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ANALYSIS OF FIRM CHARACTERISTICS AND CAPITAL STRUCTURE OF NIGERIAN INSURANCE FIRMS

Onaolapo, Adekunle Abdul-Rahman
Department of Management and Accounting
Ladoke Akintola University of Technology, Ogbomoso, Oyo State, Nigeria
araonaolapo@lautech.edu.ng

Oyedokun, Akintunde Jonathan
Department of Management and Accounting
Ladoke Akintola University of Technology, Ogbomoso, Oyo State, Nigeria

Odeyemi, Joshua Taiwo
Department of Management and Accounting
Ladoke Akintola University of Technology, Ogbomoso, Oyo State, Nigeria
jt.odeyemi@gmail.com

Abstract

This study analyzes the relationship between capital structure and firms' characteristics of Nigerian insurance firms and evaluates the main influencing factors of firms' characteristics on the capital structure. Ten proxies were used for firm characteristics while three were adopted for capital structure. Sixty-two firms that registered with National Insurance Commission (NAICOM) for insurance business as at 2018 constitute the population of this study. The data for this study was extracted from the Annual Reports and Accounts of ten firms that were purposively sampled, that are in existence and have their records available for the period 1998 to 2019. Pearson correlation and Panel data regression tools were used to assess the effect of firms' characteristics on capital structure. Findings revealed the affirmative association between firms' characteristics and capital structure of insurance industry. Further findings indicate that 55%, 58.6% and 45.1% changes in composite insurance firms, general insurance firms and insurance

industry respectively were explained by changes in firm characteristics. It is therefore recommended that firms should understand the specific characteristics that influence choice of a capital structure in order to opt for the best financing option.
Keywords: Firm characteristics, institutional environment, relationship, debt ratio, annual reports, insurance, NAICOM

INTRODUCTION

The capital structure can be defined as the mixture of equity and debt that a firm adopts to finance its assets. In other words, it refers to relationship between equity and debt that are mixed in certain proportion to attain the goals of an organization. This decision is significant because it has effect on the financial performance and efficiency of an organization and it is often a difficult challenge that organizations face (Abor, 2008). Specifically, capital structure is vital for making decisions that facilitates maximum return on investment of every firm, and also boosts the efficiency of financing decisions. Effective financing decision implies a combination of an optimum capital structure that maximizes the shareholders' wealth. Then the concern for finance managers is how to determine the appropriate capital structure for the firm. Put differently how a firm chooses its debt to equity ratio and the potential determinants of such optimal capital structure are issues of concern in corporate finance (Myers, 1984).

There have been several useful theories on optimal capital structure and each of which are designed to understand the debt-to-equity ratio structure that firms choose. Toneyeva (2013) opined that the most pronounced theories of capital structure are the trade-off theory, the pecking-order theory and the signaling theory. These theories recommend financing choices determined by a combination of factors that are related to the characteristics of the firm (Shariff *et al*, 2012).

Firm characteristics can be referred to as the features attributable to a particular firm that do not only define its activities but are also identified as variables that relatively affect the firm's decision both internally and externally. Zou and Stan (1998 cited in Mutende *et al*, 2017) described firm characteristics as a firm's demographic and managerial variables which, in turn, comprise part of the firm's internal environment. According to Bala and Abatcha (2020), firm characteristics include firm size, asset tangibility, leverage, firm growth, firm age and business risk; Too and Simiyu (2018) identified the following as firm characteristics, firm size, ownership structure and firm age while Abubarkar *et al* (2018) had liquidity, size and age as firm characteristics in their study. This study discovered that several firm characteristics were differently reviewed by some extant literatures.

Antoniou, Guney, and Paudyal (2002 cited in Buvanendra, S, Sridharan, P and Thiyagarajan,S, 2017) found that capital structure of firms were not only influenced by the frims' characteristics but also by their environment. For instance, the financial crisis of mid 2000s highlighted dramatically the potential extent of risk-taking by financial intermediaries of which insurance sector is a major component. The financial crisis exposed the degree of vulnerability of financial system dominated by insurance industry in terms of large investment in financial markets.

Nigerian insurance industry was obviously noted to be running at its minimum optimization and therefore making it difficult for the sector to serve its major economic purpose (Uwede-Meshack, 2013). The industry was confronted with various challenges ranging from under capitalization; poor returns on capital; poor asset quality; insurance premium flight; poor business infrastructural facilities especially in the area of Information communication technology (ICT); lack of innovation in product development; lack of awareness on the part of consumers on the uses/suitability of insurance products; low GDP per capita figures; and poor corporate governance structures. These challenges have contributed in many ways to the restricted growth of the sector and have proved significant in limiting the sector from achieving potential development.

The debate on regulatory adjustment of insurance sector has emphasized the need of strong capital buffers, to mitigate against these challenges. The financial crisis has urged the regulatory authorities to reconsider the solvency capital architecture. Hence, continuous reforms in the legal and regulatory frameworks and governance practices were put in place to review various relevant laws. For instance, Section 86 of the Insurance Act of 2003 empowers National Insurance Commission (NAICOM) to register insurance companies and to supervise the stipulated increase in the minimum share capital requirement as required by regulations. The obvious effect of this is that, the Nigerian insurance industry has undergone two rounds (2003 and 2005) of recapitalization reforms over the past years.

All these precipitate into the following research questions thus:

i. To what extent does firms' characteristics relate with capital structure of Nigerian insurance firms?
ii. What is the effect of firms' characteristics on capital structure of Nigerian insurance firms.
iii. What are the main firms' characteristics that influence the capital structure of Nigerian insurance firms?

Consequently, the following research objectives ensued from the research questions above. The main objective of this study is to analyze the effect of firms' characteristics on the capital structure of selected Nigerian insurance firms. Other specific objectives are:

i. To determine the relationship between firms' characteristics and capital structure of Nigerian insurance firms.
ii. To assess the effect of firms' characteristics on capital structure of Nigerian insurance firms.
iii. To analyze the main firms' characteristics that influence the capital structure of Nigerian insurance firms.

In order to achieve the objectives of the study, the following hypotheses regarding the firms' characteristics and capital structure of the general and composite Nigerian insurance firms were tested. These hypotheses are formulated as follows:

H_{01}: There is no relationship between firms' characteristics and capital structure of Nigerian insurance firms.

$H_{02:}$ Firms' characteristics do not have effect on capital structure of Nigerian insurance firms.

LITERATURE REVIEW

Capital Structure

For the past half a century, capital structure has become a contentious topic that has attracted vigorous discussions in the area of financial management. The basic concern always raised is whether there is a unique mixture of equity and debt capital a firm need to maintain that will result in not only maximizing the value of the Shareholders' wealth but also ensure optimum capital structure. The issue of what factors determine the firm's optimum capital structure equally attract the attention of researchers. While, most of the literature seeks the nature of relations between the capital structure and firm characteristics of firms in developed economies, unfortunately, few researches have been carried out on the perspective of emerging economies like Nigeria. Added to this is the business and institutional environment where the firms in developed countries operate are completely different from the environment where the firms in developing countries inhibit. Consequently, applications of conclusions from theoretical and empirical research carried out on developed economies as regards this contentious issue to developing economies need to be exercise with caution. Similarly, is the concern whether a different set of determinants as obtained in developed countries, also work in deciding capital structure in developing economies. This study attempts to examine all these and fill the gap identified.

In a nutshell, Capital structure is generally considered as the mixture of debt and equity that makes up the firms' total capital it uses for its business. Gajurel (2005) described it as different sources of funds that make up a firm's capital. According to Abor (2008), capital structure is the particular blend of equity and debt a firm uses to finance its operations. It is the way a company finances itself by combining specific long term debt, short term debt, and equity.

Firms' Characteristics

Firm characteristics can be referred to as the features attributable to a particular firm that do not only define its activities but are also identified as variables that relatively affect the firm's decision both internally and externally. Zou and Stan (1998 cited in Mutende *et al*, 2017) described "firm characteristics as a firm's demographic and managerial variables which, in turn, comprise part of the firm's internal environment". According to Bala and Abatcha (2020), firm characteristics include firm size, asset tangibility, leverage, firm growth, firm age and business risk; Too and Simiyu (2018) identified the following as firm characteristics, firm size, ownership structure and firm age while Abubarkar *et al* (2018) had liquidity, size and age as firm characteristics in their study.

THEORETICAL FRAMEWORK

This research work is based on Trade off theory and Pecking order theory. The focus of this research work is determining the firms' influencing factors on capital structure of Nigerian insurance firms thus, emphasizing on the relevance of capital structure.

Trade-off theory

The trade-off theory states that the optimal capital structure is a trade-off between interest tax shields and cost of financial distress. It is the idea that a company chooses how much debt finance and how much equity finance to use by balancing the costs and benefits which is determined by three main competing factors, that is, the tax-shield benefits associated with debt use, bankruptcy cost (costs of financial distress) and agency cost.

Taxes: Interest payments are tax-deductible before arriving at the taxable profit while payments associated with equity such as dividends are not tax-deductible. Therefore, this tax effect encourages debt use by the firm as more debt increases the after-tax proceeds to the owners. According to this theory, the optimal capital structure is achieved when the marginal present value of the tax shield on additional debt is equal to the marginal present value of the costs of financial distress on additional debt.

Bankruptcy costs: are the cost directly and indirectly incurred when the perceived probability that the firm will default on financing is greater than zero. One of the bankruptcy costs is liquidation cost, which represents the loss of value as a result of liquidating the net assets of the firm. This liquidation costs reduces the proceeds to the lender, should the firm default on finance payment and become insolvent. Given the reduced proceeds, financiers will adjust their cost of finance to firms in order to incorporate this potential loss of value. Firms will therefore incur high finance cost due to the potential liquidation costs. Examples of indirect cost includes loss of customer goodwill and loss of employees to competitors.

Agency cost: This cost results from the relationship between managers and shareholders and those between debtholders and shareholders. Harris and Raviv (1991) opined that the conflict between shareholders and managers often arise because shareholders hold all the residual claim and but managers do not always recognize these entire gains from the operating profit activities while the managers do factor in the entire cost of these activities. This has encouraged a situation whereby the managers exert insufficient work, involve in perquisites, choosing inputs and outputs that favour them.

The Pecking Order Theory:

This theory suggests that firms have a particular preference order for capital used to finance their businesses (Myers, 1984). Owing to the preference of information asymmetries between the firm and potential financiers, the relative costs of finance vary between the financing choices. Where the funds provider is the firm's retained earnings, meaning more information than new equity holders, the new equity holders will expect a higher rate of return on capital invested resulting in the new equity finance being more costly to the firm than using existing internal funds. Thus, the firm will prefer retained earnings financing to debt, short-term debt over long-term debt and debt over equity (Amidu, 2007).

Most firms that record high profits opt for less external resources because they have surplus retained earnings than less profitable firms that go for more external funding as a result of less retained earnings at their disposal. So, lower floatation and information cost influence the preference choice of the firm for debt to equity.

CONCEPTUAL FRAMEWORK

The following conceptual model is formulated to disclose the relationship between firms' characteristics and capital structure of selected Nigerian insurance firms. From the series of empirical studies reviewed for the purpose of this study, it was discovered that twenty-nine explanatory variables were identified to be adopted in various degree. It was further discovered

from the empirical studies reviewed that eight (8) variables were the most utilized and all these were adopted in this research work.

In addition, two other variables which are viewed to be relevant to the focus of this research work were incorporated and these are business environment (Akinlo, 2011), and institutional environment (Baxamusa and Jalal, 2010; Fan *et al*, 2010). Thus, the following conceptual model is formulated to disclose how firms' characteristics affect capital structure of insurance industry in Nigeria.

Figure 1: Conceptual Framework

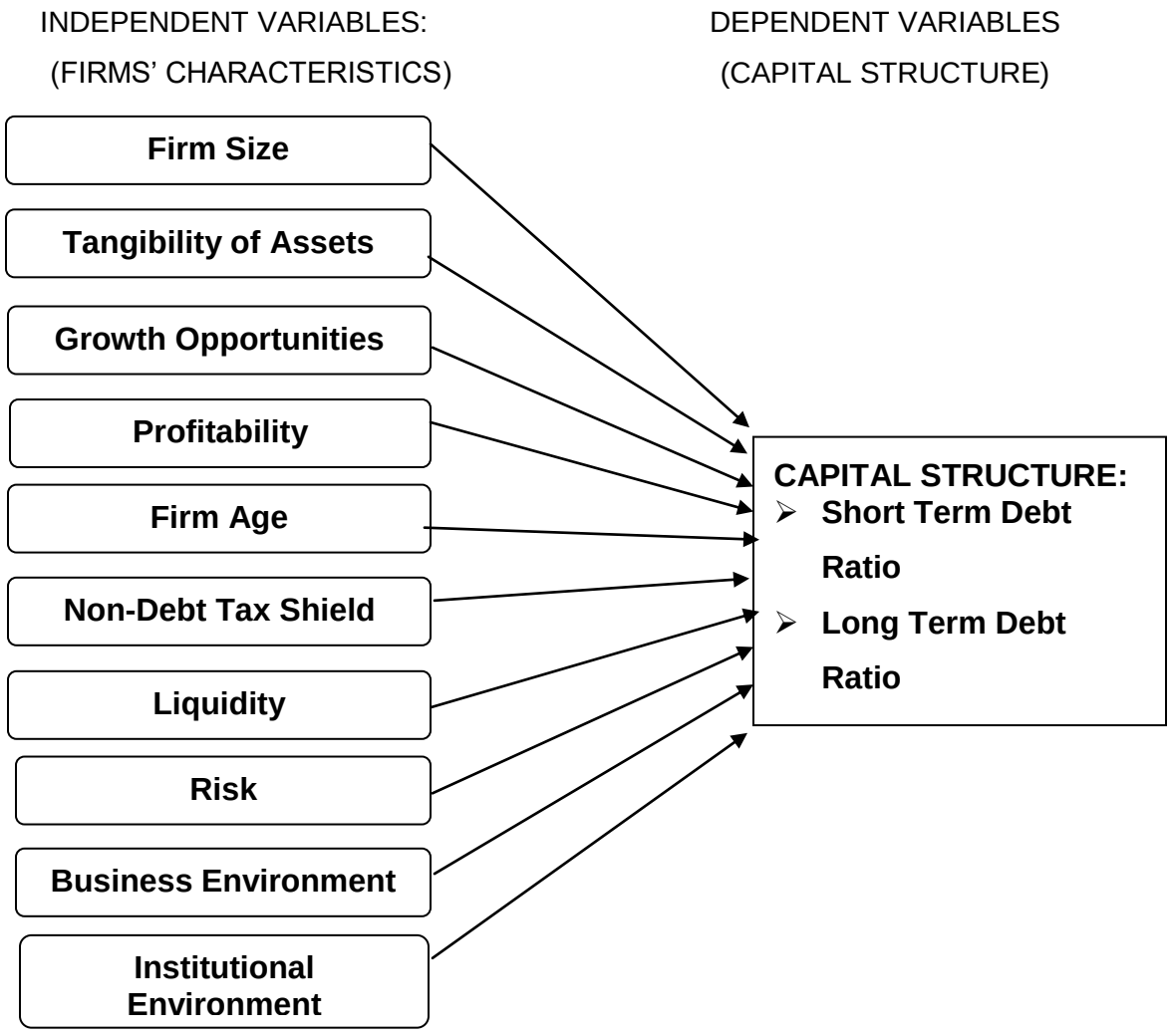

Table 1: Summary of Characteristics of Studies Reviewed On Insurance

S/N	Authors	Country of Study	Sample Size	Industrial Sector	Period (Scope)	Independent Variable	Tools of Analysis
NON-AFRICAN COUNTRIES EXPERIENCE							
1	Singlawi and Aladwan (2016)	Jordan	23	Insurance	2010 – 2014 (5yrs)	S,P,T,G,R	Multiple Regression
2	Naveed *et al* (2013)	Pakistan	**	Insurance/ Leasing	2001-2010 (10yrs)	S,G,P,T,L,R	Multiple Regression
3	Gul, Khan, Razzaq, Saif (2012)	Pakistan	22/24	Banking/ Insurance	2002-2009 (8yrs)	S,G,L,P,N_{DTS},T	Panel Data
4	Sharif, Naeem and Khan (2012)	Pakistan	31	Insurance	2004-2009 (6yrs)	P,A,V,L,S,G	Panel Data
5	Akdal (2011)	U.K.	202	Multiple Industries	2002-2009 (9yrs)	P,L,T	Multiple Regression
6	Najjar and Petrov (2011)	Bahrain	5	Insurance	2005-2009 (5yrs)	T,P,S,G,L	Multiple Regression
7	Baxamusa and Jalal (2010)	72 Countries	Large	Multiple Industries	2000-2010 (11yrs)	Cor	Multiple Regression
8	Fan, *et al* (2010)	39 Countries	36,767	Multiple Industries	1991-2006 (16yrs)	Cor,	Multiple Regression
9	Jacelly, *et al* (2008)	Latin America	806	Non-Financial	1996-2005 (10yrs)	Ow,S,G,T,P	Panel Data
AFRICAN COUNTRIES EXPERIENCE							
1	Ansong and Ekow-Asmah (2013)	Ghana	15	Insurance	2002-2011 (10yrs)	A	Panel Data
2	Kinde, B.A. (2013)	Ethiopia	9	Insurance	2004-2010 (7yrs)	G,P,A,L,R,T,S	Panel Data
3	Sherrif, M.and Elsayed, M. (2013)	Egypt	**	Insurance	2006-2011 (6yrs)	S,T,P,G,L,N_{DTS}	Panel Data
4	Tornyeva, K. (2013)	Ghana	12	Insurance	2002-2007 (6yrs)	S,G,T,N_{DTS},R	Panel Data
5	Abate (2012)	Ethiopia	9	Insurance	2003-2010 (8yrs)	S,P,T,L,R,N_{DTS}, D_PA	Panel Data
6	Buferna *et al* (2005)	Libya	55	Multiple Industries	1995-1999 (5yrs)	P,G,T,S	Panel Data

Source: Compiled From The Reviewed Studies

KEY: A = Age (Reputation), Be = Business Environment, C_D = Cost of Debt, C_E = Cost of Equity, C_{OR} = Corruption, C_I =Capital Intensity, Dp = Dividend Payout, D_{TS} = Debt tax shield, F_D = Financial Distress, G = Growth, G_R = Generated Resources, Ic = Interest Coverage, I_{DC} = Industry Classification, I_R = Interest Rate, L = Liquidity, Lw = Level of Warrants, N_{DTS} = Non-debt Tax Shield, Ow = Ownership Concentration, P = Profitability, Pc = Parent Company, R = Risk (Assets/Business), S = Size, S_A = Sales, Sp = Share Price, Su = Signaling and Uniqueness, T = Tangibility of Assets (C = Collateral), Tx = Tax Rate, U_Q = Uniqueness of the firm, V = Volatility,
** Not specified

Table 2: Summary Of The Reviewed Studies

On Nigerian Insurance Industry

S/No	Authors	Sample Size	Sampling Method	Period Covered	Source Of Data	Dependent Variable	Independent Variable	Tools of Analysis
1	Bala & Abatcha, (2020)	28	Census	2006 - 2018	Secondary	Capital Structure	Firms' Characteristics	Panel Data Regression
2	Alani & Sani, (2019)	14	Purposive	2000 - 2014	Secondary	Financial Performance	Recapitalizatio n	OLS/ Chow Test
3	Ugwu *et al*, (2018)	16	Purposive	2006 - 2016	Secondary	Capital Structure	Organisational Size	Multiple Regressions
4	Ajayi *et al*, (2019)	21	Purposive	N.A.	Primary	Financial Efficiency	Board Diversity	PPMC & Descriptive Statistics
5	Solomon & Obah, (2018)	3	Purposive	2005 - 2015	Secondary	Corporate Governance	Profit Before Tax	Multiple Regressions
6	Rafiu *et al*, (2018)	29	Purposive	2006 - 2014	Secondary	Financial Performance	Capital Structure	Panel Data Regression
7	Chizoba *et al*, (2018)	N.A.	Purposive	1985 - 2016	Secondary	Insurance Penetration	Inflation Rate	Regression Analysis
8	Ekwueme & Oghogho (2018)	22	Purposive	2002 - 2016	Secondary	Financial Performance	Capital Structure	Regression Analysis
9	Abubakar et al, (2018)	Listed Firms	Purposive	2007 - 2016	Secondary	Financial Performance	Firms Characteristics	Robust Regression Analysis
10	Adeyemi et al, (2017)	6	Purposive	2012 - 2016	Secondary	Financial Performance	Capital Structure	Panel Data Regression
11	Ebere *et al*, (2016)	14	Purposive	2008 - 2015	Secondary	Financial Performance	Corporate Governance	PPMC/ Multiple Regression
12	Adaramola & Olarewaju (2015)	8 Composite	Purposive	2008 - 2014	Secondary	Capital Structure	Firms' Characteristics	Panel Data Regression
13	Garba & Abubakar (2014)	12	Non-Prob.	2004 - 2009	Secondary	Financial Performance	Corp Board Diversity	Panel Data Regression
14	Akeem *et al*, (2014)	3	S/ Random	2002 - 2008	Secondary	Financial Performance	Corporate Governance	Multiple Regressions
15	Onaolapo *et al,* (2012)	100 (3)	S/ Random	2012	Primary	Managerial Effectiveness	Capital Adequacy	PPMC/ Multiple Regression
16	Shehu (2011)	15	Purposive	2001 - 2010	Secondary	Capital Structure	Firms' Characteristics	Multiple Regressions

RESEARCH METHODOLOGY

Capital structure which is the outcome of one of the important factors in financial decisions of a firm, forms the area of study of this research work. Using insurance industry as a case study, this research work examined the influence of firms' specific factors on capital structure of selected Nigerian insurance firms.

The choice of capital structure was influenced by the emerging recapitalization reforms witness by the insurance industry from the government sequel to the realization of the prospect of growth of the insurance sector. For instance, the total gross written premiums in Nigeria reached 400 billion (1.09 billion USD) in 2018, compared to 363 billion NGN (999 million USD) in 2017, that is an increase of 10.19% in original currency (NAICOM, 2019). Despite an unstable economic and political environment, the Nigerian insurance market is maintaining a sustained growth.

Research Design

The research design adopted in the study was *ex-post facto* design. This is a quasi-experimental study examining how an independent variable, present prior to the study in the participants, affects a dependent variable (Egbulonu, 2007). The choice of e*xpost facto* design was based on the fact that the study used data already collected, but not necessarily amassed for research purposes. E*x-post facto* design is considered appropriate when a study deals with data that had already taken place (Onwumere, 2009).

Population of Study

All sixty-two insurance firms in Nigeria that were on the register of National Insurance Commission (NAICOM), the regulatory authority of insurance companies in Nigeria, as at second quarter of 2018 constitute the population of this study.

Sampling Size and Sampling Procedure

Purposive sampling method was adopted to select those insurance firms that qualified to be included in the study. Ten insurance firms comprising four composite and six general class of insurance were considered for this research work. The criteria for the choice are based on:

i. Insurance firms that existed throughout the period of data coverage
ii. Availability of data on each firm for the period is a necessary consideration
iii. Those firms whose names were not affected by any merger or acquisition arrangement within the period in consideration.

Consequently, sample size of ten (10) were thus successfully considered for this study.

Table 3: Lists of Sampled Insurance firms

Composite Insurance Firms	
1	AIICO Insurance Plc
2	Leadway Assurance Plc
3	Niger Insurance Plc
4	Cornerstone Insurance Plc
General/Non-Life Insurance Firms	
1	Law Union & Rock Insurance Company Plc
2	NEM Insurance Plc
3	Prestige Assurance Plc
4	Mutual Benefit Assurance Plc
5	Guinea Insurance Plc
6	Universal Insurance Plc

Source: NAICOM Insurance Statistics 2018.

Method of Data Collection

The data for this study were extracted from the Annual Reports and Accounts of the insurance firms for the firms' characteristics and capital structure. While the necessary data for Business environment were elicited from various statistical bulletin of central bank of Nigeria. Information on Institutional environment was sourced from the database of Transparency International for same period.

It was discovered that empirical studies on capital structure mostly rely on secondary source of data (Akdal, 2011). This might not be unconnected with the nature of the research work itself which rely mainly on information in the financial statement of the firms of study. Moreso, Orin (2018) opined that secondary data made it possible to easily build on existing research, which leads to better results.

Model Specification

This study made use of panel data model to analyses the effect of firms' characteristics on capital structure of selected Nigerian insurance firms. Panel data involves the pooling of observations on a cross-section of units over several time periods. It is widely used in econometrics, where the behavior of statistical units (i.e. panel units) is followed across time. Towards this end, following Shah and Hijazi (2004), Shah and khan (2007) and Akinlo (2011) approach, the models for this study took the form as below:

$$\mathrm{LEV_{it}} = \alpha_o + \sum_{t=1}^{n} \alpha_i \mathrm{X_{it}} + \varepsilon$$

Where, LEV_{it} is defined as debt ratio at time t

X_{it} contains the set of explanatory variables

α_0 is the common intercept

$\alpha_1 - \alpha_{10}$ are coefficients of independent variables

ε = error term

Here, Leverage is the dependent variable while the ten independent variables are firm size, tangibility, growth opportunity, profitability, age, non-debt tax shield, liquidity, risk, business environment and institutional environment.

The dependent variable, Leverage is decomposed further into three variables thus short-term debts ratio (SDR), long-term debts ratio (LDR) and total debts ratio (TDR) and this was mathematically represented as follows:

$$SDR_{it} = \alpha_o + \sum_{t=1}^{n} \alpha_i X_{it} + \varepsilon$$

$$LDR_{it} = \alpha_o + \sum_{t=1}^{n} \alpha_i X_{it} + \varepsilon$$

$$TDR_{it} = \alpha_o + \sum_{t=1}^{n} \alpha_i X_{it} + \varepsilon$$

Measurement of Study Variables

Key concepts and variables used in the conceptual framework are operationalised in table 4 as presented below:

Table 4: Operational Definition of The Selected Variables

Variables	Indicators	Measurement Level	Measurement
Capital Structure (Dependent)	Short – Term Debt Ratio	Ratio	$\frac{Short - Term\ Debt}{Total\ Assets}$
	Long – Term Debt Ratio	Ratio	$\frac{Long - Term\ Debt}{Total\ Assets}$
	Total Debt Ratio	Ratio	$\frac{Total\ Debt}{Total\ Assets}$
Firms' Characteristics (Independent)	Size	Value	Log of Total Assets
	Tangibility	Ratio	$\frac{Total\ \ Fixed\ Assets}{Total\ Assets}$
	Growth Opportunity	Value	Percentage Change in Gross Premium
	Profitability	Ratio	$\frac{Eranings\ before\ Interst\ and\ Tax, depreciation}{Total\ Assets}$
	Age (reputation)	Value	No of years in which the firm was incorporated

Table 4…

	Non – Debt Tax Shield	Ratio	$\frac{Depreciation\ expenses}{Total\ Assets}$
	Liquidity	Ratio	$\frac{Current\ Assets}{Current\ Liabilities}$
	Risk (Earnings volatility)	Value	Standard deviation of operating Income
	Business Environment	Value	Changes in Gross Domestic Product (GDP)
	Institutional Environment	Value	Changes in corruption perception index

Source: Compiled from the Reviewed Studies

Specification Test

The following specification tests were carried out:

a. Multicollinearity Test
b. Heteroscedascticity Test
c. Normality Test
d. Diagnosis Tests carried out to determine the choice between Fixed Effect (FE), Random Effect (RE) and Pooled Ordinary Least Square (Pooled OLS) are:
    i. Hausman Test for the choice between Fixed effect and Random effect
    ii. Breusch Pagan Lagrangian Multiplier Test for the choice between Pooled OLS and Random effect
    iii. Testparm Tool for the choice between Pooled OLS and Fixed effect
e. Robust Standard Error Diagnosis

As regards the criteria for the choice among the three methods viz fixed effect, random effect and pooled OLS, a method is selected in the following preferential order where:

1. All the tests (Hausman, Breusch-Pagan Lagrangian Multipler and Testparm command) recommend similar method
2. At least two tests recommend same method
3. When all the three tests recommend different methods then Hausman method was selected.

According to the summary of specification test results for the Insurance Industry, the data set on all the three models indicates no existence of multicollinearity. The variance inflation factor (VIF) test conducted gives their p-value of t test range of 1.28 to 1.57 which is low enough to conclude that none of the independent variable is correlated.

In the same vein, Breusch-Pagan test and white test were both conducted to determine the heteroscedascticity nature of the data series. Robust Standard errors were performed to mitigate against abnormal attributes that could have arisen from the various test conducted.

However, this was after the choice of methods as regards FE, RE and Pooled OLS, were made as reflected in Table 5 below. Put differently, the robust standard error was performed after determining the choice of method to be adopted appropriately.

Table 5: Summary Of The Specification Test Results

ITEM OF TEST FOR THE MODEL	TEST	Short Term Debt Ratio	Long Term Debt Ratio	Total Debt Ratio
Multicollinearity	VIF	1.28	1.28	1.28
Heteroscedascticity	Breusch-Pagan	Prob 0.002	Prob 0.001	Prob 0.000
	White Test	Prob 0.041	Prob 0.150	Prob 0.059
Normality	Skewness	Prob 0.004	Prob 0.704	Prob 0.182
	Kurtosis	Prob 0.011	Prob 0.533	Prob 0.309
Pooled OLS vs FE (Choice)	Testparm	Prob 0.000 (FE)	Prob 0.002 (FE)	Prob 0.108 (Pooled OLS)
Pooled OLS vs RE (Choice)	Breusch-Pagan Lagrangian Multiplier	Prob 0.000 (RE)	Prob 0.011 (RE)	Prob 0.354 (Pooled OLS)
FE vs RE (Choice)	Hausman	Prob 0.000 (FE)	Prob 0.847 (RE)	Prob 0.997 (RE)
Robust Std Error	Choice Made	FE	RE	Pooled OLS

ANALYSIS AND FINDINGS

Subsequent discussion in section of the interpretation of results are based on objectives and hypotheses stated previously.

As regards objective one that is anchored on hypothesis one, the findings revealed that the Pearson correlation values for short-term debt ratio (r = 0.630) and long-term debt ratio (r = 0.737) models indicate a strong and positive association between capital structure and firms' characteristics. This clearly surpass the minimum threshold of 0.5 remark generally (Cohen, 1988). While the value of r = 0.302 for total debt ratio model indicate a positive but moderate association between capital structure and firms' characteristics.

Discussions on Objective 2 anchored on hypothesis 2 is based on the Table 6 below. The objective is to investigate relationship between firm characteristics and capital structure. The p-value of chi^2 test of the model is 0.0000 and at 5% level of significance, we can submit that the model is statistically significant in explaining the relation between firms' characteristics and capital structure of insurance industry; it is thus a good model to work with. The value of the Adjusted R^2 of this model is 0.4507, which indicate the magnitude of the explanatory power of independent variables of the model. It means that 45.07% of the variation in the long term debt ratio is explained by the variation in firms' characteristics of insurance industry. By this submission, objective three is thus achieved, null hypothesis is rejected while the alternate

hypothesis is confirmed that firms' characteristics do have significant effect on capital structure of Nigerian insurance firms.

The essence of objective three of this study is to identify the main firm characteristics that influence the capital structure of insurance firms. The study revealed that only five out of ten independent variables have significant effect on capital structure judgigng from their p-values of t test. These independent variables with their p-values of t tests are size (0.006), tangibility (0.011), growth (0.000), age (0.019) and institutional environment (0.023). except growth opportunities with negative t-statistics value -5.75, the remaining four variables have significant and positive impact on capital structure at 95% confidence level thus, achieving our the objective three of determining the main significant factors that influence capital structure. Profitability and firm risk were revealed to have positive insignificant effect on capital structure while non-debt tax shield, liquidity and business environment have insignificant negative impact.

Table 6: Panel Data Regression Results of Insurance Industry (1998 to 2019)

Random-effects GLS regression		R Square	0.4810
Number of Observations	220	Adj. R Square	0.4507
Number of groups	10	Prob (Chi^2)	0.000

Variables	**Coefficients**	**Robust Std Error**	**t-statistic**	**Prob.**
size	**.1340374**	**.0486147**	**2.76**	**0.006**
tangi	**.1739001**	**.2411374**	**2.72**	**0.011**
growth	**-.0016292**	**.0002831**	**-5.75**	**0.000**
prof	.1022215	.1533557	0.67	0.505
age	**.0009628**	**.0011799**	**2.61**	**0.019**
nontax	-.1448176	.6273946	-0.23	0.817
liqui	-.0000343	.0034343	-0.01	0.992
risk	6.54e-09	5.73e-09	1.14	0.253
busenvi	-.001956	.0040311	-0.49	0.628
instuenvi	**.0007002**	**.0004422**	**2.58**	**0.023**
constant	-.7510001	.3740905	-2.01	0.045

SUMMARY

This study examined the relationship between firms' characteristics and capital structure in Nigeria Insurance firms. The aims of the research work include analyzing the relationship between the firm's characteristics and capital structure of selected insurance firms in Nigeria

and determine the main firms' characteristics that influence the capital structure of Nigerian insurance firms.

Purposive sampling method was adopted to select those 10 insurance firms from the 62 that were on the register of NAICOM as at August, 2018. The selected firms were not only just in existence throughout the twenty-two years' period (1998 to 2019) of research coverage but also that their names were not affected by any merger or acquisition arrangement during and after the recapitalization period. This study relied on secondary source of data as dictated by the nature of this research (Akdal, 2011). Consequently, data for this study were extracted from the Annual Reports and Accounts of the insurance firms for the firms' characteristics, data on GDP from various statistical bulletin of central bank of Nigeria and information on corruption from were sourced from the database of Transparency International. Pearson Correlation Coefficient Matrix and Panel data random effect regression tools were adopted in this study to analyze the data.

CONCLUSION

There is association between firms' characteristics and capital structure of Nigeria insurance sector. The finding established that there exists a strong and positive correlation between both short-term debt financing and firms' characteristics and, long term debt financing of capital structure of Nigerian insurance industry and firms' characteristics as depicted by the values of their Pearson correlation coefficients (*r*) viz: $r = 0.630$ and $r = 0.737$ respectively. While 0.302 Pearson *r* was noted on the relationship between total debt financing of capital structure of Nigerian insurance industry and firms' characteristics indicating existence of moderate and positive relationship.

The study found that fifty five percent (45.1%) of changes in the capital structure of insurance industry were as a result of changes in their firms characteristics as indicated by the value of adjusted R square 0.451.

Furthermore, the study discovered that five firms characteristics were identified to be main influencing factors on capital structure of insurance firms; and these are firm size, tangibility, growth opportunities, firm age and business environment.

RECOMMENDATIONS

It is recommended that concessional rate of interest should be considered for small insurance firms in order to enhance their growth and stimulate the rapid development programme so that the potential could be fully tapped. This is anchored on the findings that firm size and liquidity have negative significant effects on capital structure of composite insurance

firms as those smaller insurance firms have low sales proceed and low cash volume of cash needed for their operations hence their inability to meet short-term contractual obligations on time, but they need to be encouraged so as to stimulate the rapid development programme so that the potential could be fully tapped.

In addition, Insurance firms, like any good business, should maintain good banking relationships to finance themselves when needed at competitive low rates in order to reduce their overall cost of financing.

Furthermore, it is recommended that low tax rate or tax waiver should be granted those firms that experience volatility in their earnings over certain period of time in order to cushion the effects of such volatility on their earnings, since risk (volatility of earnings) was revealed to have inverse effect on capital structure of both composite and general insurance firms.

It is recommended that insurance firms should put necessary action in place to nip in the board or reduce to great deal the level of corruption that has permeate every level of operational activities in Nigeria as evidence by the findings in this study.

It is recommended that insurance firms should pay attention to those significant characteristics that are peculiar to them in determining optimal capital structure. For instance, firm size, tangibility, growth, firm age and institutional environment.

SCOPE FOR FURTHER RESEARCH

This study made use of ten insurance firms out of twenty-six listed on Nigerian stock exchange and sixty-two on NAICOM register as at March, 2018 albert for a period of 22 years (1998 to 2019). The concern is the limited number of firms considered for the study. This by no means render the conclusions from this research unreliable but rather an avenue for further research work especially adding more firms to improve the robustness of the analysis. Also, proxies different from those adopted for some of the variables in this study could be considered. Another suggestion is that other players such as insurance brokers and agent, re-insurance and life insurance could be factored in in further study.

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