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IMPACT OF LIFE INSURANCE DEVELOPMENT ON ECONOMIC GROWTH: A CASE STUDY OF NIGERIA (2000-2022)

OLAJIDE SOLOMON FADUN
Department of Actuarial Science and Insurance, Faculty of Management Sciences, University of Lagos, Lagos, Nigeria. E-mail: ***sofadun@yahoo.co.uk***

TAIWO OLARINRE OLUWALEYE
Department of Finance (Insurance Unit), Faculty of Management Sciences, Ekiti State University, Ado-Ekiti, Nigeria. E-mail: ***taiwo.oluwaleye@eksu.edu.ng*** (Corresponding Author)

ABSTRACT

This study explored the development of life insurance and economic growth using Nigeria as a case study from 2000 to 2022. The study examined the relationship between life insurance development and economic growth and analysed the effect of life insurance penetration and density on the real GDP growth rate. Data used for the study were collected from sources including the World Development Indicator database, Global Financial Development Indicator database, NIA digest database, and Central Bank of Nigeria statistical bulletin. The investigation approach used the Granger causality test and Autoregressive Distributed Lag (ARDL) co-integration. The Granger causality test result indicated that there is no causal connection between Nigeria's economic growth and the development of life insurance. According to ARDL's estimated results, life insurance density and penetration had a negligible positive effect on the real GDP growth rate. This finding revealed that life insurance development did not contribute to Nigeria's economic growth from 2000 to 2022. This study recommended, among others, that life insurance institutions should increase their scope of operations to be directly involved in business investments other than financial market investments to enhance their significance level in Nigeria's growth process.

Keywords: Life-insurance development, life-insurance penetration, life-insurance density, economic growth, Nigeria.

INTRODUCTION

Pursuing life insurance development is necessary and significant to Nigeria's financial sector and economy. The rate of life insurance development is expected to contribute to countries' financial sector development goals since the insurance sector is one of its subsectors (Kajwang, 2022; Idowu & Fadun, 2022). Through its services and policy, the life insurance sector provides savings, creating an avenue for increasing financial sector activities (Olaiya et al., 2023; Aduloju et al., 2022). It facilitates contractual savings towards ensuring a good life for the

insured family or kin after death and provides financial resources to businesses. Abdellahi and Fathi (2020) also asserted that the life insurance sector could become an efficient and effective means of promoting the country's economic goals by enhancing density and penetration.

Generally, life insurance contributes to economic growth through the hybrid role any insurance sector could play in the economy (Iyodo et al., 2020). The providers are financial intermediaries participating in domestic savings mobilization by ensuring the accumulation of capital, efficient allocation of financial resources, and increased investment (Idowu & Fadun, 2022; Mdanat et al., 2019). Similarly, Segodi and Sibindi (2022) noted that the essentiality of life insurance development is partially embedded in the financial intermediation between the surplus and deficit units through investment and capital formation activities.

Life insurance penetration and density represent the key metrics that offer essential insights into the scope and depth of the life insurance industry in a nation. The insurance penetration rate calculates the rate at which insurance premiums increase with GDP growth (Okonkwo & Eche, 2019). Through income adjustment, insurance penetration measures the amount of insurance used with the size of the economy (Fadun, 2021). Insurance penetration reduces when insurance premiums rise, and income stays constant (Fadun, 2021; Olayungbo & Akinlo, 2016). In Nigeria, the insurance penetration rate has not been very high, and it is necessary to build confidence in modern insurance for a notable penetration rate to occur (Okonkwo & Eche, 2019).

Insurance density represents the degree of insurance market share, which indicates the quality of insurance performance within a particular population (Agbo & Agbaji, 2020). Premium income is used to measure the activity in Nigeria's insurance market because it illustrates the economy's interest in insurance coverage (Fadun & Shoyemi, 2018; Omoke, 2012). The level of life insurance development is determined by the percentage of the population that purchases life insurance. Nigeria has about two hundred and twenty-six million people. For insurers, the market landscape endowment appears boundless. With the large population, insurance is predicted to thrive and contribute positively to the economic growth in Nigeria (Agbo & Agbaji, 2020).

Life insurance development seems to be more necessary in ensuring better and

sustainable growth for the economy when the term of the contract is considered. But in reality, the life insurance sector seems to have a deficient level of development despite the need. For instance, the insurance penetration rate had only increased from 0.06% of GDP to 0.12% between 2000 and 2022, revealing a slow yet low level of development (World Development Indicator, 2023). This is also the case when life insurance density is considered, as the rate stood at an annual rate of 36.49 naira per person in 2000 and only 1382 naira per person in 2022 (Statista**,** 2023; Central Bank of Nigeria, 2022). Hence, there is a need to examine life insurance development's role in Nigeria's economic growth.

Considering the importance of growth in economic comparison and the nation's prosperity, Nigeria's economic growth is a critical issue when considering the behaviour of its metrics and measures over the past decades. The growth of GDP between the years 2000 and 2022 had seen a decline of about 1.77% with a lot of challenges such as financial crisis, economic instability, political instability, and COVID-19, among others, creating up and downward situation within the said period (Central Bank of Nigeria, 2022; Iyodo et al*.,* 2020; Sawadogo et al., 2018). With all these challenges identified, one of the crucial ways of ascertaining prosperity and economic progress is the financial development covering all subsectors (Muhammad & Khatid, 2023).

This study on life insurance development and economic growth in Nigeria is motivated by a desire to understand the dynamics between these two factors and to provide valuable insights for policymakers, industry participants, and the broader society. The findings can affect economic policies, industry practices, and overall social and economic well-being.

Several investigations have been carried out on life insurance development and economic growth in Nigeria, including Oloyede et al. (2023), Olaiya et al. (2023), Kajwang (2022), Augustine and Maliki (2021), Etale (2019), Safitri (2019), Iyodo et al. (2020), Apergis and Poufinas (2020), and Shennaev (2020). However, most studies concentrated on aggregate and disaggregated insurance sector measures. Moreover, insurance premiums and insurance penetration rates were primarily used as metrics for life insurance development, while life insurance density is scarcely explored, especially in Nigerian studies.

This study also recognised that the majority of studies had been focused on the gross domestic product as a measure of economic growth (e.g. Adetunji et al., 2018; Zaheer et al., 2019) and that those that captured growth rate (such as Iyodo et al., 2020) had not considered the need for price effect adjustment, as they tend to engage nominal instead of real growth rate. In addition, the literature had not covered the possibility of causality among the two critical variables of the study, life insurance development and economic growth. Therefore, this research used Nigeria as a case study to cover the relationship between life insurance development and economic growth.

In line with the gap identified in the literature, this study's research objectives are to:

i. investigate the causal relationship between life insurance development (density and penetration) and the real GDP growth rate of Nigeria
ii. examine the effect of life insurance density on the real GDP growth rate of Nigeria
iii. assess the effect of life insurance penetration on the real GDP growth rate of Nigeria

LITERATURE REVIEW

The literature is reviewed in this section. It explained the concept of life insurance development, measures of life insurance development, economic growth, and a review of empirical literature and theoretical concepts.

Life Insurance Development

Life insurance development is an improvement in access and coverage of the life insurance sector in the economy. In its purest form, Life insurance is a kind of personal insurance policy in which the insurer agrees to pay back a predetermined amount of money to a selected beneficiary if the insured person dies or survives to the age or duration specified in the policy. To put it another way, life insurance refers to a broad category of personal insurance, which includes protection for children until they reach adulthood or until they enroll in college. The insurers created it with a focus on mortality protection in mind. The fundamental process of purchasing life insurance involves an exchange: the policyholder pays premiums in exchange for a life contingent payout from the insurer, which is based upon the policyholder's survival, death, or potential health. After

considering the reasons, a life insurance policy turns into a product that, depending on the premium and benefit amount, pays a cash payout at death or maturity.

Measures of Life Insurance Development

Life insurance development can be measured by life insurance penetration, density, and premium, among others. Life insurance penetration is an important metric that measures the development and activities of life insurance in an economy, as it reveals the rate at which the insurance industry has contributed to a given country's total domestic product (Fadun, 2021). It is one of the ways of measuring how many people are engaged in life insurance. It is calculated by the amount of life insurance premium to a nation's overall gross domestic product in a year (Safitri, 2019).

Life insurance density is the measurement that deals with the overall financial development of an insurance company. It is measured in terms of the ratio of direct domestic premiums for the nation's life insurance per capita gross domestic product (Safitri, 2019). The insurance premium is an agreed set of payments paid by the life insurance policyholder to the insurance company within a specific period. The policy specifies the sum paid to the insurer for life insurance coverage. Life insurance premiums may be paid monthly, quarterly or annually, but most records considered and preferable for analysis is the annual premium since it can help capture policies with no exception (Safitri, 2019)

Economic Growth

John (2017) refers to economic growth as the rise in the performance of the nation's financial capacity, which boosts the living standard of individuals and the development of the entire community. Chuke et al. (2023) describe it as a consistent process that has to do with the rising output of the economy's products and services. Most economic growth is significant when there is an increase in the rate at which some sectors of the economy engage in the strategy, bringing returns and value to the nation and its entire community (Fadun, 2021; Kimaro et al., 2017). Economic growth is steady productivity growth that brings an increase in financial growth. It is the nation's transition from low income into a higher modern industrial economy. It deals with quantitative increase, which brings a realistic improvement to a nation's economy (Kingsley et al., 2022).

In literature, economic growth is commonly measured quantitatively with either the gross domestic product or the GDP per capita (e.g. Mohammad & Khatid, 2023; Fadun, 2021; Kaya & Beser, 2020; Zaheer et al., 2019; Etale, 2019). The gross domestic product is the value of goods and services generated in a nation in a given year (Oluwaleye, 2023). However, the idea of an increase in economic value in the economic growth definition depicted that measuring the growth of an economy with this metric is inadequate (Iyodo et al., 2020). Growth has much to do with the changes (increase or decrease) that occur to values than absolute values, comparing the values of two consecutive periods, such that estimating the rate of changes in current economic values would be a good representative of economic growth. Hence, several studies used the GDP growth rate as a measure of economic growth, which represents shifts in the nation's production of economic products and services (Fadun & Silwimba, 2023; Oluwaleye et al., 2023; Iyodo et al., 2020; Sawadogo et al., 2018).

Empirical Review

Oloyede et al. (2023) examined insurance's effect on Nigeria's economic growth from 1986 to 2020. Secondary data was used and analysed for the study. It utilised the inflation rate, total insurance premium, total insurance claim, and total insurance investment as the explanatory variables and the real gross domestic product as a dependent proxy for economic growth. The results showed that whereas total insurance premiums substantially correlated with economic development, total insurance investment had little effect.

Olaiya, Ariyibi, Akindele and Okunleye (2023) explored the impact of financial inclusion on economic development by considering the insurance industry's involvement in Nigeria and using the ARDL estimate approach between 1981 and 2018. The empirical findings showed that whereas life insurance premiums are inversely correlated with economic growth, total and non-life insurance premiums are favourably correlated. But credit to the private sector does better and significantly contributes positively to Nigeria's economic growth.

Kajwang (2022) examined how the legal and governmental structures affect the growth of the insurance sector. The study used a qualitative research design. Critical issues concerning the performance of the insurance industry and the role of government control were explored; a robust empirical review of related studies was also carried out in the

study. Findings from the study indicated that regulatory agencies are essential to maintaining the financial system's viability, stability, and integrity and the public's faith in an economy's financial system.

Laskowska (2022) assessed the effect of the insurance industry on economic expansion. Secondary panel data for 31 European nations from 2004 to 2019 were acquired for the research. Dynamic econometric models and the Generalized Method of Moments, or GMM, were used to analyse the study's data. The study's conclusions showed no significant relationship existed between GDP per capita and pertinent total and life insurance development characteristics.

Augustine and Maliki (2021) explored the implication of the macroeconomic environment on the penetration of Nigeria's insurance business. This investigation adopted the after-the-fact research. Secondary time series data covering 1988-2018 was collected for the research. Data was analysed via unit root test, correlation analysis and ANOVA regression. Discoveries from the study indicated that the inflation rate and the penetration of the insurance industry in Nigeria are positively correlated but not statistically significant.

Shennaev (2020) analysed how the insurance industry and economic growth relate to industrialized and emerging nations. For the research, secondary data from 2005 to 2019 was collected. The content analysis method was used to examine the study's data. The study's conclusions showed that many factors, such as the gross domestic product, influence how insurance develops and that insurance generally contributes to economic growth - particularly in wealthy and developed nations.

Iyodo et al. (2020) investigated how Nigeria's performance in the non-life insurance sector impacted economic development. Five distinct proxies quantify insurance penetration, including non-life insurance transactions, savings, expenditures, investments, and industry earnings. Regression analysis was used to analyse the data from time-series statistics from 1988 to 2012. The study's conclusions demonstrated that throughout the time, Nigeria's economic development was significantly aided by the prevalence of non-life insurance.

Abdelaali and Fathi (2020) used time series data covering the years 1980-2017 using ARDL models to examine the insurance industry's impact on economic development in Algeria. The research collected secondary

annual time-series data on real GDP, life and non-life insurance premiums, aggregate insurance premiums, foreign trade volume, gross fixed capital formation, and inflation rate from 1980 to 2017. Cointegration was used to analyse the study's data, and the results showed that all variables were cointegrated over the long term, with non-life insurance premiums having a considerable positive impact on real GDP and life insurance premium increase having a negligible effect.

Mdanat et al. (2019) studied the relationship between insurance activity and per capita income in Jordan from 1990 to 2017. They used the Autoregressive Distributed Lag (ARDL) approach to evaluate data. The research found that insurance sector activity significantly and negatively impacted per capita income, as evidenced by insurance investment. However, other economic policies, including inflation, restricted the detrimental impacts of insurance sector activities on growth.

Etale (2019) examined the connection between the expansion of Nigeria's insurance industry and the country's economic growth between 2001 and 2017. The research used secondary data from 2001 to 2017, with the gross domestic product as the response variable and total insurance investment, insurance premium, and insurance claims as predictor factors. The findings demonstrated a positive relationship between total insurance investment, premiums, and claims and the GDP, suggesting a favourable effect on economic growth.

Safitri (2019) examined the impact of insurance sector elements on the economic development of six ASEAN member states: Singapore, Malaysia, the Philippines, Thailand, Vietnam, and Indonesia. The research from 2005 to 2015 found that life insurance and non-life insurance premiums had a significant and favourable influence on economic growth. Although non-life insurance penetration and density did not significantly affect economic growth, life insurance penetration and density had substantial effects.

Nwosa and Mustapha (2018) examined the relationship between Nigeria's economic growth and insurance development dynamics between 1996 and 2014. Ordinary least squares (OLS) and the Granger causality test were used to evaluate the data collected for the investigation. The causality estimate demonstrated a one-way causal relationship between economic growth and insurance development. However, the OLS regression

estimate indicated that the relationship between insurance development and economic growth was negligible.

Theoretical Context

This research is predicated on financial liberalization theory. The hypothesis was developed by Patrick (1966) but later associated with Shaw (1973) and McKinnon (1973). The financial liberalization theory centred on the idea that removing constraints and ensuring improvement in activities in financial-related markets and institutions moves in tandem with the expansion of the global economy. That is, there is a tendency for the insurance market to improve while the nation's economic activity, production, and income rise. However, this notion had two main challenges, divided into supply-side and demand-side hypotheses.

The idea of supply-leading theory, on the one hand, is in line with the perceptions of the advocates of this theory Patrick (1966); Shaw (1973) and McKinnon (1973), as well as other followers, including Chang and Caudill (2005) and Mhadhbi (2014). It stated that development in the financial sector is growth enhancing, based on the perceived source of increased saving and investments, promoting the effectiveness of capital accretion. On the other hand, demand following the hypothesis pioneered by Robinson (1952) and followed by Kuznet (1955), Goldsmith (1969), Jung (1986), and Gurley and Shaw (1955, 1967) centred on the assumption based on the belief that rising income generated from increased growth provides funds for financial institutions to actualise and expand the level of their intermediation functions as well as other financial services rendered.

In the context of this study, the theory is very relevant, given that life insurance development is one of the elements of financial growth. As such, the supply-leading hypothesis implies that life insurance development should enhance Nigeria's economic growth. However, the issue regarding this theory is that its relevance to the development of the insurance industry, particularly life insurance development and economic growth, has not been thoroughly investigated.

Nevertheless, some economic growth models hinged on the supply-leading hypothesis. For instance, Solow’s growth model, classified under the neoclassical growth model, explained the effect of more investment and saving on long-term economic growth. In the near term, increased savings and investment quicken the country's production and income

growth. The theory uses a mathematical model based on differential equations to show how larger capital stock leads to higher per capita productivity. Solow's thesis is that a specific portion of society's revenue is saved. Both the population and the work pool are expanding steadily. It is possible to regulate capital intensity (or capital per employee). The theory identified the role of investment, capital stock and labour force in ensuring economic growth. Therefore, from the perspective of investment recognised in theory, life insurance development ensures more capital formation to improve the economic growth of a nation.

RESEARCH METHODS

Model Specification

This research modified the framework of Nwosa and Mustapha (2018) in which GDP per capita is seen as a function of insurance development (penetration), as well as control variables (capital formation and labour force) as well as Safitri (2019) in which GDP is utilized as the dependent variable, whereas insurance penetration, insurance density, and insurance premium are used as the explanatory variables.

Measurement of the Variables

However, in this research, life insurance development was assessed using life insurance density (LID) and life insurance penetration (LIP), with real GDP growth rate (GDPR) serving as the dependent variable. In contrast, the labour force (LF) and interest rate (INT) were taken as control variables to recognise the element in the growth model and an economic policy instrument.

Thus, the study's model is defined by the stated objectives as follows:

Models for Objective One: *Causality between Life Insurance Penetration and Real GDP Growth Rate of Nigeria*

$$LIP_t = \sum_{i=1}^{n} \delta_i LIP_{t-i} + \sum_{j=1}^{n} \theta_j RGDPgr_{t-j} + u_{1t} \quad (1)$$

$$RGDPgr_t = \sum_{e=1}^{n} \mu_e RGDPgr_{t-e} + \sum_{m=1}^{n} \gamma_m LIP_{t-m} + u_{2t} \quad (2)$$

Model of causality between Life Insurance Density and Real GDP growth rate

$$LIP_t = \sum_{i=1}^{n} \delta_i LID_{t-i} + \sum_{j=1}^{n} \theta_j RGDPgr_{t-j} + u_{1t} \quad ----------(3)$$

$$RGDPgr_t = \sum_{e=1}^{n} \mu_e RGDPgr_{t-e} + \sum_{m=1}^{n} \gamma_m LID_{t-m} + u_{2t} \quad ----------(4)$$

Model for Objective Two: *Effect of life insurance penetration on real GDP growth rate of Nigeria*

$$RGDPgr = f(LIP, LF, INT)$$

$$RGDPgr_t = \delta_0 + \delta_1 LIP_t + \delta_2 LF_t + \delta_3 INT_t + u_t \quad ----------(5)$$

For Objective Three: *Effect of life insurance density on real GDP growth rate in Nigeria*

$$RGDPgr = f(LID, LF, LIT)$$

$$PCIgr_t = \gamma_0 + \gamma_1 LID_t + \gamma_2 LF_t + \gamma_3 INT_t + v_t \quad ----------(6)$$

Source of Data

In this investigation, secondary time series data were used. The data were extracted from the Central Bank's statistical bulletin, Database of Global Financial Development Indicators, World Development Indicators database edition of 2023 and National Insurance Association (NIA) digest. These data spanned twenty-three years, from 2000 to 2022.

Method of Analysis

In the quest to achieve the objectives earlier stated, this study employed the inferential analysis method. The inferential methods used were the Augmented Dickey-Fuller (ADF) unit root test for the preliminary test, the co-integration method, and the Granger causality test for objectives one and two of this study

4.0 RESULT AND DISCUSSION

This segment discusses the results linked to the objectives of this study. The discussion includes the presentation of the preliminary test, the stationarity test (Augmented Dickey-Fuller unit root test), carried out on each of the variables of this study, from which the appropriate estimation technique, after which the Granger causality test and Autoregressive

Distributed Lag co-integration approach results are discussed.

Unit Root Test

Table 1: Summary of Unit Root Test Result

Variables	LEVEL			FIRST DIFFERENCE			Order of integration
	ADF statistics	1% critical value	5% critical value	ADF statistics	1% critical value	5% critical value	
RGDPgr	-1.753703	-3.769597	-3.004861	-4.461332*	-3.808546	-3.020686	I(1)
LIP	-3.736593*	-3.959148	-3.081002	-6.150647	-3.788030	-3.012363	I(0)
LID	-6.236694*	-3.959148	-3.081002	-2.335166	-2.679735	-1.958088	I(0)
LF	-0.207413	-2.679735	-1.958088	-2.913649*	-2.679735	-1.958088	I(1)
INT	-2.683711	-4.440739	-3.632896	-4.653936*	-4.467895	-3.644963	I(1)

Note: ** connote significance at 5% significant levels respectively*
Source: ***Researchers' Calculation from E-view, 2023***

Table 1 revealed that life insurance density and penetration are stationary at level, meaning they don't retain innovation shock over time. However, real GDP growth rate, labor force participation rate, and interest rate only reach stationarity after first differencing, indicating that the integrated mixed-order series in the models are I(0) and I(1).

Analysis Objective One: causality between Life Insurance Development and Economic Growth in Nigeria

Table 2: Granger Causality Test Result

Null Hypothesis	F-statistics	Probability
LIP does not Granger Cause RGDPgr	1.80918	0.1957
RGDPgr does not Granger Cause LIP	2.27234	0.1353
LID does not Granger Cause RGDPgr	3.02185	0.0770
RGDPgr does not Granger Cause LID	0.15320	0.8592

Source: ***Researchers' Calculation from E-view, (2023)***

The results of the granger causality analysis, which are shown in Table 2, indicate that there is inadequate proof to reject the null hypothesis, which holds that life insurance penetration and density do not contribute to the real GDP growth rate. Therefore, the real

GDP growth rate and the development indices of life insurance (penetration and density) are not causally related.

Analysis of the effect of Life Insurance Penetration on real GDP growth rate in Nigeria

Table 3: ARDL Co-integration Bound Test

F-statistic	Lower Bound CV	Upper Bound CV
7.098802	2.79	3.67

Note: *CV connotes critical values at 5% level of significant.*

Source: ***Researchers' Calculation from E-view, 2023***

Table 3 presents the F-statistics and critical values for the Wald test, which tested the joint null hypothesis of no long-run relationship between variables and zero coefficients of lagged level variables. The outcome showed an f-statistics value of 7.098802 and bound critical values of 3.67 and 2.79. The f-statistic was found to be bigger than the upper limit critical value when compared to the critical values (a criterion for the rejection of the null hypothesis of no long-run relationship). As a result, the analysis rejects the null hypothesis and supports the alternative hypothesis, which holds that there is a long-term relationship between the real GDP growth rate, the labor force, life insurance penetration, and interest rates.

Table 4: ***ARDL Estimation Results for the Short and Long Runs***

Short-run Coefficients				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
D(LNLIP)	0.468612	0.336730	1.391657	0.1874
D(LNLF)	13.748829	5.053779	2.720505	0.0175
D(LNLF(-1))	-31.913426	5.720278	-5.578999	0.0001
D(LNINT)	1.687217	0.508029	3.321107	0.0055
CointEq(-1)	-0.636811	0.097606	-6.524316	0.0000
Cointeq = LNGDPGR - (0.2481*LNLIP + 28.8190*LNLF + 0.9216*LNINT- 118.0318)				
Long-run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNLIP	0.248101	0.653340	0.379742	0.7103
LNLF	28.818988	8.513860	3.384950	0.0049
LNINT	0.921585	0.935725	0.984889	0.3427
C	-118.031836	34.043637	-3.467075	0.0042

Source: ***Researchers' Calculation from E-view, 2023***

Table 4 displays the short- and long-term ARDL estimate results for the effect of life insurance penetration on Nigeria's real GDP growth rate between 2000 and 2022. The coefficient and probability for D(LNLIP) were 0.468612 and 0.1875 ($p > 0.05$) according to the short run estimate result, this revealed that real GDP growth rate for Nigeria increases by 0.46% whenever life insurance penetration rate increases by 1%, but statistically negligible. As such, the result indicated that the penetration of life insurance has a negligible positive short-term effect on the real GDP growth rate. According to CointEq (-1) of -0.636811 and 0.0000 ($p < 0.05$), about 63% of the short run inconsistencies are fixed and integrated into the long run dynamic each year. Conversely, the long-term outcome for LNLIP showed a coefficient and likelihood of 0.248101 and 0.7103 ($p > 0.05$), showing real GDP growth rate increases by 0.24% as life insurance penetration rate increases by 1%, such that it can be inferred that on the long-run, the penetration of life insurance has a slight positive effect on the real GDP growth rate.

Analysis of the effect of Life Insurance Density on real GDP growth rate in Nigeria

Table 5: ***ARDL Co-integration Bound Test***

F-Statistic	Lower Bound CV	Upper Bound CV
7.056829	2.79	3.67

Note: *CV connotes critical values at 5% level of significant.*

Source: ***Researchers' Calculation from E-view, 2023***

Table 5 presents the F-statistics and critical values for the Wald test, used to test the joint null hypothesis of no long-run relationship between variables and zero coefficients of lagged level variables. The f-statistics value was 7.056829, with bound critical values of 2.79 and 3.67 for the upper and lower limits. It was found that the f-statistic is bigger than the upper limit critical value when compared to the critical values (a criterion for the rejection of the null hypothesis of no long-run relationship). The alternative hypothesis, which holds that there is a long-run relationship between the real GDP growth rate, life insurance density, labor force, and interest rate, is therefore supported by the study's rejection of the null hypothesis.

Table 6: ***Short- and Long-run Estimation Outcomes for ARDL***

Short-run Coefficients				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
D(LNLID)	0.216741	0.236151	0.917810	0.2939
D(LNLF)	12.505047	5.111756	2.446331	0.0294
D(LNLF(-1))	-31.023897	5.787217	-5.360763	0.0001
D(LNINT)	1.639152	0.516914	3.171032	0.0074
CointEq(-1)	-0.700547	0.106476	-6.579362	0.0000
Cointeq = LNGDPGR - (0.0567*LNLID + 24.0363*LNLF + 0.5199*LNINT -97.6974)				
Long-run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNLID	0.056666	0.166772	0.339781	0.3394
LNLF	24.036315	8.645639	2.780166	0.0156
LNINT	0.519884	0.986640	0.526924	0.6071
C	-97.697388	37.077915	-2.634921	0.0206

Source: ***Researchers' Calculation from E-view, 2023***

The ARDL estimates for the short- and long-run effects of life insurance density on real GDP growth rate are displayed in Table 6. For D(LNLID), the short-run estimate result showed a coefficient and probability of 0.216741 and 0.9939 ($p > 0.05$), reflecting that whenever life insurance density increases by 1%, real GDP growth rate increases by about 0.21%, although not statistically significant. This showed that in the short run, life insurance density has a negligible positive effect on the real GDP growth rate. According to CointEq (-1) values of -0.700547 and 0.0000 ($p < 0.05$), about 70% of the short-run inconsistencies are corrected and integrated into the long-run dynamic each year. On the other hand, long run coefficient and probability of 0.0567 and 0.3394 ($p > 0.05$) for LINLID indicated that there is 0.05% increase in real GDP growth rate whenever there is 1% increase in life insurance density, thus, life insurance density can be said to have trivial positive effect on real GDP growth rate on the long-run, based on the sampled data.

Discussion and implication of the Findings

Results of this study showed that a causal relationship does not exist between life insurance development and real GDP growth rate, revealing a deviation of the Nigerian situation in the year 2000 to 2022 from the proposition of the demand-following and supply-leading hypotheses. In fact, from the empirical sense, the finding on causality for this study is quite different from the submission of studies including Pradhan et al. (2020) and Etale (2019), which claimed that the demand-following theory explains the relationship between insurance development and economic growth, as well as Nwosa and Mustapha (2018) which confirmed supply leading hypothesis. But, one thing to note about most of these studies is that they were not conducted in the context of Nigeria and that the hypothesis was not formulated based on the reality of Nigeria even at the time when the hypothesis was established and the fact that those in Nigeria were not specifically on life insurance, hence the possibility of deviation for Nigeria.

This study also indicated a statistically negligible, although positive, effect of life insurance penetration on the real GDP growth rate, revealing that Nigeria's real GDP growth rate is not necessarily a result of improvement in life insurance activities and contribution to the economy. Nevertheless, essential reasons could be that the life insurance penetration rate, even though it may be increasing, is too small to impact the

economy's progress significantly. In addition, the life insurance sector seems to attract little or no attention from the monetary authorities like the banking sector, creating a lapse in the development of the former. Thus, this result is consistent with the findings of Abdellahi and Fathi (2020) and Mdanat et al. (2019); but inconsistent with the findings of Oloyede et al. (2023), Olaiya et al. (2023), Shennaev (2020), and Safitri (2019).

Lastly, this study showed that the real GDP growth rate tends to increase with an increase in life insurance density, but the outcome is not remarkable enough. It revealed that Nigeria seems to have other factors responsible for the growth rate of the period, other than life insurance density improvement, most especially given the infinitesimal amount per person operating in this sector due possibly to the rate of poverty and low level of income of most people in the country. Also, the low level of development and its insignificance could be attributed to the low level of life insurance sector intermediation activities among businesses and the labour force. The implication of this is that life insurance density does not explain the behaviour of growth in the economy of Nigeria, and it is not a good predictor of the real GDP growth rate in the case of Nigeria. This is consistent with the results of Mdanat et al. (2020) but disagrees with the conclusion of Iyodo et al. (2020) and Safitri (2019).

5.0 CONCLUSION AND RECOMMENDATIONS

Conclusion

Based on this investigation's results, it is imperative to conclude that a causal relationship does not exist between life insurance development measures (life insurance penetration and life insurance density) and real GDP growth rate. This study also established that real GDP growth has not been aided by the penetration of life insurance in Nigeria for some decades now, despite the clamour for financial sector development as a way of growth enhancement. Lastly, this study concluded that life insurance density is insignificant in explaining the real GDP growth rate, although the relationship between them is positive. Hence, this study established that life insurance development may remain insignificant in the issue of economic growth in Nigeria if drastic measures are not exercised.

Recommendation

Therefore, this study pushed forward the following recommendations:

Government and insurance regulators must concentrate on enhancing efficiency in the life insurance sector to significantly improve this sector's development. This could be achieved by consistently refining and improving the regulatory framework governing the life insurance sector operation. This will enhance the meaningful contribution of life insurance development to Nigeria's economic growth.

Life insurance institutions must put more effort towards creating awareness and spreading knowledge on the importance of life insurance policies, which may attract more participation. Life insurance companies need to fund extensive awareness programs, organise financial literacy programs and create targeted marketing strategies to raise public awareness about the value of life insurance, its advantages, and its financial stability benefits to people and their families.

Life insurance institutions should also increase their scope of operations to be directly involved in business investments other than financial market investment to enhance their significance in growth. By encouraging direct engagement in businesses, this strategic move might increase their relevance in economic growth and provide value for the insurance sector and the larger economy.

The government should improve efforts at enhancing income and reducing poverty to enhance life insurance penetration and density. The government can foster a favourable atmosphere for the life insurance sector to flourish by tackling economic inequalities. This can thus have a significant positive impact on capital creation, investment, and general economic growth.

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