CAPITAL STRUCTURE, CORPORATE GOVERNANCE AND COST EFFICIENCY IN SELECTED LISTED INSURANCE FIRMS IN NIGERIA

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Abstract

The study examined the capital structure's effect on the listed insurance organizations as well as the cost effectiveness of a sample of Nigerian insurance firms that were publicly traded. Additionally, it assessed the impact of corporate governance on the selected listed insurance institutions in Nigeria while taking cost effectiveness and capital structure into consideration. Between 2005 and 2020, the post-consolidation period and the time the nation was impacted by the infamous corona virus that shook the entire world, they were with the intention of providing information on the interactions between capital structure, corporate governance, and cost efficiency in a number of Nigerian insurance organizations. This study's goal is to investigate the capital structure, corporate governance, and cost effectiveness of a sample of Nigeria's listed insurance institutions. The study used a descriptive survey design and secondary data from 10 listed insurance firms in Nigeria. Stochastic Frontier Analysis (SFA) was used to test the data. Business governance factors including board size ($t= 2.285$, $p < 0.05$) and board expertise ($t=-2.311$, $p< 0.05$) have a substantial impact on the capital structure. The results also showed that variables that worked as mediators between corporate governance and cost effectiveness, such as board size ($t=-2.807$, $p < 0.05$), board independence, and board composition, were both statistically significant at the 5% level. The findings of the investigation showed a strong correlation between capital structure, corporate governance, and cost effectiveness.

Keywords: *Insurance firms, corporate governance, cost effectiveness, capital structure*

1.0 Introduction

The structuring of a company's capital (money) into its many forms is commonly referred to as its capital structure. It merely describes how a firm obtains funding from a range of sources to support its overall operations and growth. It's composed of the organization's long-term debt, certain short-term debt, common stock, and preferred equity. Equity capital and loan capital are the two essential types of capital. Each has benefits as well as drawbacks of its own, and selecting the best capital structure with regard to of the risk/reward ratio for shareholders is an essential part of shrewd business management. In light of this, Owolabi and Inyang (2012) specified that the composition or arrangement of a company's obligations is sometimes referred to as its capital structure.

In the work of Karadeniz, Kandir, Balcilar and Onal (2009), one of the three financing decisions that insurance managers must make, along with investment, financing, and dividend decisions, is capital structure. Capital structure of a corporation is simply a blend of different instruments. Generally, a business can choose from a large selection of alternate financing options. It is capable of issuing both substantial and modest sums of debt. Lease financing, the use of warrants, the issuance of convertible bonds, the signing of forward contracts, and bond swap trading are all options. It has the capacity to issue an enormous range of securities in an infinite number of combinations. It's common to use the term "capital structure decision" to refer to the choice of

long-term financing strategy. The separation of ownership and management authority, as well as managers' predisposition to put their own interests ahead

of the company's, are all aspects of the agency issue (Jensen & Meckling, 1976). Insurance leverage pressure plays a crucial role in mitigating agency costs and enhancing business value. This is achieved by compelling managers to generate sufficient cash flow to meet interest obligations and instilling a strong motivation in them to avert the prospect of liquidation. In the event of liquidation, managers would face not only the loss of corporate benefits but also their personal compensation (Jensen, 1986). Additionally,
Williams (1987) has put forth the perspective that the advantages gained from increased leverage can effectively counterbalance the agency costs associated with managerial tendencies towards excessive investments and a limited focus on future growth prospects. This viewpoint is further supported by (Harvey et al., 2004)

To foster a climate that is favorable for conducting business, the Nigerian government and private sector have made considerable investments. As a result, some companies have thrived admirably while others have experienced sharp performance drops. In the previous ten years, several companies have even been delisted from the Nigerian Stock Exchange. A key endeavor to salvage these struggling and closing businesses has put a strong emphasis on insurance reorganization. The advent of a thriving private business sector is extensively well-thought-out as a crucial components in the process of economic growth and development. Making insurance judgments is even more difficult when the economy of the country where the company works is frequently hazy.

A corporation can be said to be inefficient if it has technical inefficiency, uses more input than is necessary for a given level of output, or uses the inappropriate combination of inputs given their costs (allocative inefficient). A firm's costs are compared to those of the best-performing firm for a given level of output under identical conditions as part of a cost efficiency study. It is derived from a cost function in which the amount of outputs produced, the price of the inputs used, external influences, random errors, and efficiency affect a firm's overall expenses (Shen, Liao, and Weyman-Jones, 2008).

A company that is highly cost-effective will outperform its competition in terms of resource consumption. Yet, the insurance resources that are available are frequently determined by a corporation's capital structure, and the effective use of those resources can significantly affect how successfully a firm works in both the short and long terms. In light of this, the study's main focus is on how capital structure, corporate governance, and cost efficiency are related.

Stochastic Frontier Analysis (SFA) was employed to examine the necessary data. The analysis revealed that cost efficiency between 2005 and 2020 can be attributed to factors such as capital structure and corporate governance. The base period being the period immediately after consolidation running on a continuous civilian rule till the infamous corona virus came to disrupt the economy. The top ten (10) insurance institutions in Nigeria were employed in this analysis (as of capital base). In an effort to provide solutions, the following objectives will be covered in this study:

(i) analyze cost efficiency of selected listed insurance firms in Nigeria
(ii) investigate the influence of corporate governance on capital structure of selected listed insurance firms in Nigeria

(iii) examine the effect of capital structure on cost efficiency of selected listed insurance firms in Nigeria

This study is structured in the following order: Literature Review, Methodology, Data Analysis and Conclusion and Recommendation

2.0 Literature Review

A corporation's capital structure exposes all the insurance resources that are necessary for it to function. Loan capital, common share capital, and preferred share capital are the usual components of the capital structure, which outlines how a firm finances its operations. If a business keeps the proportion of various sources of funding constant, the weighted average cost of capital will remain constant. In addition to the magnitude of dividends and the cost of equity, the weighted average cost of capital also affects the market value of stock. There has to be more investigation into this connection or relationship (Akinsulire, 2014). Unquestionably, the most important step for a new company is raising capital (Brigham and Daves, 2004).

Whether or not the business is successful can be greatly influenced by the approach chosen to raise the capital. This claim may be valid for all organizations; the capital structure a company chooses to use relies on a quantity of elements, comprising the managers' goals, the state of the economy, how they see their own and the organization's futures, as well as other specifics. The management accords both the disadvantages and profits of employing both equity and debt with high priority.

When organization takes a decision, it must take into account the debt and equity connected to the different costs and benefits. However there are many different perspectives on capital formations. By considering all available funding choices and beginning with the least expensive one, management must accomplish this (Myers, 1984). An operating income (EBIT) percentage change that is bigger than the changes in sales typically results from operational leverage, which tends to magnify the effect of changing sales (Akintoye, 2008). In practice, companies often raise the necessary funds through their capital structures, preferred stock, and common equity.

The best capital structure strategy must aim for a reasonable and educated balance between risk and return because it entails a tactical trade-off with anticipated earnings and risk. Tax laws, insurance flexibility, managerial conservatism, and business risk. The business must take into account all forms of attack. These elements play a pivotal role in establishing the optimal capital structure, even if operational conditions lead to deviations from the theoretical ideal (Muritala, 2012). According to Muritala, selecting the suitable insurance configuration is a critical decision for any organizational entity. This decision hinges on the organization's capacity to effectively navigate its competitive landscape and achieve optimal returns across various operational aspects. The predominant theory suggests the existence of an ideal capital structure, an idea initially introduced by Modigliani and Miller in 1958. This structure effectively balances the risk of bankruptcy against the tax advantages associated with debt. Once in place, this capital structure is anticipated to yield higher returns for shareholders compared to an all-equity company.

There isn't a single definition that everyone agrees on. The definition fluctuates depending on the country under consideration's legal structure and cultural setting (Armstrong and Sweeney, 2002). The definitions may also change depending on the viewpoints of the policymaker, researcher,

practitioner, or theorist (Solomon, 2010). A notion identified as "corporate governance" can be considered from at least two different angles: the "narrow view," which focuses on internal corporate structures where an organization receives its essential positioning and direction, and the "broad view," which considers corporate governance as the center of both the market system and a society that is democratic (Oyejide & Soyibo, 2001). When considering corporate governance, Olayiwola (2002) emphasizes that the narrow perspective only takes into account issues pertaining to shareholder protection, management control, and

the well-known principal-agency problems of economic theory. Corporate governance is the process of establishing, improving, and preserving sustainable value while defending the needs of the external environment (Zabihollah, 2009).

One idea of economic efficiency related to this is Pareto ideology of optimality, that has origins in welfare economics. Pareto effectiveness is achieved when properties are allocated so that one economic agent gains while preserving the welfare of all other agents (This means ensuring no negative impact on the well-being of the other person involved). Pareto proficiency has significant policy repercussions as a result, especially for wealth redistribution. Pareto efficiency makes logical in theory, but it's hard to measure in practice. Profit maximization (or, conversely, cost minimization) is a better theory of economic efficiency, although it is more frequently linked with completely competitive markets than with monopolies due to the deadweight loss brought on by monopoly pricing and output limits.

Efficiency improvements for businesses in a competitive market occur when they produce solitary regular profits over the long term and increase output to adapt to shifting consumer demands. Either the result is offered for sale for the same, greater, or less price relies primarily on where the cost lines are located across time (Griffiths & Wall, 2000). Yet, efficiency is typically linked to increases in welfare. Another component of economic efficiency is allocation efficiency, which happens when a corporation allocates its inputs to maximize its paybacks (returns, income, and productivity) in accordance with the objective function of the organization. In order to effectively allocate resources, it is important to consider both productive efficiency and Pareto efficiency.

But even without allocative efficiency, Pareto efficiency is still possible. At the organizational level, allocation efficiency is achieved when prices align with marginal costs within a fiercely competitive market. This concept also encompasses the optimal combination of inputs and the quality standard of the produced output. The term "X-efficiency," which describes production efficiency by linking inputs to outputs, was first used by Leibenstein in 1966. It is a cost-effective way of describing how well a company uses the resources at its disposal to create results. It especially refers to internal organizational structures of businesses and how they respond to external forces. Under these circumstances, both competitive pressures and motivational factors may have an impact on X-efficiency (such as ethical and governmental apathy and human errors). Whenever prices in a highly competitive market align with marginal costs, allocation efficiency is attained at the organizational level. The ideal mixture of inputs and the expected level of output quality are also included in this idea.

Capital structure theories offer theoretical underpinning for insurance decision-making at the firm level that connects insurance strategy to cost effectiveness. The five most popular capital structure theories are the Modigliani-Miller theory, trade-off theory, agency cost theory (Asymmetric

Information Model), signaling model, and pecking order theory. This study clearly mimics a situation in which a principal (a superior) delegated decision-making authority to an agent (the subordinate), who was compensated for performing a task on the principal's behalf. As can be seen from the aforementioned, this research work was anchored on Agency cost theory.

Agency theory which was proposed by Stephen Ross and Barry Mitnick in 1973 is about the relationship between agents or principals and the control of delegation

An agency, in broad terms, is any relationship between two parties in which one, the agent, represents the other, the principal, in day-to-day transactions. The principal or principals have hired the agent to perform

a service on their behalf. Principals delegate decision-making authority to agents. Because many decisions that affect the principal financially are made by the agent, differences of opinion, and even differences in priorities and interests, can arise. Agency theory assumes that the interests of a principal and an agent are not always in alignment. This is sometimes referred to as the principal-agent problem. By definition, an agent is using the resources of a principal. The principal has entrusted money but has little or no day-to-day input. The agent is the decision-maker but is incurring little or no risk because any losses will be borne by the principal.

Financial planners and portfolio managers are agents on behalf of their principals and are given responsibility for the principals' assets. A lessee may be in charge of protecting and safeguarding assets that do not belong to them. Even though the lessee is tasked with the job of taking care of the assets, the lessee has less interest in protecting the goods than the actual owners.

Corporate Governance can be used to change the rules under which the agent operates and restore the principal's interests. The principal, by employing the agent to represent the principal's interests, must overcome a lack of information about the agent's performance of the task. Agents must have incentives encouraging them to act in unison with the principal's interests. Agency theory may be used to design these incentives appropriately by considering what interests motivate the agent to act. Incentives encouraging the wrong behavior must be removed, and rules discouraging moral hazard must be in place. Understanding the mechanisms that create problems helps businesses develop better corporate policy. To determine whether or not an agent acts in their principal's best interest, the standard of "agency loss" has emerged as a commonly used metric. Strictly defined, agency loss is the difference between the optimal results for the principal and the consequences of the agent's behavior. For example, when an agent routinely performs with the principal's best interest in mind, agency loss is zero. But the further an agent's actions diverge from the principal's best interests, the greater the agency loss becomes.

Modigliani-Miller Theory: Modigliani and Miller put out two theories in 1958. The basic premise proposed by Modigliani and Miller is that the capital structure of the firm is independent of the firm's worth. This indicates that regardless matter how many different debt and equity ratios were applied, the business value would remain constant. In their second proposition, they argued that there should exist a linear relationship between the projected equity return and the company's capital structure. This connection should follow the same direction as changes in the debt-to-equity ratio. This means that even if businesses reduced their equity while increasing their debt levels, the cost of capital would not alter overall because the cost of borrowing increases as a result of

increased risk associated with increased borrowing. The anticipated return on equity would therefore decrease, while the cost of capital would remain constant (Gwatizo, 2009, Yinusa, 2014). Modigliani and Miller's hypothesis was based on ideal capital market conditions. Modigliani and Miller assumed that there would be no taxes, transaction costs, or distress costs in order for there to be an effective capital market. These arguments mainly contended that the MM's presumptions did not match the actual facts. According to Kraus and Litzenberger (1973), Myers (1984), Jensen and Mecking (1976), and others, the essential assumptions of the irrelevance of capital structure on the firm theory by MM (1958) are too realistic rather than elastic because there are no taxes and no transaction or distress costs. Some researchers contend that because firms must pay fixed interest rates to loan holders when they borrow money for their capital frameworks, the corporate taxes they pay act as a shield against their earnings. Utilizing debt in the capital structure has the tax-shield benefit of reducing corporations' tax liabilities. This implies that businesses using debt in their capital structure may have tax advantages. Therefore, MM (1958)'s ideal capital market assumption-in which there are no taxes-is unrealistic. By incorporating company taxes into their model, MM (1963) modified the presumption that there are no taxes.

Trade-Off Theory: According to the capital structure trade-off theory, a firm's goal leverage is determined by three opposing forces:

(i) Taxes
(ii) insurance hardship expenses (such as bankruptcy costs), and
(iv) agency conflicts

2.2 Empirical Review

2.2.1 Review of Studies from Developed & Developing Countries

Jakata and Mutasa's (2014) study on the connection between stock prices, bank performance, and the creation of shareholder value looked at this issue. DEA and SFA were employed in Zimbabwe to increase bank productivity. Sensitivity analysis was used to determine the factors that had the most effects on stock prices when measured against conventional accounting measures of performance. Bank efficiency hinges on several critical factors, including logarithmically measured Total Assets, Return on Equity (ROE), and Return on Assets (ROA). The study's results underscore that enhancing bank efficiency directly translates to amplified shareholder value, as evidenced by the upward trajectory of stock prices.

Information was obtained from the annual reports of 24 Bangladeshi banks for the study of Hoque and Rayhan (2012) on data envelopment analysis of the insurance sector. Constant return to scale and variable return to scale were the two forms of Data Envelopment Analysis that were employed, and output-oriented DEA was used because the goal of the study was to maximize production. The findings demonstrated that the most effective bank was also the one with the highest efficiency score.

In 2011, Yeh conducted research pertaining to the capital structure and cost efficiency within the domestic insurance sector, utilizing a sample of 44 banks from Taiwan. The methodology involved the application of the stochastic frontier approach to gauge cost efficiency as a measure of company performance. Additionally, a two-stage least squares technique was employed to compute two interrelated equations. These equations were subsequently used to examine the

connection between capital structure and company performance. The outcomes of the study indicate that managers strategically select the most optimal capital structure to effectively manage agency-related challenges and augment overall performance. It was observed that diminishing managerial ownership of shares can lead to a decrease in agency costs while concurrently enhancing company performance.

Tutu (2017) looked into how corporate governance impacted the effectiveness and productivity of Ghanaian insurance companies. The study employed a dataset consisting of fourteen (14) life insurers and fifteen (15) non-life insurers to evaluate the effectiveness and efficiency of insurance companies in Ghana during the period from 2005 to 2014. The survey indicates that the cost productivity of Ghana's insurance industry has increased by an average of 3%. Cost productivity increase peaked between 2008 and 2009 at 43%. The study implies that life insurers employ management expertise to improve the company and foster productivity growth, while non-life insurer managers and policy makers implement policies that will put them in a position to benefit from technological spillovers.

Using a heteroscedastic stochastic frontier model, Nitoi and Spul-Bar (2015) investigated the cost efficiency of banks in six emerging Central and Eastern European nations between 2005 and 2011. They found that commercial banks perform better when there is substantial macroeconomic stability.

Furthermore, banks that take on more risk are less effective than lending institutions that are more cautious, as are those with less liquidity, a lower solvency rate, and a larger credit risk.

Ngan (2014) used a stochastic frontier analysis method to assess the cost and profit efficiency of 45 Vietnamese commercial banks from 2007 to 2012. He stressed the connection between risk and asset quality considerations and the cost incurred for generating profit inefficiencies of the banks. Also, it seems that cost inefficiencies are highly tied to bank ownership, mergers, and concentration. The results suggest that mergers and acquisitions may cause cost inefficiencies and heighten bank competition within the insurance sector.

2.2.3 Review of Studies from Nigeria

Adeyemi and Oboh (2011) conducted an investigation into the practical impacts of corporate capital structure, or insurance leverage, on market value. Their study was carried out using a selection of businesses listed on the Nigerian Stock Exchange. The research involved the collection of both primary and secondary data, which were then subjected to descriptive and inferential statistical analyses. The sample size consisted of 150 respondents for primary data and 90 firms for secondary data. Descriptive statistics were employed to examine the primary data, while the perceived association between capital structure and firm value was inferred using chi-square analysis. The findings revealed a link between a company's choice of capital structure and its market value within the context of Nigeria. The report proposes that listed companies in Nigeria should strategically manage and structure their capital arrangements as a means to enhance their market values.

Onaolapo and Kajola (2010) conducted a study involving a sample of 30 non-insurance companies listed on the Nigerian Stock Exchange. The research spanned over a period of 7 years and aimed

to examine the relationship between capital structure and company performance. The authors utilized the ordinary least squares estimate method to generate and evaluate panel data for the chosen firms. Interestingly, their findings indicated that a firm's debt ratio was used as a proxy for its capital structure. It was observed that a firm's insurance metrics, including Return on Assets (ROA) and Return on Equity (ROE), were negatively affected by its debt ratio. These outcomes substantiated the principles of the Agency Cost Theory and aligned with previous empirical studies on the subject.

Study by Salawu (2008) the capital structure of selected quoted companies in Nigeria using secondary data covering the period from 1999 to 2004. This data was sourced from the annual reports and accounts of 50 non-insurance publicly listed companies. The analysis encompassed the application of three different models: the pooled Ordinary Least Squares (OLS) model, the fixed effect model, and the random effect model. The findings revealed several key relationships. Firstly, profitability exhibited a positive association with short-term debt and equity, while showing a negative correlation with long-term debt. Additionally, the study showed that there was no strong correlation between profitability and the ratio of total debt to total assets. The study's conclusion emphasized the necessity for Nigerian businesses to seek external capital. Notably, a significant proportion (60%) of Nigeria's debt comprised short-term obligations.

3.0 Methodology

3.1 Research Design

This study aims to empirically observe the connection between capital structure, corporate governance, and cost efficiency among listed insurance firms in Nigeria. The examination comprises applying the top ten (10) insurance companies (selected by their capital base) for the investigation. The data was secondary in nature and derived from the annual reports of the selected insurance firms.

3.2 Model Specification and Measurement of Variables

$CE = f(CS, CG)$ ----------(1)
Where:
CE = Cost Efficiency
CS = Capital Structure
CG = Corporate Governance
Ƒ = Functional notations

4.0 Results

Statistical Properties of the Data

The table 4.1

The objective of this research work was to analyze the cost efficiency of selected listed insurance firms in Nigeria between 2005 and 2020. This period is the post-consolidation era, which depict the period when the Nigeria was influenced by the disreputable virus that quavered the whole continent. The top ten (10) insurance companies were employed in this analysis (as of capital base). The data was secondary in nature and mostly derived from the annual reports and insurance statements of the banks. The variable's variance is higher than the mean and median. The board composition and board expertise exhibited negative skewness values of -0.0034 and -0.052, respectively,

Table 4.1: Descriptive Statistics

	COST	BS	BI	BE	BC	DEBT_EQUITY
Mean	0.489972	17.49500	0.474100	0.502667	0.513733	9.192233
Median	0.479255	17.00000	0.470000	0.500000	0.535000	8.000000
Maximum	0.991846	31.00000	0.990000	0.990000	0.990000	94.28000
Minimum	0.000171	10.00000	0.000000	0.000000	0.000000	0.330000
Std. Dev.	0.279512	3.621860	0.296927	0.272972	0.289868	8.162564
Skewness	0.042151	0.889603	0.125639	-0.003494	-0.052037	4.633114
Kurtosis	1.948403	3.938484	1.822266	1.970195	1.845644	43.73024
Observations	300	300	300	300	300	300

Source: Author's Computation (2023)

4.1.2 Correlation matrix of the variables

Understanding how closely connected the explanatory variables are, is crucial when estimating the model. High levels of correlation among the independent variables caused the standard error to be either underestimated or overestimated, which may affect how effectively and forcefully the t-value is applied. Table 4.2 displays the correlation statistics between the explanatory variables. It was evident that the explanatory variables did not meaningfully correlate with one another. As a result, the multi-collinearity problem

Table 4.2 Correlation Statistics

Correlation						
Probability	**COST**	**BS**	**BI**	**BE**	**BC**	**DEBT_EQUITY**
COST	1.000000					

BS	-0.105607	1.000000				
	0.0678	-----				
BI	0.055914	0.019798	1.000000			
	0.3345	0.7327	-----			
BE	-0.045498	0.043263	0.108225	1.000000		

	0.4324	0.4553	0.0612	-----		
BC	-0.053099	0.019737	0.026268	0.091388	1.000000	
	0.3594	0.7335	0.6504	0.1142	-----	
DEBT_EQUITY	0.007824	-0.065391	-0.029101	0.059656	0.045410	1.000000
	0.8927	0.2589	0.6156	0.3031	0.4332	-----

Source: Author's Computation (2023)

4.2 The Cost Efficiency of Selected listed insurance firms in Nigeria

According to the distribution of cost efficiency of the selected listed insurance organizations in Nigeria, the cost efficiency index for the sampled firms ranged from 21 to 99 percent (Table 4.3). The cost effectiveness is average at 54.6 percent, or 22.52. This figure demonstrated that the companies could only reduce their input costs by 54.6% while still being able to turn a profit. The production of the selected firm is, on average, 45.4 percent below the highest possible level, which is a more significant finding from the average cost efficiency level. As a result, if the average company in the sample were to achieve cost-effectiveness, it might realize a save of 45.4% efficiency of its input costs. It implies that Nigerian insurance institutions have significantly improved in relation to asset quality, lending, and profitability over the sampling period. Indicating that the majority of the sampling point were economically advantageous given the state of technology, a bigger percentage (58%) had cost efficiency indices above 80%. To more clearly demonstrate the cost efficiency of the tested organizations, the predicted cost efficiencies are given in Figure 4.1. The graph shows that the modal cost efficiency varies between 80 and 99 percent. According to the sample frequency distribution, 27.1% of the sampled businesses exhibited cost efficiencies that were grouped between 80 and 100 percent. This implied that the businesses' cost-efficiency is only minimal. The typical derivation is 22.5%. These efficiency values are higher than those seen in older publications from the similar firm or organization. For illustration, corresponding figures are 21.6%, 80.29%, and 89.4%, respectively, in Portugal (Barros, 2004), Taiwan (Chen, 2007), and the United States (Anderson et al., 1999). It has been noticed that the predicted increases in insurance and

insurance efficiency were not brought about by the liberalization initiative. According to Fukuyama and Matousek (2011), the reform program in the insurance and insurance industries has a favorable effect on their effectiveness in other nations.

Table 4.3 Distribution of Cost Efficiency

Distribution of Cost Efficiency	
Efficiency (%)	**Frequency**
20≤30	35
30≤40	41
40≤50	49
50≤60	42
60≤70	42
70≤80	49
80≤90	58
>90	39
Mean	0.5462
S.D	0.2252
Var	0.0507

Min	0.2119
Max	0.9999
Total	355

Source: Author's Computation (2023)

Table 4.4 showed that conventional alliance insurance is the most cost-effective company among those surveyed, with an average value of 0.947. In a similar way, regular alliance insurance is the most affordable insurance provider. However, the weighted average of each firm's cost effectiveness showed that NIGER INSURANCE had the lowest cost-effectiveness, with a mean value of 0.159. In comparison to large banks, the table shows that medium-sized banks appear to have the highest average cost efficiency. However, no agreement in the first-hand literature on the association between business magnitude and productivity because of divergent findings.

Table 4.4 Average Cost Efficiency of the firms

	Average Cost Efficiency
AIICO INSURANCE PLC	0.824
CONTINENTAL REINSURANCE COMPANY PLC	0.579
CORNERSTONE INSURANCEPLC	0.614
CONTINENTAL REINSURANCE COMPANY PLC	0.293
CUSTODIAN & ALLIED INSURANCE PLC	0.344
LAW UNION & ROCK INSURANCE PLC	0.296
LINKAGE ASSURANCE PLC	0.605
MANSARD INSURANCE (GUARANTY TRUST ASSURANCE) PLC	0.558
MUTUAL BENEFITS ASSURANCE PLC	0.453
NIGER INSURANCE CO. PLC	0.159
	0.546

Source: Author's Computation (2023)

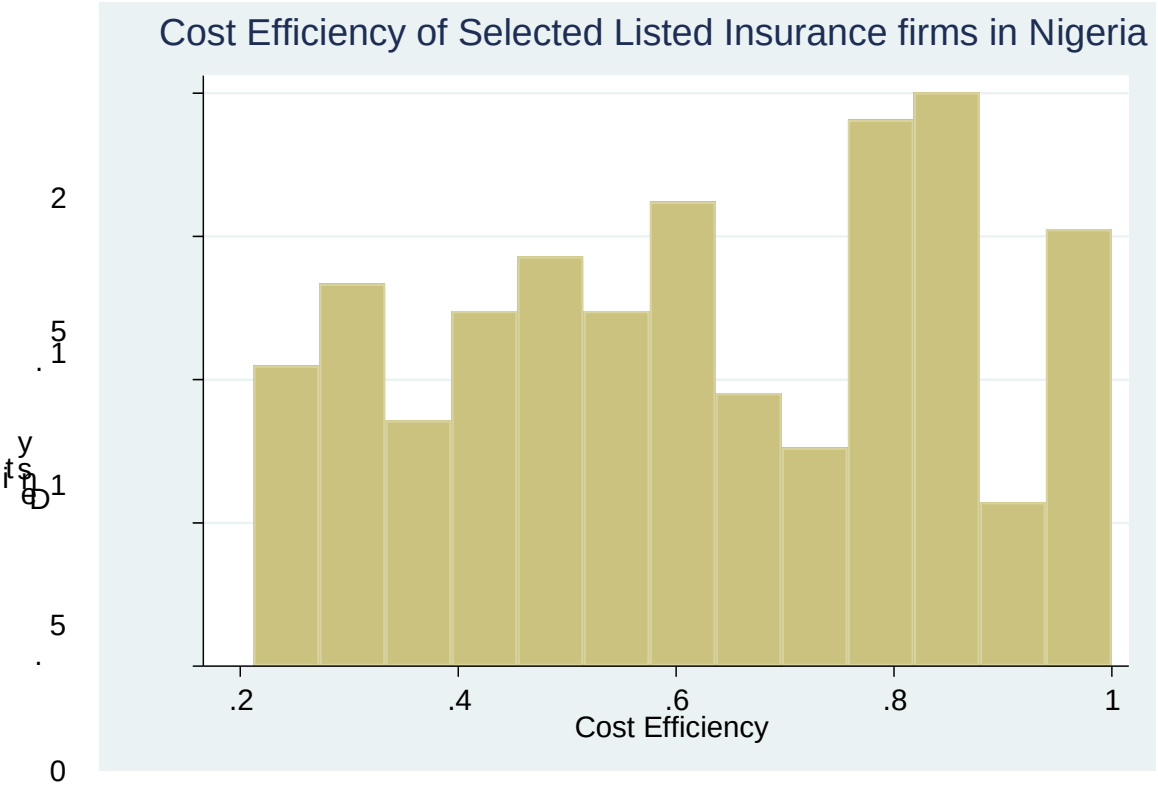

Figure 4.1: Cost Efficiency

Source: Author's Computation (2023)

4.3 The Influence of corporate governance on capital structure of selected listed insurance firms

The explanatory variables in this model have frequently been used to estimate the effect of corporate governance on capital structure. The board's independence (BI), size (BS), composition (BC), and expertise (Board) are among these factors (BE). Table 4.5's estimated coefficients provide an example of how corporate governance affects capital structure. The capital structure was represented by the debt-to-equity ratio. Since the ratio of the dependent variable was taken into consideration, a generalized linear model was employed to estimate the model.

Board Size: Research proved that a key factor in corporate governance that affected capital structure in the study area was board size. The encouraging indication points to the fact that this component significantly and favorably impacted capital structure.

Board Independence: Although not statistically significant, the estimated board independence coefficient had a positive impact on capital structure.

The sign of the coefficient of board independence indicates that the variable can improve capital structure and also improve the debt-equity ratio of the insurance firms, despite the significant status suggesting that board independence does not significantly influencing the capital structure of the surveyed firms.

Board Expertise: The calculated coefficient of board expertise, employed as a proxy for corporate governance, demonstrated a positive connection with capital structure at the 5% level of significance. Given that board expertise is a vital component of good governing board performance, this is in line with a priori predictions. A well-educated board with deep industry knowledge is expected to be innovative, demonstrate solid judgment, and be open to new ideas. As a result, it is anticipated that they will operate more productively, which will improve their monitoring responsibilities.

Board Composition: This revealed that the composition of the governing boards had less of an impact on the capital structure of the businesses. As a result, board composition is not a significant predictor of capital structure in the country's insurance industry.

Table 4.5: The Influence of corporate governance on capital structure of selected listed insurance firms

Dependent Variable: Debt-Equity ratio

Variable	**Coefficient**	**z-Statistic**	**Prob.**
BC	0.081	0.144	0.885
BE	0.095	2.854	0.004
BI	-0.023	-0.043	0.965
BS	0.016	2.311	0.021
C	0.474	8.402	0.000
LR statistic	35.608		
Pearson SSR	29.819		
Log likelihood	-62.466		
Deviance	29.819		
Restr. Deviance	30.118		
Prob(LR statistic)	0.0006		

Source: Author's Computation (2023)

4.4 The mediating role of corporate governance in the relationship between capital structure and cost efficiency of listed Insurance firms.

As proxies for capital structure measurements, debt-equity ratios, short-debt ratios, and long-debt ratios were used. As proxies for the results of the corporate governance model test, the board's independence, size, makeup, and expertise were taken into consideration. Table 4.6 displays the multivariate results, which is what one might anticipate given the conclusions of prior studies. Absolute, incremental, and extra fit indices were employed to assess the validity of the model conception in relation to the observational data. The model's GFI, AGFI, NFI, and CFI values were all greater than 0.90, and its CMIN = 4.745 ($p = 0.99 > 0.05$) value suggested a more robust model. The fewer the values, the better the model fits in terms of RMR's verification standards. According to the test findings of the fit indices reported in Table 4.6, the model exhibited a satisfactory fit. Because their values are lower than those of the independent model and lower than those of the saturated model, the test results show that AIC, BCC, BIC, and CAIC are good default models. In conclusion, the model fit the data well, according to the results of the fit index test.

This correlation linking capital structure with cost efficiency of the insurance industry is also mediated by board experience, which adds 0.031 to the relationship, in a manner similar to how capital structure and

cost efficiency of the enterprises are. In a similar vein, board size adds around 0.025 to the correlation between capital structure and cost efficiency, while board independence adds about 0.015 to the relationship between capital structure and cost efficiency.

Also, whereas short-term debt shown a negative link with cost effectiveness, long-term debt demonstrated a favorable correlation with cost effectiveness, (-0.001).

Debt equity ratios and cost effectiveness have a good relationship.

5.1 Conclusion

The primary objective of this research is to analyze the intricate interplay among capital structure, corporate governance, and cost efficiency within a selected sample of publicly listed insurance institutions in Nigeria. This investigation aimed to achieve several goals, including evaluating the capital structure and cost-effectiveness of Nigerian insurance entities in the sample, while also examining the influence of corporate governance on the structure of capital within these companies. Furthermore, the study aimed to elucidate the role of corporate governance in mediating these intricate relationships. The findings of the study revealed that the examined businesses generally demonstrated an average level of cost effectiveness, with the insurance sector displaying greater efficiency compared to the insurance sector. The study's outcomes highlighted that corporate governance significantly influences the capital structure of the studied firms. This conclusion was based on the premise that a competent and informed board of directors is capable of making prudent decisions that enhance overall company management.

Moreover, the study disclosed that the sampled companies operated with a moderate level of efficiency. Remarkably, the surveyed firms could potentially decrease their input costs by up to 54.6% without compromising their outputs. This suggests that if the average company within the sample were to attain the optimal level of cost efficiency in relation to its input costs, a substantial 45.4% reduction in costs could be realized. This indicates that an ordinary insurance institution has the potential to enhance its cost efficiency by roughly 45.4%, aligning its performance with that of top-performing insurance institutions that generate equivalent goods and services under similar circumstances.

The research further established a positive correlation between board expertise, a key measure of corporate governance, and the capital structure. This correlation was consistent with initial expectations, as board expertise was identified as a pivotal factor contributing to the effective functioning of the governing board. Additionally, the study revealed a positive relationship between board size and capital structure, with board size significantly impacting the capital structure of firms. This underscores the significance of board size as a potent corporate governance element affecting capital structure within the study's context. Furthermore, the findings emphasized that board expertise served as a mediating factor between capital structure and cost efficiency of the insurance firms. By fostering a positive contribution to the relationship between capital structure and cost efficiency, board expertise played a pivotal role in shaping these intricate

dynamics. Similarly, board independence emerged as an augmenting factor in the relationship between capital structure and cost efficiency, also contributing positively to this relationship.

In conclusion, this study sheds light on the nuanced connections between capital structure, corporate governance, and cost efficiency in the realm of Nigerian listed insurance institutions. It underscores the pivotal role of corporate governance factors such as board expertise and independence in shaping capital structure and cost efficiency outcomes. These insights offer valuable implications for insurance organizations aiming to enhance their operational effectiveness and overall performance.

Finally, it can be said that corporate governance has a major impact on the relationship between capital structure and cost effectiveness.

Recommendations

(i) This study's findings unmistakably demonstrate that board competency served as a mediating factor between capital structure and cost effectiveness. As a result, people of distinction with strong professional credentials should be selected to serve on the board of directors.

(ii) The relationship between capital structure and cost effectiveness was also made stronger by board independence. This demonstrates the significance of board independence, and it is wise to support it.

(iii) It is important to maintain the percentage of independent non-executive board members and make adequate safeguards to guard against any loss of their independence.

(iv) Because the quality of the company's earnings will rise when independent outside directors make up the majority of the board, shareholders' interests are better protected. Because growth could result in inefficiency, board size should be kept to a minimum.

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