Consolidation, Institutional Efficiency and Financial Ratio Performance of Insurance Companies in Nigeria

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ABSTRACT

The research investigated the impact of consolidation and institutional efficiency on the financial ratio performance of insurance companies in Nigeria covering the period from 2011 to 2022. The estimation technique utilized were feasible generalized least squares (FGLS) on a sample of five insurance companies was taken. The key variables used in the analysis included debt-equity-ratio (DOER) as dependent variable and claims processing efficiency (CPE), risk management effectiveness (RME), and regulatory compliance (RC) as independent variables. The findings revealed that while regulatory compliance (RC) has a significant positive impact on DOER, with an increase in RC leading to an 8.955% increase in DOER, claims processing efficiency (CPE) and risk management effectiveness (RME) were not found to have a significant impact on DOER. Specifically, an increase in CPE was associated with a 0.018% decrease in DOER, and an increase in RME was associated with a 0.864% increase in DOER, but these relationships were not statistically significant. These results suggest that while RC is a significant factor influencing changes in DOER for insurance companies in Nigeria, CPE and RME may not play a significant role in determining DOER. The study thus recommended, among others, that the insurance firm should improve the regulatory framework governing insurance companies to ensure that it encourages consolidation efforts. This will help improve the insurance firms' debt and equity finances.

Keywords: Debt-Equity Ratio, Consolidation, Institutional Efficiency, Financial Ratio, Insurance Companies

INTRODUCTION

Financial ratios show the level of liquidity and profitability of a firm and also help investors take decisions about investing in a firm. Hence, most company board members and managers use it to measure the firm's performance in several areas. In terms of finance, one major financial ratio that helps decision making is the debt-equity ratio. The ratio helps management to determine the balance of debt and equity a firm needs to boost its operations (Aseinimieyeofori, 2022).

The Nigerian insurance firms' financial ratio performance is faced with multifaceted challenges including the volatility and unpredictability of the insurance market, driven by factors such as economic fluctuations, regulatory changes, and evolving consumer behaviors (Engel, González-García, & Kraus, 2023). Additionally, the low-interest-rate environment poses a significant hurdle, impacting investment returns on insurers' portfolios. Increasing competition, technological disruptions, and the need to invest in advanced data analytics to enhance underwriting processes further strain financial performance. The delicate balance between managing risk exposure, maintaining solvency, and generating profitable returns creates a complex landscape for insurance companies seeking sustained financial success (Dou, 2021).

In Nigeria, while consolidation has accelerated across the insurance sector, brand reputation has weakened for many firms. Industry surveys reveal troubling trends: According to Adeniyi, Adeyinka, & Babayaro (2022), the composite brand equity score for Nigerian insurers declined by 8% compared to 2021. The percentage of

consumers who trust insurance companies fell from 68% in 2018 to just 54% in 2022, per Nigeria's Insurance Consumer Trust Index. In a 2021 poll by NOI Polls, only 19% of Nigerians said insurance companies have a good reputation, down from 29% in 2016. A 2023 survey by the National Insurance Commission (NAICOM) found that only 20% of Nigerians trust insurance companies. This is a significant decline from 35% in 2020, which has affected the return on investment of insurance companies. The insurance industry in Nigeria has been grappling with a significant decline in return on investment (ROI) in recent years. Several factors contribute to this issue. Firstly, a challenging economic environment characterized by inflation, currency devaluation, and fluctuating interest rates has eroded the real value of investment returns for insurance companies (Adeniyi, Adeyinka, and Babayaro, 2022). Additionally, the industry faces intense competition, which has led to price undercutting and thinner profit margins. Moreover, a lack of public trust in insurance products and low insurance penetration rates limit the industry's growth potential, further affecting ROI (Aseinimieyeofori, 2022). Lastly, regulatory hurdles and underdeveloped risk management practices can expose insurance companies to significant losses, impacting their investment portfolios and ROI (Aseinimieyeofori, 2022).

The problem of consolidation in the Nigerian insurance sector refers to the process where smaller insurance companies are compelled to merge or be acquired by larger counterparts, with the aim of creating more robust and financially secure entities. This initiative, driven by the Nigerian government and regulatory bodies, seeks to strengthen the industry, enhance overall performance, and improve its ability to meet policyholder obligations. However, this consolidation has brought about unintended consequences, notably a decrease in the debt-to-equity ratio for insurance firms operating in Nigeria (Olowokudejo & Ajijola, 2022). A primary factor contributing to the debt-to-equity ratio decline is the substantial costs associated with the consolidation process. Mergers and acquisitions entail expenses such as legal and administrative fees, integration costs, and restructuring expenditures, all of which can impact a company's profitability (Olowokudejo & Ajijola, 2022).

As noted by Nuryani and Sunarsi (2020), there is limited exploration of the impact of institutional efficiency on the debt-to-equity ratio, despite its strategic significance. The notable decline in the debt-to-equity ratio within the insurance sector in Nigeria is a worrying trend that raises economic and regulatory concerns (Hertina, 2021). This ratio, which gauges the proportion of a company's financing sourced from debt in comparison to equity, serves as a crucial indicator of financial stability and risk management (Hertina, 2021). Over recent years, there has been a substantial reduction in the debt-to-equity ratio among Nigerian insurance companies, with a greater reliance on equity than debt. This decline may signify several potential issues within the industry (Mahayati, Fatonah, & Meilisa, 2021). One significant worry is that the decreasing debt-to-equity ratio might signal a diminished capacity for expansion and growth. While reducing debt can mitigate financial risk, it also restricts the capital available for insurers to underwrite new policies or expand their operations. Moreover, a lower debt-to-equity ratio often indicates that Nigerian insurance companies face challenges in attracting long-term investments, hindering their ability to compete effectively in a highly competitive industry (Hertina, 2021). The decline in the debt-to-equity ratio often prompts concerns about the financial resilience of insurance companies in Nigeria. A higher equity component may suggest a cautious approach to risk management, but it could also imply reluctance to leverage and invest in income-generating assets. This situation has frequently impeded insurers' ability to meet their obligations in the event of a significant catastrophe or a surge in insurance claims (Nukala & Prasada Rao, 2021; Siahaan & Herijawati, 2023).

CONCEPTUAL REVIEW

Consolidation

Consolidation in the business world refers to the strategic combination of multiple business entities into a unified enterprise through various means such as mergers, acquisitions, or absorptions (Adeniyi, Adeyinka, & Babayaro, 2022). It involves the integration of two or more companies into a single, newly formed entity. This process is characterized by the amalgamation of operations from the merging companies, culminating in the creation of a single new company. The primary objectives of consolidation often include enhancing efficiency and cost reduction. Additionally, consolidation can serve as a mechanism for increasing market share and minimizing competitive forces in the industry. It is a strategy that aims to achieve greater economies of scale and cost savings (Dou, 2021). The outcome of this process is the establishment of a more formidable and

influential entity, capable of competing more effectively, both at a domestic and global level (Dou, 2021). In essence, consolidation is a pivotal maneuver in the corporate world, with various motivations and potential outcomes. It is a multifaceted process, intended to create a larger, more competitive and efficient entity (Jasrotia, & Agarwal, 2021). By synthesizing the strengths and resources of multiple companies, consolidation endeavors to secure a stronger footing in the marketplace, ultimately contributing to the growth and sustainability of the unified entity (Dou, 2021).

Mergers and Acquisitions

Mergers and acquisitions (M&A) are fundamental strategies in the corporate world, encompassing distinct financial arrangements aimed at achieving various objectives as highlighted in the cited literature. A merger, as defined by Patrick (2018), involves the combination of two or more companies into a single new entity. This process typically seeks to enhance operational efficiency and reduce costs, making it an appealing strategy for businesses looking to streamline their operations and improve overall performance (Patrick, 2018). In contrast, an acquisition, as articulated by Dang, Nguyen, and Tran (2021) pertained to one company purchasing another to gain control. The primary goal of acquisitions, as noted by Dang et al (2021), often revolves around increasing market share and reducing competition. This strategic approach allows companies to expand their footprint within an industry, reduce competitive forces, and potentially achieve economies of scale, which can translate into cost savings (Patrick, 2018). Overall, mergers and acquisitions represent two distinct but interconnected methods of corporate consolidation and expansion. Mergers entail the formation of a new, unified entity, often with the aim of improving efficiency and creating a more valuable organization (Huang, 2021). On the other hand, acquisitions involve one company taking control of another, typically with the objectives of increasing market share, reducing costs, or gaining a competitive advantage. Both strategies play a pivotal role in shaping the business landscape and can serve as vital tools for achieving a wide range of corporate goals and objectives.

Institutional Efficiency

Institutional efficiency is a fundamental concept in organizational management, encompassing the effective utilization of resources to accomplish an institution's goals and mission, as succinctly described by Kinyondo, Maganga, and Mwakalila (2021). Within companies and institutions, efficiency involves optimizing the utilization of resources, be it human capital, financial assets, or technology, to achieve the desired outcomes while minimizing waste, costs, and errors (Gebretsadik, Melese, & Negesa, 2023). It signified the ability of an institution to produce results and deliver value with the least amount of resources, indicating a streamlined and cost-effective approach to operations (Kinyondo, et al, 2021).

Achieving institutional efficiency is not only a marker of effective resource management but also a reflection of an institution's commitment to delivering value, reducing waste, and enhancing overall performance (Kinyondo, et al, 2021). This efficiency is essential for an organization's sustainability and competitiveness, ensuring that it can consistently achieve its goals while optimizing its resource utilization (Kinyondo, et al, 2021).

Claims Processing Efficiency

Claims processing efficiency is a vital aspect of the insurance industry, and it plays a significant role in ensuring customer satisfaction and the overall financial health of insurance companies. Claims processing efficiency refers to the speed, accuracy, and cost-effectiveness with which an insurer handles and resolves claims (Ecer, 2021). It involves optimizing processes to deliver timely payments to policyholders while avoiding unnecessary delays and expenses in claims assessment, investigation, and settlement (Ecer, 2021). Improving efficiency reduces frictional costs while maintaining rigorous claim handling discipline. Claims processing efficiency is the ability of an insurance company to process and pay claims quickly and accurately (Mahoney, 2021). Claims processing efficiency is the ratio of the number of claims processed to the time it takes to process them. Claims processing efficiency is the ability of an insurance company to process and pay claims at a cost that is lower than the average cost of processing and paying claims in the industry (Mahoney, 2021).

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Risk Management Effectiveness

Risk management effectiveness is a critical aspect of an organization's ability to safeguard its operations and achieve strategic objectives. As defined by Olowokudejo and Ajijola (2022), it encompasses the successful identification, assessment, monitoring, and mitigation of risks that could impact the organization. By managing risks effectively, an organization can better protect itself from potential disruptions and uncertainties, ultimately enhancing its ability to stay on course with its strategic goals. This effectiveness is not merely a measure of risk management processes; it is a key driver of an organization's ability to maintain resilience and adapt to evolving challenges (Nicolas, 2021). Furthermore, risk management effectiveness also involves improving an organization's decision-making capabilities and overall performance, as highlighted by (Olowokudejo & Ajijola, 2022). When risks are managed effectively, an organization can make more informed and data-driven decisions, reducing the likelihood of negative events and their impact. This, in turn, contributes to improved performance, as the organization can better allocate resources, optimize strategies, and enhance its competitive position in the marketplace. In today's complex and ever-changing business landscape, risk management effectiveness is not only a proactive approach to risk but a strategic driver of an organization's success, helping it navigate challenges and opportunities with confidence.

Regulatory Compliance

Regulatory compliance is a critical aspect of any organization's operations, and its significance cannot be overstated. Regulatory compliance refers to an organization's adherence to the laws, regulations, and guidelines enacted by governmental authorities in the jurisdictions where it operates (Huang, 2021). Regulatory compliance is the adherence to laws, regulations, and other requirements that apply to an organization (Huang, 2021). Regulatory compliance is the state of being in accordance with all applicable laws and regulations. Regulatory compliance is the process of ensuring that an organization's activities conform to all applicable laws and regulations (Macchi, (2021). Regulatory compliance is the condition of fulfilling all applicable laws and regulations (Macchi, (2021). Regulatory compliance is the ongoing process of ensuring that an organization's activities comply with all applicable laws and regulations (Macchi, (2021). Compliance with these legal and regulatory requirements is essential to ensure that organizations operate within the boundaries of the law and meet their obligations to both the authorities and their stakeholders.

Debt-to-Equity Ratio

The Debt-to-Equity Ratio, often referred to as D/E ratio, is a financial metric used to assess a company's capital structure and financial leverage. It is calculated by dividing a company's total debt by its total equity (Hertina, 2021). This ratio indicates the extent to which a company relies on debt financing as opposed to equity financing to fund its operations and investments. A high D/E ratio suggests a company has a significant amount of debt relative to its equity, which can indicate higher financial risk and interest expenses, but it may also lead to potential tax benefits (Nuryani & Sunarsi, 2020). Conversely, a low D/E ratio implies that a company relies more on equity for its capital needs, which can indicate lower financial risk but potentially limited access to leverage-related advantages. Another interpretation of the Debt-to-Equity Ratio is as a measure of solvency and financial stability (Nuryani & Sunarsi, 2020). A high D/E ratio could signify that a company has a substantial debt burden, making it vulnerable to economic downturns or high interest rates, while a low ratio may indicate a financially healthier company with a stronger equity base. This metric is crucial for investors, creditors, and analysts as it helps them gauge the financial health and risk profile of a business, making it a valuable tool for decision-making in the financial industry (Hertina, 2021).

Stakeholder Theory

Stakeholder theory was founded by Edward Freeman in 1984 and it assumes that organizations have a multitude of stakeholders, which go beyond just shareholders or owners (Gebretsadik, et al, 2023). These stakeholders can include employees, customers, suppliers, communities, and more. The Stakeholder theory assumes that these stakeholders have varying and sometimes conflicting interests. Their interests are interconnected and need to be balanced (Gebretsadik, et al, 2023). Stakeholder theory assumes that businesses should focus on long-term goals rather than short-term profits. It emphasizes sustainable and responsible

business practices. The Stakeholder theory assumes that ethical considerations and social responsibility should be integral to business operations (Gebretsadik, et al, 2023). It goes beyond profit maximization and considers the broader impact of business activities. Stakeholder theory assumes that value should be created for all stakeholders, not just shareholders (Gebretsadik, et al, 2023). It rejects the idea that the sole purpose of a business is to maximize shareholder wealth. Stakeholder theory assumes that organizations should seek mutually beneficial relationships with their stakeholders to ensure long-term success (Gebretsadik, et al, 2023). These assumptions form the basis of the Stakeholder theory, which advocates for a more inclusive and responsible approach to business management.

Stakeholder theory has gained support from various scholars, researchers, and business leaders who advocate for a more inclusive and socially responsible approach to business. Dang, et al, 2021) contributed significantly to the development of stakeholder theory by emphasizing the importance of sustainable development and the role of businesses in addressing global challenges, aligning with stakeholder theory's principles. Patrick (2018) emphasized sustainable and socially responsible business practices, demonstrating how a major corporation can adopt stakeholder theory in its operations. The above supporters have contributed to the growing acceptance of stakeholder theory as a framework for responsible and sustainable business practices. They have highlighted the importance of considering the interests of all stakeholders, not just shareholders, in corporate decision-making and governance.

Stakeholder theory has garnered criticism from several economists, legal scholars, and business leaders. The most common critique is that stakeholder models diffuse corporate purpose away from the fundamental goal of maximizing profits. Nobel Prize-winning economist Milton Friedman famously argued that businesses' sole responsibility is to generate returns for shareholders, and that diverting focus towards other constituents politicizes corporations and leads to poor economic performance.

Additional critics, such as corporate law professor Stephen Bainbridge, contend stakeholder theory undermines managerial accountability to shareholders, who assume the most risk as equity owners. By empowering managers to balance various political, social, and environmental concerns against profits, critics argue stakeholder theory allows executives too much latitude to pursue their own interests rather than those of investors. Overall, opponents of stakeholder theory maintain that diffusing corporate purpose dilutes business focus, reduces accountability, and comes at the expense of economic efficiency and shareholder returns. They advocate that businesses strictly prioritize maximizing value for their owners.

The stakeholder theory is highly relevant in the context of the effects of consolidation components and institutional efficiency on the performance of insurance companies. It emphasizes the significance of considering a wide range of stakeholders, including policyholders, shareholders, employees, regulators, and the broader community, in decision-making processes (Tran, Tran, and Hoang, 2020). In the insurance industry, where trust, ethical behavior, and long-term sustainability are paramount, Stakeholder Theory encourages insurance companies to align their interests with those of various stakeholders. This approach can help in building stronger relationships with policyholders, ensuring compliance with regulatory standards, and enhancing institutional efficiency (Tran et al., 2020). By addressing the diverse needs and concerns of stakeholders, insurance companies can achieve improved performance, maintain a positive reputation, and foster long-term success.

Empirical Framework

Afolabi, Adesina, and Amaihian (2021) study found that institutional efficiency has a positive impact on corporate performance in the Nigerian banking industry, as evidenced by improvements in profitability, liquidity, and efficiency ratios. They also found that the level of institutional efficiency is positively correlated with the level of corporate governance practices, which in turn positively affects corporate performance.

Kinyondo, Maganga, and Mwakalila (2021) study found a positive and significant relationship between institutional quality and firm performance in East African countries. Specifically, the results showed that regulatory quality, rule of law, control of corruption, government effectiveness, and political stability have a positive and significant impact on both ROA and ROE of firms in East African countries.

Huang (2021) study showed that institutional efficiency dimension had a positive effect on innovation, Jasrotia and Agarwal (2021) study discovered that institutional efficiency dimension had a significant and efficient method on innovation, Dou (2021) study revealed that institutional efficiency dimension had a significant influence on innovation, Ecer (2021) study found out that institutional efficiency dimension had a positive impact on innovation, Corroboratively, Chaudhary and Kaur (2021) study indicated that institutional efficiency dimension had a significant impact on innovation, Furthermore, the study of Mahoney (2021) showed that institutional efficiency dimension had a substantial impact on innovation, Alani and Sani (2019) study discovered that institutional efficiency dimension had a substantial effect on innovation, Nikolaidou (2021) study found out that institutional efficiency dimension had an important impact on innovation, Macchi (2021) study indicated that institutional efficiency dimension had a significant effect on innovation, In addition, the study of Sharma and Dhiman (2021) showed that institutional efficiency dimension had a significant influence on innovation.

METHODOLOGY

The study population encompassed selected insurance companies listed on the Nigerian Stock Exchange (NSE) during the specified period under investigation and they included Axamansard Insurance Plc, Custodian and Allied Plc, Great Nigeria Insurance Plc, Law Union and Rock Ins. Plc, and Veritas Kapital Assurance Plc.

Secondary panel data was used for the study and covered the period of twelve (12) years which lags between 2011 and 2022 for the five selected Nigerian insurance firms, during which the insurance sector in Nigeria experienced significant consolidation. The data were collected from the Nigerian Insurance Commission (NIC) and the Nigeria Exchange Group (NGX) databases. The sourced data were estimated using the panel data regression.

Model Specification

The study model was adapted and modified from the study of Afolabi, Adesina, and Amaihian (2021) and its explicit form was:

$$DOER_{it} = \delta_0 + \delta_1 CPE_{it} + \delta_2 RME_{it} + \delta_3 RC_{it} + \varepsilon_{3t} \qquad 3.1$$

Where:

DOER – Debt-to-Equity Ratio (indicator for financial ratio performance)

CPE - Claims Processing Efficiency

RME - Risk Management Effectiveness

RC - Regulatory Compliance

β_0 is the intercept for model 3.1

β_1 to β_3 are the parameters estimating each independent variable

ε_i captured the error term; i represent the individual insurance companies and t denotes years

ANALYSES

Panel Unit Root Test

It was used to establish the stationarity of the data sourced for the study. The unit root utilised was the Levin, Lin and Chu (LLC). In the unit root results in Table 4.1, it can be seen that all the variables were stationary at level.

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Table 4.1: Panel Stationary Test

	LLC	
Variable	I (0)	I (1)
DOER	-7.8136**	-2.9548***
CPE	4.4639**	-2.8432***
RME	-3.1016***	-3.9826***
RC	-4.1860***	-3.146***

Source: Author's compilation (2024) from E-views 12

Notes: * Significant at 10%; ** Significant at 5%; *** Significant at 1%.

Hypothesis Testing

The preferred model is the feasible generalized least square (FGLS). The reasons why the FGLS is the efficient model is because the Hausman statistic of 18.69 is statistically significant at the 1 percent level, thus the fixed effect model is appropriate and efficient, however, before accepting the fixed effect model, the fixed effect test of testparm must be significant. The fixed effect testparm statistic of 2.77 is statistically significant at 10 percent level (i.e., 0.072< 0.10), thus giving room for the fixed effect model. There is absence of serial correlation as the Wooldridge test is not statistically significant (0.172 > 0.05) and sectional independence given that the pesaran's test is insignificant at 5% (0.424 > 0.05).

However, with the presence of heteroscedasticity $\left(X^2_{MW} = 214.20[0.000]\right)$, the fixed effect model is no longer appropriate, thus the feasible generalized least square that corrects for heteroscedasticity is the appropriate model.

Table 4.1: Institutional Efficiency and Debt-To-Equity Ratio of Insurance Companies in Nigeria DV: *doer*

Variables	OLS	FEM	REM	FGLS
Constant	-2.921 (2.4169)	2.4865 (2.7265)	-2.921 (2.4170)	-6.4502*** (1.9895)
cpe	0.04126 (0.0384)	0.0796** (0.0338)	0.0413 (0.0384)	-0.0184 (0.0224)
rme	-1.1516 (2.8926)	-2.2207 (2.1917)	-1.1516 (2.8926)	0.8641 (1.2953)
rc	6.2925*** (1.3965)		6.2925 (1.3965)	8.9552*** (2.6739)
Observations	60	60	60	60

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Numbers of id	5	5	5	5
R-squared	0.4371	0.6292	0.4302	0.7604
Adjusted R-squared	0.4069	0.5864	0.3916	0.7328
F-statistics (prob)	14.56 (0.000)	2.775(0.272)	43.49(0.000)	13.10(0.004)
Pesaran CSD Test		F (4,52): -1.54 Prob: 0.124		
FE Testparm		F (4,52): 2.77 Prob: 0.0716	-	-
Breusch-Pagan LM Test		-	$Chibar^2(01)$:0.00 Prob: 1.00	-
Hausman Test		-	Chi^2: 18.69 Prob: 0.000	-
Modified Wald test for Heteroskedasticity		Chi^2 (5): 214.20 Prob: 0.000	-	-
Wooldridge test for autocorrelation		F (1, 4): 2.7544 Prob:0.172	-	AR (0.785)

Source: Author's compilation (2024) from STATA 15

Notes: DV**:** dependent variable, OLS: ordinary least squares, FEM: Fixed effect model, REM: Random effect model, FGLS: feasible generalied least square. Statistics ***,** and * indicate significance at 1%,5% and 10%, respectively.

The estimate FGLS model as indicated

$$doer_{it} = -6.450 - 0.018cpe_{it} + 0.864rme_{it} + 8.955rc_{it} + \varepsilon_{it} \quad (4.1)$$

From the feasible generalized least square (FGLS) results displayed in Table 4.1 and presented in estimated model (4.1), there is evidence that the claims processing efficiency (CPE) has a negative relationship with debt-to-equity ratio (DOER) in the selected insurance companies in Nigeria. This implies that increases in claims processing efficiency will lead to decrease in debt- to- equity ratio. Thus, an increase in claims processing efficiency will lead to a 0.018 per cent decrease in DOER in the selected insurance companies in Nigeria. The results revealed that the CPE has no significant association with DOER in the selected insurance companies in Nigeria at 5% significant level $(cpe_{it} = -0.018, z-test = -0.82, p > 0.05)$ implying that the claims processing efficiency is not a significant factor influencing changes in debt-to-equity ratio in the Nigeria's selected insurance companies. Similarly, it was further established from Table 4.1 that, an increase in risk management effectiveness (RME) would lead to a 0.864 per cent increase in debt-to-equity ratio, *ceteris paribus*, connoting that risk management effectiveness rate also is not a significant factor influencing

fluctuations in DOER in the selected insurance companies in Nigeria at a 5 % level $\left(rme_{it} = 0.864, z-test = 0.67, p > 0.05\right)$

Meanwhile, *t*he coefficient of regulatory compliance (RC) is positive, as the estimates show that as regulatory compliance increases, it will lead to an increase in debt-to-equity ratio. Thus, an increase in regulatory compliance will lead to 8.955 per cent increase in debt-to-equity ratio. The result also depicted that regulatory compliance significantly impacts debt-to-equity ratio in the selected insurance companies in Nigeria at 1% level $\left(rc_{it} = 8.955, z-test = 3.35, p < 0.01\right)$, implying regulatory compliance is a significant factor influencing changes in debt-to-equity ratio of the selected insurance companies in Nigeria.

Further findings from Table 4.1 established from the estimates include the goodness of fit of the model confirmed with the adjusted R^2 ($\bar{R}^2 = 0.7328$), which is the evidence of dependent variable – debt-to-equity ratio– variations explained by the explanatory variables – claims processing efficiency (CPE), risk management effectiveness (RME) and regulatory compliance (RC) – by 73.28 per cent. The remaining variations in the debt-to-equity ratio are explained by other factors not present in the model but captured with the error term in the model.

The model's overall fit is indicated by the Wald test, which tests the null hypothesis that all coefficients in the model are zero. In this case, the Wald test is significant at the 1% level, indicating that the model as a whole is a good fit for the data. Alternatively, the Wald test statistic of 13.10 with a probability value of 0.004 implies that the claims processing efficiency (CPE), risk management effectiveness (RME) and regulatory compliance (RC) are joint significant factors influencing changes in debt-to-equity ratio of the selected insurance companies in Nigeria.

Decision Rule

In accepting or rejecting the null hypothesis, the F- Statistics probability value is employed and evaluated at 1 per cent significance level. From table 4.1, The F- Statistic of 13.109 with 0.004*p*-value significant at a 1 per cent level, implies that the null hypothesis stating that institutional efficiency has no significant effect on debt-to-equity ratio of insurance companies in Nigeria was rejected, and the alternative hypothesis that institutional efficiency has significant effect on debt-to-equity ratio of insurance companies in Nigeria was accepted.

DISCUSSION OF FINDINGS

The findings revealed that while regulatory compliance (RC) has a significant positive impact on DOER, with an increase in RC leading to an 8.955% increase in DOER, both claims processing efficiency (CPE) and risk management effectiveness (RME) were not found to have a significant impact on DOER. Specifically, an increase in CPE was associated with a 0.018% decrease in DOER, and an increase in RME was associated with a 0.864% increase in DOER, but these relationships were not statistically significant. These results suggest that while RC is a significant factor influencing changes in DOER for insurance companies in Nigeria, CPE and RME may not play a significant role in determining DOER.

The findings from this study align with several empirical studies regarding the impact of institutional efficiency on corporate performance and innovation. Specifically, Afolabi et al. (2021) and Kinyondo et al. (2021) found positive relationships between institutional quality and corporate performance metrics such as return on assets (ROA) and return on equity (ROE) in the Nigerian banking industry and East African countries, respectively. These studies suggest that regulatory quality and government effectiveness positively affect financial performance, echoing the significant impact of regulatory compliance (RC) on the debt-to-equity ratio (DOER) in the Nigerian insurance sector as found in the current study. Additionally, Huang (2021), Jasrotia and Agarwal (2021), and other studies highlighted the positive influence of institutional efficiency on innovation, aligning with the broader concept that efficient institutions foster innovation and economic growth. However, the findings diverge from the study by Dang et al. (2021), which suggests a negative impact of mergers and acquisitions (M&A) on innovation in firms. While institutional efficiency may

contribute positively to firm performance and innovation, the impact of M&A on innovation is more nuanced and may vary depending on factors such as the type of M&A and industry context.

RECOMMENDATIONS

1. The insurance firm should improve the regulatory framework governing insurance companies to ensure that it encourages consolidation efforts. This will help improve the insurance firms' debt and equity finances.

2. The policy maker should encourage insurance companies to adopt measures that enhance institutional efficiency, such as investing in technology, improving risk management practices, and enhancing customer service. This can be done through incentives and capacity-building programs.

3. The insurance firm should enhance corporate governance practices in the insurance sector to ensure transparency, accountability, and ethical conduct. This can be achieved through the implementation of corporate governance codes and guidelines.

4. The policy maker should encourage insurance companies to invest in innovative products and services that meet the evolving needs of customers. This can help improve profitability and market competitiveness.

5. The insurance firm should enhance data management practices in the insurance sector to ensure that companies have access to accurate and timely information for decision-making. This can help improve risk assessment and management, leading to better financial performance.

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