

Financial Inclusion and Economic Growth in Nigeria (1991-2021)

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Abstract: This study investigated the impact of financial inclusion on economic growth in Nigeria for the period 1991-2021. The specific objectives of the study were: determine the impact of rural savings mobilization on the gross domestic product in Nigeria, to investigate the impact of bank loans to rural economy on the gross domestic product in Nigeria, and to find out bank lending rate to farmers on the gross domestic product in Nigeria. The study used time series data sources from the CBN statistical Bulletin. The study adopted the ex post facto research design and employed the autoregressive distributed lag (ARDL) method to analyze the results. The empirical result indicates that banks' rural savings mobilization financial inclusion has significant positive impact on the real gross domestic product in Nigeria, bank loans to rural economy has significant positive impact on the real gross domestic product (economic growth) in Nigeria, and bank lending rate to farmers has negative but insignificant impact on the gross domestic product in Nigeria. The policy recommendations following the findings are: there is need for a strategic policy approach to entrenching financial technology innovations and the provision of financial services (loan facilities) to rural population as it contributes to improving the performance of the aggregate economy, there is need to improve the ability of rural banks in mobilizing savings, this will further the savings culture of rural dwellers, boost rural investments and impact positively on the aggregate economy, and financial institutions should be mandated to devise a lending a special lending rate that enhances the access of rural dwellers to credits and other financial services, this will improve financial inclusion penetration and advance economic growth of the country.

Keywords: Financial Inclusion, Economic Growth, ARDL

Introduction

Financial inclusion is the provision of a broad range of high-quality financial products, such as savings, credit, insurance, payments and pensions, which are relevant, appropriate and affordable for the entire adult population, especially the low-income segment found in rural dwellings. An inclusive financial sector is characterized by the diversity of financial services providers, the level of competition between them, and the legal and regulatory environments that ensure the integrity of the financial sector

and access to financial services for all (FINCA, 2019). Evidence worldwide shows that access to financial services contributes both to economic growth and wealth creation and is therefore key to tackling the 'poverty' trap in Nigeria. It is critical for regulators and policy makers to create an enabling policy environment to actively promote both the demand for and the supply of financial services to the unbanked and under-banked.

Providing financial products and services to the rural and low-income population represents a large business opportunity for the private sector. Providers of financial products and services should develop innovative products and services that better suit the needs of the low income unbanked and under-banked population. *Innovations in high technological payment applications and business models have come with a chain of benefits for businesses as according to industry players, the Nigerian economy is one of the fastest growing economies in the world, largely attributed to its growing population and abundant resources, which has also made Nigeria an attractive market for investors. Innovations in financial services especially in payment system have significantly improved overtime, evolving from a manual processing of transactions to a semi use of technology (Anne-Laure 2020). However, this evolution has only been at the banking end, hence a need for end user experience. The evolving eco-system of payment in the country is proffering massive dynamics in the e-commerce industry enabling customers to pay for goods and services, receive money transfers as well as providing retailers with efficient and ease to integrate tool for accepting online Payments.*

In Nigeria (as is in many developing countries), cash has been the most prevalent mode of payment. This makes the country to be heavily cash – based economy. However, the cost of cash to Nigeria financial system is high and increasing. It is in this regard, that the Central Bank of Nigeria (CBN) introduced the cashless policy with the objective of promoting the financial services innovation through the use of electronic payment channels instead of cash (CBN 2015). The move towards a cashless Nigeria is projected to brings numerous benefits but there is still the need to create more awareness to entice the numerous unbanked Nigerians into the banking system. Nigeria has come a long way in its financial inclusion pursuit. From 2012 when the Central Bank of Nigeria, CBN, initiated the Nigerian Financial Inclusion Strategy, NFIS, till almost 10 years later, a lot has happened. One of the advancements is a service which enables customers to withdraw cash via mobile money agents from their bank accounts without the use of an Automated Teller Machine, ATM, or card. This cardless cash withdrawal service utilizes a secure gateway that protects customers against fraudulent transactions and requires validation using their bank PIN. But there is a question of how important this is.

While there has been progress with financial inclusion in Nigeria, data from Enhancing Financial Innovation and Access (EFInA) revealed that as

at 2018 only 59.1 per cent of women compared with 67.5 per cent of men were financially included, representing a gender gap of 8.4 per cent. Although there is a slight progress from the 9.8 per cent recorded in 2016, the gap must be closed sooner. This is considering that there are about 2.8 million more women than men in Nigeria. Without closing the gap, Nigeria can only dream of reaching the 95 per cent inclusion target set by the CBN for 2024. Like in the case of many developing countries, mobile money is more likely to close the financial inclusion gap among women than regular financial institutions and bank accounts.

Financial inclusion has deeply permeated policy and academic space, lending credence to its role in financial development and overall economic growth and development. The emphasis on financial inclusion is hinged on data and empirical studies which evidence that a large number of people are excluded from the financial space. As submitted by Klapper and Lusardi (2020) it is obvious that there are certain groups which do not have (full) access to financial services, and these groups tend to have less financial literacy. According to Grohmann and Menkhoff (2020) financial exclusion refers to groups with low socio-economic status who have problems to properly manage their financial affairs. This may mean that people do not save for retirement or do not have access to loans at traditional banks. In developing economies, financial inclusion is often even more basic by aiming to improve access to formal financial services for large parts of the population. Here, the simplest empirical measure of financial inclusion is the volume of savings mobilized by rural branches of banks, or whether a person owns any kind of a formal financial account. Knowing how financial inclusion impact economic growth is a necessary condition for macroeconomic policy formulation.

On the relationship between financial inclusion and economic growth, some micro studies such as Klapper and Lusardi (2020) show empirical evidence that there is a link between financial inclusion and the real gross domestic product. However, this describes a relationship and does not say much about potential causality. A link between financial inclusion and economic growth has also mostly been studied in some other macro settings. This type of studies has the advantage that causality is clear and that the effect of financial inclusion can be established without bias. Financial inclusion has been suggested to largely drive financial inclusivity. Financial inclusion has many objectives which differ depending on perspective, but in each case can contribute to better financial decisions, improved welfare and general economic prosperity (Kaiser and Menkhoff, 2017). Majorly, the role of financial inclusion is to enable and ease access to formal financial services. If individuals use formal financial services, they are regarded as

being financially included. Despite this role however, many people especially in the developing economies (Nigeria inclusive) do not have access to even the most basic of financial services. Demirgüç-Kunt (2018) estimates that world-wide there are almost two billion people who do not have access to any financial accounts, and thus are financially excluded at this most basic level

On how financial inclusion is measured, Dewi, Febrian, Effendi, Anwar, and Nidar (2020) has provided empirical support. They measured financial inclusion quantitatively to include the size of savings mobilized by rural branches of banks, the size of loans by banks to rural people, the rate of rural internet penetration, the number of rural people who have formal accounts with banks. The financial inclusion comes from having financial literacy which entails financial knowledge, financial experience, and financial skills. According to them, financial knowledge refers to people's levels of understanding of various components of financial markets and products, such as numeracy, assets, debts, savings and investments, value of money, inflation, compounding interest, and risk diversification. Financial experience is the actual reality of owning a financial product or sharing experiences of financial product ownership with others. Hogarth and Hilgert (2002) revealed that financial knowledge is worthless if it is not applied (experience), and that financially literate people had experience to bridge between knowledge and skills. Financial skills according to Priyadharshini (2017) relate to an individual's ability to make financial decisions based on information to minimize the possibility of becoming entangled in financial problems.

Statement of the Problem

Many Nigerians, for numerous reasons are unbanked and lack access to formal financial services, hence they are financially excluded. EFIA (2021) conducted a survey on access to financial services in Nigeria. The results of the survey showed that 34.9 million adults representing 39.7% of the adult population were financially excluded. Only 28.6 million adults were banked, representing 32.5% of the adult population. The Access to Financial Services in Nigeria 2012 survey revealed that 23.0 million adults save at home. By implication, if 50.0% of these people were to save N1,000 per month with a bank, then up to N138 billion could be incorporated into the formal financial sector every year. High levels of financial exclusion pose two major threats to economies: Losing opportunities for business growth: in the absence of finance, people who are not connected with the formal financial system lack opportunities to maximize their income and expand their businesses. The country's economic growth could be

stifled: vast unutilized resources, in the form of money in the hands of people who are in the informal sector could limit a country's economic growth potential.

The problem of financial exclusion in Nigeria is diverse ranging from issues that are purely structural in nature to inability to execute technical competence relating to finance. Inadequate financial knowledge, experience and poor financial skills have been identified as limiting factors to financial inclusivity in Nigeria especially in small and medium enterprises. Since the recent mandatory introduction of monetary policies in Nigeria aimed at boosting financial inclusion (CBN 2011), it has become imperative to study how financial literacy and inclusion boost entrepreneurial growth considering firm size and location in Nigeria. Evidence shows that many of the financially excluded lack knowledge about basic financial terms and features of available financial products in developing countries (Berg and Zia, 2017).

Review of Related Literature

Concept of Financial Inclusion

Financial inclusion has been defined differently by various people, however, all the definitions seem to convey the same meaning. Muraari and Didwania (2010) defined financial inclusion as the provision of financial services to different categories of the poor, low-income and disadvantaged groups in the society. Also, Sarman and Pais (2011) described financial inclusion as the process of making the required and necessary financial services available at the right place, form, time and fair price to all the populace of a society without any form of discrimination. According to the Central Bank of Nigeria (2012), it was conceptualized as the situation whereby adults have easy access to financial services at affordable costs in response to their needs. The presence of intermediaries in a society has been argued in literature to spur economic growth through the provision of credit for developmental purposes as well as savings mobilization for investment purposes (Ozurumba&Onyeiwu, 2019). As such, financial inclusion provides a platform for such intermediaries to integrate the unbanked sector of the world's population into the global economy and boost productivity. Yaroslava, Grigolia, and Keshelava (2018) broadly defined financial inclusion as the access of households and firms (in particular low income and SMEs) to financial services. Hence, financial inclusion has become one of the most important issues in modern development discourse. As postulated by FINCA (2021), financial inclusion refers to the delivery of financial services at affordable costs to

disadvantaged and low-income segments of society. These groups are often unbanked or under-banked. According to the World Bank's Global Findex, 1.7 billion adults worldwide lack access to basic financial services.

This means that they:

- Don't have a secure place to save money;
- Don't have access to small loans or credit lines and can fall prey to unscrupulous lenders;
- Can't build a credit record;
- Have no way to receive money – including customer payments or remittances from relatives working abroad;
- Have no safe, reliable and easy way to make payments, such as to suppliers, schools or doctors.

Concept of Economic Growth

Economic growth has been defined as the increase in the national productivity of the nation (Eton, Uwonda, Mwosi, Barigye, & Owel, 2019). In a nation like Nigeria where one of the major productive sectors is Agriculture which mostly lies in the rural areas of the country, improving productivity in such areas will definitely require financial inclusion. This is premised on the fact that inadequate credit facilities have been identified as the major constraint to productivity in the rural areas owing largely to the exclusion of such areas from the financial system. However, ensuring a broad access to financial services without price or non-price barriers will assist the rural and poor people to lift themselves out of poverty, improve their productivity and consequently spur economic growth (Eton, 2019). Therefore, until the financial system is made mobile and moved to the very doors of the financially excluded rural communities who have most of their resources and contributions outside the financial system, productivity and economic growth may continue to increase at a slow rate. This is because these rural people are the very bedrock of the agricultural sector, which forms one of the pillars upholding the nation. Economic growth refers to increase in a country's potential Gross Domestic Product (GDP). Gross Domestic Product is a monetary measure of the market value of all final goods and services produced in a period of time, often yearly or quarterly (this differs, depending on how national product has been measured). Economic growth must be sustained for a developing economy to break the circle of poverty. Countries usually pursue fiscal policy to achieve accelerated economic growth. Economic growth is an increase in the amount of goods and services produced per head of the population over a period of time; it is the increase in the

production of goods and services per head of population over a stated period of time.

Theoretical Framework

The theory of Financial Innovation Diffusion

The theoretical foundation for this study was anchored on the Theory of Diffusion of innovations theory. The theory was postulated by Everett Rogers in 1962. The theory explains how, why, and at what rate new ideas and technology spreads. According to Rodgers (1962) diffusion is the process by which an innovation is communicated over time among the participants in a social system. Furthermore, it states that the diffusion of innovation is a major determinant of the spread of financial technology, so that once the technology spreads to a greater mass of users especially in rural communities, it becomes constant, the process of growth becomes stimulated. Financial technology would ultimately mean technological innovation that seeks to improve, automate the delivery and use of financial services in improving financial inclusion in rural communities.

The theory captures the broad objective of the study which is the impact of financial inclusion on economic growth. When the financial sector deepens financial literacy adoption, its service and products will also improve and hence its total performance in terms of its contribution to the aggregate economic output of the country via improvements in financial inclusion which means greater reach of financial services especially to the rural economy. Rogers (2003) further argues that diffusion determines the uptake of new technologies. He suggested five attributes in the Theory of Innovation. The first attribute, Relative advantage, indicates the extent of technological innovation over previous innovations. These benefits can be seen from the viewpoint of technical, economic, prestige, comfort and satisfaction. If people feel that a technological innovation provides high relative advantage, then they will accept the technology. The second attribute, compatibility is the suitability of a technological innovation with the user value, user experience, and user needs. Diffusion of innovation theory further argues that uptake of a new idea, behavior, product or innovation does not happen simultaneously in a social system; rather it is a process whereby some people take on the innovation earlier than others. There are five established new user categories. These include innovators, early users', early majority, late users', and laggards. Studies have found that the early users of technology have different characteristics than the late users. This theory has been used to explain how agency banking model has penetrated within the Kenyan banking industry

Empirical Review

Ashenafi and Mutsonziwa (2021) investigated the link between financial literacy and inclusion using data from a demand side financial inclusion survey conducted in Kenya and Tanzania in 2016 covering a total of 6029 individuals. Results from our instrumental variable regression analysis confirmed that financial literacy is a strong driver of financial inclusion. This implies that efforts to promote financial inclusion need to be accompanied with financial literacy campaigns in both countries.

Adegboyegun, Ademola and Kazeem (2020) assessed the impact of financial inclusion on economic growth in Nigeria. The Auto Regressive Distributed Lag (ARDL) and Causality techniques were used to analyze data for variables viz; Gross Domestic Product, Loans to Rural Areas, Deposits from Rural Areas, Number of Bank Branches and Interest Rate for the period 1986 -2018. The study discovered that financial inclusion has significant positive effect on economic growth while interest rate has a significant negative impact on economic growth. Meanwhile, the causality test revealed a unidirectional causality from economic growth to financial inclusion majorly through the channel of loans to rural areas. Thus, due to the credence given to financial inclusion by the empirical results in the study as well as the role of economic growth in driving inclusion, it is recommended that loans extended to rural areas should be granted at lower and affordable rates with less bureaucratic demands as this factor is a major inclusion variable that guarantees growth according to the empirical findings.

Achugamonu, Adetiloye, Adegbite, Babajide, and Akintola (2020) studied the implication of financial inclusion on growth of 27 Sub Saharan African Countries between 2007 and 2017. The study which centred on the financial exclusion of bankable adults made use of ECM and GMM techniques for analysis revealing that financial inclusion has a significant effect on economic growth Nigeria. Enueshike and Okpebru (2020) examined the effects of financial inclusion on economic growth between 2000 and 2018. Adopting the ARDL technique, it was discovered that financial inclusion as proxied by rural deposits and loans to SMEs exert negative effect on economic growth. In the ASEAN region, Suidarma (2019) examined the relationship between financial inclusion and economic growth between 2008 and 2015. The study used the Panel Vector Error Correction modeling technique for analysis revealing that financial inclusion has a positive effect on economic growth

Fan and Zhang (2017) studied both theoretically and empirically the relationship between financial inclusion and the formation of entrepreneurs. The model used proposes that the advancement of financial

inclusion can mitigate credit constraints on entrepreneurial activities by diminishing data asymmetry in financial transactions, and in addition this impact is more prominent in industries with lower barriers to entry. Utilizing information from 31 regions and 19 enterprises in China amid the period 2005–2014, the effect of financial inclusion on the formation of entrepreneurs was measured. The results affirm the constructive outcome of financial inclusion development on the formation of entrepreneurs and show that this impact is heterogeneous across industries. The advancement in financial inclusion is regularly advantageous to the formations of entrepreneurs in sectors with lower entry barriers. However, the lack of formal training on financial issues is responsible for the lack of financial literacy of entrepreneurs, and this invariably leads to financial inclusion.

The study has reviewed theoretical and empirical literatures above on the financial inclusion and economic growth. The study reviewed the benefits of financial Inclusion (Household income, increase financial security, reduction in financial vulnerability); barriers to financial inclusion; indicators of financial inclusion; financial literacy, financial inclusion and impact of small and medium enterprises; determinants of financial literacy (Inclusion); and then economic growth.

The study also reviewed the theories of financial inclusion such as the theory of financial innovation diffusion, the theory of financial intermediation, and the stage of development hypothesis; the empirical literature on this topic looked at the works of Ashenafi and Mutsonziwa (2021), Adegboyegun, Ademola and Kazeem (2020), Achugamonu, Adetiloye, Adegbite, Babajide, and Akintola (2020) and Enueshike and Okpebru (2020) which assessed the impact of financial inclusion on economic growth in Nigeria.

Most of the empirical literature reviewed adopted experimental design but utilized the autoregressive distributed lag method (ARDL). However, the major gap which this study identified was on the variables used. None of the listed authors used the volume of savings mobilization of rural banks, the total loans extended to rural dwellers by banks and the lending rate of banks to farmers. These are very important determinants and measures of financial inclusion. This gap is closed by the current study as the researcher use will use these variables as the explanatory variables to explain the impact of financial inclusion on economic growth.

Methodology

Research Design

Since the data used for this study are time series data, the research design adopted is the *ex post facto*. The reason for adopting this type of design is

that it combines theoretical consideration with empirical observation (Baghebo & Atima, 2013). The data employed in this work was subjected to unit root and co-integration tests. The autoregressive distributed lag (ARDL) econometric method was employed to determine the coefficient of the parameter estimates. The data employed in this research are secondary data sourced from the Central bank of Nigeria (CBN) Statistical Bulletin (2019), The CBN Financial Inclusion Journal, records of banks and financial institutions

Model Specification

This study models the gross domestic product (GDP) as a linear function of savings mobilized by rural banks, total bank credit to rural people, the bank lending rate to farmers. This could be stated functionally as follows:

$$GDP = f(SMRB, BLREC, BLRF)$$

Where;

RGDP = real gross domestic product.

SMRB = savings mobilization by rural banks

BLREC = bank loans to the rural economy

BLRF = bank lending rate to farmers

The econometric form of the model is given as:

$$GDP = \beta_0 + \beta_1SMRB + \beta_2BLREC + \beta_3BLRF + U_t$$

Where;

U_t is a random error term representing all other variables not specified in the model.

A-priori signs of the explanatory variables are as follows:

$$SMRB > 0, BLREC > 0, BLRF < 0$$

Results and Discussion

Pre estimation test was first carried out to show some characteristics of the data employed in estimating the parameters. This was necessary in order to enhance the reliability of the outcome of the findings that will follow. The unit root test of stationarity was first applied in order to show the suitability of the data set.

The Unit Root Test

The test for stationarity conducted using the Augmented Dickey Fuller Test (ADF) approach to unit root testing shows that only the series (LBLEC – bank lending to the rural economy) on was stationary @ level. The dependent variable series (LRGDP) and the independent variables series (LSBRB and BLRF) did not achieve stationarity @ level because the ADF t-statistics were less than the 5% critical values (for LRDGP - -1.881248 < -

Table 1: Result of Augmented Dickey-Fuller Unit Root Test

Variables	Level Form			First Difference			
	ADF t-statistic	5% t-critical	p-v	ADF t-statistic	5% t-critical	P-value	order
LRGDP	-1.881248	-3.580623	0.6373	-4.103028	-3.574244	0.0160	1(1)
LSMRB	-1.955584	-3.574244	0.6001	-4.048408	-3.574244	0.0181	1(1)
LBLREC	-4.813119	-3.574244	0.0031	-	-	-	-
BLRF	-1.727144	-3.612199	0.7074	-4.42630	-2.991878	0.0039	1(1)

Source: researcher's computation 2023

3.580623, for LSRB: $-1.955584 < -3.574244$, for BLRF: -1.727144); hence they were subjected to first differencing. Differencing is done when the series fails to be stationary @ level; stationarity is concluded if the ADF statistic is greater than the 5% critical value or if the probability value (P-value) is less than (0.05). the results as in table 1 above show that Hence, stationarity and integration was achieved at orders 1(0) and 1(1).

The Cointegration Test of long run relationship

When series are integrated of mixed order [1(0) and 1(1)], it is recommended to run the cointegration using the autoregressive distributed lag (ARDL) method test to ascertain a long run tendency among the model variables. Stationary series are assumed to be cointegrated, this means that there is evidence of longrun relationship between stationary series in a model. Hence, the ARDL Bounds cointegration test was employed because the series were integrated of mixed order. The result is shown below:

Table 2: Cointegration Test Result

F-Bounds Test		Null Hypothesis: No levels relationship			
Test Statistic	Value	Signif.	I(0)	I(1)	
Asymptotic: n=1000					
F-statistic	31.00282	10%	2.37	3.2	
K	3	5%	2.79	3.67	
		2.5%	3.15	4.08	
		1%	3.65	4.66	
Actual Sample Size		30	Finite Sample: n=30		
			10%	2.676	3.586
			5%	3.272	4.306
			1%	4.614	5.966

Source: researcher's computation 2023

The F-statistic value 31.00282 is evidently greater than the I(1)(1) critical value bound. Our decision rule in this analysis indicates that we reject the

null hypothesis that there is no equilibrating relationship. The obtained f-stats is greater than the upper bounds critical value @ 5% level of significance ($31.00282 > 3.67$), hence it is concluded that the variables show evidence of long-run relationship. This means that a long-run relationship exists between the financial inclusion variables (savings mobilization by rural banks, bank loans to the rural economy, and the bank lending rate to farmers) and the aggregate economic output (RGDP) as in the case of Nigeria.

The Error Correction Mechanism

The presence of long run relationship (cointegration) has the implication of short run errors in the system or over the periods, hence the need for the error correction mechanism. The study adopted the ARDL error correction regression (ARDL-ECM) because the model had mixed order of integration 1(0) and 1(1).

Table 3. ECM result

ECM Regression				
Case 2: Restricted Constant and No Trend				
<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-Statistic</i>	<i>Prob.</i>
<i>CointEq(-1)*</i>	-0.064421	0.004804	-13.40956	0.0000
R-squared	0.508044	Mean dependent var		0.189948
Adjusted R-squared	0.508044	S.D. dependent var		0.121165
S.E. of regression	0.084985	Akaike info criterion		-2.059924
Sum squared resid	0.209450	Schwarz criterion		-2.013218
Log likelihood	31.89886	Hannan-Quinn criter.		-2.044982
Durbin-Watson stat	1.495376			

Source: researcher's computation 2023

The error correction mechanism smoothen the short-run errors associated with variables which have long run relationship or co-integration properties and also shows the speed of adjustment of the errors. The conditions for smoothening effects are that the error correction coefficient must be negative, fractional and significant. The result obtained indicated ECM coefficient of -0.064421 which means that about 6.44% of the short run errors are corrected each during each period. The conditions for error corrections are satisfied since the coefficient is negative, fractional and significant, and the error correction shows a moderate speed of adjustment to the long-run equilibrium.

ARDL Unrestricted Estimation Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LRGDP(-1)	0.935579	0.024240	38.59724	0.0000
LSMRB	0.405401	0.007121	3.158436	0.0053
LBLREC	0.095370	0.041187	2.615971	0.0125
BLRF	-0.000110	0.000190	-0.575927	0.5698
C	0.762317	0.148894	5.119870	0.0000
R-squared	0.997069	Mean dependent var		10.00439
Adjusted R-squared	0.996600	S.D. dependent var		1.569841
S.E. of regression	0.091531	Akaike info criterion		-1.793257
Sum squared resid	0.209450	Schwarz criterion		-1.559725
Log likelihood	31.89886	Hannan-Quinn criter.		-1.718548
F-statistic	2126.347	Durbin-Watson stat		1.495376
Prob (F-statistic)	0.000000			

Source: researcher's computation 2023

From table 4, it could be observed that the savings mobilization of rural banks (SMRB), bank loans to the rural economy (BLREC), and the bank lending rate to farmers (BLRF) conformed to their predicted sign (SMRB + and > 0, BLREC + and > 0, and BLRF – and < 0). An increase in savings mobilization by rural branches of banks (SMRB) will lead to increase in the real gross domestic product (RGDP) by about 0.405401 billion naira in each period; an increase in the size of bank loan extension to rural dwellers (BLREC) improves the size of the real gross domestic product by about 0.095370 billion naira annually. Similarly, an increase in the banks' lending rate to farmers (BLRF) will lead to a decline in the aggregate economic output of the country by 0.0001 billion naira.

Summary, Conclusion and Recommendations

This research work investigated the impact of financial inclusion on the economic growth of Nigeria. Related conceptual, theoretical and empirical literatures were reviewed. The study modeled the real gross domestic product as a function of the variations in the financial inclusion variables (such as savings mobilization by rural banks, banks loan extension to rural economy, and the lending rate of banks to farmers).

From the unit root test, only of the model variables (BLREC) was stationary at level. The other variables were initially not stationary at level, but at first difference, they all became stationary and integrated of the same order 1(1), hence, the result of the regression can reliably be employed in forecasting and prediction. The result of the cointegration test confirms a

long run sustainable relationship in the model, hence financial inclusion and economic growth can converge in the longrun. The error correction mechanism result shows that 6.44% of the short run errors arising from the cointegration are corrected each period. The entire regression plane is statistically significant as shown by the F-test, indicating joint influence of the model explanatory variables.

From the regression result (the unrestricted ARDL), the adjusted coefficient of multiple determination (the adjusted R^2 0.996600) shows that 99.66% of the total variations in the real gross domestic product (RGDP) is attributable to the influence of financial inclusion policy variables while the remaining 0.34% is attributed to the variables (other economic activity sectors) omitted from the model of the study. The addition of more and more variables into a model necessitates the use of the adjusted coefficient of determination.

Conclusion

The study investigated the impact of financial inclusion on the economic growth in Nigeria for the period 1991-2021. The specific objectives of the study were: determine the impact of rural savings mobilization on the gross domestic product in Nigeria, to investigate the impact of bank loans to rural economy on the gross domestic product in Nigeria, and to find out bank lending rate to farmers on the gross domestic product in Nigeria. The study adopted the ex post factor design, employing the autoregressive distributed lag (ARDL) method in the data analysis. Based on the findings, the study concludes that financial inclusion has significant positive impact on economic growth in Nigeria

Recommendations

Based on the outcome of the various tests carried out and the hypothesis evaluated, this research therefore makes the following recommendations:

1. There is need for a strategic policy approach to entrenching financial technology innovations and the provision of financial services (loan facilities) to rural population as it contributes to improving the performance of the aggregate economy
2. There is need to improve the ability of rural banks in mobilizing savings, this will further the savings culture of rural dwellers, boost rural investments and impact positively on the aggregate economy.
3. Financial institutions should be mandated to devise a lending a special lending rate that enhances the access of rural dwellers to credits and other financial services, this will improve financial inclusion penetration and advance economic growth of the country.

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