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Determinants of Financial Performance of Non-Life Insurance Companies in Nigeria.

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Abstract

Several factors affect the financial performance of non-life insurance firms, including liquidity, leverage, firm size and firm age which are the focus of this study. The dynamic impact of these predictors has often been overlooked by the traditional approaches of evaluating financial performance. This study assessed the effect these variables have on the financial performance of non-life insurance firms in Nigeria. This study adopted ex-post facto research design and secondary data for 15 years (2009 – 2023) was obtained from the annual financial reports and accounts of 16 selected insurance companies listed on the Nigerian Exchange. A quantitative analysis with the aid of the Generalized Linear Model (GLM) revealed that a higher liquidity enhances financial performance by ensuring operational stability and efficient claims payment; larger firms perform better due to advantages of economics of scale; excessive leverage hampers performance due to increased financial risk; while firm age does not guarantee improved financial outcomes. The study recommends that insurance firms focus on strengthening liquidity management, pursue strategic expansion and recapitalization through mergers and acquisitions, and invest in strategic innovation in order to gain competitive edge

Keywords: Financial Performance, Return on Assets, Liquidity Ratio, Leverage Ratio

1.0 INTRODUCTION

The insurance sector plays a crucial role in facilitating financial stability in the global economy. Olarewaju and Msomi (2021) assert that most African countries heavily rely on the insurance sector for economic growth and stability. Pandey, Risal and Basnet (2024), also contend that strong insurance companies support economic growth by boosting the nation's capacity to take on risk and supplying long-term funding for infrastructural development. In Nigeria, the insurance industry contributes to the country's GDP, creates employment opportunities, and encourages savings, investment and development of capital markets (Fadun, 2021; Fadun and Shoyemi, 2018; Curak, Dzaja, and Pepur 2013). According to National Bureau of Statistics (2024), in the third quarter of 2024, total insurance contribution to GDP stood at 5.51%, whilst the non-life insurance sector contributed 61.3% of the total premium basket as at close of 2023 (NAICOM, 2024). In spite of this contribution, the insurance sector in Nigeria and other Sub-Saharan Africa countries grapple with numerous problems. This ranges from inconsistent market sizes, limited product offerings, slow

growth and consolidation issues (Olarewaju & Msomi, 2021), leading to poor financial performance, usually measured through ROA.

Poor financial performance can lead to lack of trust and reluctance for repeat business on the part of policyholders. This financial instability according to Kamau & Njeru, (2016) can create mistrust, and often results in insurance policy surrender. These challenges are further compounded by economic volatility and changing regulatory environment, compelling insurance firms to seek various ways of increasing their financial performance and profitability. A key indicator of financial performance and stability of insurance companies is profitability (Bobakova, 2003; Sharma & Mani, 2012). Returns on Assets (ROA), is a performance indicator that measures how well a company generates profit from its assets (Batool & Shahi, 2019). ROA according to Ozen and Cankal (2020) is a globally acceptable metric for evaluating how efficiently a company uses its assets to generate profits. Kaya (2015), noted that researchers over the past decade have shifted focus to the study of determinants of insurance company's performance and profitability because of its significance to a variety of stakeholders (Sharma & Mani, 2012). Various studies have been carried out on the effects of identified factors on ROA, with market structure, economics of scale, capitalization, organizational structure economic conditions and corporate governance among them (Zinyoro & Aziakpono, 2024). Similarly, numerous financial variables could also have varied effects on ROA. For example, liquidity ratio is used to ascertain the ability of a firm to meet short-term financial obligations and maintain operational stability. Increased liquidity ratio indicates more financial power but may also indicate under utilization of assets in case excess cash is not tied to viable investment. Firm size is also an important factor, since large firms enjoy economies of scale, wide market reach, and greater competitive advantage that could raise their profitability and performance level. Similarly, a firm's age reflects its market experience and reputation—older firms may have had time to gain customer trust and operational expertise while possibly suffering from legacy systems and inefficiencies.

Kramaric, Miletic, and Pavic (2017) reported that early works on profitability and performance issues were focused mainly on developed economies, especially in the banking industries. Gradually, an increasing number of works in emerging markets discuss aspects of insurance profitability and performance. The unique environment in which the Nigerian non-life insurance business operates is beset by general low insurance penetration rates, economic volatility, and

changing regulatory environments. These factors necessitate a deeper exploration of how internal financial metrics interact with external market conditions to influence firm performance.

By focusing on variables such as liquidity ratio, leverage ratio, firm size, and firm age, this study aims to provide a comprehensive understanding of the financial determinants that drive profitability and performance in Nigeria's non-life insurance industry.

2.0 REVIEW OF LITERATURE

Empirical Review

Globally, several factors affect the financial performance of non-life insurance firms. It is imperative that insurance stakeholders and researchers understand how these factors interact with ROA.

Liquidity is essential in determining financial performance and profitability of a firm. Ngwili (2014), recognizes the vital role of liquidity in meeting firms' debt obligations, reducing financial distress and ultimately, improving financial performance and profitability. Hamal (2020) in agreement found that increased liquidity is linked with profitability in the same direction for selected non-life insurance firms in Nepal. While liquidity is generally considered beneficial, excess thereof is an indication of inefficient and non-optimal asset utilization.

Studies on the influence of size of firm on financial performance and profitability have generated varied and conflicting results. Zinyoro and Aziakpono (2024) and Almajali, Alamro, and Al-Soub (2012) contend that large firms enjoy economies of scale and efficient resource allocation over smaller firms, leading to higher financial performance and profitability. This is because, larger companies can produce more by spreading the cost of production over a larger amount of goods. In light of this, Hamal (2020) finds a positive association between firm size and profitability, albeit insignificant; implying that size in itself is not the sole determinant of performance. Kripa and Ajasllari (2016) and Hamal (2020) investigated the interdependence of firm age and size and concluded that older and larger firms tend to be more profitable. However, Cummins & Weiss (2013) assert that when a firm becomes too large, complexity may cause coordination challenges, managerial conflicts, and agency concerns, leading to poor performance compared to smaller insurers.

The relationship between leverage and financial performance has been keenly debated among researchers because of varied findings with suggestions that leverage improves performance while others point to its negative effects due to higher debt servicing costs. Kaya (2015) argues that high leverage could worsen the financial risk of a firm, leading to reduced profitability resulting from high cost of debt servicing. To buttress this position, Hamal (2020) and Msomi (2022) discovered a negative association between leverage and financial performance of non-life insurance companies indicating the intricacy of the effect of leverage in financial performance. In contrast, Olowokudejo and Ajijola (2022) establish a positive relationship between the variables. The conflicting results indicate the need for caution in the application of leverage where the benefits thereof may depend on other variables such as the risk profile and financial structure of the firm.

Firm Age is also a crucial factor that has been associated with profitability. Kripa & Ajasllari (2016) contend that older firms generate higher profits due to their market presence and accumulation of experience over time. Hamal (2020) and Jaishi (2020), agree with this position with no statistical significance to their findings. This is a sign that firm age does not guarantee profitability by itself and might be moderated by other internal and external factors in the performance-age relationship.

3.0. METHODOLOGY

The study adopted an ex-post facto research design which entails collection of data over a particular period of time, allowing the establishment of a cause-and-effect relationship between two or more variables. This research design was chosen for this study because of the researcher's intention to collect data from the Nigerian Insurance Industry's (NIA) report from 2009 to 2023 to support the analysis of the cause-and-effect relationship between selected variables and financial performance of non-life insurance companies in Nigeria. The population of the research comprised the 29 licensed non-life insurance companies in Nigerian as of end of 2024. Sixteen (16) non-life insurance companies, however, were selected by a purposive sampling method. This approach was employed to focus on companies with complete information for the period 2009-2023 to ensure a comprehensive and authentic analysis of data. The study utilized secondary data, collected from the annual financial reports of non-life insurance firms and Nigerian Insurers Association (NIA) covering the review period to provide an accurate and reliable analysis.

Model Specification

To examine the effect of the selected independent variables on the financial performance of non-life insurance firms in Nigeria, this research adopted the Generalized Linear Model (GLM) specified below:

$$g(\mu it) = \beta 0 + \beta 1 \ LIQit + \beta 2 \ LEVit + \beta 3 \ SIZEit + \beta 4 \ AGEit$$

Where:

- g(μit): link function (e.g., identity, log, logit)
- μit = E(ROAit): expected value of ROA
- LIQ = Liquidity Ratio
- LEV = Leverage Ratio
- SIZE = Firm Size
- AGE = Firm Age

Method of Data Analysis

Descriptive and inferential statistics were used in the study to analyze the data with the aid of Statistical Package for Social Sciences (SPSS). The descriptive statistics was used to examine the features of the extracted data, diagnostic tests to ascertain the appropriateness of the study data and inferential analysis with the aid of the Generalized Linear Model (GLM) to determine the effect of the independent variables on the dependent variable. The GLM was considered appropriate due to its flexibility in handling various types of response variables and distributions, thereby accommodating a wider range of data structures beyond those suited to traditional linear regression.

4.0 DATA PRESENTATION AND ANALYSIS

The data used for this study were extracted from audited financial reports of sixteen (16) registered non-life insurance companies in Nigeria and Nigerian Insurers Association (NIA) for a period of fifteen (15) years (2009 to 2023). The dependent variable is the financial performance measured with return on asset (ROA), while the independent variables are determinants of financial performance measured with liquidity ratio, leverage ratio, firm age and firm size. Descriptive statistics such as mean, median, maximum, minimum, standard deviation, skewness and kurtosis

were used to establish the nature of the collected data. Table 1 shows the summary statistics for the collected data.

Table 1: Descriptive Statistics

	ROA	Liquidity Ratio	Leverage	Firm Size	Firm Age
Mean	1.766820	19.84732	52.32778	7.217782	17.36820
Median	3.010000	14.71000	43.48000	7.130000	15.00000
Maximum	20.76000	70.99000	256.2200	8.990000	34.00000
Minimum	-54.99000	1.200000	11.42000	6.410000	3.000000
Std. Dev.	7.501248	14.62491	37.93763	0.378042	8.812138
Skewness	-3.405849	1.314948	3.126248	1.088132	0.326513
Kurtosis	22.33958	4.459847	14.99274	5.286098	1.771256
Jarque-Bera	4186.667	90.09805	1821.574	99.20859	19.28187
Probability	0.000000	0.000000	0.000000	0.000000	0.000065
Sum	422.2700	4743.510	12506.34	1725.050	4151.000
Sum Sq. Dev.	13391.96	50905.37	342544.7	34.01392	18481.60
Observations	239	239	239	239	239

Source: *Author's Computation, 2025*

Figure 1: *ROA, Liquidity ratio, Leverage, Firm age, and Firm size*

Table 1 depicts descriptive statistics for 16 non-life insurance companies in Nigeria, revealing notable disparities in financial performance and firm-specific characteristics with implications for industry stability.

The average ROA is 1.77%, but the median is 3.01%, a sign of left-skewness occasioned by the presence of extreme negative outliers, with high variability from -54.99% to 20.76% and with standard deviation of 7.50, which points to the existence of companies in deep financial distress. The mean and median liquidity ratios of 19.85% and 14.71% respectively prove that some firms maintain high liquidity ratio, up to about 80%, but majority fall below the mean. The distribution also indicates a right-skewness and moderate peak with a standard deviation of 14.62, kurtosis of 4.46 and skewness of 1.31. These features are evidence of significant variation and influence of outliers.

This suggests a non-standardization of liquidity management, requiring the need for a regulatory benchmark to balance solvency and profitability. Mean leverage ratio is 52.33%, median being 43.48%, suggesting that over a half of companies' assets are being financed on a debt basis. However, the presence of leveraged outliers having a high value of maximum as 256.22%, having a large standard deviation value of 37.94, skewness as 3.13, and kurtosis of 14.99 denotes a right-skewed, tall peaked distribution and suggests a pair of companies highly exposed to debt.

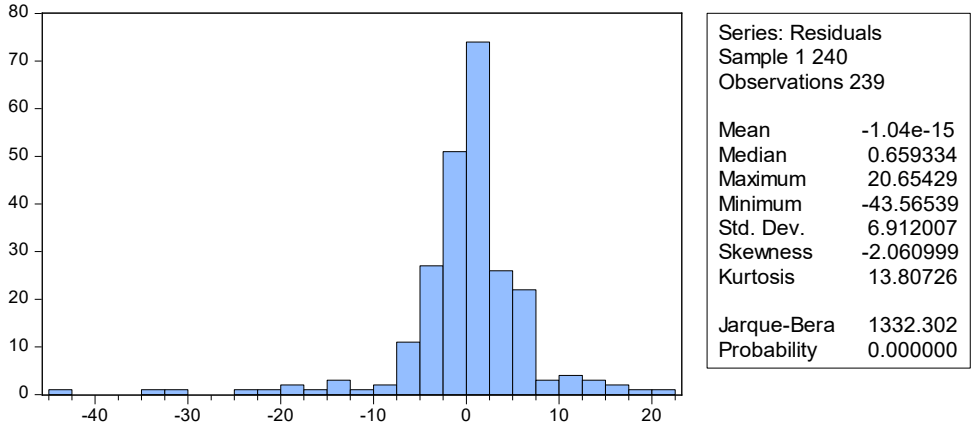
Firm size, as measured by the natural log of assets, has a mean of 7.22 with low standard deviation of 0.38 and range of 6.41 to 8.99 that reflects moderate variation. The skew of 1.09 and kurtosis of 5.29 reflect a moderate right-skew with a moderate peak around the mean. The table shows an average age of the firms at 17.37 years with a median of 15 years, a standard deviation of 8.81, skewness and kurtosis of 0.33 and 1.77 respectively. This presents evidence of a near normal distribution, indicating a fairly balanced mix of younger and older firms. Overall, the evidence suggests extensive structural and financial differences, justifying the imposition of focused regulation.

Diagnostic Tests

To ascertain the nature and strength of the relationship between the independent and dependent variable, three diagnostics tests were carried out on the collected data. The results of the tests are as follows:

Normality Test (Residual of Regression Model)

Table 2: Normality Test



The Jarque-Bera test on the residuals produced a statistic of 1332.302 with a p-value of 0.0000, indicating strong rejection of the null hypothesis of normality. The residuals are heavily left-skewed (skewness = -2.06) and highly peaked (kurtosis = 13.80), implying non-normality that may distort inference from OLS estimates.

Unit Root Test (Stationarity – ADF Test)

Table 3: Diagnostic Test (Unit Root)

	At Level				At First difference			
Parameters	ADF test Statistic	Test critical value @ 5%	Prob.*	Order	ADF test statistic	Test critical value @ 5%	Prob.*	Order
ROA	-5.211256	-2.873596	0.0000	I(1)	-13.61901	-2.873596	0.0000	I(1)
Liquidity Ratio	-5.685689	-2.873543	0.0000	I(0)	-17.06353	-2.873648	0.0000	I(0)
Leverage	-3.382866	-2.873440	0.0125	I(0)	-16.38572	-2.873492	0.0000	I(0)
Firm Age	-3.791837	-2.873440	0.0034	I(0)	-14.88678	-2.873492	0.0000	I(1)
Firm Size	-4.978610	-2.873440	0.0000	I(0)	-16.38396	-2.873492	0.0000	I(1)

Source: *Author's Computation, 2025*

The Augmented Dickey-Fuller (ADF) test as displayed in table 2 revealed that ROA is non-stationary at level but becomes stationary after first differencing, indicating it is I(1), while Liquidity Ratio, Leverage, Firm Size, and Firm Age are stationary at level (I(0)). This mix of differencing results- I(0) and I(1)-confirms the absence of I(2) series. This justifies the use of OLS or GLM without the risk of spurious regression.

Serial Correlation Test (Breusch-Godfrey LM Test)

Table 4: **Breusch-Godfrey Serial Correlation LM Test:**

F-statistic	24.82698	Prob. F(2,232)	0.0000
Obs*R-squared	42.13432	Prob. Chi-Square(2)	0.0000

Presample and interior missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Liquidity Ratio	-0.009680	0.029253	-0.330920	0.7410
Leverage	0.008068	0.011367	0.709794	0.4785
Firm Size	-0.491139	1.122449	-0.437560	0.6621
Firm Age	-0.007003	0.047670	-0.146914	0.8833
C	3.447646	7.983173	0.431864	0.6662
RESID(-1)	0.375576	0.065278	5.753477	0.0000
RESID(-2)	0.096505	0.066732	1.446160	0.1495

R-squared	0.176294	Mean dependent var	-1.04E-15
Adjusted R-squared	0.154991	S.D. dependent var	6.912007
S.E. of regression	6.353817	Akaike info criterion	6.564840
Sum squared resid	9366.070	Schwarz criterion	6.666661
Log likelihood	-777.4984	Hannan-Quinn criter.	6.605871
F-statistic	8.275661	Durbin-Watson stat	1.969838
Prob(F-statistic)	0.000000		

Breusch-Godfrey test revealed F-statistic = 24.83 and Obs*R-squared = 42.13, each having p-values of < 0.01. This indicates the presence of first-order autocorrelation in residuals. Despite a

Durbin-Watson statistic close to 2.0, the high lagged residuals suggest violation of the no serial correlation assumption, suggesting the need for robust standard errors or dynamic modelling adjustments.

Table 5: Generalized Linear Model (Newton-Raphson/Marquardt steps)

Variable	Coefficient	Std. Error	z-Statistic	Prob.
Liquidity Ratio	0.076550	0.032036	2.389535	0.0169
Leverage	-0.051747	0.012289	-4.211032	0.0000
Firm Size	3.188276	1.224852	2.602990	0.0092
Firm Age	0.049171	0.052277	0.940572	0.3469
C	-20.91096	8.714775	-2.399483	0.0164
Mean dependent var	1.766820	S.D. dependent var		7.501248
Sum squared resid	11370.65	Log likelihood		-800.7009
Akaike info criterion	6.742267	Schwarz criterion		6.814997
Hannan-Quinn criter.	6.771575	Deviance		11370.65
Deviance statistic	48.59252	Restr. deviance		13391.96
LR statistic	41.59707	Prob(LR statistic)		0.000000
Pearson SSR	11370.65	Pearson statistic		48.59252
Dispersion	48.59252			

Generalized Linear Model analysis shows that Liquidity Ratio (β = 0.0766, p = 0.0169) and Firm Size (β = 3.1883, p = 0.0092) have significant positive impacts on Return on Assets (ROA), while Leverage (β = -0.0517, p = 0.0000) has a significant but negative impact, i.e., higher liquidity and larger firm size enhance financial performance, while excessive leverage reduces it. Firm Age is not statistically significant (p = 0.3469), and overall model fit is adequate with LR = 41.60 (p = 0.0000), validating that the predictors collectively explain ROA variations.

Hypotheses Testing

Hypothesis 1:

Ho1: Liquidity ratio has no significant effect on financial performance of non-life insurance companies in Nigeria.

Table 4(a): Generalized Linear Model (Newton-Raphson / Marquardt steps)

Variable	Coefficient	Std. Error	z-Statistic	Prob.
Liquidity Ratio	0.076550	0.032036	2.389535	0.0169
C	-20.91096	8.714775	-2.399483	0.0164

In table 4(a), the effect of liquidity ratio on financial performance of non-life insurance companies in Nigeria, depicts the coefficient of 0.076550 (7.65%) but statistically significant at P=0.0169,

which is less than 0.05 threshold. This implies that there is no enough evidence to accept the null hypothesis. Thus, liquidity ratio has significant effect on financial performance of non-life insurance companies in Nigeria.

Hypothesis 2:

Ho2: Leverage ratio has no significant effect on returns on financial performance of non-life insurance companies in Nigeria.

Table 4(b): Generalized Linear Model (Newton-Raphson / Marquardt steps)

Variable	Coefficient	Std. Error	z-Statistic	Prob.
Leverage	-0.051747	0.012289	-4.211032	0.0000
C	-20.91096	8.714775	-2.399483	0.0164

The effect of leverage on financial performance of non-life insurance companies in Nigeria was also shown in the Table 4(b) with negative coefficient of -0.051747 and statistically significant (P=0.0000 < 0.05). This implies that the null hypothesis is rejected, thereby confirming that leverage ratio has significant effect on financial performance of non-life insurance companies in Nigeria.

Hypothesis 3:

Ho3: Firms' size has no significant effect on financial performance of non-life insurance companies in Nigeria.

Table 4(c): Generalized Linear Model (Newton-Raphson / Marquardt steps)

Variable	Coefficient	Std. Error	z-Statistic	Prob.
Firm Size	3.188276	1.224852	2.602990	0.0092
C	-20.91096	8.714775	-2.399483	0.0164

The hypothesis, as shown in the table 4(c) has a coefficient value of 3.188276 (3.19%) and the p-value of 0.00092 < 0.05. This shows that the null hypothesis has no concreate evidence of being accepted. Thus, firms' size has significant effect on financial performance of non-life insurance companies in Nigeria.

Hypothesis 4:

Ho4: Firm Age has no significant effect on financial performance of non-life insurance companies in Nigeria.

Table 4(d): Generalized Linear Model (Newton-Raphson / Marquardt steps)

Variable	Coefficient	Std. Error	z-Statistic	Prob.
Firm Age	0.049171	0.052277	0.940572	0.3469
C	-20.91096	8.714775	-2.399483	0.0164

In table 4(d), firm age, generated a weak positive coefficient of 0.049171 but statistically insignificant at P= 0.3469, which is greater than 0.05. This implies that there is no enough evidence to reject the null hypothesis. Thus, firm age has no significant effect on financial performance of non-life insurance companies in Nigeria.

Discussion of Results

Based on the results, this study highlights some critical determinants of financial performance of Non-Life Insurance Companies in Nigeria. The effect of the liquidity ratio, leverage ratio, firm size, and firm age on the financial performance of non-life insurance firms was determined using a Generalized Linear Model (GLM) estimation technique.

The first finding indicates that liquidity ratio exerts a positive and statistically significant effect on the financial performance of the non-life insurance firms in Nigeria. A higher liquidity ratio indicates that the firm is able to mitigate its short-term obligations, which further translates into better operational stability and profitability for the firm. This result is consistent with the findings of Fadun and Akindipe (2024), Falana and Adewale (2022), Hamal (2020), Isayas (2022), and Nwala, Aza, and Sukana (2024), but contradicts Agbo (2021), who established a negative relationship.

The leverage ratio depicts a negative significant relationship with financial performance, indicating that excessive reliance on debt financing reduces profitability through increased interest burden and increased financial risk. This corroborates the findings of Agboola and Obalola (2024), Malik (2011), Daniel and Tilahun (2013), Odusanya, Yinusa, and Ilo (2018), Hamal (2020), and Msomi (2022), contrary to findings of Almajali, Alamro, and Al-Soub, (2012). Talat and Asghar (2013), Nwala, Aza & Sukana (2024), and Olowokudejo and Ajijola (2022).

Firm size was found to have a positive and significant impact on financial performance. Through larger firm size lies a brand presence and an opportunity for economies of scale. This equates to greater service capability, lower costs, and, hence. increased profitability per unit. Ibrahim, Gimba, Ezekiel and Osama, (2024) in support of this finding, argued that the larger insurance firms in Nigeria are more competitive and financially solvent because of their resource pool and market

scope. This is in tandem with the findings of Ibrahim, Gimba, Ezekiel, and Osama (2024), Sah and Magar (2021), and Isayas (2022), but disagrees with Pierce et al. (2013) and Hamal (2020) positions.

Firm age from the analysis did not show any indication of notable influence on financial performance, suggesting that age is not a critical determinant of financial performance. It is the firm's adaptability and innovative strategies that that truly matter. This agrees with the finding of Isayas (2022) and strengthens the argument of Ibrahim, Gimba, Ezekiel and Osama (2024) that older firms do not grow as fast as younger ones that are driven with better innovative strategies. This contradicts the findings of Kripa and Ajasllari (2016).

In summary, this study has established that size of firm, leverage, and liquidity which are internal characteristics thereof, are more effective drivers of performance in the Nigerian non-life insurance sector than the age of firms. The results reinforce the importance of sound financial approaches and business flexibility over mere institutional legacy or heritage.

Conclusion

This study analysed the determinants of financial performance of non-life insurance companies in Nigeria using Generalized Linear Model. The study statistically established that liquidity, leverage, and firm size significantly affect financial performance, while firm age had no significant effect. Specifically, higher liquidity positively affects performance indicating that firms with better short-term financial health tend to perform better. In contrast, leverage has a negative effect on performance, which indicates that excessive reliance on debt reduces profitability. It was found that firm size positively enhanced performance, probably because of operational efficiencies and optimal resource allocation. Firm age, however, was not statistically significant, suggesting that age alone does not guarantee improved performance.

These results highlight the focus predominantly placed on financial strategy and scale rather than historical presence. It is recommended that other managers and policymakers of the Nigerian insurance industry focus on more liquidity and debt control, while also utilizing firm size as an advantage. Operational efficiency and financial strength are crucial to enhance sustained profitability and growth in the insurance industry. Based on the conclusion, the study recommends strengthening liquidity management, pursuing strategic expansion and facilitating innovative and strategic management.

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