FINANCIAL INCLUSION AND ECONOMIC GROWTH IN NIGERIA

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ABSTRACT

The objective of this study is to examine the nature of relationship between measures adopted for financial inclusion as defined by National Financial Inclusion Strategy (NFIS) of the Central Bank of Nigeria (2012) and Nigerian economic growth, from first quarter of 2009 to fourth quarter of 2017. The Time series data used were sourced from Central Bank of Nigeria Statistical and World Bank Global Financial Development Database. The analysis of growth rate of the Nigerian economy (GDPG %) and financial inclusion measures (bank branching, electronic banking, Bank rural branch loans and Microfinance bank loans) made use of descriptive statistics with the Econometric View Statistical package. The Ordinary Least Square properties of Co-Integration, Granger Causality Test, and Augmented Dickey Fuller Test (ADF) were also used. The findings reveal that there is significant causal relationship between branch bank and economic growth. It was also found, among others, that there are no significant causal relationships between Bank rural branch loans, electronic banking (ATMG) *and Microfinance bank loans and economic growth. It is therefore concluded that financial inclusion efforts through Bank rural branch loans (RUCRG), electronic banking (ATMG), Microfinance bank loans (MFBLG) over the period studied have not been able cause economic growth. However, the good news is that bank branches are very significantly growing at the rate of 57% with a 793% north ward change in GDPG and the use ATMG as a financial inclusion measure is growing by 7.81%*

in Nigeria, even though not substantial. We are hopeful of significant improvement if the recommendations proffered here are taken and implemented. The study recommends, among others, that financial inclusion should be pursued through penetration, which involves the establishment of more access points of both physical and virtual. Again, banks should eliminate stringent conditions that make loan access by customers difficult and most times impossible. They should rather emphasize on the customer's character, formulating a standard financial inclusion policy, among other things. This will boost financial inclusion (increase Bank rural branch and Microfinance bank loans to the borrowing public) and drive economic growth in Nigeria.

Key Words: Financial inclusion, Economic Growth, Penetration and Access

Introduction

Nigerian population and its characteristics provide a rear light on the financial inclusion-economic growth nexus. According to World Bank statistics, Nigeria currently has a population of approximately 196 million persons, and has been ranked the most populous nation in Africa and 7th most populous nation in the world. According to the same report, Nigeria has recently over taken India as the country with largest number of poor persons in the world. This comes on the heels of several international financial, social and health intervention measures and years of a myriad of poverty alleviation programs. The United Nations reported that about 70% of Nigeria's populace currently lives below the international poverty line of $1.90 a day (Olayinka and Ibukun, 2018). According to Enhancing Financial Innovation and Access (EFInA) 2017 report, Nigeria has a total adult population (18 years and above) of 96.4 million; out of which, 59.6million (61.9%) are found in rural areas. 56.2million Nigerian adults (58.3%) are under 35 years which means there are quite a lot of young persons. They also reported that 18.4 million adults (19.1%) get their main source of income from subsistence/commercial farming, 18.9 million (19.6%) get theirs from own business (non-farming), 7.9 million (4.2%) get from the formal sector, while 21.8m adults (22.6%) have no formal education. Given the operational characteristics of financial institutions in Nigeria, it is obvious from the above statistics that very high percentage of our adult population is excluded from financial services. This is supported by the views of Tijjani, Sulaiman and Dani (2018), who stated that, Millions of adult Nigerians do

not have any kind of dealing with financial institutions even at the community banking or cooperative and thrift society levels. Obviously, access to financial services at all levels particularly the low-income group that constitute the greater proportion of the population is key to economic prosperity. According to Martin (2008) giving access to financial services and products to nearly all persons would provide the possibility for the creation of a large depository of savings, investable funds, investment and therefore national wealth generation. In other words, access to financial services for low-income earners would promote enormous capital accumulation, credit creation and investment boom, as this group (low-income earners) constitute the largest proportion of the population in developing countries, and therefore control an enormous chunk of the economy's idle fund albeit held in small amounts in the hands of each of the several million members of this group. Harnessing and accumulating these resources should provide a huge source of cheap long-term investable capital needed for economic growth and development. This is financial inclusion.

Theoretically, the thought of Financial Inclusion having the ability to influence economic growth, stems from ideologies surrounding the influence financial development can have on economic growth and development. In 2013, World Bank listed financial inclusion (access and usage) as one of the measures necessary for financial development in a country to effect economic growth. Unfortunately, the statistics and efforts to reduce the level of financial exclusion and increase financial inclusion in Nigeria have not been impressive.

According to EFInA reports, as at 2017, 41.6% of Nigeria's adult population was unbanked. They also showed that between 2014 and 2016: the adult population growth in Nigeria outpaced the growth in the banked population; and the financially excluded population of Nigeria grew from 36.9 million to 40.1 million. Hence, the Central Bank of Nigeria and other stakeholders introduced and implemented the National Financial Inclusion Strategy (NFIS) to decrease the number of Nigerians that are excluded from financial sector (CBN, 2012). The strategies adopted were to- increase rural Bank branching and Microfinance banks, develop more micro savings & credit products, introduce Mobile agents, increase volume of Micro Credit and General credit (especially for SME'S and rural dwellers), reduce Bank charges, introduce and expand Electronic banking (since over 60% of Nigerian adult populace have mobile phones; and provide

alternative forms of payment and banking services like the Automated teller machine (ATM), point of sale machines etc.), and increase Literacy. This move has resulted in bank branches and MFB branches in rural areas growing by up to 6% and 10% respectively (CBN, 2018). Number of ATMs and POS transactions grew by over 100% between 2008 and 2017, so did the volume of transactions carried out via them. The financially served proportion of the Nigeria's adult population grew by an average of 6.4% between 2008 and 2012, and by 2% in 2016.

In spite of this increase in number of banked adult (and reduction in financial exclusion), the EFInA also reported that by the first quarter of 2016, household consumption fell by 1.05% and 6.00% in the second quarter. Unemployment also rose to 12.1% and 13.3%, compared to 7.5% and 8.2% in the first and second quarters of 2015. This means that the increase in unemployment and inflation rates eroded purchasing power in spite of the increase recorded in financial inclusion. This outcome obviously deviates from the expected, and calls for questioning the real effect these financial inclusion measures introduced and pursed actually have on the Nigerian economy. This is with a view to investigating the nature of relationship that exists between financial inclusion efforts (measured by bank branching, electronic banking, Bank rural branch loans and Microfinance bank loans) and economic growth in Nigeria.

Essentially, most studies on financial inclusion pay more attention to the extent of inclusion and efficacy of measures employed to achieve inclusion (Martins 2008; Sarma 2010; Shankar 2010; Demirguc-Kunt and Klapper 2012, Fadun 2014; Clementina and Egwu 2015). Only very few studies looked at the significance and nature of the relationship between financial inclusion and economic growth directly. In Nigeria, studies from this perspective are very scanty with few researchers. For instance, Tijjani, Sulaiman and Dani (2018) only considered northern Nigeria while Toby (2013) considered Microfinance Banking and SME development. This study therefore seeks, as noted earlier, to provide a broad based bridge by including in the investigation the causal effect between Nigeria's financial inclusion effort as outlined by CBN's National Financial Inclusion Strategy (NFIS) (2012) and her economic growth.

To put the paper into proper perspective, it is segmented into five sections. Section one is the introduction while Section two reviewed the study literature. The third section provided the methodology used in the study. Data presentation, analysis, interpretation of estimation results

and discussion of findings were carried out in section four while the fifth section concluded and made appropriate recommendations.

Section 2: Literature Review

This section provides the paper's review of literature, which is consists of conceptual treatment, theoretical framework and empirical review

Conceptual and Theoretical Frameworks

Financial Inclusion and Economic Growth

Financial Inclusion

Financial inclusion, as a relatively popular terminology in the financial system, is the deliberate efforts of major stakeholders in the financial system to make financial products and services affordable and accessible to all members of the society including individuals and households, businesses, non-profit making organizations, institutions and governments, irrespective of their status, size, race, gender, net-worth, etc. It is key to poverty reduction and economic prosperity particularly in developing economies like Nigeria. It started in India in the late 1960s as channeling of credit to the neglected and un-accessed low income group. In Nigeria, it started in mid 2000s but was blown in 2010 and documented in 2012.

Financial inclusion is made up of financial usage (which measures the demand for or actual (effective) usage of financial services); and financial access (which measures the sustainable supply and availability of affordable financial services across all sectors). Therefore financial access refers to the breadth of the financial systems across a country, often called penetration or outreach of financial systems. Most researchers are more interested in financial access than usage, because some individuals may have access to financial services, but choose not to use them. In developing countries, what has proven to be more problematic is the accessibility of services and product than its usage.

 Beck, Demirguc-Kunt and Peria (2005) opined that, without broad access to financial services, constraints created by market imperfections make it impossible for poor households or small entrepreneurs to finance high return investment projects which are necessary for desired growth.

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Diego and Diego (2013) stated that low financial access indicates that financial services are concentrated in few economic players, while good investment opportunities are missed. According to Alliance for Financial Inclusion (AFI 2013), potential barriers to financial access include high cost and physical proximity to bank access points (branches, ATMs, etc.). For financial institutions, most popular measures of financial access include total number of access points (bank branch or Automated teller machine, etc.) per 100,000 adults (Čihák et al. 2013; IMF and GFDR) or per 10,000 adults (AFI, 2013); number of access point per 1,000 km^2 (IMF and GFDR); percentage of administrative units with at least one access point; or rural and or micro credit and services of commercial banks as a percentage of the GDP. Mbutor and Uba, (2013), suggested as a measure of financial access- aggregate size of deposits and loans of rural bank branches and rural microfinance banks (indicative of the extent of openness of the rural populace to the activities of the banks) to GDP. Adenuga and Omotosho (2014) rather differentiated these measures to represent the following financial inclusion measures: banking penetration (number of bank accounts as proportion of total population), availability of banking services (number of bank branches per 1000 population) and usage dimension (bank credit and bank deposit as percentage of GDP). Other measures like access to technology leading to non-physical banking and others highlighted in Table 2.1 below. However, some of these measures have their shortcomings. For instance, using the level of technology may be advantageous to developed economies but wreckage to developing countries like Nigeria. Again using number of bank branches is very advantageous to developing economies but wreckage to developed countries. According to Greenarce (2012), developed countries like USA, UK and Australia, internet and mobile banking is transforming banking from physical (use of branches) to non-physical (use of other electronic devices like mobile phones, iPods, ATMs, etc. for banking transactions). In the case of developing countries like in Africa, where there is high level of illiteracy and large rural population; the concept of formal banking is yet to be widely accepted, and the use of information technology for such transactions is not very popular (even when popular in the urban centers, it is nearly absent in rural regions).

Generally, it is conventional to count only financial service providers that are licensed, actively supervised and captured in the formal structure. For markets, the most popular measure is Percent of market capitalization or traded value outside top 10 (largest) companies. In the case of

financial markets, Diego and Diego (2013) stated that access to stock and bond markets measured by their concentration. This includes, percentage of market capitalization outside the 10 largest companies, the percentage of value traded outside of top 10 traded companies, government bond yields (3 month and 10 years), ratio of domestic to total debt securities, ratio of private to total debt securities (domestic), and ratio of new corporate bond issues to GDP. According to them, the logic behind this is that a higher degree of concentration should lead to greater difficulties for access for new or smaller issuers. The use of financial institutions, particularly banks is most appropriate in this study. EFInA (2014) justifying the use of banks alone, using Nigeria as an example stated that after recapitalization 2004/2005 and bank reconstruction in 2009, banks now recognize the SMEs and lower income levels segment as an untapped and potentially profitable market, and have therefore developed new strategies to increase access to them.

Just as was found in some other developing countries by World Bank research group led by Sahar in 2008, Financial inclusion has been frustrated and financial exclusion boosted in Nigeria because of Un-functional Bank Branch; Collateral Issues, Fraud and Contract Enforcement; Illiteracy; Excess Bank Charges; and Interest Rate Spread, among others. These have negatively affected financial inclusion and desired aggregate economic output.

Financial Inclusion Efforts in Nigeria

Individuals, Committees and Corporate research efforts at national and international levels through conferences, seminars, workshops and other professional means have culminated in the recognition of financial inclusion as a panacea to poverty reduction in Nigeria and formulation of strategies on the   way (s) forward. The government through the Central Bank of Nigeria (CBN) made a commitment in 2010 to reduce adult financial exclusion rate from 46% to 20% by the year 2020. These efforts are made concrete in the creation of National Financial Inclusion Strategy (NFIS) by Nigerian government in 2012.

Since then NFIS has worked in conjunction with the Enhancing Financial Innovativeness and Access (EFInA) to ensure this goal is achieved. The main elements of the strategy focused on-targets (across products, channels and enablers) and solutions. The strategy was built on four strategic areas of agency banking, mobile banking / mobile payments, linkage models and client

empowerment. Based on these strategic areas, four topics were prioritized for guideline and framework development: (a) tiered know-your-customer (KYC) regulations, (b) agent banking regulations, (c) national financial literacy strategy and (d) consumer protection. The NFIS set two financial inclusion targets for the year 2020: an overall financial inclusion rate of 80% of the adult population and a formal financial inclusion rate of 70% of the adult population. The NFIS defined additional 15 targets for channels, products and enabling environment, as well as 22 key performance indicators (KPIs) related to these targets.

Currently, new stakeholders have also joined the push for financial inclusion. One of such examples is the Central Bank of Nigeria (CBN) and the Nigerian Communications Commission signing an MoU on digital payment systems in 2018. Again, CBN has collaborated with the Nigeria Inter-Bank Settlement System (NIBSS) to create a regulatory sandbox that will allow financial technology start-ups to test solutions in a controlled environment and is partnering with the private sector to roll out a 500,000-agent network to offer basic financial services. In addition, several players in the private sector have introduced new products and services aimed at the unserved/underserved, and new partnerships are driving the delivery of digital financial services more widely—programmes have been launched to boost access to finance specifically for excluded groups such as women and micro, small and medium-sized enterprises. One of such moves is CBN's advance for establishment of Deposit Money bank branches and electronic banking mediums in areas with least number of financially served persons. This has given rise to establishment of more rural Bank branches, spread of microfinance banks, and establishment of more virtual banking halls (like ATM hubs and units) (CBN, 2018).

Olayinka and Ibukun (2018) noted that in 2016, the government also went ahead to establish the Social Investment Programs (SIP) initiatives which were aimed at reducing poverty and improving livelihood of vulnerable groups such as the unemployed youths, women, and children. The components of the SIP include:

N-Power: a job creation scheme supporting graduates and non-graduates. The scheme seeks to enhance the employability of participants by providing stipends while non-graduates acquire vocational skills. Graduates, on the other hand, are trained to work in communities as school teachers, health support, and agriculture extension workers.

Home Grown School Feeding (HGSF): a school feeding programme to enhance nutrition and learning of primary school children, markets for agriculture providers and jobs for food vendors in the community. Payments for agricultural produce and cooking services are made by the government.

Conditional Cash Transfer (CCT): a poverty-reduction scheme providing cash transfers of N5,000 to one million very poor and vulnerable Nigerians on the national social registry (NSR).

Government Enterprise and Empowerment Programme (GEEP): an interest-free credit scheme for micro and small enterprises that lack access to formal credit.

These SIP schemes involve the disbursement of cash to a broad base of Nigerians and aim to increase the throughput of payments as well as promote financial inclusion. Large transaction throughput/volumes are essential in the enhancement of the Digital Financial Services (DFS) ecosystem and government's SIP initiatives offer such an avenue to increase DFS transactions volumes.

Another fortunate development is that the Nigerian government was able to secure a $500 million loan from the World Bank towards the execution of this project. This throughput will facilitate monetary transaction flows between government and persons (G2P/P2G), government and business (G2B/B2G) and government and government (G2G).

Unfortunately, the SIP implementation at all levels has been hampered by extant financial system infrastructure constraints, institutional and operational issues and challenges as well as attitudinal issues. In particular, these attempts by the government have exposed constraints in the areas of identity, reach (access) and cash-out (liquidity) (Olayinka and Ibukun, 2018).

Financial Inclusion Theories

Financial inclusion theories include evidence-based and change based (theory of change) theories. According to Monso (2017) evidenced based theory is a theory of how and why an intervention works or is expected work, mapped out so that underlying assumptions and contextual factors that may have any effect on the implementation of activities and their potential to bring about desired outcomes and can be explored and tested.

Mercy Corps' financial inclusion theory of change states that within inclusive financial systems, if participants are able to access, use, and afford a range of financial services then they will better

manage economic assets to cope with shocks and stresses, adapt to changing circumstances, and transform their lives (www.mercycorps.org retrieved on 26/11/2018).

Performance financial inclusion theory states that prospective customers are attracted to transact with financial institutions whose general performance is good and outstanding. Thus, in a weak financial system, people are skeptical about transacting with financial institutions for fear of losing their money.

Economic Growth

Economic growth, as defined by International Monetary Fund (IMF) (2012), is the increase in market value of goods and services produced by a society/ economy over time, and usually measured as the percent rate of increase in real gross domestic product (GDP) annually. Economic growth only transforms to economic development which is the end/ goal, when the GDP grows faster than the population as a ratio - the per capita income- which indicates the living standard in the economy. According to Bjork (1999), this growth may be as a result of efficiency in the production process (intensive growth), or increase in inputs or factors of production which include capital, labor, land, etc. (extensive growth). He stated that increase in productivity has been the most important source of real per capita economic growth, as it has been found historically to lower cost of goods and this creates increase in aggregate demand. Several schools of thoughts have emerged in attempt to interpret economic growth and its determinants. This has led to a number of theories such as the **Classical/ Ricardian theory** of production and growth held that an increase in either factors of production- in this case labor or capital, while holding constant all others (including technology), will increase output but at a diminishing rate. Proponents of this school of thought include Adam Smith, Thomas Malthus, David Ricardo, John Stuart Mill and Karl Max, etc.

The **Neoclassical/ Solow-Swan Growth model** of the 1950s' came up with a theory that gave more importance to technological change than capital accumulation. It was the first attempt to model long-run growth analytically; and they stressed efficiency. This theory rests on three predictions- 1. Increase in capital relative to labor creates economic growth; 2. Investments in capital produces higher returns in poor countries than rich countries, therefore poor countries would grow at a faster rate; 3. Due to diminishing return to capital, there is a point to which

increase in capital can no longer yields economic growth; but countries can overcome this 'steady state' and continue growing by inventing new technologies. The theory also holds that growth in output depends on and is positively related to savings.

Due to shortfalls of the neoclassical model, the **Endogenous growth theory** was developed by Paul Romer and Robert Lucas, Jr. in the 1980s' and early 1990s'. This theory holds that, though economic growth rate depends on the type of capital invested into by a country, growth does not slow as capital accumulates. Contrary to the views of older theories, this assertion is based on their recognition of the increasing rate of return quality found in human capital (skills and knowledge that make workers productive), unlike the physical capital (Elhanah, 2004). The **Endogenous growth school** stressed the role of entrepreneurship and innovation, which allows some leeway for finance to direct incentives to research and innovation or rent-seeking. **Samuelson of the Prior savings theory** held that the financial sector functioned merely as a bridge connecting prior savings to investment units (Bhole, 2006).

The theory of financial intermediation was first formalized by the work of Goldsmith in 1969. According to him, the differences in economic growth as witnessed in different countries was a function of the quality and quantity of services provided by their financial institutions, as they have the ability to influence more efficient use of capital stock (Levine, 2004).
Schumpeter (1911) developed the **innovative growth theory** explaining growth as a function or consequence of innovation and a process of creativity destruction. He opined that the financial sector (banks) played a major role in the efficient allocation of savings to entrepreneurs with the best chances of successfully implementing innovative products/ production processes to effect economic growth. He stressed the importance of their credit creation ability which is able to jumpstart innovative productivity independent or ahead of prior savings (Bhole, 2006).

Empirical Review

Beck, Demirguc-Kunt and Peria (2005) carried out a study on "Access to and use of banking services" across 99 countries (economically developed, emerging, and transition economies). The paper among other things presented new indicators of banking sector penetration based on a survey of deposit money bank regulatory authorities in the countries studied. Data were collected

through questionnaire administered to bank regulatory agencies across the countries; and from secondary sources, including government publications and official websites.

The first part of the study analyzed the use of financial services at the household and firm level. The second part explored the cross-country variations in outreach, for which statistical tools of correlation and regression where employed. The third part examined if these cross-country variations in outreach could explain differences in firms' perceptions about the severity of financing constraints, which have been shown to be robustly correlated with firm growth. Their findings revealed that greater outreach was correlated with standard measures of financial development, as well as with economic activity. The cross-country correlation and regression results showed that larger economies enjoyed greater levels of outreach, suggesting economies of scale in banking service provision.

Therefore, controlling for country size and population density, the results showed that cross-country variation in outreach was rather explained by countries' banking system structure, quality of the institutional framework supporting the financial system, and physical infrastructure. Therefore, relating to institutional development, they found that better communication and transport infrastructure and governance were associated with greater outreach. Relating to bank structure, they correlated bank ownership against the penetration indicators; and the results also showed that government ownership of financial institutions translated to lower access as they were negatively correlated. On the other hand, the share of foreign-owned banks, was not significantly correlated with outreach; while more concentrated banking systems were associated with greater outreach. They also found that in countries with higher branch and ATM penetration and higher use of loan services, firms report lower financing obstacles, thus linking banking sector outreach to the alleviation of firms' financing constraints. This implies that higher penetration and wider use of loan services were associated with lower financing obstacles. Limitations of their indicator database as they pointed out was that, as was the case of the used of primary data by questionnaire/ interviews for finance and growth literature, their data were only available at one point in time. This prevented them from exploring the relationship between financial outreach and economic development over time and exploiting within-country variation in banking system outreach.

World Bank (2008), at the request of the Egyptian government, carried out a study led by Sahar Nasr on "Access to Finance and Economic Growth in Egypt, Middle East and North African Region". This is aimed at investigating why few Egypt firms and households used the formal financial markets for their investment and saving needs; and why banks and other financial institutions were reluctant to extend credit, even in conditions of high liquidity. The study applied quantitative assessment of impediments of access to finance, which relied largely on five surveys (in addition to the secondary data) - (i) The Investment Climate Survey (ICS), of December 2004 of a stratified random sample of 1,054 firms from the industrial sector in 16 Governorates in Egypt. (ii) ICS follow-up of June 2005 of 300 firms from the industrial sector. (iii) Individual surveys of each of the 45 banks operating in Egypt. (iv) Individual insurance company surveys. And (v) National Household and Income Survey conducted by the Central Agency for Public Mobilization and Statistics (CAPMAS) for the fiscal year 2005. The study also relied on analysis of existing data provided by other organizations, and reviews of existing policies, laws, regulations, administrative practices, and tax systems. It also involved substantial dialogue with policymakers and representatives of financial institutions, corporations, and others from the private sector for the qualitative approach. Data were presented in tables and graphs and analyzed using simple percentages and averaging methods. The study's findings showed that relative to Egypt's total population, banks (State, Private and Foreign) had very few outlets (branches and ATMs), and they concentrated more in the urban areas, except for the state-owned specialized banks who had high rural branch density. The finance industry was characterized by high transaction cost, large non- performing loans and limited access for small firms and households- poor intermediation. These outcomes were as a result of the industry being dominated by state owned banks that were found to be undercapitalized with poor asset quality, high level of non-performing loans, slow to modernize and innovate, lacked product diversification, high collateral requirements, lagged in efficiency, and generally in performance of intermediation. Findings also showed that competition, development of a deep and well regulated financial system, as well as non-bank financial services was hampered by significant public ownership of real and financial assets in the country. The study also revealed, among others, that the existence of large fiscal deficit encouraged financial institutions (especially public-owned) to invest predominantly in risk and tax free government securities rather than lend to other than state-owned enterprises and large private firms. The study recommended that, since

the government plays a major role in ensuring macroeconomic stability, they should concentrate on providing good supervisory oversight by first moving away from asset ownership, towards creating an enabling environment for innovative private (including foreign) financial service providers. Government should also make concerted effort to lower deficit and public borrowing and provide adequate institutional infrastructure. Also they recommended the deliberate effort to grow micro financing; and that banks could profitably apply microfinance policies and practices toward the SME sector.

Ibeachu (2010) studied, 'A Comparative Analysis of Financial Inclusion: A Study of Nigeria and the United Kingdom- UK'. The study assessed the capability of the Nigerian banking industry through the use of Porter's diamond model; and investigated the expansion of financial inclusion of Nigeria from benchmarking a more highly included economy (UK). Primary data was used and were gathered through questionnaires administration, analyzed with simple methods of econometrics and interpreted through descriptive methods- tables, charts, Standard deviation, and time series. The sample size was made up of 52 persons from Nigeria and 80 persons from UK of which a total had access to bank accounts. The study measured financial access (Bank accounts owned; access to Microfinance banks; access to banks; and access to ATM) and financial inclusion (familiarity with various banking and mortgage services). The findings revealed existence of various types of exclusion- self exclusion, access exclusion and price exclusion as a result of high amount of charges, over-complexity and lack of access. The study also found that bank charges, service quality, income and employment status were critical to the levels of financial inclusion and exclusion except for the factor of required identification. Also, Nigerian respondents showed a lower level of familiarity with the normal accustomed banking services except in the use of mobile banking which is a rising means of banking in Nigeria. The study concluded that developing countries have lesser financial capability and access than the more developed nations, as Nigerian respondents showed a low appreciation of utilizing microfinance service (17% of respondents); while UK showed a high penetration as all respondents were familiar with the services that they were asked to identify. The study recommended that financial providers should use the acquired data to look for better ways to link their need to make profit with also their obligation for better welfare; by reducing the barriers of financial access to the general public on equal grounds.

Toby (2011) conducted a study on "Modeling Bank Management, Rural Lending and Small Business Finance in Nigeria". The study examined the effects of selected bank management ratios on financial access for rural lending and small business finance in Nigeria. The bank management ratios included- aggregate loan-to-deposit ratio, liquidity ratio, and cash reserve ratio. Rural financing was proxied by - rural loan-to-deposit ratio; while SME financing was proxied by- ratio of loans to SMEs. Secondary data sourced from the CBN Statistical Bulletin for the period 1992-2007 were used. They were analyzed using Software Package for Social Sciences (SPSS). The study found that a critical gap in bank intermediation still exists in the Nigerian rural and SME financing. A significantly positive relationship existed between the explanatory variable - rural loan-to-deposit ratio and aggregate loan-to-deposit ratio at the 5% level. The coefficient of determination showed that bank management variables (Liquidity Ratio, Cash Reserve Ratio and Loan-to-Deposit Ratio) accounted for 84.02% of the variation in rural loan-to-deposit ratio. Also, all bank management variables varied negatively with the ratio of loans to SMEs at the 5% level of significance. Nearly 75% of the variations in the ratio of loans to SMEs were accounted for by the bank management explanatory variables. Overall, the results suggested that rural bank management expanded aggregate credit in such a manner that constrained their liquidity profiles, particularly from 2007. On the other hand, excess liquidity in the banking system between 1992- 2007 did not improve the flow of credit to SMEs in Nigeria. Hence the study concluded that, the Nigerian banks had failed in their social role of financing the entrepreneur-innovator by restricting the spread of fiat money contrary to the expectations of the Keynes-Schumpeter model. The study also pointed out that there was also no evidence showing that the banks were dealing significantly with the problem of information asymmetries through improved relationship lending to the SMEs in Nigeria. It was therefore recommended that, monetary policies should focus more on compliance with prudential standards; the restoring of mandatory credit allocation regime to the rural and SME sectors; and deepening of the rural financial system.

Demiriguc- Kunt and Klapper (2012) studied, 'Financial Inclusion in Africa'. The study used secondary data sourced from Global Financial Inclusion Indicators database (Global Findex) and World Bank Enterprise Survey. The data were analyzed using descriptive statistics and tools, tables and graphs. It was found, among others, that less than a quarter of adults in Africa had a

formal account, as most of them rather used informal methods to save and borrow; most of the SMEs in Africa were unbanked and a major obstacle was access to finance; an inverse relationship between these obstacles (cost, distance, and documentation requirements- financial, physical and bureaucratic barriers) and economic growth. They concluded that the success of mobile money showed that innovations can bring about dramatic changes in how people engage in financial transactions by lowering entry barriers, reducing costs, and expanding access.

Mbutor and Uba (2013) studied "The impact of financial inclusion on monetary policy in Nigeria". Their main objective was to examine the impact of financial inclusion on monetary policy in Nigeria between 1980 and 2012. They sourced secondary data from the CBN Statistical Bulletin. The Johansen-Juselius test for co-integration was used. Their results supported the notion that growing financial inclusion improved monetary policy effectiveness; although number of bank branches indicated that the higher the number of bank branches the more inflation increases. They explained that this could be as a result of the fact that in opening branches, banks mainly pursued profits but not financial inclusion which is a policy objective, so there are clusters of branches which are under-utilized while numerous locations which are considered not favourable for balance sheets are under-branched. They therefore recommended that the CBN should increase its vigour for pursuing financial inclusion especially bank branching in the rural areas.

Morgan and Pontines in 2014 studied Asian Financial Stability and Financial Inclusion. Their objective was to examine the relationship between financial stability and financial inclusion- if they are mutually reinforcing, or there is substantial trade-offs between them. Using secondary data obtained from the World Bank's GFDD and the IMF's FAS, financial inclusion was proxied by SME outstanding loans as a proportion of total outstanding loans of commercial banks and the number of SME borrowers as a proportion of the total number of borrowers from commercial banks. Financial stability was proxied by bank Z-score (defined as the sum of capital to assets and return on assets divided by the standard deviation of return on assets) and bank non-performing loans (NPLs) as a proportion of gross loans by banks. Other intervening factors introduced were the ratio of private credit by deposit money banks and other financial institutions to GDP and the ratio of liquid assets to deposits and short-term funding were obtained from the GFDD. They analysed their data using correlation through the GMM dynamic

panel estimator. They found evidence that an increased share of lending to SMEs in total bank lending aided financial stability, mainly by a reduction of NPLs and a lower probability of default by financial institutions. The study also showed that higher per capita GDP tended to increase financial stability, while a higher ratio of private bank credit to GDP reduced financial stability. They stated that their results were consistent with previous findings which suggested positive effects in terms of: diversification of bank assets, thereby reducing their riskiness; increased stability of their deposit base, reducing liquidity risks; and improved transmission of monetary policy.

Nnamdi and Nwinyordee (2014), in the light of financial inclusion- access to and use of financial service, investigated the nature and direction of causal relationships between classified sectoral microcredit allocations and sectorally classified entrepreneurship contributions to Nigeria's economic growth. Secondary data used were sourced from Central Bank of Nigeria publications for the period 1992 to 2011. Augmented Dickey-Fuller and Unit Root and the Standard Granger Causality techniques were employed in processing the data. The results of the study showed that 4 sectors failed the causality test at 0.05 level, with only a significant unidirectional causality running from contributions of 'other mining/quarrying' in Nigeria's GDP to microcredit allocations. This implies a demand-following trend; i.e. microcredit institutions only function to service rather than promote activities in the sector. They explained that this could have resulted from lending to large scale cooperative associations involved in other mining/quarrying operators in several regions of Nigeria. The result of the other four sectors largely confirms the prevalence of Schumpeterian independent hypothesis stage. This goes to show that entrepreneurial activities in these sectors are predominantly independent of the microcredit operations within the economy.

Tijjani, Sulaiman and Dani (2018) studied the contemporary Islamic banking system (Jaiz bank) in tackling financial exclusion in Nigeria. Their main objective was to explore the level of financial exclusion in northern Nigeria, its causes; and the recent Islamic banking system in Nigeria (Jaiz Bank) based on customers' participation and how that promotes financial inclusion and sustainable development in the Northeast of Nigeria. Primary data was gathered through questionnaires issued to 180 Jaiz bank customers. The data was tested using regression analysis

and correlation through the Statistical Package for Social Sciences (SPSS).They found that over 60% of the country's financial exclusion is from the Northern region of the country; while 68.4% of the North - East sub – region is unbanked. The results also revealed that the religious reason and lack of Shari'ah - compliant in Nigerian banking system, promote the vast number of financial exclusion in the northeast of Nigeria. They recommended development of many branches of Islamic bank in the northeast; introduction of Islamic microfinance banks, and small medium Enterprises (SMEs) financing with Shariah compliant instruments.

Indeed a lot of literature has been done with respect to the need for financial inclusion, yet out of these there is lack of sufficient test and explanation on the direct causal relationship between financial inclusion and economic growth in Nigeria.

Section 3: Methodology

The study enjoyed the adoption of quasi-experimental designs because of its relevance. Secondary data were sourced from Central Bank of Nigeria Statistical Bulletin and the World Bank Global Development Report. In analyzing the data, E-views econometric program was used to run the descriptive statistics, multiple regression, test of stationarity, cointegration, and the Granger causality tests.

Essentially, the relationship between the dependent variable (economic growth) and the explanatory variables- financial inclusion (a dimension of financial development) has been theoretically expressed by Čihák, Demirgüç-Kunt, Feyen and Levine (2013). They postulated that economic growth is dependent and explained by financial development (financial inclusion); emphasizing a positive relationship between economic growth and financial inclusion (financial development).

This is represented *functionally* as:

   Economic Growth = f (Financial Inclusion) …………. (1.0)

Measuring Economic Growth and financial inclusion, we have:

Gross Domestic Product Growth = f (bank branching, rural bank branch credit, microfinance bank credit, electronic banking)………………………………… … (1.1)

GDPG = f (BR10K, RUCRG, MFBLG, ATMTG)…………………………….………... (1.2)

This means that the level of economic growth (GDPG) is a function (f) of financial inclusion (BR10K, RUCRG, MFBLG, ATMTG).

Where:

GDPG = Gross domestic product growth rate (economic growth);

BR10K= Bank branch per 10,000 adults (penetration);

RUCRG= Deposit Money Bank Rural Branch credit growth rate;

MFBLG= Microfinance Bank Credit growth rate; and

ATMTG = Electronic Banking via growth rate of Automated Teller Machine use

All measured in percentages.

Equations (1.2) could further be represented *mathematically* as:

$$GDPG_{it} = \alpha + \beta_1 BR10K_{it} + \beta_2 RUCRG_{it} + \beta_3 MFBLG_{it} + \beta_4 ATMTG_{it} \dots\dots\dots\dots\dots\dots (1.3)$$

Econometrically, equ. 1.3 is further represented as:

$$GDPG_{it} = \alpha + \beta_1 BR10K_{it} + \beta_2 RUCRG_{it} + \beta_3 MFBLG_{it} + \beta_4 ATMTG_{it} + \varepsilon_{it}; \ \beta_1 > 0, \ \beta_2 > 0, \ \beta_3 > 0, \ \beta_4 > 0$$

(1.4)

Where:

α = intercept;

β_1 - β_4 = coefficient of the explanatory variables - (BR10K, RUCRG, MFBLG, ATMTG)

ε = stochastic error term which is a surrogate or proxy for all the omitted or neglected variables that may affect the dependent variable (GDP) but are not or cannot be included in the regression model.

i = cross-sectional variable from 1, 2, 3 … nth.

t = time series variable from 1, 2, 3...nth.

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

That is coefficients of β_1 (Bank branching), β_2 (Rural Bank branch credit), β_3 (Microfinance Credit), and β_4 (Electronic banking) are expected to carry positive signs.

Granger causality test was carried out following pair of linear regression models:

$$Y_t = a_0 + \sum_{i=1}^{p} \beta_j X_{t-j} + \sum_{j=1}^{p} \gamma_j Y_{t-j} + U_{1t} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (1.5)$$

$$X_t = a_1 + \sum_{i=1}^{p} \lambda_j X_{t-j} + \sum_{j=1}^{p} \delta_j Y_{t-j} + \varepsilon_{1t} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (1.6)$$

Where:

Y_t = Economic Growth rate (GDPG) time series data

X_t = Individual representation of the four dimensions of financial inclusion measures (Bank branching, Rural bank credit, Microfinance Credit and electronic banking) time series data to be tested successively against economic growth.

p = number of lags that adequately models the dynamic structure so that the coefficients of further lags of variables are not statistically significant and the error terms e are white noise.

t = time series variable from 1, 2, 3...nth.

t - j = lagged period

β, λ = estimated coefficients on the lagged X (BR10K, RUCRG, MFBLG, ATMTG respectively in successive tests)

δ, γ = set of estimated coefficient on the lagged Y (GDPG)

U, ε = disturbance/stochastic error term, that captures all variations in Y and X not included in the lagged values.

Equations (1.5) postulate that current Y (GDPG) is related to past values of itself (Y_{t-1}) as well as that of X (the measures of financial inclusion- BR10K, RUCRG, MFBLG, ATMTG, in their respective equations). Also, equation (1.6) postulates a similar behavior in X (BR10K, RUCRG, MFBLG, ATMTG in their respective equations as well as Y). Thus, the study is expected to exhibit a *Bi-directional causality* relationship between dependent and independent variables (i.e., $\beta_j \neq 0$ in (…1.5); and ($\delta_j \neq 0$ in …1.6).

Other casual relationships outside our expected are

a. *Uni-directional causality* (i.e., $\beta_j \neq 0$ in … 1.5); and (i.e., $\delta_j = 0$ …1.6). OR.

b. An I*ndependence* (i.e., $\beta_j = 0$ in …1.5); and $\delta_j = 0$ in …1.6

Section 4: Data Analysis, Results and Discussion

Data is analyzed, results interpreted and findings discussed here. The results of the analyzes are presented in Tables 1.1-1.8 and Figures 1-3 and interpreted under each Table/Figure.

Table 1.1: Descriptive statistics

	GDPG	BR10K	RUCRG	MFBLG	ATMTG
Mean	11.02361	0.572222	0.918881	0.061531	0.078057
Median	8.850000	0.570000	0.044100	0.027050	0.010700
Maximum	38.05000	0.680000	28.50600	0.606700	2.502800
Minimum	-1.360000	0.350000	-0.957600	-0.265900	-0.716600
Std. Dev.	10.37179	0.050940	4.776067	0.181835	0.472811
Skewness	1.639315	-2.101333	5.579731	0.803687	3.908463
Kurtosis	4.843269	12.07252	32.71674	4.290185	21.28889
Jarque-Bera	21.22058	149.9596	1511.427	6.372340	576.8989
Probability	0.000025	0.000000	0.000000	0.041330	0.000000
Sum	396.8500	20.60000	33.07970	2.215100	2.732000
Sum Sq. Dev.	3765.091	0.090822	798.3785	1.157242	7.600718
Observations	36	36	36	36	35

Source: Descriptive Analysis Result from E-View.9

From Table 1. 1 above, economic growth (GDPG) was the most volatile with a standard deviation of 10.37; while Bank branching was the least volatile with standard deviation of 0.05. On an average, the economy grew (GDPG) at 11%; it recorded its highest growth at 38% in the fourth quarter of 2010; and least growth of a decline by 1.36% in the first quarter of 2009. This is also reflected in the Figure 1.1 below.

Through the period, bank branching grew at an average of 57%. it recorded its highest number of branch spread in second quarter of 2010, with 5,752 branches spread across the country; serving 68% of the adult population; and least growth in branching by 2011 first quarter with 3,377 branches across the country, serving only 35% of the adult population.

Deposit Money Bank Rural branch credit grew at an average of 91% through the period. It had its highest growth of 280% in third quarter of 2013, with a credit volume of NGN708, 202, 000,

000. It recorded its least growth – a decline by 95% in first quarter of 2015, with credit volume of NGN41, 928, 100, 000. From Appendix 1, its highest volume of credit issued in fourth quarter of 2014, at the sum of NGN988,587,900,00 and least sum of NGN13,575,000,000 in second quarter of 2009.

Micro finance bank credit growth (MFBLG) grew at an average rate of 6% through the period. In second quarter of 2013, it recorded its highest growth of 60.67%, with a volume of NGN155,961,000,000; it recorded its least growth- a declined by 26.59% in the second quarter of 2016, with a volume of NGN184,246,600,00. From Appendix 1, Micro finance bank credit had its highest credit

volume issued in first quarter of 2016 with a sum of NGN250,999,000,000; and least sum issued in first quarter of 2009 with the sum of NGN56,162,000,000.

Electronic banking proxied by volume of transactionsdone through the Automated Teller Machine – ATM (ATMTG) grew at an average of 7.81% through the period. Its use grew its highest in first quarter of 2011 by 250% with 79,612,004 transactions; and declined in use in first quarter of 2010 by 71.66% having only 7,762,869 transactions, this was also its least period of use. The ATM had its most period of use in fourth quarter of 2014 with 112,400,254 transactions.

The Jarque-Bera showed significance at 5% level of significance; hence the residuals are normally distributed.

The graphical presentattion of the study data below also reflects these observations.
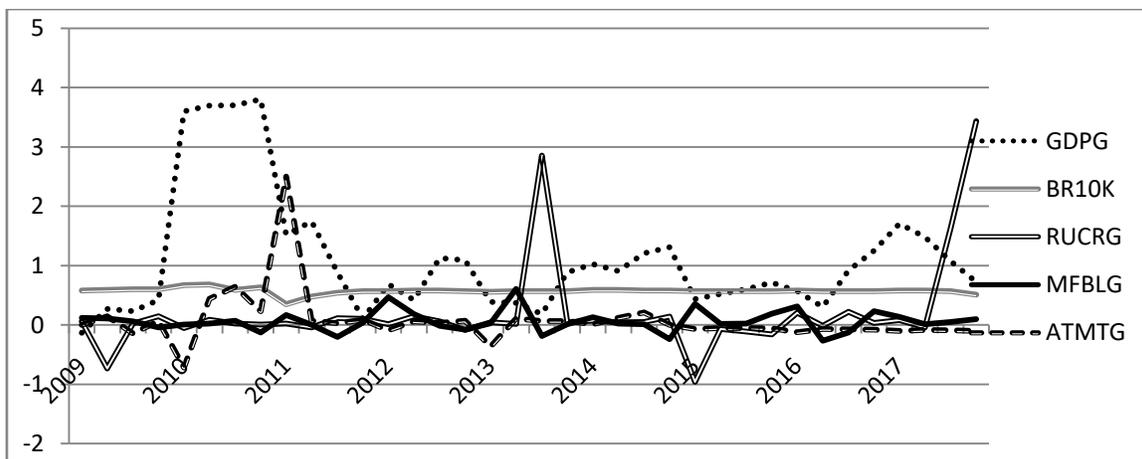

Figure 1: Economic growth and Measures of Financial inclusion

From figure 1, in first of 2009 economic growth (GDPG) was in the negative, it begun to rise till it got to a peak in 2010. Growth slowed a bit through 2010, and begun to decline at steeply in 2011 until it hit a bottom in fourth quarter of 2011. After this period its growth pattern was more volatile rising and falling between the quarters of the years, and continuously declined in 2017. This trend is repeated in most of the variables studied except in few ones as can be observed from the figure.

Table 1.2: Result of Stationarity (Unit Root) Tests:

Variable	ADF t-statistics	Critical Value 5%			Order of Integration	Prob.
		1%	5%	10%		
D(GDP)	-5.671555	-3.639407	-2.951125	-2.614300	I(1)	0.0000
D(MCG)	-6.023039	-3.661661	-2.960411	-2.619160	I(1)	0.0000
D(NBB)	-8.069057	-3.639407	-2.951125	-2.614300	I(1)	0.0000
D(RCG)	-9.769676	-3.639407	-2.951125	-2.614300	I(1)	0.0000
D(ATM)	-6.614682	-3.661661	-2.960411	-2.619160	I(1)	0.0000

Using both 1% and 5% Substantial Level.

Source: *E-view 9 Output (Authors Computation and Compilation)*

The Stationarity test precedes the long run relationship test, to determine the most appropriate test. From table 1.4 above, all variables are stationary at level I(1) having met the decision rule of the ADF test statistic absolute value for all the variables being higher than their Mackinnon test Critical values at 1%, 5%, or 10% significance level respectively. Given this outcome, it is safe to proceed to the Johansen Cointegration test, to test for Long run relationships.

Table 1.3: Result of Johansen Unrestricted Co-integration Rank Test (Trace)

Obs	Series	Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	P 0.05 Critical Value	Prob.**
36	D(ATM), D(MCG), D(NBB),	None *	0.768397	116.3126	69.81889	0.0000
		At most 1 *	0.723621	70.96790	47.85613	0.0001
		At most 2*	0.487089	31.10243	29.79707	0.0352

		At most 3*	0.186106	10.40519	15.49471	0.2509
	D(RCG)	At most 4*	0.121664	4.021514	3.841466	0.0449

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

Source: *E-view 9 Output (Authors' Computation)*

From the above table, the Trace Statistic is greater than the 0.05 Critical Values in three out of the four equations. Thus, the co-integration results reported reveals the rejection of the null hypothesis of no existing co integration. The test output shows a co integrating association among the criterion variable and the predictor variables. It can thus be concluded that there exist a substantial long-run association between Criterion variable, Gross Domestic Product (GDPG) and the Predictor (financial inclusion) variables (Number of Bank Branches, Rural Credit, Micro Finance Credit and Automated Teller Machine Transaction). This is in agreement with our A priori expectations. However, the authors acknowledge that a shift from this association is possible due to changes in employed variables within the short-run. Thus, we adopted the Error Correction Estimates (ECE) to examine and correct any short run changes in the variables under research. Hence, having established Co-integration, ECE is specified to show the short-run changes in the variables under research while preserving the long-run relationship.
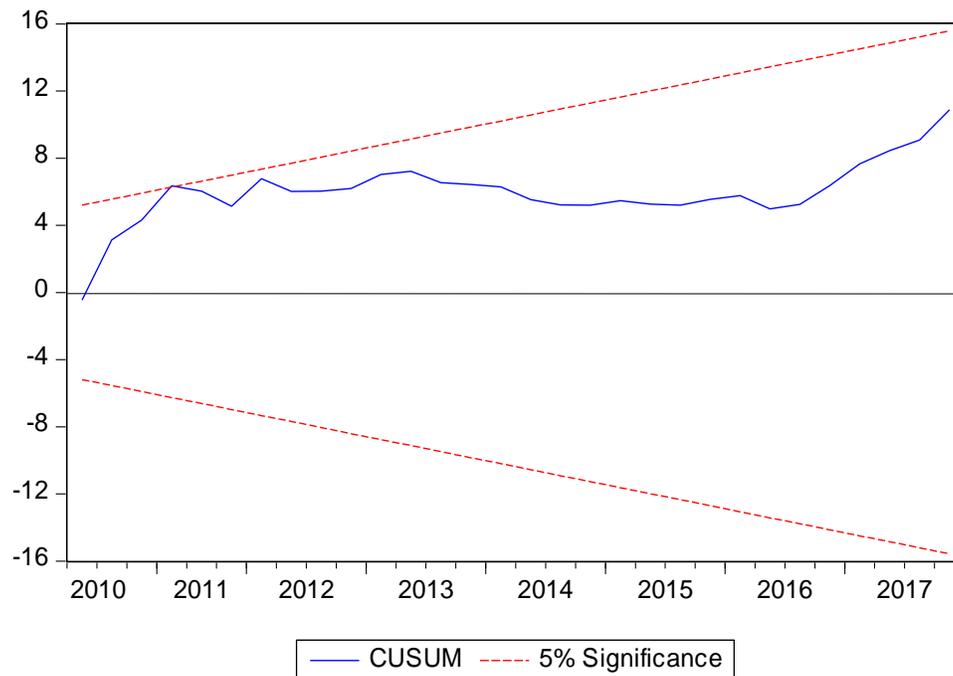
Figure 2: Cusum Test of Model Stability Result

Source: E-view 9 Output (Authors' Computation).

Model stability test which is Cusum test, shows if the model is stable or not. The result above shows that the blue line falls within the two read lines, which therefore means that the model is stable.

Table 1.4: Error Correction Model Results

Dependent Variable: D(GDPG)
Method: Least Squares
Date: 11/29/18   Time: 22:42
Sample (adjusted): 2009Q2 2017Q4
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(ATMG)	0.439827	3.880015	0.113357	0.9106
D(MFBLG)	-1.849790	4.117329	-0.449269	0.6568
D(BR10K)	79.34849	31.05157	2.555378	0.0166
D(RUCRG)	-0.194758	0.162443	-1.198934	0.2410
ECM(-1)	-0.368585	0.169581	-2.173504	0.0387
C	0.894405	1.045277	0.855662	0.3997
R-squared	0.540780	Mean dependent var		0.452121

Adjusted R-squared	0.455740	S.D. dependent var	7.932472
S.E. of regression	5.852102	Akaike info criterion	6.534445
Sum squared resid	924.6717	Schwarz criterion	6.806537
Log likelihood	-101.8183	Hannan-Quinn criter.	6.625995
F-statistic	6.359078	Durbin-Watson stat	1.584749
Prob(F-statistic)	0.000505		

Source: E-view 9 Output (Authors' Computation)

The Error Correction Estimation output reveals that the predictor variables jointly account for about 54.07 percentage shocks in Gross Domestic Product, criterion variable. The Error Correction Model (ECM) is of the expected adverse sign and also statistically substantial at 5% level of significance. The absolute value of the coefficient of the Error Correction Term indicates that about 36% of the disequilibrium in the level of Gross Domestic Product is offset by short run amendment in each year. The associated F-Statistic value of 0.000505 is statistically substantial at the 5% (0.05) significance level, which confirms a good line of fit. The estimation output displays that the following predictor variables value of the ATM, MFBLG and RUCRG are not statistically substantial in explaining variability in Gross Domestuc Product (GDP) in Nigeria at 5% level of significance. The probability coefficient associated with value of BR10K is 0.0166, which is less than 0.05 level of significance, indicate a substantial statistical relationship with the Criterion variable, Gross Domestic Product (GDPG), which aligns with our a priori expectation. However, the coefficients of ATM and BR10K are positive which implies that an increase in ATM transactions and BR10K will lead to an increase in GDP. While the coefficients of MFBLG and RUCRG are negative which connote that an increase in MFBLG and RUCRG will lead to a decrease in Nigerian GDPG.

Table 1.5: Granger Causality Test Output

Pairwise Granger Causality Tests

Date: 11/30/18   Time: 20:39

Sample: 2009Q1 2017Q4

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.

MFBLG does not Granger Cause GDPG	34	0.01782	0.9823
GDPG does not Granger Cause MFBLG		0.95401	0.3970
BR10K does not Granger Cause GDPG	34	3.62404	0.0394
GDPG does not Granger Cause BR10K		6.62305	0.0043
RUCRG does not Granger Cause GDPG	34	0.15013	0.8613
GDPG does not Granger Cause RUCRG		0.29903	0.7438
ATM does not Granger Cause GDPG	31	2.55249	0.0972
GDPG does not Granger Cause ATM		9.95750	0.0006

Source: E-view 9 Output (Authors Computation)

From the Granger causality test results, the probability of the F-Statistic at 5% showed that increase in Bank branching (BR10K) can cause economic growth (GDPG); and that economic growth can also cause increase in bank branching. This suggests a bi-directional relationship. On the other hand, there is a unidirectional relationship flowing only from GDPG to ATM and none from ATM to GDPG. There is no directional causal association existing between Micro Finance Banks (MFBLG), Rural Credit (RUCRG) and Gross Domestic Product (GDPG) and vice versa.

Result of test of Hypotheses

The test of hypotheses used Table 1.5, ECM Test Results and decision reached was based on the rule that when the p-value is equal to or less than the critical value of 5% level of significance, the null Hypothesis is rejected. Otherwise the alternate is accepted and vice versa.

H_{01}: There is no significant causal relationship between bank branching and economic growth in Nigeria.

The causality test results in Table 1.5 revealed that there is a significant bi-directional causal relationship flowing from bank branching to economic growth and vice versa at 0.039 and 0.004 which are less than the 5% critical level leading to the rejection of the null hypothesis and the alternative accepted. It is therefore concluded that there is significant causal relationship between bank branching and economic growth in Nigeria.

H$_{02}$: There is no significant causal relationship between loans by rural bank branches and economic growth in Nigeria.

The causality test showed that probability values stood at 0.86 and 0.74 which are above the 5% critical level of significance thereby accepting the null hypothesis. It is concluded that there is no causal relationship between loans by rural bank branches (RUCRG) and Nigerian economic growth.

H$_{03}$: There is no significant causal relationship between Micro finance bank credits and economic growth in Nigeria.

The causality test results showed probability figures of 0.98 and 0.39 which are above the study's critical value of 5% leading to the acceptance of the null hypothesis. The conclusion, therefore, is that there is no significant causal relationship between Micro finance bank credits (MFBLG) and economic growth in Nigeria.

H$_{04}$: There is no significant causal relationship between electronic banking (ATMG) and economic growth in Nigeria.

The causality test also reveals a uni-directional causal relationship electronic banking via ATMG use and economic growth; with probability figures of 0.097 and 0.000 which are above and below the critical value of 5% respectively indicating no causal relationship flowing from ATMG to GDPG but one is flowing from GDPG to ATMG. Thus, the null hypothesis is accepted. The study therefore concludes that there is no significant causal relationship between electronic banking (ATMG) and economic growth in Nigeria.

4. DISCUSSION OF FINDINGS

This section sought to discuss the major findings of the study.

The study found a bi-directional causal significant relationship between Bank branching (BR10K) (financial inclusion) and economic growth in Nigeria (GDPG) within the period. This is in line with our a priori expectation and supported by Beck, Demirguc-Kunt and Peria (2005) who found that in countries with higher branch and ATM penetration, firms report lower financing obstacles, thus linking banking sector outreach to the alleviation of firms' financing constraints leading to economic growth. On the other hand, a reduction in bank branches will

adversely affect economic growth. According to Ebi and Akpan (2014) a sharp fall in number of bank branches and deposit trends in Nigeria was accompanied by the greatest falls in per capita GDP. This also implies that the establishment of a bank branch in a financially excluded area will make room for economic activities in that area to be captured and accounted for by the formal financial sector hence reflecting in economic growth. It would also mean, as suggested by Olayinka and Ibukun (2018), that financial inclusion can influence economic growth especially creating more access points for disbursement and monitoring of economic intervention funds; which will in turn create economic activities that will boost growth. On the other hand, where the economy improves, it creates more demand for financial services. For example the sitting of factories in rural areas has the potential of luring banks to site branches in these areas. Morgan and Pontines (2014) in their study on Asian Financial Stability and Financial Inclusion concluded with a suggestion that policy measures to increase financial inclusion, at least by SMEs, would have the side benefit of contributing to financial stability and increased output as well.

The study also found a no significant causal relationship between Bank rural branch loans (RUCRG), as a measure of financial inclusion, and economic growth (GDPG) in Nigeria within the period under review. This means irrespective of the volume of loans issued by banks rural branches, economic growth is not significantly impacted. This is contrary to our a priori expectation as it also contradicts the suggestions of theories by McKinnon. This also contradicts the findings of Beck, Demirguc-Kunt and Peria (2005), which stated that higher penetration and wider use of loan services were associated with lower financingobstacles. This finding rather confirms the findings of Nasr (2008) and Ibeachu (2010). Ibeachu in his study found that bank charges, and processes negatively impacted on firm performance and inclusion.

The study revealed that there is no significant causal relationship between electronic banking (ATMG) and economic growth in Nigeria. This, no doubt, contradicts theory. Obviously, ATMG is supposed to have a significant causal relationship with economic growth if greater percentage of the population are banked and or transactions from this channel are directed for productive purposes otherwise it will not, which we think may be the reason (s) for the outcome in this study. Tijjani, Sulaiman and Dani (2018) studied the contemporary Islamic banking system (Jaiz

bank) in tackling financial exclusion in Nigeria and they found that 68.4% of the North - East sub – region is unbanked. Again, in a study by

Demiriguc- Kunt and Klapper (2012), they found, among others, that less than a quarter of adults in Africa had a formal account, as most of them rather used informal methods to save and borrow; most of the SMEs in Africa were unbanked and a major obstacle was access to finance; an inverse relationship between these obstacles (cost, distance, and documentation requirements-financial, physical and bureaucratic barriers) and economic growth. However, they concluded that the success of mobile money showed that innovations can bring about dramatic changes in how people engage in financial transactions by lowering entry barriers, reducing costs, and expanding access leading to increased usage accompanied by increased production and enhanced economic growth, which support our a priori expectation.

Finally one of the major findings revealed that there no significant causal relationship between Microfinance bank loans (MFBLG) and economic growth (GDPG) in Nigeria within the period covered. This means irrespective of the volume of loans issued by microfinance banks, economic growth is not significantly impacted. This is contrary to our expectation, which also contradicts the suggestions of theories by McKinnon. Obviously, Microfinance Bank loans are not enough to impact positively on economic growth in view of the small volume from this source occasioned by the very high cost of fund that drives productive agents away from accessing these funds. Toby (2011) found that a critical gap in bank intermediation still exists in the Nigerian rural and SME financing and that all bank management variables varied negatively with the ratio of loans to SMEs at the 5% level of significance.

It was also found from the study that financial inclusion is neither driving economic growth nor economic growth driving financial inclusion. This is the independence theory of causal relationship, which Weli (2013) described it as one of the schools of thought on various types of causal relationships. This finding is supported by the work of Nnamdi and Nwinyordee (2014) who explained that in Nigeria, at 0.05 level of significance, Schumpeterian independent hypothesis stage is largely confirmed- entrepreneurial activities being predominantly independent of the operations of the financial system within the economy.

5. Conclusion and Recommendations

Conclusion: Over the last decades, the Nigerian governments have embarked on several programs to reduce poverty and improve economic growth and development. More recently financial inclusion has been identified as a major vehicle for poverty alleviation and by extension economic growth. Consequently, EFInA, NFIS, SIF, among others have been created and financial inclusion measures advanced and implemented with a view to driving economic growth. This study examined the causal relationship between these measures and economic growth in Nigeria with revealing outcomes based on which conclusions are drawn.

The study findings defied economic theory (A priori) except bank branches and economic growth that drive each other leading to bi-causal relationships. This implies that banks' efforts in opening branches across the country provides for inclusiveness for users of financial products and services in Nigeria who are excluded and by extension drives the economy substantially. Thus, financial inclusion efforts in Nigeria through penetration- establishing of bank branches created desired impact on the Nigerian economy. The contradiction of a priori expectations of causal relationships between financial inclusion measures like Bank rural branch loans (RUCRG), electronic banking (ATMG) and Microfinance bank loans (MFBLG) and economic growth call for concern. It is either the loans from Bank rural branches and Microfinance banks are not enough to drive economic growth because of the difficulty of loan access by customers arising from banks' bottlenecks or loan are not properly channeled to productive use. Given the control/compliance measures by banks on loan purpose, the former is the likely reason. The independence theory as revealed by the study is a clear evidence of financial exclusion, as prospective users of financial products and services are enjoying these same services and products outside the formal financial system. It calls for worry in view of the policy and development implications. Generally, it is concluded that financial inclusion efforts through Bank rural branch loans (RUCRG), electronic banking (ATMG), Microfinance bank loans (MFBLG) over the period studied have not been able cause economic growth.

However, the good news is that bank branches are very significantly growing at the rate of 57% with a 793% north ward change in GDPG and the use ATM as a financial inclusion measure is growing by 7.81% in Nigeria, even though not substantial. We are hopeful of significant improvement if the recommendations proffered here are taken and implemented.

Recommendations: From the study findings, discussion and conclusion, we recommend the following:

1. Financial inclusion should be pursued through a deliberate financial penetration, which involves the establishment of more access points of both physical and virtual.

2. Banks should eliminate stringent conditions that make loan access difficult and most times impossible. They should rather emphasize on the customer's character, among other things. This will increase Bank rural branch and Microfinance bank loans to the borrowing public.

3. Additional financial service access points should be created (Bank branches and ATM outlets), to reduce the problems associated with cost, distance, and provision of financial literacy. This will reduce if not eliminate the 'disconnect' between the banks and the unbanked in Nigeria.

4. Central Bank of Nigeria should focus on framing more favorable and strategic financial inclusion policy and other policies that create conducive environment for credit delivery and its utilization.

5. Monetary policies should focus more on compliance with prudential standards; the restoring of mandatory credit allocation regime to the rural and SME sectors; and deepening of the rural financial system.

6. Government should partner with private sector to ensure development of infrastructure in the rural arrears to ensure that rural enterprises and SMEs are more focused in their ventures.

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