

# Financial Inclusion and Inclusive Growth in Nigeria

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**Abstract:** This study examined the effect of financial inclusion on inclusive growth in Nigeria between the periods of 1981-2020, which is a period of 40years. The study used secondary data (Time Series) from CBN statistical bulletin. The study covers the whole deposit money banks in the Nigeria economy and was limited to evaluation of the various measures of financial inclusion (Rural Bank Deposits (RBDs), Loans of Rural Branches (LRBs), Loans and Advances to Small & Medium Scale Enterprises (LADSMSEs), Bank Branches Spread (BBS), ATM Transactions (ATMs) and Financial Deepening Indicator (FDI) measured by Money Supply to GDP (MS/GDP) ratio) on inclusive growth (proxy Real Gross Domestic Product Growth Rate (RGDPGR)) in Nigeria. The data were analyzed with descriptive statistics which comprises the minimum, the maximum, mean, and standard deviation were used for the preliminary description of the data set. Since the data are annual time series that the stationary test (ADF and Johansen Cointegration Tests) was conducted as if the data are stationary to have accurate regression results. The correlation analysis was used to ascertain the co-movement of the independent variables about the dependent variable while the Multiple Regression analysis was employed with the aid of E-VIEW version 9.0 to test the research hypotheses. The result showed that Rural Bank Deposits (RBDs), Loans and Advances to Small & Medium Scale Enterprises (LADSMSEs), and Financial Deepening Indicator (FDI) has a significant effect on Real Gross Domestic Product Growth Rate (RGDPGR) while Loans of Rural Branches (LRBs), Bank Branches Spread (BBS) and ATM Transactions (ATMs) does not have a significant effect on Real Gross Domestic Product Growth Rate (RGDPGR) in Nigeria. Finally, the study concludes that financial inclusion has a significant effect on inclusive growth in Nigeria. It was recommended that Nigerian banks should develop financial products to reach the financially excluded regions of the country as this will increase the GDP growth rate of Nigeria and inclusive growth. The CBN should help reduce the high interest rate of banks as this would help ensure increased financial intermediation.

**Keywords:** Financial Inclusion, Inclusive Growth, Rural Bank Deposits, Loans of Rural Branches, Loans and Advances to Small & Medium Scale Enterprises **Financial Deepening Indicator.**

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### 1. Introduction

Financial inclusion is a very crucial tool, which government uses to stimulate economic increase due to its capability for efficient allocation of productive assets, for that reason decreasing the cost of capital (Nwafor and Aremu, 2018). Financial inclusion has assumed a greater level of importance owing to its apparent prominence as a driver of economic growth. Financial inclusion is a situation in which economic services are provided through arrays of vendors, which is spread to every member of the society who could use them. Precisely, it means a financial system that serves as many people as possible in a country. Financial inclusion is an avenue of conveying financial services at affordable fees to some low-income sectors of the Nigerian economy (Harley, Adegoke, and Adegbola, 2017).

Financial inclusion is a situation in which everybody has access to banking and insurance offerings, accompanied by financial literacy and talents. It has additionally been described as the nation of the financial device where every member of the society have right of entry to appropriate financial services, for effective management of financial products and resources; sourced the needed finance for their organization and use financial leverage to accelerate the income and earnings of the financial establishment (Uruakpa, Kalu and Ufomadu, 2019).

Recent efforts by Nigeria Government at improving the intermediation process have seen the licensing of microfinance institutions saddled with the responsibility of making sure that the financially excluded public in rural and urban centers are brought into the financial system. Other non-formal banking settings such as credit unions and savings cooperatives in Nigeria have made considerable progress in boosting the living standards of their participants by stimulating savings and investment. An inclusive financial system promotes effective allocation of financial resources to sectors that need them and efficient use of financial sources lessens the cost of capital charge in form of interest on the borrowed funds (Enueshike and Okpebru, 2020). The deepening of the financial system has lessened the stringent financial restriction attached to accessing loans for investment by individuals and corporate bodies (Abdul and Adamu, 2016). The synergy between the bank as a formal inclusive financial system and the informal credit sectors like corporate societies and credit associations ensure that interest rates for borrowed funds are kept at a minimum as borrowers have choices regarding their choice of accessing finance either through the formal or informal sector. Thus, it's miles feasible that nations can enhance efficiency and welfare via an all-inclusive financial system with the aid of providing approaches for cozy and safe saving practices and by promoting efficient financial offerings (Enueshike and Okpebru, 2020).

Most countries today formulate their financial inclusion techniques in a way that growth in rural areas must be facilitated by using banks. Banks on their very own, ought to deploy a core banking solution (CBS) that will enhance the volume and varieties of services required in capturing the rural population whom most are low income. The banks must also sustain a multi-channel approach using handheld devices, mobiles, cards, micro-ATMs, branches, and kiosks after their deployment, with appropriate structures by facilitating core banking solutions, especially in the rural area (Nwafor and Aremu, 2018).

Corrado and Corrado (2017) made a case that financial inclusion may be an essential device in driving economies on the part sustainable growth by empowering individuals and organizations to tap into a range

of economic opportunities. In Nigeria, where this study is targeted, three (3) out of every 5(five) Nigerians live in abject poverty, and with an estimation of over 60 percent of the total population live in abject poverty (Stear Business, 2017). The Nigerian economy has grown without the permitting environment for equal possibilities for the overall populace, which has resulted in persistent inequalities across generations and regions (Stear Business, 2017) and this has long-term implications for sustainable economic growth and national unity. Understanding the effect of financial inclusion in stimulating inclusive growth in Nigeria has helped shape future policy-oriented studies and if it is found to be insignificant, then it'll mitigate the intensity of studies in this domain.

### **The Problem**

Nigeria is the most populous African nation with a populace of over a hundred and eighty million, and approximately 40.1 million of the Nigerian population representing 41.6 percent are financially excluded, i.e., they do not have access to deposit money banks, microfinance banks, mobile money, insurance and pension (Afolabi, 2020). This could be the aftermath of allocation, lack of information, illiteracy, and other factors. The bank has derived by means to banking needs of unbanked Nigeria, these unbanked or under-banked Nigerians often resort to patronizing the informal and inefficient financial intermediaries like the money lenders which are very risky and costly than the formal institutions.

Previous empirical studies examining financial inclusion variables have mostly been linked to economic growth, and scanty linked to inclusive growth (proxy with Real Gross Domestic Product Growth Rate (RGDPGR)). For example; Afolabi (2020), findings showed that financial inclusion, in form of rural loans, financial institution branches, and level of liquidity has a positive and significant effect on inclusive growth while Enueshike and Okpebru(2020) confirmed that small and medium enterprises loans (SMEL), rural bank deposit (RBD) and inflation (INF) has a significant impact on economic growth in Nigeria. Uruakpa, Kalu, and Ufomadu (2019) discovered that Deposits of rural branches of commercial banks and ATM transactions exert a high quality and significant impact on economic growth while Loans of rural branches of industrial banks exert a poor and insignificant effect on the financial boom of Nigeria. Based on the findings of the numerous authors, it shows that their findings are mixed and inconclusive. Also, several types of research focused on the position of financial inclusion on economic growth in Nigeria, at the same time as to the first-rate of my know-how, only Afolabi (2020) have worked on the subject and captured inclusive growth, by proxying inclusive growth with Real GPD per capita. Thus, this research tends to investigate the short-run and long-run impact of financial inclusion [proxied with Rural Bank Deposits (RBDs), Loans of Rural Branches (LRBs), Loans and Advances to Small & Medium Scale Enterprises (LADSMSEs), Bank Branches Spread (BBS), ATM Transactions (ATMTs) and Financial Deepening Indicator (FDI) measured by Money Supply to GDP (MS/GDP)] on inclusive growth in Nigeria from 1981 to 2020, by using Real Gross Domestic Product Growth Rate (RGDPGR) as a proxy for inclusive growth.

### **Objectives**

1. To examine the impact of Rural Bank Deposits (RBDs) on the Real Gross Domestic Product Growth Rate (RGDPGR) in Nigeria.
2. To explore the impact of Loans of Rural Branches (LRBs) on the Real Gross Domestic Product Growth Rate (RGDPGR) in Nigeria.

3. To assess the impact of Loans and Advances to Small & Medium Scale Enterprises (LADSMSEs) on Real Gross Domestic Product Growth Rate (RGDPGR) in Nigeria.
4. To investigate the impact of Bank Branches Spread (BBS) on the Real Gross Domestic Product Growth Rate (RGDPGR) in Nigeria.
5. To examine the impact of ATM Transactions (ATMTs) on the Real Gross Domestic Product Growth Rate (RGDPGR) in Nigeria.
6. To examine the impact of the Financial Deepening Indicator (FDI) on the Real Gross Domestic Product Growth Rate (RGDPGR) in Nigeria.

### Hypotheses

**HO<sub>1</sub>:** There is no significant relationship between Rural Bank Deposits (RBDs) and Real Gross Domestic Product Growth Rate (RGDPGR) in Nigeria.

**HO<sub>2</sub>:** There is no significant relationship between Loans of Rural Branches (LRBs) and Real Gross Domestic Product Growth Rate (RGDPGR) in Nigeria.

**HO<sub>3</sub>:** There is no significant relationship between Loans and Advances to Small & Medium Scale Enterprises (LADSMSEs) and Real Gross Domestic Product Growth Rate (RGDPGR) in Nigeria.

**HO<sub>4</sub>:** There is no significant relationship between Bank Branches Spread (BBS) and Real Gross Domestic Product Growth Rate (RGDPGR) in Nigeria.

**HO<sub>5</sub>:** There is no significant relationship between ATM Transactions (ATMTs) and Real Gross Domestic Product Growth Rate (RGDPGR) in Nigeria.

**HO<sub>6</sub>:** There is no significant relationship between Financial Deepening Indicator (FDI) and Real Gross Domestic Product Growth Rate (RGDPGR) in Nigeria.

## 2. Review of Related Literature

### Conceptual Framework

#### Concept of Financial Inclusion

Financial inclusion is supposed to be a cycle that guarantees the simple entry, accessibility, and use of the formal financial system by all individuals from an economy. As indicated by Wakdok (2018), financial access as a basic approach instrument connected with by the public authority in a contentious and animating development dependent on its inclination to work with the proficient designation of useful assets which in turn reduce the cost of capital. This cycle as it is otherwise called an inclusive financing framework can genuinely improve the everyday management of finances, as well as diminish the growth of informal sources of credit (such as money lenders), which were discovered to be unmerited.

Thus, an inclusive financial framework is now generally known as policy importance in many countries with creativities coming from the financial regulators, the government, and the banking industry. Legislative dealings have also been initiated in some countries leading to such monitoring frameworks in countries like the United States, France, United Kingdom, South Africa, etc. A well-functioning financial system propels economic growth, builds a platform for financial intermediation by providing savings, credit, payment, and risk management products to people with a wide range of needs. Financially inclusive systems permit easy broad-based access to financial services by making custom-built financial products obtainable at a reasonable

price without rigorous documentation, mostly to the poor or other vulnerable groups within the economy (Uruakpa, Kalu, and Ufomadu, 2019).

Financial Inclusion can likewise be characterized as a practice or circumstance which allows easy access to or convenient use of formal financial systems by all individuals from the economy. It alludes to an advancement where all residents of a nation don't have trouble in opening bank accounts, can afford to access credit, and can easily; conveniently, and reliably utilize financial system products and offices without trouble. It is the cycle that guarantees that an individual's money-related inflow is boosted; out-going is controlled and can practice educated decisions through access to plain financial services (Otiwu, Okoro, Uzowuru and Ozuzu, 2018).

### **Concept of Inclusive Growth**

"Inclusive growth" as a system of financial improvement has got a lot of attention due to the rising worry that the benefits of economic development have not been fairly shared. Development is inclusive whenever it sets out economic open doors alongside guaranteeing equivalent access to them. Inclusive growth as the literal meaning of the two words refers to both, the pace and the pattern of the economic growth (Migap, Okwanya, and Ojeka, 2015) cited in Nwafor and Aremu (2018).

There is an unmistakable differentiation between direct pay reallocation or shared development and inclusive growth. The inclusive growth approach accepts a more extended term point of view as the emphasis is on useful business as opposed to on direct pay reallocation, as a method for expanding incomes for excluded groups. Inclusive growth is, thusly, assume to be inalienably sustainable as distinct from income distribution schemes which can in the short run diminish the disparities, between the poorest and the rest, which may have emerged because of strategies proposed to kick off growth and development. While income distribution schemes can permit individuals to profit from economic growth development in the short run, inclusive growth permits individuals to "contribute to and benefit from financial growth" (Nwafor and Aremu, 2018).

### **Theoretical Review**

The study was guided by two theories which are Finance-Growth Theory and Modern Development Theory

#### **Finance-Growth Theory**

The finance-growth theory hypothesis is received for the hypothetical structure in this investigation because the finance-growth theory nexus accepts that financial improvement establishes a powerful useful climate for development through 'supply driving' or 'request following' impact. This hypothesis additionally perceives the absence of access to funding as a basic factor liable for industrious income inequality as well as sluggish growth. Consequently, access to a safe, easy and affordable source is recognized as a pre-condition for reviving development and diminishing pay inconsistencies and poverty which set out equivalent open doors, empowers economically and socially excluded people to integrate better into the economy, and actively contribute to the development and shield themselves against economic shocks (Afolabi, 2020).

One of the significant difficulties confronting Financial Inclusion in Nigeria is the exceptionally low financial literacy rate particularly among the rural dwellers making banking and other financial services challenging for the operators. In addition, information and telecommunication knowledge is still low in the

country, making access to financial services difficult. Likewise, data and media transmission information are still low in the nation, making admittance to Financial inclusion troublesome. Deficiency and impropriety of mindfulness crusade here and there hinder the level comprehension of financial transactions and the capacity of the unskilled to exploit the conceivable outcomes in financial services. Basic to mindfulness is the distinction in the language of the objective populace and the language of schooling and along these lines diminishes the viability of correspondence. An ignorant populace can't successfully utilize financial services (Migap et al, 2015) cited in Afolabi (2020).

This theory is important to these studies because if the populaces have easy access to financial services, both rural and urban areas, it will go a long way to foster economic growth, as a result of proper implementation of financial inclusion.

### **Modern Development Theory**

The Modern development hypothesis was propounded by Burr, HS in the year 1958 and it is a combination or an aggregate vision of speculations about how alluring change in the public eye is best accomplished. The hypothesis depended on the modernization hypothesis which is utilized to investigate how modernization measures in the general public can happen. The hypothesis took a looked at which part of the economy can encourage advancement and which one that establishes obstructions for economic growth. The earliest principles of development hypothesis can be gotten from progress which expressed that individuals can create and change their general public themselves (Uruakpa, Kalu and Ufomadu, 2019).

This theory is relevant to this study because the possibility of financial inclusion of rural dwellers is the developmental assistance targeted at those particular aspects that can lead to the modernization of custom or in reverse social orders. This is an indication that this country is meant to be developed by us and not by another foreigner, thus this theory is relevant to this research.

### **Empirical Reviews**

Afolabi (2020) investigated the effect of financial inclusion on inclusive growth in Nigeria covering the periods of 1981 to 2017. It adopts the Auto-Regressive Distributed Lag (ARDL) model, using annual series from CBN statistical bulletin and World Development Indicators (WDI). The variables adopted include; rural loan, number of bank branches, money supply-GDP ratio, private sector credit to GDP ratio, and GDP per capita. The study found financial inclusion, in the form of rural loans, several bank branches and level of liquidity have a positive and significant effect on inclusive growth in the short and long run, while interest rates impede inclusive growth.

Enueshike and Okpebru (2020) examined the effects of financial inclusion on economic growth in Nigeria from 2000 to 2018. The data was sourced from the Central Bank of Nigeria Statistical Bulletin was used for the estimation of the variables. The dependent variable of financial inclusion proxied by the contribution of financial institutions to gross domestic product (GDP) was regressed on the explanatory variable of loan to small and medium enterprises (LSME), rural bank deposit (RBD), and control variable of inflation (INF). Diagnostic tests of unit roots and co-integration were conducted which show that the variables co-integration were mixed and show a long-term relationship respectively. The statistical estimation of the explained and explanatory variable was done using auto-regressive distribution lag and findings from Wald

tests indicate that loan to small and medium enterprise (LSME), rural bank deposit (RBD) and inflation (INF) has a significant effect on economic growth in Nigeria.

Uruakpa, Kalu, and Ufomadu (2019) examined the impact of financial inclusion on the economic growth of Nigeria for the period 2003 – 2015. The study made use of the Ordinary Least Square Technique (OLS) involving multiple regression analysis. Real Gross Domestic Product (RGDP) proxy for economic growth was adopted as the dependent variable while Deposits from rural branches of commercial banks (DRBCB), Loans to rural branches of commercial banks (LRBCB), and ATM transactions (ATM) were adopted as the explanatory variables. The empirical results show that Deposits of rural branches of commercial banks and ATM transactions exert a positive and significant impact on economic growth in Nigeria while Loans of rural branches of commercial banks exert a negative and insignificant impact on the economic growth of Nigeria for the period under study.

Wakdok (2018) examined the Impact of Financial Inclusion Economic Growth in Nigeria using econometric analysis. The finance-growth theory was adopted as the theoretical framework. The data extracted from secondary sources for econometric analysis covered the period between 1990 and 2014 while the Error Correction Model was used to test the hypotheses. Based on empirical analysis, the study concluded that Financial Inclusion has a positive and significant impact on Economic Growth in Nigeria through financial deepening variables which are influenced by financial inclusion variables such as broad money, credit to the private sector, loan deposit of the rural area and liquidity ratio of commercial banks.

Nwafor and Yomi (2018) examined the nexus between financial inclusion and economic growth in Nigeria. Archival data spanning from 2001 to 2016 were obtained. The data were subjected to statistical analysis using a two-staged least square regression method. The dependent variable change in GDP to GDP growth rate was regressed on the independent variables are broad money supply to GDP, bank credit to GDP, commercial banks deposit from rural areas, commercial banks loans to rural areas, commercial banks loans to deposit ratio, and commercial bank loan to small and medium scale enterprises. Findings from regression results show that broad money supply to GDP, bank credit to GDP, commercial banks deposit from rural areas and commercial banks loans to rural areas have a significant effect on economic growth. Results also indicate that commercial bank loans to deposit ratio and a commercial bank loan to small and medium scale enterprises have a significant effect on economic growth.

Otiwu, Okoro, Uzowuru and Ozuzu's (2018) study tried to establish the relationship between financial inclusion and economic growth with a focus on microfinance for the period 1992 to 2013 in Nigeria. The study adopted the ordinary least square method and employed the Johansen cointegration tests to test run and short relationships among variables. The dependent variable economic growth was proxied by gross domestic product and the explanatory variables were total deposits mobilized by SMEs, total loans and advances to SMEs, number of bank branches, and investment. Findings indicate total deposits mobilized, several bank branches, and investment have an insignificant effect on economic growth while total loans and advances show a significant effect on economic growth.

Harley, Adegoke, and Adegbola (2017) carried out an empirical study on the role of financial inclusion in economic growth and poverty reduction in a developing economy using panel data analysis ranging from

2006 to 2015 within a log-linear model specification framework. The methodology they applied to the study was extracted from the literature they came across. From their regression result, the records of active ATM, bank branches, and government expenditures selected from three Africa countries were the most robust predictors for financial inclusion on poverty reduction in a developing economy. According to them, a one percent increase in the ratio of active ATMs will lead to about 0.0082 percent increase in the gross domestic product and a reduction of poverty in developing economies. According to them, an indicator shows that most of the ATMs in developing economies are outdated and thus required a technological upgrade to have a significant impact in rural areas. Their coefficient of determination was very high as it showed that about 92 percent of the total variations in the real growth rate of the gross domestic product are explained by all the independent variables in the model.

### 3. Methodology

This study made use of an Ex-post facto research design; this is because the data for the study has to do with events that have already taken place which cannot be manipulated by the researcher. In a bid to actualize the research objectives, data was gathered from secondary sources which are mainly CBN statistical bulletin for the period under review. The Descriptive statistics and the correlation analysis were used and the hypotheses were tested with Multiple Regression Model (MRM), using E-VIEW Software.

The model for the study was adopted from the study of Nwafor and Aremu (2018). The author's model was specified as;

$$GDP = b_0 + b_1FD1 + b_1FD2 + b_3BDR + b_4BLR + \mu \dots \dots \dots \text{Eqn. (I)}$$

$$BDR = b_0 + b_1LDR + b_2LSSE + b_3BLR + \mu \dots \dots \dots \text{Eqn. (II)}$$

This model was modified to suit the variables of this study. The inclusive growth as the dependent variable proxy with Real Gross Domestic Product Growth Rate (RGDPGR) and financial inclusion was proxy with {Rural Bank Deposits Real Gross Domestic Product (RBDs), Loans of Rural Branches (LRBs), Loans and Advances to Small & Medium Scale Enterprises (LADSMSEs), Bank Branches Spread (BBS), ATM Transactions (ATMTs) and Financial Deepening Indicator (FDI)} are the independent variables. However, for this study the above model is restated as follows:

$$RGDPGR = f(RBDs, LRBs, LADSMSEs, BBS, ATMs, \dots \dots \dots)(1)$$

The above equation is decomposed below:

$$RGDPGR = \beta_0 + \beta_1 RBDs + \beta_2 LRBs + \beta_3 LADSMSEs + \beta_4 BBS + \beta_5 ATMs + \beta_6 FDI + E$$

Where;

RGDPGR= Real Gross Domestic Product Growth Rate

RBDs= Rural Bank Deposits Real Gross Domestic Product

LRBs= Loans of Rural Branches **FDI**

LADSMSEs= Loans and Advances to Small & Medium Scale Enterprises

BBS= Bank Branches Spread

ATMs= ATM Transactions

FDI= Financial Deepening Indicator



E = Error Term

$\beta_0-\beta_6$  = the Parameters

A priori Expectation =  $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6 > 0$

This model used in this study is differentiated from that of Nwafor and Aremu (2018) because made use of four independent variables while this study made use of six independent variables. Secondly, this used gross domestic product as the dependent variable while the modified model used real gross domestic product, and finally, this study will conduct various diagnostics tests because of the annual time series of the data while the study Nwafor and Aremu (2018) did not conduct any diagnostics tests.

**4.1 Result and Discussions**

**4.2 Descriptive Statistics**

**Table 4.2.1: Descriptive Statistics for the Independent and Dependent Variables**

	RGDPGR	RBDS	LRBS	LADSMSES	BBS	ATMTS	FDI
Mean	4.222000	42.27377	79.58783	26.75029	3266.275	1135.219	15.23321
Median	3.470000	8.583600	11.20525	15.48237	2407.000	77.85000	12.64095
Maximum	14.60000	354.8605	988.5879	123.9321	5809.000	6512.608	24.89526
Minimum	-1.920000	0.019723	0.030000	0.827500	869.0000	0.000000	8.464230
Std. Dev.	3.954781	92.19994	206.0754	28.30338	1702.012	1957.535	5.284174
Skewness	0.514221	2.671217	3.332963	1.449638	0.321250	1.820801	0.614716
Kurtosis	2.581292	8.818008	13.35243	5.061006	1.535950	5.042691	1.731911
Jarque-Bera	2.055014	103.9847	252.6790	21.08924	4.260414	29.05642	5.199253
Probability	0.037898	0.000000	0.000000	0.000026	0.018813	0.000000	0.044301
Sum	168.8800	1690.951	3183.513	1070.012	130651.0	45408.78	609.3285
Sum Sq. Dev.	609.9714	331532.4	1656216.	31242.17	1.13E+08	1.49E+08	1088.977
Observations	40	40	40	40	40	40	40

Source: Eviews9 Output (2021).

Real Gross Domestic Product Growth Rate (RGDPGR) had a mean value of 4.2220; with a maximum and minimum of 14.6000 and -1.9200 respectively; the standard deviation is 3.9548. Rural Bank Deposits (RBDs) had a mean of 42.2738; with a maximum and minimum of 354.8605 and 0.0197 respectively; the standard deviation stood at 92.1910. Loans of Rural Branches (LRBs) had a mean of 79.5878 with a maximum and minimum of 988.6878 and 0.0300 respectively; the standard deviation for the period was 206.0754. Loans and Advances to Small & Medium Scale Enterprises (LADSMSES), had a mean of 26.7503; and with a maximum and minimum of 123.9321 and 0.8275 respectively; the standard deviation for the period was 28.3034. Bank Branches Spread (BBS) has a mean of 3266.28 and with a maximum and minimum of 5809.00 and 869.00 respectively; the standard deviation for the period was 1702.012. ATM Transactions (ATMs) have a mean of 1135.22 and with a maximum and minimum of 6512.608 and 0.0000 respectively; the standard deviation for the period was 1957.535. Financial Deepening Indicator

(FDI) has a mean of 15.2332 with a maximum and minimum of 24.8953 and 8.4642 respectively; the standard deviation for the period was 5.2842. Finally, the standard deviation shows that ATM Transactions (ATMs) are the most volatile variable and follows by Rural Bank Deposits (RBDs). Lastly, the Jarque-Bera statistics reveal that the variables are normally distributed at a 5% significant level. Hence, Jarque-Bera's statistics for all variables are significant; hence we reject the null hypothesis and conclude that the series is normally distributed (or have a normal distribution).

**4.3 Augmented Dickey-Fuller (ADF) Unit Root Test**

Testing for the existence of unit roots is a principal concern in the study of time series models and co-integration. The rationale behind this test is to avoid the problem of spurious regression which is commonly associated with time-series data. The presence of a unit root implies that the time-series data under investigation is non-stationary; while the absence of a unit root shows that the stochastic process is stationary. The unit root test was conducted using the Augmented Dickey-Fuller (ADF) Unit root test as presented in table 4.5.1 below:

**Table 4.3.1: Result of Stationarity Using ADF Test**

Test Variables	ADF Test Statistic Value	Mackinnon Critical Value @ 5%	Order of Integration	P-Value	Decision
RGDPGR	-3.295162	-2.938987	1(1)	0.0219	Stationary
RBDs	2.048531	-2.938987	1(1)	0.0098	Stationary
LRBs	4.469275	-2.960411	1(1)	0.0000	Stationary
LADSMSEs	-2.935450	-2.238987	1(1)	0.0176	Stationary
BBS	-3.720501	-2.938987	1(1)	0.0297	Stationary
ATMTs	3.018051	-2.963972	1(1)	0.0000	Stationary
FDI	-3.715240	-2.938987	1(1)	0.0311	Stationary

Source: Computed from E-Views 9.0 (2021)

The summary of the ADF unit root test output in table 4.5.1, above revealed that all the variables under investigation i.e. Real Gross Domestic Product Growth Rate (RGDPGR), Rural Bank Deposits (RBDs), Loans of Rural Branches (LRBs), Loans, and Advances to Small & Medium Scale Enterprises (LADSMSEs), Bank Branches Spread (BBS), ATM Transactions (ATMTs) and Financial Deepening Indicator (FDI) contain unit root test at their first difference 1(1). Evidence of this could be seen from the value of their respective ADF statistics which is more than the critical value at 5%. Moreover, additional evidence of stationary series could also be seen from the p-value for all variables which is less than 5% level of significance greater than 95% confidence level.

**4.4. Johansen Cointegration**

**Table 4.4.1: Summary of Johansen Cointegration Test Output**

Date: 08/30/21 Time: 14:07

Sample (adjusted): 1983 2020

Included observations: 38 after adjustments

Trend assumption: Linear deterministic trend

Series: RGDPGR RBDS LRBS LADSMSES BBS ATMTS FDI

Hypothesized	Eigenvalue	Trace Statistic	0.05	Prob.**	Max-Eigen Statistic	0.05	Prob.**
No. of CE(s)			Critical Value			Critical Value	
None *	0.866737	203.7134	125.6154	0.0000	76.58651	46.23142	0.0000
At most 1 *	0.774695	127.1269	95.75366	0.0001	56.63135	40.07757	0.0003
At most 2 *	0.544513	70.49556	69.81889	0.0441	39.88271	33.87687	0.0394
At most 3	0.391064	48.61285	47.85613	0.0013	28.84959	27.58434	0.0262
At most 4	0.307636	31.76326	29.79707	0.0118	23.97047	21.13162	0.0375
At most 5	0.166924	17.92793	15.49471	0.0478	16.39948	14.26460	0.0463
At most 6	0.022193	4.852845	3.841466	0.0457	4.852845	3.841466	0.0357

**Researcher’s computation Based E-views 9.0. Output (2021)**

Trace test indicates 4 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

Table 4.6.1 above revealed that the result of the multivariate cointegration test by Johansen and Juselius cointegration technique reveals that both the trace statistic and the Maximum Eigen value statistic shows evidence of two cointegration relationship (at None and most 1), where the values of the trace statistic and the Maximum Eigen value statistic is greater than their respective critical values at 5% level of the significance level. This result conforms to the existence of a stable long-run relationship between inclusive growths.

**4.5 Correlation Matrix**

**Table 4.5.1: Correlation Matrix for the Independent and Dependent Variables**

	RGDPGR	RBDS	LRBS	LADSMSES	BBS	ATMTS	FDI
RGDPGR	1.000000						
RBDS	0.293492	1.000000					
LRBS	0.003089	0.198997	1.000000				
LADSMSES	0.248112	0.510816	0.001994	1.000000			
BBS	0.135614	0.468311	0.490405	0.249893	1.000000		
ATMTS	-0.201526	0.717389	0.563797	0.235139	0.721963	1.000000	
FDI	0.052454	0.551353	0.543087	0.124163	0.910933	0.786351	1.000000

Source: E-VIEW 9.0 Output, 2021.

Rural Bank Deposits (RBDs), Loans of Rural Branches (LRBs), Loans and Advances to Small & Medium Scale Enterprises (LADSMSEs), Bank Branches Spread (BBS), ATM Transactions (ATMTs) and Financial Deepening Indicator (FDI) has a positive correlation with Real Gross Domestic Product Growth Rate(RGDPGR)except for ATM Transactions (ATMTs) that has a negative correlation with Real Gross Domestic Product Growth Rate (RGDPGR). Finally, the correlation matrix that is presented in Table 4.7.1, and shows the absence of multi-co linearity among the variables since the correlation values are less than 0.7.

4.6 Test of Hypotheses

**Table 4.6.1: TEST OF HYPOTHESES ONE TO SIX (REGRESSION RESULT)**

Dependent Variable: RGDPGR

Method: Least Squares

Date: 08/30/21 Time: 13:59

Sample: 1981 2020

Included observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.935129	2.711767	0.713604	0.4805
RBDS	0.023393	0.010975	2.131417	0.0406
LRBS	0.001003	0.003419	0.293524	0.7710
LADSMSES	0.062907	0.025536	2.463446	0.0191
BBS	0.001429	0.000868	1.645794	0.1093
ATMTS	-0.000413	0.000590	-0.700213	0.4887
FDI	2.769490	1.172060	2.362925	0.0244
R-squared	0.908891	Mean dependent var		4.222000
Adjusted R-squared	0.881416	S.D. dependent var		3.954781
S.E. of regression	3.305458	Akaike info criterion		5.386655
Sum squared resid	360.5597	Schwarz criterion		5.682209
Loglikelihood	-100.7331	Hannan-Quinn criteria		5.493518
F-statistic	3.804541	Durbin-Watson stat		1.455916
Prob(F-statistic)	0.005446			

Source: E-VIEW 9.0 Output, 2021.

From the Multiple Regression results in Table 4.8.1 above, the regression coefficient of Rural Bank Deposits (RBDs) is 0.0234 with a T-value of 2.1314 and associated P-value (Sig. Value) is 0.0406. This implies that the effect is significant given the fact that the P-value of 0.0406 is lesser than that 0.05 (5%) level significance. We, therefore, accept the alternate hypothesis and reject the null hypothesis ( $H_{01}$ ), which states that there is no significant relationship between Rural Bank Deposits (RBDs) and Real Gross Domestic Product Growth Rate (RGDPGR) in Nigeria. One percent (1%) movement in Rural Bank Deposits (RBDs) would lead to 2.34% increases in Real Gross Domestic Product Growth Rate (RGDPGR). Rural Bank Deposits (RBDs) have a significant influence on Real Gross Domestic Product Growth Rate (RGDPGR) in Nigeria. These findings are supported by finance-growth theory, which posits that if the populaces have easy access to financial services, both rural and urban areas, it will go a long way to foster economic growth, as a result of proper implementation of financial inclusion. This finding agrees with Enueshike and Okpebru (2020), Nwafor and Yomi (2018), and Wakdok (2018).

Also, the Multiple Regression result in Table 4.8.1 above, the coefficient of Loans of Rural Branches (LRBs) is 0.0010 with a T-value of 0.2935 and associated P-value (Sig. Value) is 0.7710. This implies that the effect Loans of Rural Branches (LRBs) is not significant given the fact that the P-value of 0.7710 is greater than that 0.05 (5%) level significance. We, therefore, reject the alternate hypothesis and accept the null hypothesis ( $H_{02}$ ), which states that there is no significant relationship between Loans of Rural Branches (LRBs) and Real Gross Domestic Product Growth Rate (RGDPGR) in Nigeria. The coefficient of Loans of Rural Branches (LRBs) is 0.0010 which implies that one percent (1%) movement in Loans of Rural Branches (LRBs) would lead to 1.0% decreases in Real Gross Domestic Product Growth Rate (RGDPGR). These findings are supported by finance-growth theory. This finding is in line with the finding of Nwafor and Yomi (2018) and Uruakpa, Kalu, and Ufomadu (2019) but contrary to the finding of Wakdok (2018).

The Multiple Regression results in Table 4.8.1 above, the regression coefficient of Loans and Advances to Small & Medium Scale Enterprises (LADSMSEs) is 0.0629 with a T-value of 2.4634 and associated P-value (Sig. Value) is 0.0191. This implies that the effect is significant given the fact that the P-value of 0.0191 is lesser than 0.05 (5%) level significance. We, therefore, accept the alternate hypothesis and reject the null hypothesis ( $H_{03}$ ), which states that there is no significant relationship between Loans and Advances to Small & Medium Scale Enterprises (LADSMSEs) and Real Gross Domestic Product Growth Rate (RGDPGR) in Nigeria. One percent (1%) movement in Loans and Advances to Small & Medium Scale Enterprises (LADSMSEs) would lead to a 6.29% increase in Real Gross Domestic Product Growth Rate (RGDPGR). This finding is in line with the findings of Enueshike and Okpebru (2020) and Otiwu, Okoro, Uzowuru, and Ozuzu (2018).

From the Multiple Regression results in Table 4.8.1 above, the regression coefficient of Bank Branches Spread (BBS) is 0.0014 with a T-value of 1.6458 and associated P-value (Sig. Value) is 0.1093. This suggests that Bank Branches Spread (BBS) has a positive insignificant effect on Real Gross Domestic Product Growth Rate (RGDPGR). This implies that the effect is not significant given the fact that the P-value of 0.1093 is greater than 0.05 (5%) level significance. We, therefore, reject the alternate hypothesis and accept the null hypothesis ( $H_{04}$ ), which states that there is no significant relationship between Bank Branches Spread (BBS) and Real Gross Domestic Product Growth Rate (RGDPGR) in Nigeria. The coefficient of Bank Branches Spread (BBS) is 0.0014, which implies one percent (1%) movement in Bank Branches Spread (BBS) would lead to a 0.14% decrease in Real Gross Domestic Product Growth Rate (RGDPGR). This finding is supported by finance-growth theory and agreement with the findings of Afolabi (2020) and Otiwu, Okoro, Uzowuru, and Ozuzu (2018) but contrary to the findings of Uruakpa, Kalu, and Ufomadu (2019).

From the Multiple Regression results in Table 4.8.1 above, the coefficient of ATM Transactions (ATMs) is -0.0004 with a T-value of -0.7002 and the associated P-value (Sig. Value) is 0.4887. This suggests that ATM Transactions (ATMTs) have a negative insignificant effect on Real Gross Domestic Product Growth Rate (RGDPGR). This implies that the effect is not significant given the fact that the P-value of 0.4887 is greater than 0.05 (5%) level significance. We, therefore, reject the alternate hypothesis and accept the null hypothesis ( $H_{05}$ ), which states that there is no significant relationship between 0.4887 and the Real Gross Domestic Product Growth Rate (RGDPGR) in Nigeria. The coefficient of ATM Transactions (ATMTs) is -

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0.0004 which implies that one percent (1%) movement in ATM Transactions (ATMTs) would lead to 0.04% decreases in Real Gross Domestic Product Growth Rate (RGDPGR). This finding is in agreement with the findings of Afolabi (2020) but contrary to the findings of Uruakpa, Kalu, and Ufomadu (2019).

From the Multiple Regression results in Table 4.8.1 above, the regression coefficient of the Financial Deepening Indicator (FDI) is 2.7695 with a T-value of 2.3629 and associated P-value (Sig. Value) is 0.0244. This implies that the effect is significant given the fact that the P-value of 0.0244 is lesser than that 0.05 (5%) level significance. We, therefore, accept the alternate hypothesis and reject the null hypothesis ( $H_0$ ), which states that there is no significant relationship between Financial Deepening Indicator (FDI) and Real Gross Domestic Product Growth Rate (RGDPGR) in Nigeria. The coefficient of the Financial Deepening Indicator (FDI) is 2.7695, which implies that one percent (1%) movement in Financial Deepening Indicator (FDI) would lead to 276.95% increases in Real Gross Domestic Product Growth Rate (RGDPGR). This finding agrees with the findings of Afolabi (2020).

### Conclusion

The study examined the effect of financial inclusion on inclusive growth in Nigeria between the periods of 1981-2020, which is a period of 40 years. The study made use of secondary data (Time Series) from the CBN statistical bulletin. The study covers the whole deposit money banks in the Nigeria economy and was limited to evaluation of the various measures of financial inclusion (Rural Bank Deposits (RBDs), Loans of Rural Branches (LRBs), Loans and Advances to Small & Medium Scale Enterprises (LADSMSEs), Bank Branches Spread (BBS), ATM Transactions (ATMTs) and Financial Deepening Indicator (FDI) measured by Money Supply to GDP (MS/GDP) ratio) on inclusive growth (proxy Real Gross Domestic Product Growth Rate (RGDPGR)) in Nigeria. The data were analyzed with descriptive statistics which comprises the minimum, the maximum, mean, and standard deviation were used for the preliminary description of the data set. Since the data are annual time series that the stationary test (ADF and Johansen Cointegration Tests) was conducted to as if the data are stationary to have accurate regression results. The correlation analysis was used while the Multiple Regression analysis was employed with the aid of E-VIEW version 9.0. The result showed that Rural Bank Deposits (RBDs), Loans and Advances to Small & Medium Scale Enterprises (LADSMSEs), and Financial Deepening Indicator (FDI) has a significant effect on Real Gross Domestic Product Growth Rate (RGDPGR) while Loans of Rural Branches (LRBs), Bank Branches Spread (BBS) and ATM Transactions (ATMTs) does not have a significant effect on Real Gross Domestic Product Growth Rate (RGDPGR) in Nigeria. Finally, the study concludes that financial inclusion has a significant effect on inclusive growth in Nigeria in Nigeria.

### Recommendations

1. Nigerian banks should develop financial products to reach the financially excluded regions of the country as this will increase the GDP growth rate of Nigeria and consequently inclusive growth.
2. The CBN should help reduce the high interest rate of banks as this would help ensure increased financial intermediation.
3. Banks should plant sub-bank branches and ATM outlets as this will help include the financially excluded regions of Nigeria.

4. Improved financial services be made available at a reasonable cost to rural dwellers and the economy as a whole at a reasonably low interest rate to help them participate and contribute to national productivity under strict monitoring and evaluation system,

## References

- Abdul, Z. H. & Adamu, A. (2016). Effect of financial inclusion on Human Development in Nigeria. In Aruwa S.A.S and Gbande, C.A (eds) *managing the national economy in transition*, conference proceedings of 6th national conference of Faculty of Administration, Nasarawa State University, Keffi.
- Afolabi, O. J. (2020). Impact of Financial Inclusion on Inclusive Growth: An Empirical Study of Nigeria. *Asian Journal of Economics and Empirical Research*, 7(1), 8-14.
- Corrado, G. & Corrado, L. (2017). Inclusive finance for inclusive growth and development. *Current Opinion in Environmental Sustainability*, 24: 19-23. Available at: <https://doi.org/10.1016/j.cosust.2017.01.013>.
- Enueshike, P. & Okpebru, O. O. (2020). Effects of Financial Inclusion on Economic Growth in Nigeria (2000–2018). *IOSR Journal of Research & Method in Education (IOSR-JRME)*, 10(1), 44-49.
- Gretta, S. (2017). Financial Inclusion and Growth. *The Business and Management Review*, 12(17), 301-317.
- Harley, T. W., Adegoke, A. J., & Adegbola, D. (2017). Role of Financial Inclusion in Economic Growth and Poverty Reduction Role of Financial Inclusion in Economic Growth and Poverty Reduction. *Internal Journal of Research in Economics and Social Sciences (IJRESS)*, 17(8), 265-271.
- Migap, P. J., Okwanya, I. & Ojeka, G. (2015). Financial inclusion for inclusive growth: The Nigerian perspective. *International Journal of Information Technology and Business Management*, 37(1), 1-8.
- Nwafor, C. M. & Aremu, I. Y. (2018). The nexus between financial inclusion and economic growth: Evidence from Nigeria. *International Journal of Research and Innovation in Social Science (IJRISS)*, 7(4), 143-150.
- Okoye, L. U., Adetiloye, K. A., Erin, O., & Modebe, N. J. (2017). Financial Inclusion as a Strategy for enhanced Economic Growth and Development. *Journal of Internet Banking and Commerce*, 1(1), 1-12.
- Stear Business (2017). Inequality in Nigeria. Available from <https://www.stearsng.com/article/inequality-in-nigeria-is-worse-than-it-looks>.
- Uruakpa, N. I., Kalu, U. E. & Ufomadu, O. A. (2019). Impact of financial inclusion on the economic growth of Nigeria. *International Journal of Sustainable Development*, 12(2), 46 - 58.
- Wakdok, S. S. (2018). The Impact of Financial Inclusion on Economic Growth in Nigeria: An Econometric Analysis. *International Journal of Innovation and Research in Educational Sciences*, 5(2), 237-245.