



## On the Technical Characteristics of Insurance Operations and Financial Performance of Non-life Insurance Companies in Nigeria

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**Abstract:** The inverse cycle nature of insurance business suggests the adoption of unique firm characteristics upon which its operations rely. These characteristics to a large extent determine risk exposure, underwriting capacity, risk appetite, risk tolerance among others. This study evaluated the impact of these technical characteristics on the financial performance on non-life insurance companies in Nigeria. This study adopted descriptive research design and relied on secondary data of all the non-life companies operating in Nigeria between 2006-2019. Data were gathered from the annual financial statements as contained in NIA, a publication of Nigeria Insurers Association. The study used firm size, premium growth, loss ratio, liquidity, investment, capital adequacy, reserves and underwriting capacity as proxies of technical characteristics while return asset, return on equity and return on investment were used as proxies of financial performance. The results revealed a significant impact of joint technical characteristics variables on the financial performance. Specifically, the study revealed that reserves, shareholders' fund, firm size, capital adequacy and premium growth are the main technical characteristics that influence the financial performance. The study recommended that non-life insurance companies must constantly monitor their reserves, increase shareholders fund, increase capital base, capital adequacy, and grow their portfolio through premium generation.

**Keywords:** Firm size; Reserves; Capital Adequacy; Underwriting Capacity; Return on Asset, Return on Equity; Return on Investment.

**JEL Classification:** G52; M21

### 1. Introduction

Industries and firms can be distinguished from one another on the basis of financial and non-financial characteristics including size, value, profitability, structure, leverage, liquidity, sales growth, age, customers' base and so on (Malik, 2011). These characteristics are unique and are directly traceable to the operations of the identified industry (Nyabaga & Matanda, 2020). While most of the characteristics cut across various sectors, there are some characteristics that are peculiar to certain industries. In the same vein, the nature of insurance operation which is hinged on risk transfer, homogeneous exposure, charging of equitable premium among others depend highly on specific technical characteristics. These technical characteristics include size of insurance company, premium growth, loss ratio, liquidity, age of insurance company, shareholders' fund, solvency, underwriting capacity and reserves.

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(Burca & Batrinca, 2014; Koc, 2016; Ngwili, 2014; Mazviona & Sakahuhwa, 2017; Poudel, 2019). The management of these characteristics reveal to a large extent capacity of insurance companies to pay claims, ability to stabilize claims ratio and ultimately determine their profitability.

Therefore, this study tends to examine the impact of these technical characteristics on the financial performance of non-life insurance companies in Nigeria.

### **1.1. Statement of Research Problem**

Insurance business stimulates economic activities through reduction in uncertainty, optimal utilisation of capital and protection of financial wellbeing of individuals, group of individuals or organisation (Lomba, 2014; Cristea, Marcu & Carstina, 2014). While these functions had worked adequately in other developed economies, the same cannot be said for Nigeria. For example, contribution of insurance to the Nation's GDP reduced from 0.41% to 0.31% for 2018 and 2019 respectively (Nigeria Insurers' Digest, 2020). Moreover, the premium per capita income also declined by 30.08% while insurance penetration reduced to 0.6% for the year 2020 (Salami, 2021). Reasons for the poor performance indicators may not be unconnected to inadequate attention given to the core indices of insurance operations.

More so, Nigerian insurance market has been known to be fragmented with often poor performance. The poor performance had been traced to neglect of core firm characteristics of insurance business (Cenfri, 2018; Abass, 2019). Apart from a few larger and stronger insurers, the market is characterized with a large tail-end of insurers with small balance sheets and often weak business fundamentals. While the expense ratios are high, claims ratios seems to be too low to provide consumer value or too high to attain profitability. For example, the average profit margin for non-life insurance companies in 2018 was 3% (Cenfri Report, 2018).

The ability of the insurance sector to fulfil its role as risk manager in the economy is determined, to a large extent, by the size of its assets. This appears to be limited judging from Nigerian point of view. The industry holds only 2.5% of total financial sector assets (Cenfri Report, 2018).

This study therefore intends to find how technical characteristics (insurance company's size, premium growth, loss ratio, liquidity, capital adequacy, reserve and investment) of insurance operations affect the financial performance (return on assets, return on equity and return on investment) of non-life insurance companies in Nigeria.

### **1.2. Statement of Hypotheses**

- H<sub>01</sub> There is no significant impact of individual technical characteristics on the financial performance of non-life insurance companies in Nigeria.
- H<sub>02</sub> There is no significant impact of joint effect of technical characteristics on the financial performance of non-life insurance companies in Nigeria.

## **2. Review of the Literature**

Firm characteristics according to Bannier and Hänsel (2008) are the managerial and demographic fickle which are embedded in the internal attributes in a company. The internal attributes according to Malik (2011) can further be sub divided into financial and non-financial variables. While financial variables as the determining factors that are directly driven from items in a balance sheet and profit and loss accounts, the non-financial variables are those factors cannot be driven from the items in the balance sheet and profit and loss accounts.

Relatedly, scholars have argued about the suitability of these firm characteristics across various sectors. The line of argument is based on identified core activities in respective industry.

In lieu of this, technical characteristics of insurance business must be based on its core technical operations (Kozak, 2011; Almajali, Sameer & Yahya, 2012; Charumathi, 2012).

Therefore, core technical characteristics associated to insurance business include; age, size, premium growth, loss ratio, liquidity, investment, capital adequacy, solvency margin, reserves, shareholders' fund, reinsurance dependence, underwriting capacity and leverage (Pervan & Pavic Kramaric, 2012; Dogan, 2013; Mehari & Aemiro, 2013; Batrinca, 2014; Kaya, 2015; Kozak, 2015; Mazviona, Dube & Sakahuhwa, 2017; Ajao & Ogieriakhi, 2018; Ochingo & Muturi, 2018).

For the purpose of this study, technical characteristics of insurance operations shall be conceptualized into; size of an insurance company, premium growth rate, loss ratio, liquidity, investment, capital adequacy, reserves, underwriting capacity.

### **2.1. Technical Characteristics of Insurance Operations**

Insurance company's size according to Brown (2009) refers to how large or small firm is, it measures a firm's market value in relation to its competitors. It enables an organisation obtain a competitive edge over its rivals through the creation of opportunities and cost reduction through economies of scale (Dogan, 2013). Big insurance companies can effectively diversify their assumed risk, possess a greater capacity to deal with adverse market fluctuations and respond quickly to changes in market conditions compared to small insurers (Harwick, 1997; Wyn, 1998). Various studies have linked performance of insurance companies to their size (Malik, 2011; Burca & Batrinca, 2014; Velnampy & Niresh, 2015; Batool & Sahi, 2019).

Premium is the insurance rate and the number of unit power exposure (Abate, 2012). Charging of premium according to Daniel and Tilahun (2013) is expected to cover claim cost (loss ratio), while and other expenses like management expenses, sales expenses, profit of insurer and re-insurance premium. Premium growth is an important technical characteristics of insurance operations because it measures the rate of sales growth, market penetration, profitability in the succeeding year, and measures contribution of insurance to Gross Domestic Product (GDP) and determines the profitability level of insurance companies (Akilo, 2015; Etale, 2011; Burca & Batrinca, 2014; Mehari & Aemiro, 2013; Kozak, 2015; Kaya, 2015).

Loss ratio also known as claims ratio is measured by the ratio of incurred claims to premium earned. It demonstrates the effectiveness of the underwriting activities of insurance companies (Kaya, 2015). Loss ratio reflects the adequacy of insurers underwriting performance and emphasizes the efficiency of the insurer's underwriting activity (Adam & Buckle, 2003; Burca & Barinca, 2014). Though, there

is a divergent view on the relationship between loss ratio and financial performance. While some studies have shown an inverse relationship between loss ratio profitability (Pervan & Visic, 2012; Dogan, 2013; Kaya, 2015), some authors argue otherwise (Burca & Barinca, 2014; Hussaine & Joo, 2019).

Liquidity on the other hand characterizes the ability of an organisation to meet its payment obligations in a short term by using liquid funds at its disposal (Turney & Robbins, 2015). Liquidity from insurance operation's point of view refers to the capability of an insurer to pay liabilities like operating expenses and payment for losses/benefits under insurance policies (Chen & Wong, 2004). It indicates insurance companies' ability to finance all its contractual obligations like claims payment, underwriting expenses, claims expenses, reinsurance expenses, investment and maturity of liabilities (Iswatia, 2007). Relationship between liquidity and financial performance of an insurance company has generated debates. While the first dichotomy is based on the risk and return theory which believes liquidity is statistically related to the profitability (Ngwili, 2014; Liu, Shiu & Liu, 2016; Hussaine & Joo, 2019). On the other hand, some related studies showed no statistically significant relationship (Mehari & Aemiro, 2013; Abdeljawad & Dwaikat, 2019; Poudel, 2019).

Investment practice involves the act of sacrificing current money or other resources into different securities for future benefits (Epetimehin, 2014). According to Husain and Nikita (2016), investment practice of insurance companies involves the dispensation that allowed assets into various investments to earn additional revenues. Chui and Kwot (2008) emphasized the importance of investment in the overall operations of insurance companies. Palande, Shah and Lunawat (2013) suggest that insurance companies invest their shareholder's funds, policyholder's fund and other temporally available financial resources.

Capital adequacy is the level of capital required by insurance companies to enable them withstand operational risks that they are exposed to in order to absorb the potential losses and protect the policyholders (Nyabaga & Matanda, 2020). It is instrumental to the survival of an insurance company because it generates a good level of profitability (Ikonik et al, 2011). The importance of capital adequacy as one of the major technical attributes of insurance operations had been echoed by Ikonik (2011), Kaya (2013), Too and Simiyu (2018) and Ochingo and Muturi (2018).

Reserve is an amount representing actual or potential liabilities kept by an insurer to cover debts to policyholders. Reserve in insurance is built to guarantee payment of insurance to policyholder (Osadez, 2002). Insurance reserve is formed by an insurance company to ensure future payments insured sums and insurance compensation (Shulieshova, Domanska & Wasilewski, 2015). The need for reserving according to Kneysler (2009) include; delayed and uncertain costs, claims reserving, under requirements and quantum of reserves.

Shareholders' fund is made up of called up capital which gives an insurance company continuity of ownership and reserves that do not include loan capital. According to Soye and Adeyemo (2018), shareholder's fund represents a protection net of cushion that allows an insurance company to remain solvent and continue operation despite unexpected disturbance.

Underwriting capacity is the maximum amount of liability that an insurance company agrees to assure from its underwriting activities (Kagan, 2018). It represents an insurer's ability to retain risk and assume larger unexpected risk (Onaolapo, 2005; Oyetayo & Abass, 2020). Several studies had demonstrated that insurance companies with high underwriting capacity tend to assume more risk,

shows insurer's ability to pay its obligations and possess better financial performance (Mankai & Belgacem, 2013; Burca & Batrinca, 2014; Soye & Adeyemo, 2018; Oyetayo & Abass, 2020).

## **2.2. Financial Performance**

Financial performance refers to the degree to which financial objectives is being or has been accomplished. It shows organisation's overall financial health over a given period of time (Bhunia, Mukhuti & Roy 2011). Financial performance of business organisation is measured with the use of financial ratios. Abate (2012) defines financial ratios as a class of financial metrics that are used to assess a business' ability to generate earnings as compared to its expenses and other relevant costs incurred during a specific period of time. Most commonly and widely used financial performance metrics in insurance business are return on asset, return on investment and return on equity (Carton, 2004; Al-Shami, 2008; Malik, 2011; De Villiers, 2012; Delen, Kuzey & Uyar, 2013; Turley & Robbins 2015).

## **2.3. Measures of Financial Performance**

Return on Asset (ROA) reveals how much profit a company earns for its assets (Delen et al, Kuzey & Uyar, 2013). It indicates how profitable a company is relatively to its assets. It gives an idea as to how efficient management is in using its assets to generate earnings. Assets include cash in bank, account receivable, property, equipment, inventory and furniture. The higher the firms return on total assets, the better the firm is.

Return on Equity (ROE) measures overall firm performance. It compares net profit after taxes (minus preferred stock dividend, if any) to the equity that shareholders have invested in the firm (Mankai & Belgacem, 2013). A high return on equity often reflects the firm's acceptance of strong investment opportunities and return on the ownership interest (shareholder's equity) of common stakeholders. Therefore, it shows how well a company uses investment funds to generate earnings growth.

Return on Invested Capital (ROIC) measures insurance company's efficiency in allocating the capital under its control in profitable investment. This metric gives an indication of a company's actual capacity to generate returns through utilization of its productivity assets. It is expressed in net premium earned from underwriting activities, annual turnover, return on investment and return on equity (Greene & Segal, 2004).

## **3. Materials and Methods**

The study employed descriptive research design. The population of the study comprised forty-one (41) licensed non-life insurance companies operating in Nigeria as at 31<sup>st</sup> January 2020. Non-life insurance companies are companies that underwrite all risks except risk(s) associated with life. Census sampling technique was adopted using secondary data. Secondary data used for the study covered a fourteen (14) year period from 2006-2019. The data were gathered from the audited annual financial reports of NIA Digest (a self-regulatory body of all insurance and reinsurance companies operating in Nigeria). Data extracted were used as proxies for size of insurance companies, premium growth, loss ratio, liquidity, investment, capital adequacy, reserves, underwriting capacity, return on asset, return on

equity and return on investment. Due to inconsistent in raw data, they were transformed using logarithmic transformation of model.

This study formulates a linear panel model of the following form:

$$FP = f(TC) \quad (1)$$

Where  $TC$  is Technical Characteristics

$FP$  is Financial Performance

Breaking down the independent variable ( $FP$ ) further into components;

$$TC = FS, PG, LR, LIQ, INV, CA, SC, SF, UD, \varepsilon \quad (1a)$$

Breaking down the dependent variable ( $FP$ ) further into component parts;

$$FP = ROA, ROE, ROI, \varepsilon \quad (1b)$$

## Model Equation

### Model 1

$$FP = a_1 + b_1(FS) + b_2(PG) + b_3(LR) + b_4(LIQ) + b_5(INV) + b_6(CA) + b_7(SC) + b_8(SF) + b_9(UD) + \varepsilon$$

Due to inconsistent in raw data, the above models were transformed using **logarithmic transformation of model** as follows:

$$\log_e FP = a_1 + b_1 \log_e(FS) + b_2 \log_e(PG) + b_3 \log_e(LR) + b_4 \log_e(LIQ) + b_5 \log_e(INV) + b_6 \log_e(CA) + b_7 \log_e(SC) + b_8 \log_e(SF) + b_9 \log_e(UD) + \varepsilon$$

**Table 1. Variable Measurement**

Variable	Measurement	Definition	Expected outcome
Independent	Firm Size	log of total assets)	+/-
Independent	Premium growth (PG)	$\frac{GPW \text{ (New)} - GPW \text{ (Old)}}{GPW \text{ (Old)}}$	+/-
Independent	Loss Ratio	$\frac{\text{Net Claim}}{\text{Net Premium Income}}$	+/-
Independent	Liquidity	Cash and cash equivalent	+/-
Independent	Investment	Financial Assets (Short-term + Long term investment)	+/-
Independent	Capital Adequacy	$\frac{\text{Shareholders' fund}}{\text{Net premium earned}}$	+/-
Independent	Share capital	Reserve	+/-
Independent	Shareholders' fund	Shareholders' fund	+/-
Independent	Underwriting capacity	Combined ratio + reserve	+/-
Dependent	Return on Assets	$\frac{\text{Profit after tax}}{\text{Total Assets}}$	+/-
Dependent	Return on Equity	$\frac{\text{Profit after Tax (PAT)}}{\text{Shareholders' equity}}$	+/-
Dependent	Return on Investment	$\frac{\text{Profit earned on investment}}{\text{Cost of Investment}}$	+/-

**Table 2. Descriptive Analysis**

	SC	SF	LIQ	INV	FS	PG	LR	UD	CA	ROA	ROE	ROI
Mean	14.767	15.393	13.039	14.428	15.914	-1.599	-1.474	-0.302	0.949	-3.092	-2.658	2.014
Median	15.035	15.602	13.260	14.828	16.062	-1.521	-1.348	-0.299	0.942	-3.126	-2.610	1.998
Maximum	17.541	17.667	17.106	17.142	19.561	1.257	1.889	4.576	3.079	12.462	0.199	9.248
Minimum	0.000	0.000	0.000	0.000	0.000	-6.316	-6.412	-3.256	-1.944	-8.242	-7.922	-4.336
Std. Dev.	2.121	2.173	2.381	2.324	2.310	1.193	1.016	0.765	0.863	1.510	1.169	1.452
Skewness	-5.922	-6.274	-2.380	-4.316	-5.712	-0.666	-1.057	0.875	0.057	3.726	-0.545	0.808
Kurtosis	41.733	44.730	13.676	26.729	40.103	4.080	7.137	10.672	3.063	42.256	5.521	7.673
Jarque-Bera	19413.110	22469.260	1616.677	7544.401	17834.860	34.790	255.352	732.702	0.199	18892.870	89.290	289.335
Probability	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.905	0.000	0.000	0.000
Sum	4193.875	4371.585	3703.046	4097.427	4519.604	454.256	-418.676	-85.780	269.481	-878.188	754.937	572.112
Sum Sq. Dev.	1273.542	1335.832	1604.088	1528.036	1509.498	403.053	291.924	165.723	210.851	645.419	387.062	596.759
Observations	284.000	284.000	284.000	284.000	284.000	284.000	284.000	284.000	284.000	284.000	284.000	284.000

The result of the descriptive statistics in table 2 indicates a normal distribution for variables ROA, ROE and ROI as the probability gives values of 0.0000, 0.0000 and 0.0000 respectively which is lesser than 5%. The standard deviation coefficient of all the variables is positive which implies the level of contribution of the independent's variables to financial performance of the selected Insurance firms. The level of the data distribution is symmetry to the positive variables while variables show a low kurtosis as they all indicate positive values and higher than one. Kurtosis tend to have heavy tails, or outliers. According to the table above none of the variables sets shows a low kurtosis as they all indicate positive values and higher than one.

**Table 3. Correlation Matrix**

	SC	SF	LIQ	INV	FS	PG	LR	UD	CA	ROA	ROE	ROI
sc	1.00											
sf	0.95	1.00										
lq	0.66	0.67	1.00									
in	0.81	0.87	0.56	1.00								
fs	0.93	0.98	0.69	0.87	1.00							
pg	0.22	0.20	0.28	0.18	0.21	1.00						
Lr	0.16	0.21	0.07	0.21	0.22	0.08	1.00					
ud	0.04	0.05	0.07	0.05	0.08	0.02	0.20	1.00				
ca	0.16	0.22	0.01	0.09	0.10	0.19	0.06	0.34	1.00			
roa	0.29	0.24	0.21	0.18	0.24	0.19	0.13	0.05	0.01	1.00		
roe	0.32	0.27	0.12	0.18	0.19	0.15	0.10	0.02	0.27	0.72	1.00	
roi	0.1144	0.1299	0.1582	0.0168	0.1158	0.1065	0.0405	0.0475	0.0524	0.0835	0.0691	1.0000

Table 3 reveals that return on assets has a negative relationship with share capital, shareholders fund, liquidity, investment, firms' size and capital adequacy while return on assets as a premium growth, loss ratio and underwriting with investment practice of the selected insurance firms in Nigeria at 0.1946, 0.1263, and 0.0472 respectively.

**Table 4. Test of Hypothesis**

Dependent Variable: ROA

Method: Panel Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SC	-0.462076	0.129897	-3.557264	0.0004
SF	0.400253	0.272484	1.468907	0.1430
UD	0.105148	0.123848	0.849005	0.3966
LR	0.159587	0.087023	1.833845	0.0677
LIQ	-0.009895	0.052300	-0.189192	0.8501
INV	0.053087	0.077741	0.682872	0.4952
FS	-0.123253	0.214590	-0.574362	0.5662
CA	-0.148807	0.136376	-1.091159	0.2761
PG	0.185844	0.076036	2.444167	0.0151
C	-0.406137	0.619415	-0.655679	0.5126
R-squared	0.128948	Mean dependent var	-3.104628	
Adjusted R-squared	0.101247	S.D. dependent var	1.509181	
S.E. of regression	1.430743	Akaike info criterion	3.587798	
Sum squared resid	579.3081	Schwarz criterion	3.713401	
Log likelihood	-515.6125	Hannan-Quinn criter.	3.638104	
F-statistic	4.654963	Durbin-Watson stat	2.198601	
Prob(F-statistic)	0.000009			

Table 4 further shows that share capital, premium growth individually has a significant influence ROA at 0.0004 and 0.0151 respectively. Shareholders' fund, underwriting, loss ratio, liquidity, Investment, that firms' size, and capital adequacy showed otherwise at 0.1430, 0.3966, 0.0677, 0.8501, 0.4952, 0.5662 and 0.2761 respectively. However, technical characteristics jointly influence ROA at 0.000009.

**Table 5. Test of Hypothesis**

Dependent Variable: ROE

Method: Panel Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SC	-0.450341	0.091201	-4.937897	0.0000
SF	-0.418690	0.190895	-2.193306	0.0291
UD	0.145617	0.086748	1.678633	0.0943
PG	0.145183	0.053252	2.726359	0.0068
LR	0.110674	0.060956	1.815638	0.0705
LIQ	0.019419	0.036663	0.529649	0.5968
INV	0.013759	0.054453	0.252679	0.8007
FS	0.688529	0.150276	4.581767	0.0000
CA	-0.234916	0.095544	-2.458724	0.0145
C	-0.325189	0.433775	-0.749673	0.4541
R-squared	0.286953	Mean dependent var	-2.681312	



Adjusted R-squared	0.264197	S.D. dependent var	1.168045
S.E. of regression	1.001937	Akaike info criterion	2.875393
Sum squared resid	283.0934	Schwarz criterion	3.001310
Log likelihood	-409.8074	Hannan-Quinn criter.	2.925830
F-statistic	12.60957	Durbin-Watson stat	1.247894
Prob(F-statistic)	0.000000		

Table 5 reveals that share capital, shareholders' fund, premium growth, firm size, and capital adequacy individually influences return on asset at 0.0000, 0.0291, 0.0068, 0.0000 and 0.0145 respectively. While there is no significant influence of underwriting, loss ratio, liquidity and investment on return on equity at 0.0943, 0.0705, 0.5968 and 0.8007 respectively. However, the table reveal a joint effect of technical characteristics on return on equity at 0.000000.

**Table 6. Test of Hypothesis**

Dependent Variable: ROI				
Method: Panel Least Squares				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
SC	-0.202731	0.125173	-1.619604	0.1063
SF	1.257000	0.266886	4.709872	0.0000
UD	0.225825	0.119543	1.889079	0.0597
PG	0.194477	0.070785	2.747428	0.0063
LR	0.091204	0.080714	1.129974	0.2593
LIQ	0.032825	0.051625	0.635833	0.5253
INV	-0.260193	0.073045	-3.562101	0.0004
FS	-0.650270	0.212937	-3.053814	0.0024
CA	-0.639733	0.133826	-4.780320	0.0000
C	0.402823	0.631442	0.637941	0.5240
R-squared	0.117302	Mean dependent var	1.961387	
Adjusted R-squared	0.093446	S.D. dependent var	1.539799	
S.E. of regression	1.466091	Akaike info criterion	3.631797	
Sum squared resid	715.7578	Schwarz criterion	3.743685	
Log likelihood	-612.8533	Hannan-Quinn criter.	3.676366	
F-statistic	4.916964	Durbin-Watson stat	0.550724	
Prob(F-statistic)	0.000003			

Table 6 discloses that shareholders' fund, premium growth, investment, firm's size and capital adequacy individually influences return on investment at 0.0000, 0.0063, 0.0004, 0.0024 and 0.0000 respectively. Meanwhile, share capital, underwriting, loss ratio and liquidity show no individual significant influence on ROI at 0.1063, 0.0597, 0.2593 and 0.5253 respectively. However, technical characteristics jointly influence return on investment.

#### 4. Discussion of Findings

This study revealed that share capital/ reserve, shareholders' fund, firm size, capital adequacy and premium growth significantly are major technical operations influence financial performance (return on assets, return on equity and return on investment) of non-life insurance companies in Nigeria. This outcome shares a convergent view Malik (2011), Kaya (2011), Burca and Batrinca (2014), Koc (2016), Too and Simiyu (2018), Efuntade and Akinola (2020), Oyetayo and Abass (2020) and Muema

and Abdul (2021). Though, Kaya (2011) and Efuntade and Akinola (2020) in their results suggested loss ratio and liquidity respectively as an important characteristics of insurance operation.

On the other hand, the findings revealed that there is negative and statistical relationship of underwriting capacity, loss ratio, liquidity and investment on the financial performance (return on assets, return on equity and return on investment) of non-life insurance companies in Nigeria. This outcome shares similar view with Batool and Sahi (2019). The finding is at variance with Koc (2016), Burca and Batrinca (2014) and Efuntade and Akinola (2020) especially investment and liquidity.

## 5. Conclusion and Recommendations

The study examined the individual technical characteristics of insurance operations and joint effect of technical characteristics of insurance operations on the financial performance of non-life insurance companies in Nigeria for a fourteen-year period of 2006-2019. This study further assert the importance of specific firm characteristics to insurance operations. The outcome the regression result revealed joint significant effect of technical characteristics on return on assets, return on equity and return on investment. However, a closer look at the individual characteristics suggests that share capital, shareholders' fund, firm size, capital adequacy, and premium growth significantly influenced all the financial performance variables (return on assets, return on equity and return on investment). However, loss ratio, and investment showed a weak influence on the financial performance variables with more emphasis on return on investment. However, there is negative influence of underwriting capacity and liquidity on all the financial performance variables.

Hence, major operational characteristics of insurance non-life insurance companies operating in Nigeria are share capital, shareholders' fund, size of an insurance company, capital adequacy, premium growth, ability to monitor loss ratio and investment proceeds. Hence, non-life insurance business which is short term business compared to life insurance companies must concentrate on building share capital or reserve, must surpass the regulated shareholders' fund in order to assume more risk and by extension generate increase in premium growth. Moreover, they must continually increase the asset base through diversification either in related or non-related businesses. Attention must also be given to investment income that may help shore up the profitability level. Lastly, net claim must be monitored vis-à-vis net premium income.

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