size}_{it} + \beta_5 \text{Age}_{it} + \beta_6 \text{Risk}_{it} + \beta_7 \text{Growth}_{it} + e_{it}$$

The study employs two proxies to measure the dependent variable, which is performance (PERF) in the insurance sector. The first proxy is the accounting measure of Return on Assets (ROA), calculated as the ratio of net profit to total assets. Net profit is obtained by adding underwriting gain to loss and other investment income (loss). Underwriting gain/loss is computed by subtracting net claims, commission paid, and management expenses from earned premium income. The net profit is then derived by adding the underwriting gain/loss to other net investment income (or loss), following the approach suggested by (Foong & Idris, 2012) in a similar study. The second proxy for performance is Tobin's Q, a market-based measure. Tobin's Q is calculated as the ratio of the market value of equity plus book value of liability to book value of total assets, aligning

with the measurement approach of studies conducted by (Afzal *et al.* 2008). The independent variable, leverage (LEV), is measured by dividing the total debt by the total equity ratio. Total debt is computed as the sum of pre-collected insurance funds and other liabilities, while total equity is calculated as the sum of paid-up capital and reserves. This measurement approach is consistent with the study conducted by (Foong & Idris, 2012). To assess the moderating role of product diversity (PD), the study employed the Herfindahl Index. This index calculates the concentration of sales for each product relative to the total assets of the firm. Previous studies, such as (Kanini *et al.* 2019) and (Septina, 2022), have also utilized this index. The formula for the Herfindahl Index is as follows:

$$PRODIV = 1 - \sum_{i=1}^n p_i^2$$

Where,  $p_i$  represents the total premium earned in product line  $i$  divided by the total premium earned by the firm.  $n$  denotes the number of product lines. In addition to product diversity, the study included several control variables to account for other factors that may influence the relationship between leverage and performance. These control variables include firm size, firm age, risk, and firm's growth. Firm age was measured as the difference between the observation year and the

establishment year of the firms, which is consistent with the study conducted by Chen and Yu (2012). Firm size was measured using the natural logarithm of total assets, as suggested by (Dhiab, 2021). Risk was measured by calculating the standard deviation of the ratio of total claims to total premiums. Firm's growth was measured as the percentage change in premiums, following the methodology employed by (Morara & Sibindi, 2021).

#### **4. Empirical Findings and Discussions**

**Table 1:** Descriptive Statistics

	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>S.D</b>
<b>ROA</b>	-0.31	0.34	0.05	0.10
<b>Tobin's Q</b>	0.01	5.24	1.01	0.65
<b>LEV</b>	0.01	6.34	0.59	0.63
<b>PD</b>	0.05	1.00	0.59	0.28
<b>AG</b>	2.00	86.00	39.19	24.30
<b>SZ</b>	4.83	8.29	6.42	0.62
<b>RK</b>	0.00	0.19	0.03	0.04
<b>GR</b>	-0.89	0.85	0.06	0.23

The presented dataset, encompassing 328 observations, offers a detailed perspective on various key variables. The mean Return on Assets (ROA) of 0.0484 reveals that, on average, Pakistani insurance firms achieve a return of 4.84% on their assets, signifying profitability. With a mean Tobin's Q value of 1.0123, the firms, on average, exhibit a market value exceeding their book value, indicating perceived value beyond tangible assets. The mean leverage value of 0.5907 indicates that, on average, firms rely on debt financing for approximately 59.07% of their capital structure. The average product diversity value of 0.5944 suggests that insurance firms have moderately diversified their product offerings. The observed negative correlation between product diversity and leverage implies a weak inverse relationship, suggesting that as product diversity increases, leverage tends to decrease, and vice versa. Delving into the correlation matrix reveals valuable insights into the relationships between different variables. The positive correlation of 0.039 between ROA and Tobin's Q implies a slight association, suggesting

that higher profitability is marginally linked to a higher market value. Leverage exhibits a 10.9% positive correlation with accounting profit, hinting that firms with higher leverage may experience slightly higher profitability. The 12.4% correlation between product diversity and profitability suggests that firms with more diversified product offerings may achieve slightly higher profitability. This finding suggests that firms with a more diversified product portfolio may have lower leverage, indicating a reduced reliance on debt financing. One plausible explanation for this negative correlation is that firms with a broader product range may enjoy a more stable revenue stream and reduced risk, allowing them to depend less on debt for financing. Conversely, firms with a narrower product range may need to rely more on debt to fund their activities and compensate for potential revenue fluctuations. In light of these findings, it becomes evident that the diversification strategy in the insurance sector is intertwined with financial leverage and performance outcomes. Firms with a diverse product portfolio may



experience benefits such as enhanced profitability, reduced risk, and a more favorable market perception. However, the observed inverse relationship between product diversity and leverage suggests a nuanced trade-off. While diversified product offerings may contribute to stability and reduced reliance on debt, firms must

carefully manage this balance to optimize their financial structure and overall performance. These findings underscore the complexity of strategic decision-making in the insurance industry, emphasizing the importance of a well-calibrated approach to product diversification and leverage management.

Table 2: Regression Analysis

	Overall Sample	
	ROA	Tobin's Q
Constant	-.0248	2.1919
LEV	.0964***	-.7149***
PD	.1300***	-.6194***
Lev * PD	-.1507***	1.2508***
AG	.0008***	.0103***
SZ	-.0035	-.1942**
RK	-.4758***	1.7446*
GR	-.0585**	-.0884
R-sq.	.1590	.1543
F statistics	8.614***	8.31***
Observations	327	327

The results of the regression analysis provide valuable insights into the relationship between key variables. The significant F-statistics for both ROA and Tobin's Q indicate that the overall model is a strong fit for the data. The R-squared values suggest that about 15.90% of the variation in ROA and 15.43% of the variation in Tobin's Q can be explained by the variables included in the model. While these percentages indicate a moderate level of explanation, it's important to acknowledge that there are other unaccounted factors influencing performance. The positive and significant effect of leverage on firm accounting performance ( $\beta = 0.0964$ ;  $p < 0.01$ )

supports the hypothesis (H<sub>1a</sub>). This finding is in line with prior studies, suggesting that higher debt levels can lead to tax advantages, positively impacting profits and overall performance. However, it's crucial for firms to carefully manage their leverage levels to avoid excessive financial risk. Interestingly, the positive relationship between product diversification and performance ( $\beta = 0.13$ ;  $p < 0.01$ ) contradicts the findings of (Pavić & Pervan, 2010). This suggests that, in the context of Pakistani insurance firms, diversifying products positively contributes to enhanced performance. The alignment with Markowitz's portfolio theory underscores the

strategic benefits of diversification in maximizing productivity and minimizing risk by operating in different product categories. The negative relationship between the interaction term (LEV\*PD) and ROA ( $\beta = -0.1507$ ,  $p < 0.01$ ) holds significant implications and is consistent with the tenets of agency theory. Jensen (1986) posits that debt serves as a governance tool, mitigating conflicts between managers and shareholders. It is also instrumental in minimizing agency costs related to free cash flows (Jensen & Meckling, 1976). Unethical actions by shareholders can undermine the value of diversification policies. As debt levels rise, diversification tends to decrease, negatively impacting firm performance (Menendez-Alonso, 2003). The noteworthy negative and significant interaction between leverage and diversification underscores the non-linear nature of their relationship, contingent on the level of debt. As debt increases, the positive effects of diversification on performance may diminish or even reverse. This finding highlights the nuanced interplay between debt and diversification, emphasizing the need for prudent leverage management to optimize firm performance. These results are at odds with the findings of (Oladimeji & Udosen, 2019), suggesting the importance of considering contextual factors that may influence the relationship between leverage, diversification, and performance in different settings. The regression results, with Tobin's Q as the dependent variable, reveal a noteworthy negative impact of leverage on a firm's market performance. This outcome aligns with previous

studies by (Khan, 2012) and Saeed and Badar (2013), suggesting that the underdeveloped money market in Pakistan and stringent bank covenants make long-term debt expensive and challenging to secure. High levels of leverage result in increased interest costs, negatively affecting firm performance. Additionally, product diversification exhibits a significant negative effect on a firm's market performance ( $\beta = -0.6194$ ,  $p < 0.01$ ), in line with previous research highlighting potential drawbacks of diversification. These drawbacks include inefficient capital allocation, information asymmetry among managers, high operating costs, and a loss of focus on core products (Stulz, 1990; Simmonds and Lamont, 1996; Harris *et al.*, 1982; Scharfstein & Stein, 2000). These findings underscore the importance of careful management of diversification strategies to prevent adverse impacts on performance. Moreover, the results indicate a significant positive moderating role of product diversity on the relationship between leverage and financial performance, supporting the co-insurance theory. This suggests that diversified product portfolios can help mitigate the negative effects of high leverage on financial performance. In terms of control variables, the positive and significant relationship between firm age and both performance proxies (0.0008 for ROA and 0.0103 for Tobin's Q) is consistent with the study by (Sahu, 2017), implying that older firms gain market power, accumulate experience, attract larger customers, and become more profitable over time. Age serves as an indicator of firm

maturity and stability, positively influencing performance (Pervan *et al.*, 2017). On the other hand, size shows an insignificant negative effect on firm's accounting performance ( $\beta = -0.0035$ ,  $p > 0.01$ ), but the effect becomes significant in the case of market performance ( $\beta = -0.1942$ ,  $P < 0.01$ ). These findings align with the study by (Derbali, 2014), suggesting that smaller firms tend to be more efficient and agile compared to larger firms, adapting quickly to changes in the business environment, responding effectively to customer needs, and receiving government support, contributing to their overall performance and competitiveness. The analysis reveals a significant negative relationship between risk and accounting performance ( $\beta = -0.4758$ ,  $p < 0.01$ ). These results align with the previous study by (Sindhu *et al.* 2014), indicating that unpredictability in risk negatively impacts future decision-making, returns, and overall firm performance. Elevated levels of risk introduce uncertainties and challenges that can hamper

financial performance (Bloom & Milkovich, 1998). Conversely, risk shows a significant positive relationship with Tobin's Q ( $\beta = 1.7446$ ,  $p < 0.01$ ). This finding is in line with the results of (Getahun, 2016), suggesting that investors anticipate higher returns when undertaking higher levels of risk. In this context, higher risk may be associated with greater growth opportunities and the potential for increased returns, contributing to improved performance. Moreover, growth demonstrates a significant negative effect on firm's accounting performance ( $\beta = -0.058$ ,  $p < 0.01$ ). However, it exhibits an insignificant negative relationship with Tobin's Q ( $\beta = -0.0884$ ,  $p > 0.01$ ). These findings are consistent with the study by (Kausar *et al.* (2014), indicating that firms striving for higher growth may resort to increased leverage. This, in turn, can result in higher bankruptcy costs and a lack of proper utilization of tax-shield benefits, ultimately impacting firm performance (Soumadi & Hayajneh, 2012).

**Table 3:** Conditional direct of product diversity on firm performance

PRODIV	OA		PRODIV	Tobin's Q	
	Effects	Se		Effects	Se
0.3548	.0429***	0.0131	0.3548	-.2771***	0.0912
0.6939	-0.0082	0.0109	0.6939	.1531**	0.0752
0.7667	-0.0191	0.0126	0.7667	.2441***	0.0864

Note: \*\*\*,\*\* and \* are significant at 1%, 5% and 10% level respectively.

The discovery of a positive correlation between leverage and financial performance in insurance firms with low product diversity supports the idea that leverage can be advantageous in specific scenarios. In instances where insurance firms

exhibit low product diversity, they may possess a focused business model and specialized expertise within a particular market segment. In such contexts, higher leverage can grant these firms access to additional funds for growth and

investment, potentially resulting in enhanced financial performance. However, the observed significant negative correlation between leverage and financial performance in situations of high product diversity implies that the benefits of leverage diminish as the complexity and breadth of the firm's product portfolio increase. Managing a diversified portfolio may require substantial resources, coordination, and management capabilities, presenting challenges that are difficult to overcome. Additionally, the potential risks and costs associated with handling a diversified portfolio may outweigh the advantages of increased leverage, leading to a negative impact on financial performance. The identification of a negative correlation between leverage and financial performance, as measured by Tobin's Q, in insurance firms with low product diversity suggests that elevated levels of leverage may have an adverse effect on the firm's market value and overall performance. When insurance firms have low product diversity, they may encounter constraints in generating sufficient revenues and maintaining competitiveness. Consequently, higher leverage levels can magnify financial risks and elevate financing costs, negatively influencing the firm's market value. Conversely, the observed significant positive correlation between leverage and financial performance in situations of high product diversity indicates that the benefits of leverage become more pronounced in the presence of a diverse product portfolio. With high product diversity, insurance firms may access a broader range of market segments and address

diverse customer needs, enabling them to capitalize on various revenue streams and potentially achieve economies of scale. This can lead to increased profitability and enhanced market value, establishing a positive relationship between leverage and financial performance. A comparative analysis of how the conditional effects of product diversity vary with the measurement of financial performance reveals distinct patterns. The negative relationship uncovered between leverage and accounting performance in insurance firms with low product diversity suggests that elevated leverage levels have an adverse impact on the firm's financial indicators, such as return on assets (ROA). This finding underscores the potential risks and costs associated with higher debt levels, which can detrimentally affect the firm's profitability and overall financial well-being. In this scenario, accounting performance serves as a metric for evaluating the firm's operational efficiency and its ability to generate profits. Conversely, the discovery of a significantly positive relationship between leverage and market performance (Tobin's Q) in insurance firms with high product diversity highlights the potential benefits of leveraging when the firm maintains a diverse product portfolio. In this context, market performance reflects the firm's capacity to create value for shareholders and attract investors in the financial markets. The positive relationship implies that higher leverage levels, when coupled with a diverse product portfolio, can amplify the firm's market value and potentially result in higher stock prices. These differing results

indicate that the impact of leverage on firm performance is multifaceted and can vary depending on the dimension of performance being assessed.

## **5. Conclusion**

The study endeavors to scrutinize the moderating role of product diversification in the relationship between leverage and performance within the insurance sector of Pakistan. The findings illustrate that the correlation between leverage and performance, as gauged by various proxies, is contingent upon the specific performance metric employed. In the context of return on assets (ROA), the interaction between leverage and product diversification manifests a noteworthy negative impact. This aligns with the tenets of agency theory, suggesting that heightened levels of debt may induce unethical shareholder behavior, undermining the advantages of diversification. As debt escalates, the degree of product diversification tends to decrease, culminating in an adverse effect on firm performance. Conversely, concerning market-based performance measured by Tobin's Q, the interaction between leverage and product diversification indicates a substantial positive effect. This aligns with co-insurance theory, signifying that diversified businesses can alleviate the risk associated with debt repayment, bolster the firm's credit rating, and facilitate easier access to lower-cost debt. The affirmative relationship implies that, in the presence of product diversification, higher leverage can contribute to enhanced market performance.

Managers are urged to prudently weigh the trade-off between leverage and product diversification. While elevated leverage can furnish access to funds for growth and investment, a judicious balance is crucial to mitigate potential negative impacts on performance, particularly when product diversification is low. Managers ought to evaluate their firm's specific needs and capabilities to ascertain the optimal levels of leverage and product diversification. When evaluating market performance, the positive relationship between leverage and performance in the context of high product diversification should be considered. This suggests that diversified product portfolios can augment market value and potentially attract investors. Managers can leverage this potential by strategically expanding and diversifying their product offerings to capture diverse market segments and maximize value creation. However, it is imperative to acknowledge the study's limitations, such as its confinement to the insurance sector and a relatively small sample size, which may curtail the generalizability of the findings. Future research avenues could explore additional performance measures like return on equity (ROE) or economic value added (EVA) to obtain a more holistic understanding of the interplay between leverage, diversification, and various facets of firm performance. Additionally, future investigations may delve into how the relationship between leverage, diversification, and performance is shaped by diverse regulatory frameworks, institutional environments, and

economic conditions across both developed and developing economies.

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