ORIGINAL RESEARCH ARTICLE
JBFS Volume 17 Number 1 (June) 2025
DOI:https://www.doi.org/

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Keywords
tructure-Conduct-Performance (SCP), HHI, Market Power, Bangladesh, Non-Life Insurance

JEL Classifications: G22, L25, C33

Received: 30 July, 2025

Accepted: 7 December, 2025

Published online: 31 December, 2025

Published in Print: 31 December, 2025

ISSN (Online) 3006-5720

ISSN (Print) 1990-5157

Structure Conduct Performance: Insights from Bangladesh's Non-Life Insurance Sector

Abstract

This study comprehensively checks out the competitive dynamics and financial performance of the Bangladesh non-life insurance sector by applying Structure-Conduct-Performance (SCP) hypothesis. Using a balanced panel data of 46 insurers, comprising 45 private and one public insurer, over the period of 2014 to 2023, the research explores how market competition and company specific characteristics influence insurer performance. The market structure is assessed through Herfindahl-Hirschman Index (HHI), CR3, and CR5 concentration ratios, which stipulates a moderately concentrated market dominated by few large insurers. Additionally, a fixed effect panel regression model with robust standard errors empirically examines the impact of market structure and insurer's conduct on the net profit, used as a proxy of financial performance. The findings disclose that higher market concentration (CR5) is linked with lower profitability, contradicting with traditional SCP expectations. Whereas the company specific conduct factors such as cost efficiency and insurer size foster profitability. Overall, these results support that in Bangladesh non-life insurance sector, the internal efficiency of the insurer matter more than the market power in evaluating insurer success.

1. Introduction

The Bangladesh insurance industry has undergone a remarkable transformation over the last decade, driven by rising market participants, regulatory reforms, technological improvement and market liberalization. As of July 2025, the industry comprises 82 companies, including both life and non-life insurers. Despite the growth in number of players in the existing market, the insurance sector's contribution to national GDP remains low, in particular below 2 percent. In 2024, the contribution from both life and non-life insurance was around 0.5 percent and was far lower than the neighboring countries and emerging market's average of 3.3 percent. Therefore, low insurance penetration and insurance density highlights a structural mismatch between industry size and economic impact.

At present, in Bangladesh non-life insurance sector, 45 private insurers and one public insurer – Sadharan Bima Corporation (SBC) – are competing in a fragmented but static market. Though the market has high number of insurers, the market is dominated by few players. Therefore, the industry is facing an intense competition within a limited customer base, leading to unethical and risky business practices. Thus, the regulatory authority - Insurance Development and Regulatory Authority (IDRA) – is under pressure to implement stern regulatory supervision to create a stable market.

To comprehend how a market structure influences the insurer actions and outcomes, this paper employs the Structure-Conduct-Performance (SCP) framework. According to SCP theory, the structure of the market shapes insurer conduct (e.g. underwriting, pricing, and risk management strategies), which in turn influence their final outcomes such as profitability and solvency (Boateng, et al., 2022). The SCP paradigm is widely applied in developed market equipped with strict regulation and market maturity. However, its dynamics can differ significantly in a less regulated and saturated market prone to regulatory inefficiency, weak actuarial governance, low insurance demand and underdeveloped financial infrastructure.

This research paper aims to address '*How does market competition, as captured by market concentration, influence the conduct and financial performance of non-life insurance companies in Bangladesh*?' Besides, it examines, whether increased competition foster efficiency and profitability or, conversely, leads to adverse risk taking and weaken financial outcomes. This research paper contributes to the inadequate empirical literatures on the application of SCP framework in developing country, notably in an unexplored market like Bangladesh's non-life insurance sector. This study put emphasis on a growing market with large number of insurers with weak regulatory enforcement.

For empirical analysis this study uses a balanced panel data of 46 insurers-including the public entity SBC, from 2014 to 2023. Market concentration is measured by both Herfindahl-Hirschman Index (HHI) and Concentration ratios (CR3 and CR5). Moreover, insurer conduct is captured by four financial ratios – leverage, reinsurance ratio, management expense ratio and agency commission ratio. Financial performance is assessed using the value of net profit. Further, to account for firm level heterogeneity, size, ownership and an interaction term of ownership and reinsurance is considered in the analysis as control variables. The findings demonstrate the market is moderately concentrated and dominated by few large players. Moreover, the result of the study partially supports SCP hypothesis because in Bangladesh non-life insurance sector, large market concentration doesn't guarantee higher return.

Understanding the interrelationships within the SCP framework in an unexplored market is vital for the academicians, policymakers and the regulators. The findings can provide helpful insights to the regulators and policymakers to foster financial stability and encouraging reasonable competition within the sector. Besides, the insurers can have helpful insight from the result in designing their internal strategies related to underwriting, pricing, and reinsurance and risk management behaviors under competitive pressure.

The remainder of the paper is structured as follows: section two reviews the relevant literature on SCP theory and empirical studies; section three outlines the methodological framework; section four presents and discusses the empirical findings; and section five provides concluding remarks with policy recommendation with future research directions.

2. Literature Review

The structure-Conduct-Performance

(SCP) model provides a robust analytical framework to understand how market conditions shape firm behavior and, ultimately, firm performance. SCP initially introduced by Bain (1951) and later refined by Scherer and Ross (1990). SCP framework posits that market structure-defined by factors such as competition, market concentration, and entry/exit barriers – affect firm conduct including pricing, investment, underwriting and risk taking strategies. These characteristics, in turn, influence firm outcome related to profitability, solvency, efficiency and risk exposure (Jedlicka and Adusei, 2006).

While SCP originated in industrial economies; it has extensive application in financial sectors such as banks, insurance (Berger, 1995; Molyneux and Forbes, 1995; Ullah et al., 2016; Duong et al., 2023). Most of the empirical applications of SCP hypothesis in financial sector are found in literature related to banking, exploring the relationship between market structure and bank's financial performance or efficiency. On the contrary, SCP has limited application in insurance sector.

Joskow (1973) was one of the earliest researchers to apply SCP to insurance, who examined how market competition influences US general insurers pricing behaviors. Later, Chidambaran et al. (1997) studied the relationship between market competition and profitability of 18 US non-life insurers and concluded that higher market power tends to be associated with higher return. However, the empirical validity of SCP remains debated. Literature related to market competition and firm performance provides mixed findings. According to SCP framework, competition fosters innovation, better operational efficiency, risk management structure, and thereby improves performance (Al-Qaisi, 2018). In contrast, competitive markets can lead to aggressive pricing and risk taking behaviors, and diminish profit margin (Krishnamurthy et al., 2005). For instance, Jedlicka and Adusei (2006) found little to no relationship between market structure and conduct in Australian insurance industry. In addition, Choi and Weiss (2008), applying SCP and Relative Market Power (RMP) theory in US market concluded that the relationship between firm outcomes and market competition is significantly influenced by the regulatory context.

Despite the existence of diverse conclusion, the SCP paradigm is still extensively acknowledged as a helpful means for analyzing strategic behavior in competitive industries such as banking and insurance. However, most prior literatures were based on developed market, with little attention to developing market. Therefore, this study extends the application of SCP model to the less explored non-life insurance industry of Bangladesh – a dynamic emerging market amid regulatory, operational and structural challenges.

Researchers have shown incessant interest in determining how market conditions and firm-specific characteristics influence performance in both banking and insurance. Several studies have explored market competition using the Herfindahl–Hirschman Index (HHI), Lerner Index and concentration ratios. For example, Ghimire (2020) explored the competition in Nepalese insurance industry by using HHI. Arif and Firmansya (2021) explored the relationship between HHI and Profitability in Indonesia's Islamic insurance sector. In another study, Boateng et al. (2022) used both HHI and concentration ratio (CR5) on the insurance market of Ghana to

evaluate the SCP framework.

Literatures related to performance analysis and SCP has examined several firm specific and macroeconomic variables. For instance, studies related to banks and depository financial institutions have focused on different profitability indicators such as Return on Assets (ROA), Return on Equity (ROE) and Net Interest Margin (NIM) or the Net Profit Margin (NPM) (Boadi et al., 2013; Samina, 2024). Related to conduct factors, Berger and Humphrey (1997) linked high expense ratio to cost inefficiency, which increases underwriting risk and reduces profitability. Cole & McCullough (2006) found high reinsurance ratio, as a measure of risk transfer mechanism by the primary insurer, can lower the underwriting risk and enhance firm performance. Samina (2024) identified premium growth as an early signal of aggressive underwriting practices in Bangladesh non-life insurance sector. Ortyński (2016), studying general insurers in Poland, stated that higher operating expenses reduce firm profitability, while firm size has a positive effect.

In developing countries, firm-specific variables have also been linked to insurer performance. Boadi et al. (2013) found that liquidity and leverage positively influence profitability in the insurance market of Ghana. Ullah et al. (2016) analyzed insurance companies of Bangladesh from 2004 to 2014 and showed how underwriting risk, size, expense ratio, and premium growth were related to ROA. Cudiamat and Siy (2017), examining insurers in the Philippines, found that size, age, leverage, and liquidity significantly influence performance.

Despite wide ranging use of SCP hypothesis in banking and industrial economies, the application in insurance sector is quite limited. Most existing studies focused either on market competition or return based performance indicators, while overlooking firm specific conduct variables such as reinsurance ratio, management expense ratio and leverage. Moreover, in most of the performance analysis studies, market competition is treated as an exogenous or control variable. This study addresses this limitations by applying the SCP framework to investigate how market structure, measured by the HHI and CR5, impacts insurers performance in terms of net profit while taking insurer conduct into consideration. Therefore, key conduct variables include leverage, management expense ratio, agency commission ratio, reinsurance ratio along with size and ownership treated as control variables. This study, by using firm level panel data of 46 insurers from 2014 to 2023, offers both theoretical and empirical contribution to the SCP literature. Overall, this study comprehends the understanding of how market competitions shape insurer behavior and ultimately financial outcome in a rapidly expanding emerging market. The findings are likely to yield policy-relevant insights for regulators and insurers to promote a competitive yet financially stable non-life insurance industry in Bangladesh.

3. Methodology

This study follows Structure-Conduct-Performance (SCP) hypothesis to examine the competitive dynamics and financial performance of the non-life insurers in Bangladesh. Through the lens of SCP framework this paper aims to examine how market concentration influence firm conduct, and how structure-conduct in turn impact performance outcomes–

specifically, net profit.

The analysis of this study is based on secondary data collected from the annual reports of the non-life insurance companies, yearbooks published by Bangladesh Insurance Association (BIA), and annual reports of Insurance Development and Regulatory Authority (IDRA). The dataset spans from 2014 to 2023, a complete ten years time frame. The dataset consists of a balanced panel data of 46 insurers – 45 private and 1 public- over the study period. All the companies in operation during the study period have taken into consideration. As there were no entries and exits during the study period, the dataset ensures consistency across firms and years. Due to incomplete data for the year 2024 across all 46 companies, it was excluded from the observation window to ensure panel integrity.

This study employs a two-stage methodical approach to explore how competition within the non-life insurance industry in Bangladesh influences company's performance:

In the first stage, this study evaluates the extent of market competitiveness by calculating market concentration indicators using HHI and Concentration ratios.

Herfindahl-Hirschman Index (HHI): HHI is used as a proxy measure of the competitive structure of the market. HHI is calculated by aggregating the squared value of company's market share in an industry.

$$HHI_t = \sum_{i=1}^{n} ms_i^2 \times 10{,}000 \qquad (1)$$

Here, represents the market share of company i, calculated as the ratio of the company's gross premium to the total gross premium of the non-life insurance industry of Bangladesh. Higher HHI stands for greater concentration in the industry. According to global standards, the HHI is used to categorize market concentration levels as follows:

HHI Value	Market Condition
HHI less than 1000	Unconcentrated
HHI between 1000 to 1800	Moderately Concentrated
HHI greater than 1800	Highly Concentrated

Concentration Ratios: Concentration ratios (CR3 and CR5) are used to measure the degree of dominance from major insurers. The concentration ratio is the percentage of industry contribution coming from the few top insurers. Here, contribution from top three insurers and top five insurers are used to label CR3 and CR5, an important measure of market competition.

$$= \sum_{i=1}^{k} ms_i \qquad (2)$$

(k = 3, 5)

This is the aggregate market share of top three (CR3) and top five insurers (CR5) respectively.

In the second stage, a panel regression model is used to assess how firm specific conduct and market structure influence performance. The empirical model incorporates variables related to market structure, firm specific conduct and control variables.

Table 01: List of Variables

Category	Variables	Description	Sign
Dependent Variable	Net Profit	Net Profit	
Structure Variable	Market Share	Individual insurer's share of market gross premium	+
	CR5	Sum of market share of top 5 insurers	±
Conduct Variable	Leverage	Total Liabilities / Total Assets	±
	Reinsurance Ratio	Reinsurance Premium Ceded / Gross Premium	±
	Management Expense Ratio	Management Expenses/ Net Premiums	-
	Agency Commission Ratio	Agency Commission/ Net Premium	-
Control Variables	Size	Log of Total Assets	+
	Ownership	Dummy: 0 = Private; 1 = Public	±
Interaction Variable	Ownership × Reinsurance Ratio	Interaction term to assess effect heterogeneity	±

To evaluate the Structure-Conduct-Performance framework, the following regression model is estimated:

$$NP_{it} = \alpha + \beta_1 Market\ Share_{it} + \beta_2 CR5_t + \beta_3 Reinsurance\ Ratio_{it} + \beta_4 Management\ Expense\ Ratio_{it} + \beta_5 Agency\ Commission\ Ratio_{it} + \beta_6 Size_{it} + \beta_7 Ownership_i + \beta_8 (Ownership \times Reinsurance\ Ratio)_{it} + \varepsilon_{it} \quad (3)$$

This study applied four panel data estimation models to select the appropriate one. Initially, the empirical analysis began with the application of OLS. Then several diagnostic tests – including the Shapiro-Wilk test, Variance Inflation Factor (VIF), Breusch-Pegan Test, and Durbin Watson test – were performed to assess normality of residuals, multicollinearity, heteroscedastcity, and autocorrelation, respectively. The VIF (appendix) results indicates low to moderate multicollinearity as all the variables have VIF value less than 10, except for the interaction variable of which is theoretically justified. Moreover, evidence of heteroscedasticity and non-normal residuals supported the use of OLS model with more conservative heteroscedasticity-consistent standard errors (HC3).

Subsequently, given the panel nature of the data, Fixed Effects (FE) and Random Effects (RE) models were estimated with same set of variables to control for unobserved heterogeneity. The Hausman test was then performed to choose between FE and RE models, and the test result preferred the FE model. Consequently, the Fixed Effect model with

robust standard error was selected as the primary estimation strategy to interpret the influence of structure and conduct on the performance of the non-life insurers.

4. Findings and Discussion

The level of disparity in the market share among the general insurers of Bangladesh is shown in table 2. Sadharan Bima Corporation (SBC) holds an average market share of 27.4%, which is three times higher than its closest one, Green Delta Insurance Company. SBC's high market dominance, reflected by larger market share supports its dual role as a direct insurer and reinsurer in the market. However, the next four insurers'- Green Delta, Reliance, Pioneer, and Pragati- market share ranges from 4.6% to 8.4%, indicating a moderately concentrated market. Overall, according to average market share throughout the study period demonstrates that SBC as a single player holds the biggest portion while rest of the insurers compete within a fragmented space, indicating a moderately concentrated market. SBC has highest market share in terms of gross premium because it plays a dual role of general insurer and local reinsurer.

Table 02: Market Share

Rank	Company	Average Market Share (%)
1	Sadharan Bima Corporation	27.395
2	Green Delta Ins. Co. Ltd	8.354
3	Reliance Insurance Limited	6.516
4	Pioneer Insurance Co. Ltd	6.422
5	Pragati Insurance Limited	4.587

Source: Author's own estimation

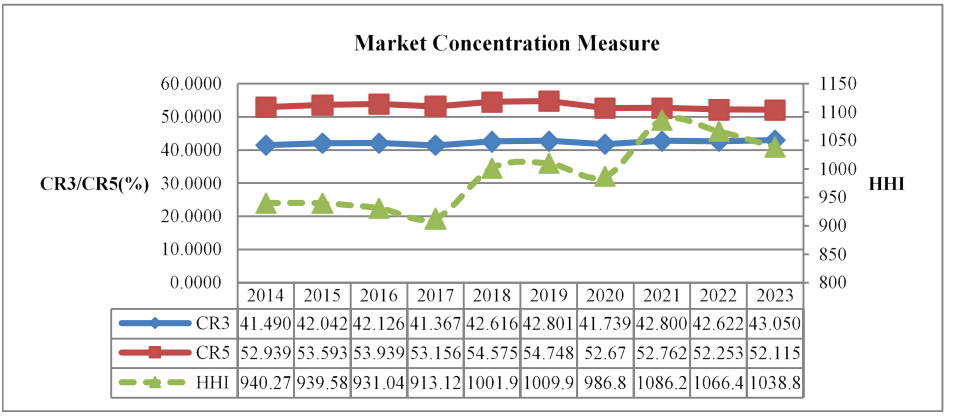
The trend of market concentration in the non-life insurance industry from 2014 to 2023 is illustrated in chart 1 using CR3, CR5 and the HHI. CR3 measure indicates that the top three insurers - SBC, Green Delta and Reliance - consistently controlled around 41-43% of the market, which accounts for approximately one-third of the entire industry. Similarly, the top 5 insurers (CR5) held around 52-55% of the total market share. This indicates that the market is moderately concentrated where a small number of insurers dominate over half of the total non-life insurance industry.

The HHI remained relatively stable between 910 and 940 from 2014 to 2017, demonstrating little concentration and soaring competition. However, it experienced a notable upward trend from 2018 to 2023, with the exception of trivial drop in 2020. According to global standards, an HHI value below 1000 is considered as a competitive market.

The HHI shows a visible but fleeting shift in the market structure of Bangladesh's non-life insurance industry. The timeline can be divided into three distinct phases: before COVID-19 (up to 2019), during COVID-19 (2019–2020), and after COVID-19 (post-2020). The graph shows a sharp decline in concentration in 2020 during the height of the pandemic, because smaller insurers gained momentum while major players faced operational challenges due to the large scale of operation and

complexity of their insurance portfolios. However, shortly after the COVID-19 shock, the leading insurers began to recoup their market power probably due to stronger capital buffers, superior digital capabilities, better experience and greater operational resilience. Largely, COVID-19 led short-term instability in market concentration, but its effects were temporary, with the market returning to a more consolidated structure thereafter and maintained a decreasing HHI index after 2021.

Chart 01: Market Structure



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
CR3	41.490	42.042	42.126	41.367	42.616	42.801	41.739	42.800	42.622	43.050
CR5	52.939	53.593	53.939	53.156	54.575	54.748	52.67	52.762	52.253	52.115
HHI	940.27	939.58	931.04	913.12	1001.9	1009.9	986.8	1086.2	1066.4	1038.8

Source: Author's own calculation

Since 2021, the HHI has continued to rise, reaching values above 1000, further confirming that the Bangladesh non-life insurance market was moderately concentrated during this period. The increase in concentration levels could have implications for pricing power, risk behavior, and firm-level risk management strategies—elements explored further in the regression analysis.

Table 3 represents the descriptive studies of the variables used in the study which portrays a wide landscape of Bangladesh non-life insurance industry. The net profit averages 188.85 million BDT, but with a higher volatility of 430.08 million. Most insurers in the dataset experienced positive net profit throughout the study period whereas some insurers reported net loss with maximum of 60.63 million BDT due to inefficiency, claim shocks and poor underwriting management. The market share shows that on an average, an insurer holds only 2.17% of market share with a minimum of 1.59% and maximum of 29.86%, reflects a fragmented industry with few top players. Moreover, the highest market share is captured by the one and only public insurer SBC, and the market share always remained between 25 to 30% throughout this 10 year observation window. The CR5 concentration ratio indicates that the market is moderately concentrated where top 5 dominant players hold more than half of the market share. Moreover, average leverage depicts insurers heavy dependence on liabilities and this situation is theoretically supported in insurance industry with full of future liabilities.

Table 03: Descriptive Studies

	Net Profit	Market Share	CR5	Leverage	Reinsurance Ratio	Management Expense Ratio	Agency Commission Ratio	Size
count	460	460	460	460	460	460	460	460
mean	188.8483	2.173913	53.27518	0.699861	0.415797	0.459023	0.211531	3.181019
std	430.0819	4.10646	0.870033	0.124913	0.124499	0.185532	0.076665	0.379805
min	-60.6291	0.054557	52.11498	0.277343	0.037344	0.019541	0.000112	2.108535
25%	67.50834	0.906182	52.66974	0.619234	0.332837	0.32981	0.175199	2.987855
50%	95.89184	1.150616	53.04772	0.690612	0.415836	0.436011	0.211943	3.141447
75%	148.8294	1.591322	53.93908	0.779734	0.48502	0.576201	0.247082	3.312255
max	3948.363	29.858	54.74866	0.999706	0.807003	1.28126	0.693282	4.930728

Source: Author's own calculation

In terms of risk sharing strategy, insurers transfer around 42% of their insurance premium with reinsurers. In case of operational efficiency, around 46% of net premium is spent as management expenses. Some firms in the dataset are highly efficient in managing operating expenses while other incurred expenses more than net premium income. Agency commission expense, proxy for selling and advertising efficiency, averages at 21.15% with a low standard deviation. Size, log of total assets, shows significant deviation in the scale across firms. Overall, the descriptive studies show a reasonable variation across insurers which emphasize the need to control firm-specific effects in the panel dataset.

Table 04: Correlation Matrix

	Market Share	CR5	Leverage	Reinsurance Ratio	Management Expense Ratio	Agency Commission Ratio	Size	Ownership
Market Share	1							
CR5	0.000000	1						
Leverage	0.435928	-0.14077	1					
Reinsurance Ratio	0.1385175	-0.0071	0.031577	1				
Management Expense Ratio	-0.3323822	0.010126	-0.05818	0.115073	1			
Agency Commission Ratio	0.3013273	0.153638	0.086707	0.372652	0.000018	1		
Size	0.7606133	-0.15012	0.442	0.262866	-0.31736	0.314797	1	
Ownership	0.8161931	-0.01661	0.293655	0.014428	-0.23984	0.151812	0.505166	1

Source: Author's own calculation

Following the descriptive analysis, a correlation matrix was constructed to focus on the linear relationship among the independent variables and to identify any potential multicollinearity. Size and ownership has moderate positive relationship with market share (0.51), reflecting public insurer has a scale advantage. None of the variables has a pair-wise correlation of 0.9, and this signifies no serious multicollinearity problem. However, high correlation

between market share, size and ownership may have some influence on the model. Additionally, the correlation between the interaction variable was not included to avoid possible distortion of the matrix. In summary, the correlation matrix justifies the inclusion of structure, conduct and control variables to study the nature of SCP hypothesis in the context of general insurance industry of Bangladesh.

Table 05: Regression Models

	OLS		OLS (Robust)		FE		RE		FE (Robust)	
	Coefficient	**P-value**	**Coefficient**	**P-value**	**Coefficient**	**P-value**	**Coefficient**	**P-value**	**Coefficient**	**P-value**
const	1314.6073	0.0010	1314.6073	0.0660	646.6600	0.1270	984.9200	0.0660	646.6600	0.0836
Market Share	89.0304	0.0000	89.0304	0.0000	-62.4990	0.0007	89.4550	0.0000	-62.4990	0.1711
CR5	-27.1138	0.0000	-27.1138	0.0070	-28.1680	0.0001	-24.0110	0.0070	-28.1680	0.0009
Leverage	-128.6040	0.0150	-128.6040	0.1120	-244.1700	0.0660	-115.5900	0.1120	-244.1700	0.1931
Reinsurance Ratio	24.9759	0.6250	24.9759	0.6130	34.6410	0.6263	52.3160	0.6130	34.6410	0.3981
Management Expense Ratio	27.9826	0.4060	27.9826	0.4000	-51.2640	0.1990	17.1820	0.4000	-51.2640	0.0311
Agency Commission Ratio	-513.1811	0.0000	-513.1811	0.0000	-104.0100	0.3138	-484.6400	0.0000	-104.0100	0.2527
Size(Log of Total Assets)	93.0619	0.0000	93.0619	0.1020	435.2700	0.0000	138.5400	0.1020	435.2700	0.0000
Ownership	-2368.5701	0.0000	-2368.5701	0.0440	-3656.1000	0.0000	-2504.1000	0.0440	-3656.1000	0.0000
Ownership x Reinsurance Ratio	6118.4964	0.0000	6118.4964	0.0390	7996.5000	0.0000	5983.6000	0.0390	7996.5000	0.0000
R^2	**0.9230**		**0.9230**		**0.5742 (Within)**		**0.8418**		**0.5742 (within)**	

Source: Author's own calculation

Table 5 summarizes the results obtained from different regression models, which clearly represents some notable variation in strength and significance of the relationships. Though the findings of OLS models show stronger significance and high explanatory power, they don't capture the differences among insurers. Therefore, the Fixed Effects model with robust standard errors was chosen for the primary model for analysis, which provides more reliable results by controlling for those individual differences.

The result of the robust fixed effect model presented in table 06 partially support Structure-Conduct-Performance (SCP) hypothesis in the context of Bangladesh non-life insurance industry. Between the two structural variables, market concentration indicator CR5 is statistically significant and depicts that less competition (higher concentration) leads to lower net profitability. This contradicts with traditional SCP hypothesis. In Bangladesh it's not surprising as firms' can't exercise extreme pricing strategies and set their costing as low as possible due to inefficiencies in the market along with low insurance demand.

Table 06: Fixed Effect (Robust) Model

	Parameter	Std. Err.	T-stat	P-value	Lower CI	Upper CI
const	646.66	372.69	1.7351	0.0836	-86.267	1379.6
Market Share	-62.499	45.575	-1.3714	0.1711	-152.12	27.126
CR5	-28.168	8.4342	-3.3398	0.0009*	-44.754	-11.582
Leverage (L/TA)	-244.17	187.26	-1.3039	0.1931	-612.42	124.09
Reinsurance Ratio	34.641	40.947	0.846	0.3981	-45.884	115.16
Management Expense Ratio	-51.264	23.686	-2.1643	0.0311**	-97.845	-4.6837
Agency Commission Ratio	-104.01	90.782	-1.1457	0.2527	-282.53	74.524
Size (Log of Total Assets)	435.27	105.16	4.1392	0.0000*	228.47	642.08
Ownership	-3656.1	857.72	-4.2626	0.0000*	-5342.8	-1969.3
Ownership x Reinsurance Ratio	7996.5	1923	4.1584	0.0000*	4214.9	1.18E+04

Source: Author's own calculation (* Significant at 1% Confidence Interval; ** Significant at 5% Confidence Interval)

From the conduct variables, Management expense ratio has a strong negative effect on firms' performance. It posits that operational efficiency leads to better performance, consistent with SCP hypothesis. Other conduct variables, leverage and agency commission shows negative but insignificant relation with company's profitability. Notably, the reinsurance ratio has a positive but insignificant effect on performance while the interaction with ownership makes it an important driver of insurers' profitability. It shows that the public insurer can benefit from increasing reinsurance facilities to maintain its dual role as direct insurer and reinsurer which requires efficient risk management strategy through reinsurance. Moreover, firm's size has a positive and significant association with insurer's profitability. It supports SCP hypothesis that economies of scale improves performance.

To sum up, the SCP theory is partially supported in Bangladesh non-life insurance market. The results contradict with the established expectation that larger market share leads to higher profitability does not evident here. Instead of market structure, firm-level efficiency and governance issues appear more critical for better performance. The findings suggest that the regulatory focus should be on improving firm level efficiency rather fostering competition to improve the financial health of the industry.

5. Conclusions

This study explored how market structure and conduct of the insurers influence the performance of non-life insurers in Bangladesh, using a panel dataset of 460 observations from 46 insurers during 2014 to 2023. The fixed effects model with robust standard errors was used to capture the differences in insurers' performance due to market structure and firm level conduct characteristics. The results provide a mixed view of the SCP framework in Bangladesh non-life insurance market. Though market concentration does influence insurer's performance, the effect is dissimilar from the conventional SCP theory. In Bangladesh, having greater market share or experiencing moderate concentration do not guarantee better financial performance. This deviation could be the reason of existing structural inefficiencies, regulatory constraints, and public mistrust in the insurance market. In contrast to structure, conduct factors specifically the operating efficiency, size and reinsurance strategy have strong positive influence on company's performance.

The research findings challenge the classical assumptions of the SCP framework and partially support the hypothesis in an emerging market like Bangladesh. There are several structural and regulatory limitations that curb insurers' ability to transform market concentration into strategic behavior to get superior outcome. For example, as a tariff-based industry, insurers of Bangladesh non-life insurance industry, has little discretion over pricing due to strict regulation which jeopardize the fundamental SCP assumption of exercising power in the concentrated market. Moreover, non-life insurance market is largely conventional with minimal scope of product diversification which is a key approach under conduct to influence market performance. Further, regulatory weaknesses in the form of inadequate mechanism for market monitoring and inconsistent industry rules suppress competitive dynamics. Additionally, opaque credit rating practices undermines the market's ability to signal the true financial health of the insurers. This lack of transparency diminishes policyholder's confidence and reduce the effective of the competition mechanism based on insurer's quality. Collectively these conditions are creating an imbalance in the market environment where structural concentration cannot ensure competitive behavior and thereby challenging the applicability of SCP hypothesis in the context of Bangladesh non-life insurance market.

This research insight is valuable for academics, regulators and industry leaders to improve the overall health of the non-life insurance sector. Future research studies may possibly incorporate more recent data, extend the study period, and analyze public and private insurers separately. In addition, including more conduct-related variables, as well as important macroeconomic indicators, can render deeper insights. Finally, comparative studies across different countries would help in realizing how market structure and conduct influence performance in varying regulatory and economic contexts.

Acknowledgement:

We have read and agreed to the published version of the manuscript.

Funding:

This research was not funded from any internal or external source of financing.

Informed Consent Statement:

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement:

The data presented in this study are available on request. The data are not publicly available due to restrictions.

Conflicts of Interest:

The author declare no conflict of interest.

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Appendix

Table 01: Standard Hausman Test Results (Non-Robust Standard Errors)	
Hausman Test Statistic:	97.4540
Degrees of Freedom	10
P-value:	0.0000

Table 02: Breusch-Pagan Test for Heteroscedasticity	
Lagrange Multiplier statistic	243.77957711857906
P-value	3.5844316309116413e-48
F-statistic	63.56047905611966
F-statistic P-value	3.4508995539106e-69

Table 03: Durbin-Watson test for Autocorrelation	
Durbin-Watson statistic	1.9992747

Table 04: Variance Inflation Factor (VIF)	
Variable	**VIF**
Constant	4901.614692
Market Share	6.574104

CR5	1.123513
Leverage (L/TA)	1.350184
Reinsurance Ratio	1.273567
Management Expense Ratio	1.225897
Agency Commission Ratio	1.329836
Size (Log of Total Assets)	3.087930
Ownership	3.455806