

NEXUS BETWEEN INSURANCE PENETRATION AND ECONOMIC GROWTH: EVIDENCE FROM NIGERIA

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Abstract

The study examined the connection or nexus between insurance penetration and economic growth in Nigeria. Ex-post facto research design is adopted for the study. Secondary data were sourced from Central Bank of Nigeria (CBN) Statistical Bulletin, National Insurance Statistics and Directory, National Bureau of Statistics, World Bank database, Nigeria Insurance Digest, and CIA World Fact Book, for the period of fourteen years (2004 - 2017). Data analysis was undertaken using Ordinary Least Square (OLS) method. The findings of the study suggested that insurance (life and non-life) penetration and claims settlement impact on economic growth in Nigeria during the period considered (2004 - 2017); and insurance (life and non-life) penetration impact positively on the economic growth in Nigeria during the period. The results revealed that non-life insurance penetration and insurance density had a negative impact on economic growth in Nigeria. Nonetheless, life insurance penetration and claims settlement had no significant impacts on economic growth in Nigeria. The study findings suggested amongst others that intense effort is essential to entrench the knowledge and importance of insurance to promote economic growth and growth of the insurance industry through local media, social media, development of new products to meet the insuring public needs, and improved customer service strategy.

Keywords: *Insurance, Insurance penetration, Economic growth, Nigeria*

1. Introduction

The insurance sector plays a vital role in a nation's growth by providing a mechanism for the transfer of individuals, households and organisations risks to insurers. In many countries, the insurance industry plays active and leading role in diversification of risks thereby contributing immensely to economic growth (Gabriel, 2015; Outreville, 2011; Yinusa & Akinlo, 2010; Haiss & Sumegi, 2008; Arena, 2006). In Nigeria, the insurance sector does not contribute effectively to the nation's economic growth despite its huge and untapped economic potential (Fadun & Shoyemi, 2018; Gabriel, 2015). The role of insurance in Nigeria economy cannot be overemphasized (EY Global, 2018). For instance, the Nigeria insurance sector generated about N350 billion gross premium income (GPI) in 2016 which is about 19% above the previous year GPI (Agusto & Co, 2017; Oxford Business Group (OBG), 2017). Insurance companies' funds are invested in stock markets and other profitable ventures to improve organisational value for the benefit of investors and improvement of Nigeria economy (Fadun & Shoyemi, 2018; McGrath, 2014). In 2016, the Nigerian insurance industry invested an estimated N178 billion in the banking industry as placements and deposits; and held treasury instruments of over N270 billion (Agusto & Co, 2017).

This study aimed at analysing the connection or nexus between insurance penetration and economic growth in Nigeria, using fourteen years data (2004 - 2017). Specifically, the study analyses the impact of insurers' premium income and claims settlement on economic growth in Nigeria; and assessed the impact of insurance density on economic growth in Nigeria. It is envisaged that the findings of the study is beneficial to the insurance industry and its stakeholders. Previous studies on insurance penetration and economic growth did not focus quality of health, and standard of living (Olayungbo & Akinlo, 2016; Outreville, 2011; Arena, 2006; Kugler & Ofoghi, 2005; Enz, 2000; Ward & Zurbruegg, 2000). Hence, the study is significant as it analyses, among others, two distinct variables (quality of health, and standard of living) not considered by previous studies on insurance penetration and economic growth in Nigeria. The remaining part of the paper is divided into five sections which focused on review of literature, methodology, data analysis and discussions, and conclusion and implications of findings.

2. Review of Literature

2.1 Insurance Penetration

Insurance penetration connotes the level of development of the insurance sector in a country (Ehiogu, Eze & Nwite, 2018; Poposki, Kjosevski & Stojanovsk, 2015). Penetration rate can be measure as the ratio of premium underwritten in a particular year in relation to the GDP (Dash et al., 2018; Ehiogu et al., 2018). In the insurance industry, insurance penetration can be considered from two main perspectives: life insurance and non-life insurance penetration. Life insurance penetration focuses on premiums from life insurance business as a percentage of GDP; and non-life insurance penetration focuses on premium from insurance businesses outside life insurance policies. The insurance sector has witnessed rapid growth in recent years (EY Global, 2018). The Nigerian insurance market has attracted enormous foreign insurance investors and practitioners in recent years (OBG, 2017).

2.2 Economic Growth and Insurance Growth

Economic growth entails an increase in the wealth of a nation over time (Todaro & Smith, 2015; Taylor & Lybbert, 2015). Economic growth is usually distinguished from economic development, the latter term being restricted to economies that are close to the subsistence level. The term economic growth is applied to economies already experiencing rising per capita incomes (Todaro & Smith, 2015; Taylor & Lybbert, 2015). Economic development is concerned with promotion of intensive and advanced economic activity through education, improved tools and techniques, financing, improved transportation, and creation of new businesses (Banerjee & Warrier, 2017; Das, Mourmouras & Rangazas, 2015; Todaro & Smith, 2015). Though economic growth and economic development are often used interchangeably; studies have shown that there is a disparity between these concepts in terms of definition and measurements (Ahmed, 2016; Adu, Marbuah & Mensah, 2013). Growth is usually measured using Gross Domestic Product (GDP); but development relates to qualitative aspects of a nation which cannot assume equal measurement with growth (Taylor & Lybbert, 2015; Acemoglu & Robinson, 2012; O'Sullivan & Sheffrin, 2003). Sen (1999), a Nobel Prize winner and highly acknowledged Economist, stated that the growth of a nation should be based and measured on the freedom it provides to her citizen. He classified freedom into five inter-connected categories namely: political freedom; provision of economic facilities (through income supplement and unemployment relief); social opportunities (education, health care, etc.); transparent government; and security guarantees (e.g., through poverty alleviation programme) (Sen, 1999). Lawal and Oluwatoyin (2011) noted that the pride of any government is the attainment of higher value level of growth in a manner that its citizens would derive natural attachment to governance. Socio-political and economic stability is necessary to ensure the growth of a nation's economy. In this regard, Nigeria has witnessed series of development plans.

The variety and diversity of insurance products depend on the maturity of the sector, the market, and potential buyers. Insurance markets offer several insurance products. Culture, religion, and tradition can impact on the growth of a nation's insurance sector. Develop countries often enjoy a high share of the insurance market in the GDP, compared to developing countries (Poposki et al., 2015; Arena, 2006; Ward & Zurbruegg, 2000). The circumstance of a country would obviously be affected by its financial factors (Cristea, Marcu & Carstina, 2014). Insurance industry can stabilize a nation's economy and make business owners to accept considerable business risks. Insurance companies can accumulate reserve funds and premiums by accepting claims (Chang, Lee & Chang, 2014; Horng, Chang & Wu, 2012; Oke, 2012). Hence, insurance companies can manage internal cash flow and create large amount of assets for investment purpose. Insurance companies can also promote economic growth by indemnifying insureds who suffer losses to stabilize their financial position. Risk adverse economic units are more induced to buy goods and services, especially those of higher value (Ahmed, 2016; Adeniyi et al., 2015; Adu et al., 2013; Ang, 2008). In this way, insurance support demand for goods and services thereby encouraging production and creating employment opportunities with multiplier effects on economic growth (Banerjee & Warrier, 2017; Das et al., 2015; Gabriel, 2015, Mourmouras & Rangazas, 2015; Fadun, 2013).

2.3 Performance of the Nigeria Insurance Industry

Insurance is a contract or agreement involving two parties (insured and insurer) whereby the insurer agrees to compensation or indemnity the insured, in return for a consideration (premium),

for loss(es) caused by the insured peril during the period of insurance. Life insurance is a benefit contract which could serve protection and investment purposes. Insurance serves an investment, if it affords the assured benefit of collecting the insurance proceed with bonus or interest at the maturity of the policy. On the other hand, a non-life insurance is an indemnity contract that provides indemnity to the insured. Premium paid by insureds under indemnity contracts are used to settle losses (claims) which occur during the period of insurance (Fadun & Hood, 2016; Rani & Shankar, 2015). Benefits of insurance include guaranteed financial protection against insured losses, promote culture of long-term saving through life insurance contracts, mobilization of funds to finance government's projects, facilitate trade and commerce, contribute to GDP and economic growth (Gabriel, 2015; Chang et al., 2014; Fadun, 2013; Yinusa & Akinlo, 2010).

The insurance market consists of three major players: buyers, sellers, and intermediaries (brokers and agents). There are also regulators, representative bodies or organisations, consultants, and technical advisers in the insurance market. Buyers of insurance include individuals, organisations, and government with valid insurable interest in the subject matter of insurance (Fadun & Hood 2016; Oluoma 2010). Sellers of insurance consist of insurance and reinsurance companies. There are over 40 registered insurance companies and 2 registered reinsurance companies in the Nigeria insurance market (NAICOM, 2019a). Insurance intermediaries include insurance brokers and agents. There are about 447 registered insurance brokers and over 10,000 insurance agents in the Nigeria insurance market (NAICOM, 2019b).

Rapid growth of the Nigeria insurance sector would improve insurance penetration thereby improving the sector's contribution to the nation's economic growth. There are several factors which may impact on insurance growth and penetration in an insurance market. These include improved capital base or minimum capital requirement, degree of financial growth, private saving rates, interest rates, social security expenditures, income, young dependency ratio, life expectancy and geographic regions (Dash et al., 2018; Ehiogu et al., 2018; OBG, 2017; Olayungbo & Akinlo, 2016; Poposki et al., 2015). Hence, insurance-growth nexus varies across countries with different conditions. For example, positive impact on economic growth is less in the middle-income countries, but high in the low-income countries (Olayungbo & Akinlo, 2016; Podoaba, 2015). This suggests that there is a connection or series of connection (nexus) between insurance penetration and economic growth in Nigeria. In terms of economic growth, this study explored the nexus between insurance penetration and economic growth in Nigeria.

2.4 Insurance Penetration in Nigeria

The potential and performance of an insurance sector can be assessed based on two parameters: insurance penetration and insurance density. These two parameters are often used to determine the level of growth of a nation's insurance sector (Olayungbo & Akinlo, 2016; Podoaba, 2015). Insurance penetration can be described as the ratio of premium underwritten each year compared to Gross Domestic Product (GDP), stated in Percentage (Olayungbo & Akinlo, 2016; Podoaba, 2015). Podoaba (2015) asserted that insurance penetration is an indication of the level of contribution of an insurance sector to a nation's GDP. On the other hand, insurance density can be described as the ratio of premium income compared to total population measured (Olayungbo & Akinlo, 2016; Podoaba, 2015). For convenience of comparison, it is a per capita premium each year.

2.5 Concept of Insurance Density

Quantitative and qualitative indicators can be used to assess the insurance market. Insurance penetration and insurance density are vital parameters for measuring a country's insurance sector performance (Olayungbo & Akinlo, 2016; Podoaba, 2015). Insurance density can be expressed as the ratio of total direct gross premiums collected and total number of inhabitants (population) of a country, expressed as average per capita (Access to Insurance Initiative, 2017; Podoaba, 2015). Insurance density measures how much each resident of a country spends on insurance on the average. Although life insurance penetration and life density are based on gross premiums; but there are significant differences between these two measures. Life insurance penetration measures life insurance consumption relative to the size of the economy; and life insurance density compares life insurance consumption across countries without adjusting for income (Access to Insurance Initiative, 2017). Consumers who purchase life insurance policies to insure their dependents against mortality risk have the potential to buy more coverage (Beck & Webb, 2003). This may result to a higher face value in richer or developed countries because the death benefit would replace a large income (Beck & Webb, 2003). Factors influencing life insurance growth and density include population count, per capita GDP, total savings deposit, education attainment, telephone ownership per capita, social welfare expenditure, and young dependency ratio (Beck & Webb, 2003). Zhang and Zhu (2008) study showed that insurance density is significantly affected by population size, per capita GDP, wage level per capita, private savings deposit per capita, number of telephones per capita, young dependency ratio, and aged dependency ratio. For the coastal, the central and the western areas in China. For instance, the insurance penetration was influenced significantly by market structure and social welfare expenditure (Zhang & Zhu, 2008). This study explored the nexus between insurance penetration and economic growth in Nigeria.

2.6 Empirical Review

This study aimed at assessing the impact of insurance density on economic growth in Nigeria. Empirical evidence in the literature revealed the importance of the insurance industry in stimulating growth and development of an economy (Dash et al., 2018 Adeniyi et al., 2015; Gabriel, 2015; Chang et al, 2014; Cristea et al., 2014; Oke, 2012). Outreville (2011) conducted a cross-sectional analysis on the relationship between insurance premium and GDP using Ordinary Least Square (OLS) method for 80 countries. The findings of the study revealed a nonlinear relationship between insurance premium and GDP (Outreville, 2011). Enz (2000) introduced a logistic model to explain the relationship between insurance penetration and GDP. It was observed that the regression curves for insurance portrayed an S-shaped relationship, thus indicating that insurance penetration rises alongside GDP (Outreville, 2011; Enz, 2000). Furthermore, Ward and Zurbruegg (2000) examined short and long run relationship between economic growth and insurance premium of nine OECD countries. Based their assessment, they found that the causal relationship between economic growth and insurance market activity vary across countries (Ward & Zurbruegg, 2000). Though the exact causes of causal relationship were not determined by Ward and Zurbruegg (2000); but potential causes may be country specific in terms of cultural, legal and regulatory environment.

Kugler and Ofoghi (2005) examined the long run relationship between growth in insurance market size and economic growth using Johansen's cointegration tests and Granger causality test. The findings indicated that there is a causal relationship between insurance market activity and

economic growth (Kugler & Ofoghi, 2005). In addition, they found that causality from GDP growth to insurance market size development is significant (Kugler & Ofoghi, 2005). The effect of banking and insurance on economic growth using a cross-country data of 55 developed and developing countries indicated that synergy exist between banks and insurance, and they provided greater benefit to economic growth (Webb, Grace & Skipper, 2002). Haiss and Sumeji (2008) analysed the impact of insurance on economic growth measured by GDP on 29 countries within the European economic region. Their findings indicated that life insurance has a higher impact on economic growth at low levels of economic development, and the impact of non-life is at the middle level (Haiss & Sumeji, 2008). Arena (2006) also conducted a cross sectional analysis on causal relationship between insurance market activity and economic growth among 56 developed and developing countries.

This study aimed at assessing the impact of insurance density on economic growth in Nigeria. The literature revealed that there is a positive significant effect of insurance market activity on economic growth; thus, affirmed that there is a positive relation between the growth of insurance sector and economic development (Dash et al., 2018; Olayungbo & Akinlo, 2016; Cristea et al., 2014). Akinlo and Apanisile (2015) examined the impact of the insurance industry on economic growth in sub-Saharan Africa countries over the period 1986 to 2011 using pooled OLS, fixed effect model and generalized method of moment panel model for estimation. The findings showed that the insurance market has positive and significance impact on economic growth (Akinlo & Apanisile, 2015). This suggests that there is a positive relationship between premium and economic growth of sub-Saharan African countries. The implication is that it is essential to deepen insurance penetration in Nigeria to enhance the sector's contribution to nation's economic growth.

2.7 Hypotheses Formulation

Based on the reviewed literature, the following hypotheses are formulated for this study:

Hypothesis 1:

Insurers premium income and claims settlement do not impact positively on economic growth in Nigeria.

Hypothesis 2:

There is no positive correlation between insurance penetration and economic growth in Nigeria.

3. Methodology

The study is an analytical study. In addition to the literature, secondary data was used for the study. Data used for the study are extracted from National Insurance Statistics and Directory, National Bureau of Statistics, Nigeria Insurance Digest, CIA World Fact Book, and CBN Statistical Bulletin. Time series analysis multiple regression analysis is used to analyse the data collected for the study due to data stationarity and its reliance on unit root testing. The data used for the study are presented in Table 1 below.

Table 1: Non-life premium, life premium, insurance claim settled, Nigeria, population, and Nigeria GDP for the period of 2004 - 2017

YEAR	NLP	LP	CS	POPULATION	GDP
	(N'000)	(N'000)	(N'000)	(Million)	(N'000)
2004	43,441,810	9,360,913	13,253,851	129,050	9,913,518
2005	50,100,830	11,763,338	18,262,123	132,602	11,411,067
2006	67,433,690	11,653,900	17,450,850	140,004	14,610,811
2007	81,583,750	13,422,340	80,561,103	140,432	18,564,595
2008	89,104,890	16,274,390	25,133,240	144,926	20,657,318
2009	126,470,300	30,735,720	37,413,600	149,563	24,296,329
2010	153,127,120	36,833,330	61,969,150	154,349	24,794,239
2011	157,336,810	43,039,170	53,815,320	156,051	33,984,754
2012	175,756,760	57,996,130	60,204,770	160,342	37,409,861
2013	182,172,874	69,965,203	73,162,280	164,752	40,544,100
2014	187,419,363	80,415,942	92,951,094	169,282	80,092,563
2015	184,967,767	108,576,192	87,007,805	173,938	89,043,651
2016	178,487,081	134,067,982	119,827,149	181,182	94,268,468
2017	218,111,213	163,831,074	168,572,833	185,990	104,203,951

Source: CBILLION Statistical Bulletin, National Insurance Statistics and Directory, National Bureau of Statistics, World Bank database, Nigeria Insurance Digest and CIA World Fact Book (2004 - 2017)

Note:

NLP = Non-Life Insurance Premium,

LP = Life Insurance Premium,

CS = Claim Settlement,

GDP = Gross Domestic Product

The data collected was analysed using estimation technique. Precisely, Ordinary Least Square (OLS) method was used to calculate coefficients of independent variables and dependent variable proxies. To accept a model, at least fifty percent of the independent variables should be significant. A result can be significant at four levels, namely: 0.1%, 1%, 5 % and 10%. However social research emphasised the importance of using 5% level of significance. For the study, 10% level of significance was used during data analysis; and a result is significant when the observed p-value of a test statistic is less than the significance level. The study's dependent and independent variables are presented below.

Independent Variables

LP = Life Premium

NLP = Non-Life Premium

ID = Insurance Density (Ratio of TIP to POP). TIP denotes total insurance premium, and POP denotes population.

Dependent Variable

Economic growth is the dependent variable of the study. Proxy variables for the dependent variable are:

QH = Quality of health

SL = Standard of living

Model Specification

The general form of the multiple regression model in relation to a dependent variable to 'p' independent variables is given by:

$$Y_i = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \dots + \beta_p X_{ip} + \varepsilon_i \quad (1)$$

Where:

Y_i = The dependent variable,

X_{ij} = The independent variables, $i = 1, 2, \dots, n$; $j = 0, 1, 2, \dots, p$,

β_j = The parameters to be estimated, and

ε_i = the random error.

Based on the above model, two models (Models 1 and 2) were developed as follows:

Model 1:

The model consists of the impact of Life Insurance Penetration (LP), Non-Life Insurance Penetration (NLP), Claims Settlement (CS) and Insurance Density (ID) on Economic Growth (GWT) in Nigeria is presented as follows:

$$Y_{DEV} = \beta_0 + \beta_{LP} + \beta_{NLP} + \beta_{CS} + \beta_{ID} + \varepsilon_i \quad (2)$$

Model 2:

The model which species the impact of Insurance Penetration on Economic Growth (GWT) in Nigeria is presented as follows:

$$Y_{DEV} = \beta_0 + \beta_{LP} + \beta_{NLP} + \varepsilon_i \quad (3)$$

Test Statistics:

To test hypotheses formulated above (section 2), t-test for mean where the population standard deviation is unknown was used. The test statistic, t-test for sample mean is given by:

$$t = \frac{\bar{x} - \mu_0}{s / \sqrt{n}}$$

Where:

\bar{x} = sample mean,

μ_0 = hypothesized population mean,

s = sample standard deviation, and

n = sample size.

4. Data Analysis and Discussions

The data collected was analysed using E-view statistical software to present descriptive statistics, trend analysis, ordinary least square, and diagnostic tests. Two models, developed in Section 4, were also estimated in the section. The data collected for the study were processed for analysis purpose, as presented in Table 2.

Table 2: Non-Life Insurance Penetration (NLP), Life Insurance Penetration (LP), Claim Settlement (CS), Insurance Density (ID), Consumption Expenditure (CE) and Health Care Expenditure Per Capita (HCE) for 2004 - 2017

YEAR	CS (N'000)	ID (TIP/ POP)	NLP (*NLP/ GDP)	LP (*LP/ GDP)	GDP (N'000)	CE (AS A % OF GDP)	HCE
2004	13,253,851	409.2	4.4	5.3	9,913,518	85.73	38.50
2005	18,262,123	466.5	4.4	5.4	11,411,067	80.73	44.94
2006	17,450,850	564.9	4.6	5.4	14,610,811	81.97	53.09
2007	80,561,103	676.5	4.4	5.1	18,564,595	70.11	61.01
2008	25,133,240	727.1	4.3	5.1	20,657,318	87.75	81.37
2009	37,413,600	1051.1	5.2	6.5	24,296,329	76.88	88.52
2010	61,969,150	1230.7	6.2	7.7	24,794,239	88.17	74.36
2011	53,815,320	1284.0	4.6	5.5	33,984,754	74.83	80.34
2012	60,204,770	1457.8	4.7	6.2	37,409,861	73.92	93.23
2013	73,162,280	1530.4	4.5	6.2	40,544,100	66.59	90.39
2014	92,951,094	1582.2	2.3	3.3	80,092,563	80.05	110.37
2015	87,007,805	1687.6	2.1	3.3	89,043,651	78.21	117.52
2016	119,827,149	1725.1	1.9	1.4	94,268,468	84.10	125.63
2017	168,572,833	2181.1	2.1	1.6	104,203,951	85.75	136.96

Source: Researcher's Analysis/Computation

Note:

NLP = Non-Life Insurance Penetration,
 LP = Life Insurance Penetration,
 *NLP = Non-Life Insurance Premium,
 *LP = Life Insurance Premium,
 CS = Claim Settlement,
 GDP = Gross Domestic Product,
 ID = Insurance Density,
 CE = Consumption Expenditure,
 HCE = Health Care Expenditure Per Capita,
 TIP = Total Insurance Premium, and
 POP = Population.

4.2 Descriptive Statistics

The descriptive statistics on economic growth (GWT), Non-life insurance penetration (NLP), life insurance penetration (LP), claim settlement (CS), insurance density (ID), consumption expenditure, and health expenditure per capital were analysed using mean, standard deviation, maximum, minimum and trend statistic and presented in Table 3.

Table 3: Descriptive analysis of variables for the period of 2004 - 2017

	Minimum	Maximum	Mean	Std
Claim settlement	N13,253,851	N168,572,833	N64,970,369	N30,464,721
Insurance density	409.16	2,181.1	1,183.85	614.60
Non-life insurance penetration	1.9	6.2	3.98	0.48
Life insurance penetration	1.4	7.7	5.6	1.01
Consumption (as a percentage of GDP)	66.59	88.17	76.63	6.58
Health expenditure per capital	38.50	136.96	85.44	29.89

Source: Researcher's Analysis

As shown in Table 3, the minimum value of claim settlement within the period of 2004 - 2017 was N13,253,851 and the maximum value was N168,572,833. Average claims settlement for the period considered was N64,970,369 with a standard deviation of N30,464,721. Insurance density was lowest at 409.16 with a maximum value of 2,181.1 within the period. Insurance density also recorded an average of 1,183.85 with a standard deviation value of 414.60. The mean value of non-life insurance penetration and life insurance penetration were 3.98 and 5.6 respectively. This implies that life insurance contributed more to Nigeria's GDP than non-life insurance during the period (2004 - 2017). However, non-life insurance penetration data was more reliable (standard deviation = 0.48) than that life insurance penetration data (standard deviation = 1.01). During the period (2004 - 2017), the maximum penetration of life insurance penetration was 7.7 and the maximum penetration of non-life insurance penetration was 6.2. Furthermore, consumption was indicated as a percentage of GDP recorded a maximum point of 88.17 and a minimum value of 66.59 during the period (2004 - 2017). Expenses incurred in consumption recorded an average of 78.75 during the period of 2004 - 2015. Health expenditure per capital averaged 85.44 with minimum and maximum values of 38.50 and 136.96 respectively. This means that the provision of health services (preventive and curative), family planning activities, nutrition activities, and emergency aid designated to health services in Nigeria within the period (2004 - 2017) was reasonable.

The Nigerian insurance sector is relatively small, compared to its banking and formal pension savings sectors which are growing faster. Hence, the Nigeria's insurance industry needs to overcome growth and penetration challenges to improve its contribution to nation's GDP. More importantly, the Nigeria insurance industry practitioners need to create more awareness about insurance and how it works. Nigeria's insurers should also endeavour to settle legitimate insurance claims promptly. Sound corporate governance practices should be also embraced within the Nigeria's insurance industry. The nations (Nigeria) huge population offers a good opportunity to the insurance sector to deepening insurance penetration in Nigeria. The country (Nigeria) population is currently estimated to over 195 million and an emerging middle class driving

economic activities (Central Intelligence Agency, 2019; Internet World Stats, 2019). The phenomenon of low insurance penetration is not unique to Nigeria because it is also prevalent in other Africa countries, excluding South Africa (Augusto & Co, 2017). Across the world, 65% of insurance premiums written are contributed by the G7 economies, which only constitute 10% of the world’s population (Augusto & Co, 2017). The average premium spent in G7 countries in 2012 was US\$3.910 compared to US\$120 average premium realized from emerging markets including Africa (RisCura, 2015). This implies that the contribution of insurance to the Nigeria’s GDP is less than 1%. This implies that insurance penetration in Nigeria is low. This presents a huge opportunity for the Nigeria insurance sector to explore its enormous untapped potential. We now proceed to engage data presented above to test the study’s hypotheses.

4.3 Hypotheses Testing

The hypotheses are validated, using model estimation with OLS method, in this subsection. The decision criteria is such that the model is significant if ‘p’ value is less than 0.05, in that case the null hypothesis was rejected. The model is insignificant if ‘p’ value is greater than 0.05, in that case the null hypothesis was accepted. In some instances, a 10% level of significance was used.

4.3.1 Hypothesis 1 Testing

The hypothesis 1 is stated below:

Insurers premium income and claims settlement do not impact positively on economic growth in Nigeria.

Ordinary Least Square (OLS) regression was used to test the hypothesis 1 on the impact of Life Insurance Penetration (LP), Non-Life Insurance Penetration (NLP), Claims Settlement (CS) and Insurance Density (ID) on Economic Growth (GWT) in Nigeria based on model 1, stated below:

$$Y_{DEV} = \beta_0 + \beta_{LP} + \beta_{NLP} + \beta_{CS} + \beta_{ID} + \varepsilon_i \dots\dots\dots (1)$$

Table 4: Impact of Life Insurance Penetration (LP), Non-Life Insurance Penetration (NLP), Claims Settlement (CS) and Insurance Density (ID) on Economic Growth (GWT)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.8457	0.00163	-2.915231	0.0625
LP	0.2954	0.18185	1.225982	0.1647
NLP	-0.1252	0.01628	-3.025132	0.0346
CS	0.4826	0.34175	1.484523	0.1357
ID	0.6845	0.04815	-3.284361	0.0674

R² = 0.79; F-stat = 2.7; Durbin Watson = 1.62

Source: Researcher’s Analysis

Table 4 shows the impact of life insurance penetration (LP), non-life insurance penetration (NLP), claims settlement (CS) and insurance density (ID) on economic growth. The results (Table 4) show that there is a negative impact of non-life insurance penetration and insurance density on economic growth in Nigeria (Non-life Insurance Penetration: t-Statistic = -3.025132, p < 0.05; Insurance Density: t-Statistic = -3.284361, p < 0.1) within 2004 and 2017. This means that an increase in non-life insurance penetration and insurance density would slow down economic growth in the country. The F-stat (F = 2.7, p < 0.05) is significant at 0.05 level of significance. Since ‘p’ value is greater than 0.05, the null hypothesis was rejected and the alternative (which implies that

‘insurers premium income and claims settlement impact positively on economic growth in Nigeria’) was accepted. The implication is that insurance (life and non-life) penetration and claims settlement impact on economic growth in Nigeria from 2004 - 2017.

Based on the marginal significance level (the probability value), non-life insurance penetration and insurance density are statistically significant at both 5% and 10% levels. This implies that there is 95% level of confident that the relationship between non-life insurance penetration and economic growth is significant; and there is 90% level of confidence in the relationship between insurance density and economic growth. The results (Table 4), however, suggest that life insurance penetration and claims settlement had no significant impacts on economic growth in Nigeria (Life Insurance Penetration: t-Statistic = 1.225982, $p > 0.05$; Claims Settlement: t-Statistic = 1.484523, $p > 0.05$) from 2004 - 2017. The results (Table 4) also show that independent variables (i.e., non-life insurance penetration, life insurance penetration, claim settlement, and insurance density) jointly contributed 0.79 proportion of variances (Adjusted $R^2 \times 100$). The implication is that 79% of the total variation in economic growth during the period (2004 - 2017) was accounted for by combination of four independent variables, which are: non-life insurance penetration, life insurance penetration, claim settlement, and insurance density). The F-statistics that shows the significance of the independent variables in explaining growth indicated that non-life insurance penetration, life insurance penetration, claim settlement and insurance density are jointly significant in explaining growth in Nigeria. The Durbin Watson statistics result of 1.62, which is less than 2, indicated the presence of first order serial correlation in the model. This may be due to the paucity of the data used in estimating the model. Overall, the hypothesis 1 testing results indicated that insurance (life and non-life) penetration and claims settlement impacted on economic growth in Nigeria from 2004 to 2017. This is consistent with the findings of previous studies on the impact of life insurance penetration, non-life insurance penetration, claims settlement and insurance density on economic growth (Dash et al, 2018; Olayungbo & Akinlo, 2016; Outreville, 2011; Enz, 2000).

4.3.2 Hypothesis 2 Testing

The hypothesis 2 is stated below:

There is no positive correlation between insurance penetration and economic growth in Nigeria.

OLS regression was used to test the impact of life insurance penetration (LP) and non-life insurance penetration (NLP) on economic growth (GWT) in Nigeria based on model 2, stated below:

$$Y_{DEV} = \beta_0 + \beta_{LP} + \beta_{NLP} + \varepsilon_i \dots\dots\dots (2)$$

Table 5: Impact of Insurance Penetration on Economic Growth (GWT) in Nigeria

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.1562	0.00174	-3.648521	0.0381
LP	0.3249	1.12461	1.348025	0.1964
NLP	-0.1940	0.06402	3.108412	0.0473

$R^2 = 0.64$; F-stat = 2.6; Durbin Watson = 1.58

Source: Researcher’s Analysis

Table 5 shows the impact of insurance penetration on economic growth in Nigeria. Similar to results obtained with the first model, the result of second model shows a positive impact of non-life insurance penetration on economic growth in Nigeria (Non-Life Insurance Penetration: t-Statistic = 3.108412, $p < 0.05$). This implies that an increase in non-life insurance penetration would lead to under-development and lack of growth in Nigeria. Conversely, there was no significant positive impact of life insurance penetration on economic growth in Nigeria (Life Insurance Penetration: t-Statistic = 1.348025, $p > 0.05$). Based on the marginal significance level (the probability value), the results (Table 5) indicated that non-life insurance penetration is statistically significant at 5% level of significance. The F-stat ($F = 2.6$, $p < 0.05$) is significant at 0.05 level of significance. Since 'p' value is greater than 0.05, the null hypothesis was rejected and the alternative hypothesis (which implies that 'there is a positive correlation between insurance penetration and economic growth in Nigeria'). The implication is that insurance (life and non-life) penetration impact positively on economic growth in Nigeria from 2004 - 2017.

The R^2 result shows that non-life insurance penetration and life insurance penetration explained 64% variations in economic growth. The remaining 36% may be due to other factors not captured in the model. The F-statistics shows that non-life insurance penetration and life insurance penetration are jointly significant in explaining economic growth in Nigeria. The Durbin Watson statistics result of 1.58, which is less than 2, indicated the presence of first order serial correlation in the model due to the paucity of the data. Overall, the hypothesis 2 results indicated that insurance (life and non-life) penetration impact on economic growth in Nigeria from 2004 - 2017. The finding is in consonant with findings of previous studies on impact of insurance penetration on economic growth in Nigeria (Arena, 2006; Kugler & Ofoghi, 2005; Zurbruegg, 2000).

5. Conclusion and Implications of Findings

5.1 Conclusion

The study aimed at analysing the connection or nexus between insurance penetration and economic growth in Nigeria. It analysed the impact of insurers premium income and claims settlement on economy growth in Nigeria; and assessed the impact of insurance density on economic growth in Nigeria. Generally, the findings of the study indicated that insurance (life and non-life) penetration and claims settlement impacted positively on economic growth in Nigeria within the period considered (2004 - 2017); and insurance (life and non-life) penetration also impacted positively on economic growth in Nigeria during the period. The findings revealed that non-life insurance penetration and insurance density had negative impact on economic growth in Nigeria (Non-life Insurance Penetration: t-Statistic = -3.025132, $p < 0.05$; Insurance Density: t-Statistic = -3.284361, $p < 0.1$). Nonetheless, life insurance penetration and claims settlement had no significant impacts on economic growth in Nigeria (Life Insurance Penetration: t-Statistic = 1.225982, $p > 0.05$; Claims Settlement: t-Statistic = 1.484523, $p > 0.05$) at 0.05 level of significance. The study findings suggested, amongst others, that intense effort is essential to entrench the knowledge and importance of insurance to promote economic development and growth of the insurance industry through local media, social media, development of new products to meet the insuring public needs, and improved customer service strategy.

5.2 Implications of the Findings for Practice

The findings of the study have direct and indirect implications for practice and policy making. This is because the findings would assist insurance practitioners in Nigeria to further appreciate

the need for the insurance sector to work towards deepening and improve the sector's contribution to the nation's GDP. The findings would also facilitate exchange of knowledge in tackling current and future challenges to create pathways for the improvement of the Nigeria insurance industry. It is, therefore, recommended that the government and policymakers should formulate policies geared towards improving the nation's insurance sector. Such policies will reduce the gap between the relationship between insurance penetration and economic growth. Lastly, there is a room for further research on insurance penetration and density on economy growth in a nation.

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