EFFECTS OF FINANCIAL INCLUSION ON ECONOMIC GROWTH IN NIGERIA

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Abstract
This study investigated the effect of financial inclusion on economic growth in Nigeria from 1981-2021, the objectives of the study were to, Analyze the effect of total bank loans on economic growth in Nigeria; determine the effect of bank branches on economic growth in Nigeria; Evaluate the impact of commercial banks deposit on economic growth in Nigeria; and Evaluate the impact of automated teller machine services on economic growth in Nigeria. Ordinary least squared (OLS) method of data analysis was adopted because of its Best Linear Unbiased Estimators (BLUE) properties. The variables used were sourced from Central Bank of Nigeria Statistical Bulletin. The variables used were total bank loans, bank branches, commercial banks deposit, and gross fixed capital formation. The collected data were sourced from central bank of Nigeria (CBN) statistical bulletin 2021 The study adopted the unit root test, co-integration approach, as well as Error Correction Mechanism. E- View software was used for the analysis. The study found that: Total bank loan has negative and significant effect on economic growth in Nigeria (t, -2.198595, p=0.0389). This result implies that Total bank loan has not favored the economic growth in Nigeria. Bank branches have positive and significant effect on economic growth in Nigeria (t, 2.549937, p=0.0191). This implies that Bank branches has contributed significantly to economic growth in Nigeria. Commercial bank deposit has positive and significant effect on economic growth in Nigeria; (t, 3.103610, p=0.0009). The implication of this result is that Commercial bank deposit has positively affected the economy of this country. The study recommends that, Banks should be very careful the way and manner they give out loan to customers, they should make sure that corresponding collateral is presented before loan should be issues out and again the purpose of the loan should be define properly. Increase in the number of bank branches to support their economic activities. The number currently in circulation is limited and banks should deploy more POS devices to strategic places like shops, churches, schools, hospitals, institutions and fuel stations for easy access to financial transactions.
Keywords: *total bank loans, bank branches, commercial banks deposit, and gross fixed capital formation*

Introduction

According to Yin, Xu, Chen, and Peng (2019), financial inclusion is the availability to both individuals and businesses of pertinent and reasonably priced financial goods and services that meet their needs for purchases, payments, deposits, lending, and

coverage that are offered in a sustainable and responsible manner. Financial inclusion aids in the creation of services that foster financial efficiency. Financial inclusion refers to ensuring that all adults in society have equal access to financial services that are provided at reasonable prices. Additionally, due to the availability of insurance, people at the advanced stage of financial inclusion accept financial risks without any reluctance (Liu, Dong, Meng, 2022). Financial inclusion is an important and vital component of economic progress and has recently gained significant attention. According to Ali, Nazir, Hashmi, and Ullah (2022) inclusive finance is a component of financial development and has drawn increasing attention in studies when it comes to finding solutions to the problems of poverty and economic progress.

Recently, financial inclusion has become a crucial development policy priority on a worldwide scale, particularly in developing economies like Nigeria. In contrast to financial exclusion, which occurs when those services are unavailable or unaffordable, financial inclusion is defined as the provision of financial services at reasonable costs to some economically disadvantaged and low-income parts of the economy. Financial inclusion, according to Onaolapo (2015), is a procedure that guarantees that all participants in the economy have easy access to, or availability of, the formal financial system and may use it. It refers to a procedure whereby all members of the economy can open bank accounts without difficulty, afford to access credit, and conveniently, easily, and consistently use financial system products and facilities, such as Automated Teller Machines (ATM), internet banking, and point of sales, which is a cash dispenser that enables bank customers to enjoy banking services without coming into contact with bank tellers (cashier). In terms of payment services, ATMs assist cashiers in carrying out their jobs. It is a computerized piece of technology that allows users to do financial transactions in public without a cashier, human clerk, or bank teller present. (Ogunsemore, 2012) An ATM is often referred to as a cash terminal or cash machine. Automated Teller Machines (ATMs) have emerged as a key indication of banks' ICT spending. They provide significant advantages to banks and depositors alike. Depositors may be able to withdraw cash from the machines at more convenient times and locations except during branch banking hours (Tucker, & Lean, 2013). The next-generation e-payment system's point of sale (POS) terminal has emerged as a promising new application. A portable device used to accept bank card payments for goods and services is called a point of sales (POS) terminal. It enables cardholders to access funds and information in their bank accounts in real-time online using debit or cash cards. 2017 (Shekhar, & Shekar)**.** For retail transactions, a point of sale/service [POS] terminal is utilized. Depending on the type, it can offer a wide range of services, including processing credit cards, scanning checks, and transactions. These gadgets are practically everywhere, including grocery stores and gas stations. A quick and secure transaction is the outcome of the technology utilized in POS machines.

Economic growth is a dynamic, long-term phenomenon that is hampered by things like population increase, a lack of capital, inadequate infrastructure, inefficient resource utilization, excessive government intervention, structural and cultural paradigms that make growth difficult, and so on. By increasing a country's capacity for output and making the most use of the capital that is already available, economic growth can be achieved. It encourages the distribution of salaries throughout the populace and society. The longitudinal outcomes, or slight differences in rise rates, start to matter for periods of a decade or longer. It's interesting to note that inclusive finance promotes sustainable economic growth and the production of wealth (Hannig & Jansen, 2010). The importance of financial inclusion in fostering economic growth is acknowledged both conceptually and experimentally According to Adeoti and Oshotimehin (2012), providing the underserved with adequate and inexpensive financial services including savings, credit, and payment could increase business opportunities. Financial inclusion can also mitigate the financial risks faced by unbanked and underbanked individuals by easing consumption, protecting savings, and reducing debt (Ayo, 2010; Krawetz, N. (2017)). Accordingly, financial inclusivity encourages overall economic growth, narrows the income difference, and secures the eradication of poverty (Castle, Pervaiz, Weld, Roesner, & Anderson, 2016).

The high percentage of unbanked people and those without access to financial services in Nigeria, particularly among rural residents, can be attributed to a variety of factors. They consist of inadequate infrastructure, illiteracy, poverty, and insecurity. According to a 2012 survey on expanding financial innovation and access (EFInA) to financial services in Nigeria, 349 million adults, or 39.7% of the adult population, were found to be financially excluded. This indicates that just 28.6 million persons, or 32.5% of the adult population, were banked (EFInA, 2013). Over time, Nigerian financial institutions have neglected to give the active poor and rural inhabitants who need financial inclusion their due attention. Rural financial intermediation and economic development are noticeably absent from the Nigerian economy's top priorities. As a result, the rural sector and the working poor continued to experience severe economic constraints brought on by insufficient financial planning. However, the rural sector and the active poor, with their distinctive small businesses, have the ability to expand capacity and stimulate the economy in any country. As a result, failing to acknowledge this as a problem would undermine the sector's contributions to economic expansion.

According to Global Findex's 2017 report, the majority of Nigeria's adult population—2/3 of which are women and low-income rural residents—does not have a bank account. Since the lack of a formal financial system has been identified as a barrier for reducing poverty, mobile money, ATMs, and point-of-sale systems have become an opportunity to close the As a result, the rural sector and the working

poor continued to experience severe economic constraints brought on by insufficient financial planning. However, the rural sector and the active poor, with their distinctive small businesses, have the ability to expand capacity and stimulate the economy in any country. As a result, failing to acknowledge this as a problem would undermine the sector's contributions to economic expansion. According to Global Findex's 2017 report, the majority of Nigeria's adult population 2/3 of which are women and low-income rural residents does not have a bank account. Since the lack of a formal financial system has been identified as a barrier for reducing poverty, mobile money, ATMs, and point-of-sale systems have become an opportunity to close the financial inclusion gap (Christolav, Marianne, and Jeanne 2013).

Objective of the Study

The broad objective of the study is to analyze the effect of financial inclusion on economic growth in Nigeria. The specific objectives are to:

1. Analyze the effect of total bank loans on economic growth in Nigeria.
2. To determine the effect of bank branches on economic growth in Nigeria.
3. Evaluate the impact of commercial banks deposit on economic growth in Nigeria.
4. Evaluate the impact of automated teller machine services on economic growth in Nigeria

Research Hypotheses

The following null hypotheses are formulated to guide this study:

Ho1 Total bank loans has no significant effect on economic growth in Nigeria
Ho2 Bank branch has no significant effect on economic growth in Nigeria
Ho3. Commercial bank deposit has no significant effect on economic growth in Nigeria.
Ho4. Automated teller machine has no significant effect on economic growth in Nigeria.

The paper is organised as follows' the next section reviews relevant literature with regards to context justification and provide a theoretical background for the study, respectively. Next describes the sample data and empirical methodology. The last section summaries the main results, offers conclusion and recommendations.

Review of Related Literature

Theoretical Framework

Modern Development Theory

The Modern Development Theory was created by Burr, HS in 1958, and it is a collection of theories regarding how to effectively bring about desired change in society. The theory was founded on modernization theory, which is used to examine

the processes that can lead to modernization in a society. The hypothesis examined which aspects of the economy can promote growth and which ones act as roadblocks to it. This is so that traditional or backward civilizations might be modernized; the concept of financial inclusion of rural residents is developmental support focused at those particular elements. The notion of progress, which asserted that, can be used to deduce the earliest tenets of development theory.

Empirical Review

Azimi, (2022) with a vast number of panels divided up by income and regional levels from 2002 to 2020, researchers examined the effects of financial inclusion on economic growth from a global viewpoint. The analysis starts with the creation of a thorough composite financial inclusion index made up of financial service penetration, availability, and usage as well as the estimation of heterogeneous panel data models enhanced with well-known variables. A long-term association between economic growth, financial inclusion, and the control variables in the complete panel, income-level, and regional economies is supported by the findings of the panel co-integration test. The results of the GMM model clearly indicate that financial inclusion has a significantly positive impact on economic growth across all panels, implying that financial inclusion is an effective tool in fostering rapid economic growth in the world.

Enueshike and Okpebru (2020) nvestigated from 2000 to 2018 how Nigeria's economic growth was affected by financial inclusion. For the estimation of the variables, historical data from the Central Bank of Nigeria Statistical Bulletin was used. The explanatory variables loan to small and medium businesses (LSME), rural bank deposit (RBD), and control variable inflation (INF) were regressed on the dependent variable of financial inclusion, which was measured by the contribution of financial institutions to gross domestic product (GDP). The study used an ex-post factor research approach, and unit root and co-integration diagnostic tests were carried out, which revealed that the variables' co-integration was mixed and that there was a long-term link, respectively. Among other things, the research suggested that rural bank deposits (RBD) be promoted by the Central The study recommended among other things that rural bank deposits (RBD) should be encouraged by Central Bank of Nigeria.

Eze and Alugbuo (2021) Identify the impact of financial inclusion on reducing poverty in Nigeria. Using information from the World Bank's 2017 Global Findex survey for Nigeria, we estimated two models: a Logit model and an Instrumental variable model. The "poor" dummy variable served as the dependent variable and was set to 1 if the subject's "within economy income quintile" was under the bottom 40% and 0 otherwise. The explanatory variables include the author's financial inclusion index, respondents' ages, educational levels, genders, job statuses, wages, transfers from the government, pensions, savings, and self-employment.

Ifediora, Offor, Eze, Takon, Ageme, Ibe, and Onwumere (2022) uses panel data from 22 Sub-Saharan African (SSA) nations between the years of 2012 and 2018 to explore how financial inclusion affects economic growth. The system Generalized Method of Moments (GMM) is used in the investigation. We found that the availability dimension of financial inclusion, the penetration dimension of financial inclusion, and the composite financial inclusion (all indicators taken together) have a significant and positive impact on economic growth while the usage dimension of financial inclusion has a small but positive impact on economic growth. Additionally, bank branches and ATMs have a favorable and considerable impact on economic growth, while deposit accounts, outstanding loans, and outstanding deposits have a less significant but nonetheless negative impact.

Khan, Zafar, Okunlola, Zoltan and Robert (2022) examined the impact of financial inclusion on the G20 countries' gross domestic product, human development, financial efficiency, and financial sustainability. For the years 2004 to 2017, this analysis used yearly data from 15 developed and rising economies. By using principle composite analysis (PCA), the current study has used a single indicator for financial inclusion, financial sustainability, and financial efficiency. The ARDL model was validated by the panel stationarity test results for both the long and short runs. Similarly, the results of the ARDL Model 1 indicated that there was no correlation between financial inclusion and financial sustainability in the short term, but that there was in the long run. The ARDL Model 2 further shown that financial inclusion has no effect on efficiency in the short run, while it positively influenced financial efficiency in the long run. The results of the ARDL Model 3 are also similar to Models 1 and 2 where inclusive finance showed no effect on poverty in the short run, but a significant effect in long run. Similarly, the ARDL Model 4 also presented no association between GDP and inclusive finance in the short run, while it showed significant relationships in the long run.

Obi, (2022) determined the impact on Nigeria's economic expansion. The time series data for the study covered the years 2004 through 2021. The study spanned the time before inclusion through the time of implementation. The Ordinary Least Square approach was used to estimate the data. Additionally, preliminary and post-estimation tests were carried out. The OLS result confirmed that the financial inclusion policy had a favorable impact on economic growth despite its recent adoption. It was determined that a growth driver is financial inclusion. It was suggested that the Central Bank of Nigeria continue to implement the inclusion effort in all rural communities, working with commercial banks and microfinance institutions to make sure that women, youths, farmers, and traders in the informal sector are included in the financial system.. Also, Central Bank Nigeria should set up financial inclusion compliance committee at the Local Government levels, with a State Monitoring unit to ensure compliance.

Okonkwo and Nwanna (2021) from 1992 to 2018, researchers examined the impact of financial inclusion on economic growth in Nigeria. The following are some of the determinants for financial inclusion: nonbanking currency, circulation of currency, deposits in microfinance banks, number of commercial bank branches, credit from commercial banks to the private sector, and loans and deposits in commercial banks' rural branches. On the other side, the chosen indicator of economic growth was the nominal GDP. Ex-post facto research design is the one employed. Regression was used to analyze the variables' relationships, and the Grander Causality test was used to analyze the effects. The test's findings showed that Nigeria's economic growth is causally related to and strongly positively correlated with the amount of cash in circulation there.. Likewise, loans extended by rural branches of commercial banks also have a positive and significant relationship and causal effect on economic growth in Nigeria. Deposits of rural branches of commercial banks have causal effect on GDP in Nigeria and a positive relationship though not significant.

Olusegun, Evbuomwan and Belonwu (2021) analyzed the relationship between financial stability and inclusion in Nigeria using panel data for the years 2014Q1–2018Q4. A financial inclusion index was created to take into account usage, availability, and penetration. Financial stability was shown to be positively impacted by financial inclusion in the article, which suggests that stronger financial stability would result from higher levels of financial inclusion. Regarding dimension, utilization was discovered to have a negative link with financial stability, whereas penetration and availability did. This suggests that decision-makers must weigh whether to prioritize financial stability enhancements over changes that would encourage financial inclusion, innovation, and access.

Oti Chiadika and Obi (2022) After putting the time series data through the ADF unit root test, researchers looked into how financial inclusion affected the Nigerian economy. According to the data, Nigeria's economy benefits greatly and positively from the number of ATMs per 100,000 adults. This indicates that development is fueled in the short term by banks' use of ATMs as a form of payment. POS/100,000 adult is insignificant and has negligible economic impact. This can be linked to the fact that POS, a payment method that was recently introduced into the banking system, hasn't had a big impact on RGDP yet. This is further affirmed from the analysis which showed that a 10 percent rise in the number of POS/100,000 adults does not increase RGDP by any percentage. It therefore means that POS impact is likely to be felt in the long run and not in the short run.

The study by Ozili and Adekemi (2022) on the effect of financial inclusion on economic growth is attracting a lot of interest among academics and professionals. The authors of this paper examine the existing literature in order to highlight the current status of research in the field and to pinpoint potential areas for cutting-edge

study. The authors divided their examination of the literature into pertinent categories using an approach known as a thematic literature review. The authors conclude that considerable study on the subject just started to be conducted after 2016. The majority of the research that are now available come from emerging nations in Asia and Africa. The common empirical methodology used in the literature are causality tests, co-integration and regression methods. Multiple proxies of financial inclusion and economic growth were used in the literature which partly explains the conflicting result among existing studies.

Methodology

Model Specification

An economic model is a representation of a phenomenon's essential characteristics. It is essential to construct an analysis model or paradigm that will allow the parameter estimates of inequality to be derived in order to assess the nature of the relationship between financial inclusion and economic growth. Thus a linear regression model is stated in a functional form as,

RGDP= F (TBL, BBR, TBD, ATM);

Where,

RGDP= Real gross domestic product

TBL= total bank loan

BBR= bank branches

TBD= total bank deposit

ATM= automated teller machine

The above equation can be restated in a functional form as;

$RGDP = \beta_0 + \beta_1 TBL + \beta_2 BBR + \beta_3 TBD + \beta_4 ATM + \mu$

Where;

β_0 = Autonomous or Intercept

β_1 = Coefficient of Parameter TBL

β_2 = Coefficient of parameter BBR

β_3 = Coefficient of parameter TBD

β_4 = Coefficient of parameter ATM

μ = Stochastic variable or error term

The above can restarted in it log form as

$Log\ RGDP = C + \beta_1\ TBL + \beta_2 BBR + \beta_3\ TBD + \beta_4\ ATM + \mu$

Where Log = logged values of the variables.

Estimation procedure

Ordinary Least Square (OLS), which will be used in this study's data analysis, will be used to determine whether there is a relationship between the dependent and independent variable (E-view). The advantage of OLS over other estimate methods or approaches led to the decision to use it. OLS is an estimating methodology that is

recommended due to its desirable features of unbiased consistency, efficiency, sufficiency, and best linear. Gujarati (2004) also noted the technique's ease of computation.

Sources of Data

Data for the survey were sourced from the secondary methods. The secondary sources of data or information are with respect to existing literature, research reports, and CBN documents etc. These secondary sources of data for this study were sought through the following sources, including Central Bank of Nigeria (CBN) statistical Bulletin, and world bank data from 1981-2021.

Presentation and Analysis of Result

Presentation of Data

The raw and logged data for this study were presented in the appendix I & II respectively. The data was logged to present the data in the same based before it was use for the analysis. Another reason is to achieve normality.

Unit Root Test

The time series variables when used in their natural form, often leads to spurious regression results and this misleads policy makers. In other not to obtain spurious result the variables were first tested for stationary by employing the Augmented Dickey Fuller test (ADF). The Result obtained from the analysis is presented in the table below:

Table 4.1 Unit Root Result

Variables	ADF	Integration	Significance
RGDP	-5.043937	I (1)	1%
TBL	-4.490357	1 (1)	1%
TBC	-2.777864	1 (1)	1%
BBR	-5.242143	1 (1)	1%
ATM	-5.956261	1 (1)	1%

Source: *E-view 11 version.*

From the result in table 4.1 above, it is well observed that none of the variables (Total bank loans, Bank branch, Commercial bank deposit and Automated teller machine) was found to be stationary at level, but the entire variables were stationary at 1st difference. This implies that all the variables are stationary at first differencing with ADF values are higher than their critical values at 5% significance and this result gives us a lead way to co-integration analysis.

Co-integration Test

The second step is the testing of the level of co-integration between the variables, order that is if in the long run two or more variables move closely together, it implies a long run equilibrium relationship as the difference between them is not stationary. A lack of co-integration suggests that such variables have no long-run relationship.

Table 4.2 Johansen Co-integration Test

Hypothesized no of (ECS)	Eigen value	Trace statistics	5% Critical value	Prob**
None *	0.883558	213.0846	69.81889	0.0000
At most 1 *	0.839158	131.3710	47.85613	0.0000
At most 2 *	0.758753	61.93230	29.79707	0.0000
At most 3	0.185719	7.898793	15.49471	0.4763
At most 4	0.002410	0.091700	3.841466	0.7620
At most 5	0.883558	213.0846	69.81889	0.0000

Source: *E-view 11 version*

Max-eigen value test indicates 3 co-integration equations at 0.05 *denotes rejection of the hypothesis at 0.05 level. **Mackinnon-Haug-Michelis (1999) p- values.

Unrestricted Co-integration Rank Test (Trace)

Hypothesized no of (ECS)	Eigen value	Max-Eigen value	Critical value	Prob**
None *	0.883558	81.71366	33.87687	0.0000
At most 1 *	0.839158	69.43868	27.58434	0.0000
At most 2 *	0.758753	54.03351	21.13162	0.0000
At most 3	0.185719	7.807093	14.26460	0.3986
At most 4	0.002410	0.091700	3.841466	0.7620
At most 5	0.883558	81.71366	33.87687	0.0000

Source: *E-view 11 version*

Max-eign value test indicates 3 co-integrating equation(s) at the 0.05 level. *denotes rating of the hypothesis at the 0.05 level **Mackinnon – Haug-Michelis (1999) p-values. Since co-integration is a pre-requisite for the Error correction Mechanism, and following our co-integration result, there is a long-run equilibrium relationship among the variables.

The result of the Johansen co-integration presented above in tables 4.4 was carried out assuming linear deterministic trend in co-integrating equation. The trace test indicates three co-integrating equation at 5% significance level likewise. In line with this, there exist long-run equilibrium relationship that between financial inclusion and economic growth *in Nigeria*. From this findings, we move ahead to present our regression result.

Lag Length Selection

Below is the tabular summary of the lag length selected for the study

Table 4.3: Lag length selection for the study.

VAR Lag Order Selection Criteria
Endogenous variables: LRGDP LTBL LTBC LBBR LATM
Exogenous variables: C
Date: 07/25/23 Time: 23:23
Sample: 1981 2021
Included observations: 38

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1209.240	NA	3.91e+21	63.90735	64.12282	63.98401
1	-1022.704	314.1658	8.05e+17	55.40546	56.69829	55.86543
2	-995.1751	39.11948	7.57e+17	55.27238	57.64257	56.11567
3	-896.3692	114.4069*	1.89e+16*	51.38785*	54.83540*	52.61446*

* indicates lag order selected by the criterion

Source: E-view 11 version

We started with a lag of one to find the ideal lag length, but ultimately chose a latency of three. At the 5% level of significance, we performed the selection using the sequential modified LR test, the final prediction error test, the Akaike information criterion test, the Schwarz information criterion test, and the Hannan Quinn information criteria. We ultimately opted for the Hannan Quinn (HQ) information criterion, which suggests a three-lag order. Therefore, a lag order of three (3) is the maximum lag length for the outcome.

Presentation of Regression Result

Table 4.5: Regression Result (Dependent Variable: LRGDP)

Dependent Variable: LRGDP
Method: ARDL
Date: 07/25/23 Time: 23:33
Sample (adjusted): 1984 2021
Included observations: 38 after adjustments
Dependent lags: 1 (Fixed)
Dynamic regressors (3 lags, fixed): LTBL LTBC LBBR LATM
Fixed regressors: C

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LRGDP(-1)	1.009908	0.048593	20.78307	0.0000
LTBL	0.001733	0.002854	0.607173	0.5506
LTBL(-1)	-0.005888	0.003701	-1.590778	0.1273
LTBL(-2)	-0.011505	0.003971	-2.897301	0.0089
LTBL(-3)	0.008934	0.004064	2.198595	0.0398
LTBC	0.000180	0.000687	0.261756	0.7962

LTBC(-1)	0.000686	0.000622	3.103610	0.0009
LTBC(-2)	-0.000102	0.000866	-0.117925	0.9073
LTBC(-3)	0.000869	0.000558	1.555947	0.1354
LBBR	-0.800005	8.050005	-0.231454	0.8193
LBBR(-1)	0.000251	9.840005	2.549937	0.0191
LBBR(-2)	-0.530005	0.000124	-0.687700	0.4995
LBBR(-3)	-0.560005	0.000156	-0.099787	0.9215
LATM	-0.000373	0.000152	-2.449401	0.0236
LATM(-1)	-0.000211	0.000171	-1.234686	0.2313
LATM(-2)	0.000132	0.000169	0.784526	0.4419
LATM(-3)	0.000231	0.000180	1.282791	0.2142
C	-0.044344	0.187860	-0.236049	0.8158

R-squared	0.895570	Mean dependent var	6.337657
Adjusted R-squared	0.991804	S.D. dependent var	2.397552
S.E. of regression	0.217057	Akaike info criterion	0.088204
Sum squared resid	0.942277	Schwarz criterion	0.863902
Log likelihood	16.32413	Hannan-Quinn criter.	0.364191
F-statistic	264.3697	Durbin-Watson stat	1.945458
Prob(F-statistic)	0.000000		

Source: *E-view 11 version*

Discussion of the Result

The amount of variance in the dependent variables that can be explained by all of the independent variables taken together is shown by the R2, which is the coefficient of determination or the measure of goodness of fit. The model's goodness of fit is improved by increasing our R2's proximity to 1. Our R2 is equal to 0.895570, as seen in table 4.3 above. This shows that our model suited the data well.. According to the corrected R2 of 0.881804=0.88, our variables can still account for around 88% of the changes or variation in the model, even after the degree of freedom has been adjusted. As a result, it is consistent with the model's goodness of fit result.

The total statistical significance of our parameter in the model is examined using the F-statistic. We accept the null hypothesis and reject the alternative if the probability of F in the estimated model is higher than the acceptable threshold of significance (0.5). From the outcome in table 4.3 above, f is computed to have a value of 26.43697 and a probability of 0.04. The alternative theory, which argues that the, is accepted because its probability is smaller than 0.05.

The a priori expectation, which identifies the characteristics of the economic connection under discussion, is dictated by the prevailing economic theory. The statistically significant variables will be interpreted by the researcher. Our estimated model's output revealed that the second lag of total bank loans has a negative sign, with a value of -0.011505. This suggests that a 1% rise in real gross domestic product will result from a drop in total bank loans. A positive sign is also present in

the third lag of total bank loans, which has a value of 0.008934. This indicates that a rise in total bank loans will result in an 8% growth in real GDP domestic product.

Given that total bank credit at the first lag has a positive sign and a value of 0.000686, it is possible that a rise in total bank credit will result in a 6% increase in real GDP domestic product. This matches what we predicted theoretically. Given that the bank branch at the first lag has a positive sign and a value of 0.00251, it follows that a decline in the poverty rate will raise the real gross domestic product by 7%, as would be expected a priori. The automated teller machine in the second position has a positive sign with a value of 0.000373, which indicates that an increase in automated teller machines will raise real gross domestic product by 3%, as predicted by theory. The t-statistics aid in identifying each parameter's statistical significance within the model. Total bank loan at the second lag was found to be statistically significant at the 5% level, while total bank loan at the third lag was likewise shown to be statistically significant at the 5% level. This outcome suggests that the total bank loan has resulted in a significant change in Nigeria.

But at a 5% threshold of significance, total bank credit is statistically significant. This suggests even more that they made a big contribution to Nigeria's economic development. The bank branch at the first lag has a positive (2.549937) and a (0.0191) probability level. This suggests that the first bank branch in Nigeria had a substantial impact on the country's economic growth. Automated teller machines are statistically significant at the 5% level (2.449401) and have a probability value of (0.0236), which suggests that they have made a major contribution to Nigeria's economic growth.

The Durbin Watson statistic is used to determine whether autocorrelation is present in our regression model or not. Our d-w statistics' value of 2 denotes the lack of autocorrelation among the model's explanatory variables. Given that our model's durbin-watson statistics is (1.9), which is nearly equal to 2, it follows that the issue of autocorrelation is not present in our model.

Hypothesis Testing

In a bid to carry out the necessary empirical analysis a hypothesis were formulated and have to be tested to verity the validity or otherwise of such proposition.

Hypothesis One

Ho_1 Total bank loans has no significant effect on economic growth in Nigeria

From the above regression result, it was observed that t-test on total bank loans is statistically significant; at 2nd lag which is -2.897301 (0.0089) . The probability result of total bank loans which is 000 and less than 0.05 suggest that the null hypothesis of no significant effect of income inequality on economic growth should be rejected and

alternative hypothesis alternative. The implication of this result shows that total bank loans has no significant effect on economic growth in Nigeria. This is in line with economic theory which posits that Total bank loans support the growth of the economy.

Hypothesis Two

H_{o2} Bank branch has no significant effect on economic growth in Nigeria

From the above regression result it was observes that t-test on Bank branch is statistically significant, with its values as 2.549937 (0.0191). The probability result of Bank branch which is 0.01 and less than 0.5 suggest that the null hypothesis of no significant effect of Bank branch on economic growth should be rejected and alternative hypothesis accepted. The implication of this result shows that Bank branch affect the growth of the economy. This is in line with economic theory which posits that speared of Bank branches support the growth of the economy.

Hypothesis Three

H_{o3}. Commercial bank deposit has no significant effect on economic growth in Nigeria.

Meanwhile, drawing inference from table 4.3 above we find out that the computed value of T- test for Commercial bank deposit is 3.103610 While it's probability is 0.0009 since it's probability is less than 0.05% level of significance, we reject the null hypotheses (H0) and accept the alternative hypothesis which says that Commercial bank deposit has significant positive effect on economic growth in Nigeria. The implication of this result shows that Commercial bank deposit affect the growth of the economy. This is in line with economic theory which posits that Commercial bank deposit positively affecting the growth of the economy.

Hypothesis Four

H_{o4}. Automated teller machine has no significant effect on economic growth in Nigeria.

From table 4.3 above we find out that the computed value of T- test of Automated teller machine is 2.449401 while its probability is 0.0026 since its probability is less than 0.05% level of significance, we reject the null (H0) hypothesis and accept the alternative hypothesis which says Automated teller machine has significant effect on economic growth in Nigeria. The implication of this result shows that Automated teller machine affect the growth of the economy. This is in line with economic theory which posits that Automated teller machine support the growth of the economy.

Summary of Finding, Recommendations and Conclusion

Summary of Findings

The research reveals the followings

1. Total bank loan has negative and significant effect on economic growth in Nigeria (t, -2.198595, p=0.0389). This result implies that Total bank loan has not favored the economic growth in Nigeria
2. Bank branches have positive and significant effect on economic growth in Nigeria (t, 2.549937, p=0.0191). This implies that Bank branches has contributed significantly to economic growth in Nigeria
3. Commercial bank deposit has positive and significant effect on economic growth in Nigeria; (t, 3.103610, p=0.0009).The implication of this result is that Commercial bank deposit has positively affected the economy of this country
4. Automated teller machine has positive and significant effect on economic growth in Nigeria (t, 2.449401, p=0.0235).. This result implies that Automated teller machine over the years has transmitted to a meaningful growth in Nigeria

Recommendations

This study therefore recommends as follows:

i. Banks should be very careful the way and manner they give out loan to customers, they should make sure that corresponding collateral is presented before loan should be issues out and again the purpose of the loan should be define properly.
ii. Increase in the number of bank branches to support their economic activities. The number currently in circulation is limited and banks should deploy more POS devices to strategic places like shops, churches, schools, hospitals, institutions and fuel stations for easy access to financial transactions.
iii. Commercial bank should increase their interest rate to encourage more deposit from customers. This will increase the interest of the customers to deposit their money in the bank
iv. Aggressive spread of Automated teller machines especially in the unbanked rural areas to ensure their financial access is guaranteed.

Conclusion

After conducting the study and examining all the data gathered, it was found that increasing financial inclusion is essential for enhancing economic performance. The conclusion that can be drawn from the data is that financial inclusion significantly boosts growth, which in turn strengthens the economy. This is consistent with Goldsmith's (1969) analysis of the connection between financial inclusion and economic growth, which was published 48 years ago. As a result, financial inclusion has advanced significantly. Many of the pathways by which the emergence of financial markets, institutions, and innovations effect economic development are

carefully illuminated by rigorous theoretical works. A growing body of empirical analysis including product analysis, firm level studies and industry level studies demonstrate strong positive link between the functioning of the financial inclusion and in the long run, deposit money banks.

In light of the foregoing, the researcher comes to the conclusion that this study is vital at this time since its findings have shown a wealth of insightful information that the Nigerian government need to take seriously as they see this work as a partner for economic growth. The investigations in this study have shown to engender performance of economic development in Nigeria, thus the government should implement appropriate monetary and fiscal policies to foster financial innovations in Nigeria.

References

Adeoti, O.O & Oshotimehin, K.O, 2012, "Factors Influencing Consumers Adoption of Point of Sale Terminals in Nigeria" *Journal of Emerging Trends in Economics and Management* Sciences, 2 (5): 388-392

Ali, M.; Nazir, M.I.; Hashmi, S.H.; Ullah, W. Financial inclusion, institutional quality and financial development: Empirical evidence from OIC countries. Singap. Econ. Rev. 2022, 67, 161–188.

Ayo, C.K. (2010), "Information Systems and technologies," McKAY Education series, First Edition, 649p

Azimi M. N (2022) New insights into the impact of financial inclusion on economic growth: A global perspective. PLoS ONE 17(11): e0277730. https://doi.org/10.1371/journal.pone.0277730

Castle, S., Pervaiz, F., Weld, G., Roesner, F., & Anderson, R. (2016). Let's talk money: Evaluating the security challenges of mobile money in the developing world. In Proceedings of the 7th Annual Symposium on Computing for Development, 1-10.

Demirgüç-Kunt, A. & Klapper, L (2012). Financial Inclusion in Africa: An Overview, Policy/Research Working Paper; No. 6088.

Enueshike P. and Okpebru, O. O. (2020) Effects of Financial Inclusion on Economic Growth in Nigeria (2000 – 2018). *IOSR Journal of Research & Method in Education 10(1), 44-49*

Eze, E. and Alugbuo, J. C. (2021) Financial inclusion and poverty reduction in Nigeria: A survey-based analysis. *GSC Advanced Research and Reviews, 07(03), 075–084*

Hannig, A., & Jansen, S. (2010). Financial inclusion and financial stability: Current policy issues. *ADBI Working Paper Series*, Number 259. Kama, U., & Adigun, M. (2013). Financial inclusion in Nigeria: Issues and challenges. *CBN Occasional Paper*, No. 45.

Ifediora, C. Offor, K. O., Eze F. E., Takon, S. M., Ageme, A. E., Ibe, G. I. & Onwumere J. U. J. (2022) Financial inclusion and its impact on economic growth: Empirical evidence from sub Saharan Africa, Cogent Economics & Finance, 10:1,

Khan, N.; Zafar, M.; Okunlola, A.F.; Zoltan, Z.; Robert, M. (2022) Effects of Financial Inclusion on Economic Growth, Poverty, Sustain66ability, and Financial

Efficiency: Evidence from the G20 Countries. Sustainability 2022, 14, 12688. https://doi.org/10.3390/ su141912688

Krawetz, N. (2017) Point-of-Sale Vulnerability on Customer Satisfaction in Retail Banking: An Empirical Study, *International journal of Business and Management Invention* (ISSN (Online), vol. 2 Issue 1, 2319-8028.

Liu, C.; Dong, T.; Meng, L. The Prevention of Financial Legal Risks of B2B E-commerce Supply Chain. Wirel. Commun. Mob. Comput. 2022, 2022, 6154011.

Nwanne, T. F. I., & Okorie, G. C. (2015). Relationship between financial inclusion and economic growth in Nigerian rural dwellers. *International Journal of Small Business and Entrepreneurship Research, 3*(7) 17-27.

Obi, C. K. (2022) Financial inclusion strategy and economic growth in Nigeria: A Short-Run Empirical Analysis. *Preprints* (www.preprints.org) | NOT PEER-REVIEWED | Posted: 10 October 2022

Okonkwo J. J. and Nwanna I. O. (2021) Financial Inclusion and Economic Growth in Nigeria: An Empirical Study. *International Journal of Research and Innovation in Social Science 5(1), 323-335.*

Olusegun, T. S., Evbuomwan, O., and Belonwu, M. C. (2021) Does Financial Inclusion Promote Financial Stability in Nigeria? *Central Bank of Nigeria Economic and Financial Review Volume 59/1 March* 2021 77

Onaolapo, A.R. (2015). Effects of financial inclusion on the economic growth of Nigeria. *International Journal of Humanities and Social Science Invention*. 3(8), 11-28.

Oti P., Chiadika E. O. & Obi, K. O. (2022); The Effect of Financial Inclusion on Nigeria Economy. *Hmlyan Journal of Economic and Business Management; 3*(5) 19-25

Ozili, P. K. and Adekemi A. (2022) Impact of financial inclusion on economic growth: review of existing literature and directions for future research. Emerald Insight https://www.emerald.com/insight/0306-8293.htm

Shekhar, O. O. & Shekar, G (2017). The impact of microfinance bank credits on economic development of Nigeria (1992–2006). *International Journal of Development and Management Review. 6* (1), 23-32.

Tucker, J., & Lean, J. (2013). Small firm finance and public policy. *Journal of Small Business and Enterprise Development*. 10 (1), 50-61.

Yin, X.; Xu, X.; Chen, Q.; Peng, J. The sustainable development of financial inclusion: How can monetary policy and economic fundamental interact with it effectively? Sustainability 2019, 11, 2524.