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Impact assessment of the financial inclusion strategy in Nigeria: Lessons from BRICS and other countries

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Abstract

The quest for economic development through an all-inclusive financial system has evolved to be the recent focus in financial literature and practice especially in developing countries where many are unbanked. This study assessed the financial inclusion strategy in Nigeria and its contribution to economic development between 1986 and 2018. The study regressed loans from rural bank branches, deposits to rural bank branches, number of bank branches and interest rates against per capita income using the ARDL and the Pairwise Causality Techniques. It was revealed that financial inclusion has a significant positive effect on economic development in Nigeria. Meanwhile, a unidirectional causality was found to run from economic development to financial inclusion majorly through the loans from the channel of rural bank branches. A comparative analysis revealed that Nigeria still trails behind the BRICS and some other African countries in the quest to achieve an all-inclusive economic development. It was recommended that for financial inclusion to birth real development, interest rate on loans should be reduced to single digits while deposits emanating from rural areas should be granted as loan credits to people in the same environment and not expatriated for developmental purposes in the urban areas.

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1   Introduction

The financial framework of every nation plays an important part in ensuring development within her economy. As a result, an increase in participation within such financial system will accelerate the rate of economic development. However, in most developing countries, people living in rural areas are mostly excluded from services rendered by the financial system, as no provision is made to accommodate them due to absence of proper grassroots financial deepening: because many banks have no branches or credit extension outlets in the rural areas. Hence, there has been a global clarion call for the inclusion of the unbanked, as it is expected that there would be a resultant growth in income and economic activities.

Financial inclusion as explicated by Sarma (2008) refers to the ease of accessibility by the members of the society to formal financial services. Meanwhile, exclusion can be considered the alienation of some portion of the people from access to financial services. The World Bank (2015) classified exclusion to be voluntary and involuntary: voluntary exclusion is the marginalisation of a segment of the population from financial services because they chose not to participate while involuntary exclusion arises because of market imperfections or discriminations within the system.

Financial exclusion engenders exploitative informal financial intermediaries to gain dominance in the economy, resulting in economic stagnation particularly in the rural areas where the greater proportion of the people engages in primary production such as agriculture. In a bid to bolster the concept of financial inclusion in the economy, several contributions in literature have emerged to look into the relationship between financial inclusion and economic development. However, it can be observed that while some (Harley-Tega, Adetoso & Adegbola, 2017) discovered a non-significant effect of financial inclusion on economic growth, some others discovered a significant impact (Onaolapo, 2015). Because of such mixed results and lack of consensus in literature, it is imperative to make an inquiry into the subject matter to ascertain a standpoint for recommendations. Thus, this study examined the effect of financial inclusion on economic growth in Nigeria using the regression techniques. Taking cognizance of government efforts along this line, the study made special inclination to loans to and deposits from rural areas as well as number of bank branches for fostering financial inclusion. At the end, a comparative analysis was made with other economies of the world to weigh the efforts of government in Nigeria in relation to performance in other climes.

2   Literature Review

2.1   Conceptual Literature

Financial inclusion, which is the banking sector's outreach, is the provision of a variety of banking services at a reasonable price and time to all the members of the society without any discrimination whatsoever (Sarman & Pais, 2011). However, much more than an outreach to the residents in the urban centres of the economy, Oruo (2013) considered financial inclusion to be a scheme projected at availing the poor an access to formal banking and financial services. Hence, in the process, there is an intervention in the market to break through the barrier against the poor, underprivileged, unbanked and illiterate people to ensure that they are also included or covered by the financial umbrella of the economy.

Furthermore, financial inclusion provides a great access to financial services by poor and rural households, as well as small and medium enterprises, which leads to self-reliance and reduces the dependence of such households or enterprises on the government. Ordinarily, a well-developed financial system should be accessible to everyone with little or no transaction cost and information lop-sidedness, because excluding a portion of the people from the banking services will lead to increase in costs to the participating entities (Sinclair, McHard, Dobbie, Lindsay & Gillespie, 2009). Correspondingly, Kempson, Whyley, Caskey and Collard (2000) argued that excluding a portion of the economy would undisputedly lead to poverty, as deprivation is tantamount to poverty in the long-run. As time rolls by, classes will evolve in such economy and the rich will tend to get richer while the poor get poorer. Chidiac (2017) revealed three simple but sound ways to increase financial inclusion in West Africa. First, he noted that savings groups must be taken into serious consideration if the financial umbrella of the economy wants to cover everybody. These groups include the cooperative and other societies that mobilise savings but in an informal manner. He averred that most financial inclusion frameworks exclude informal savings societies and as such are no longer good inclusion frameworks in themselves. In addition, he stressed the need for the creation of better digital solutions, which will accommodate even the poor and illiterates in the deep rural areas of the economy. Finally, Chidiac (2017) considered the reinforcement of financial education as a sound background for financial inclusion in the economy. Financial education must be taken to everyone, everywhere including the nooks and crannies of the country to liberate people from poverty and educate them as regards the need to save, borrow and manage their assets.

In some African countries such as Kenya, Nigeria, South Africa and Tanzania, financial inclusion had received a boost through the adoption of mobile financial services. In Kenya, the strategy of financial inclusion has been implemented through the use of mobile financial services by the mobile

giant M-Pesa. The M-Pesa is the leading mobile money service in Kenya with 25.57 million users (81 percent) out of the total 31.6 million users of mobile money services as at December 2018 (Reuters, 2019).Nineteen percent of the total airtime sold in Kenya was purchased through the mobile financial services. In South Africa, mobile financial services like the First National Bank, Wizzit, Flash Mobile Cash, MTN Mobile Money and the M-Pesa promote financial inclusion (AfDB, 2013). Besides, the M-Pesa came up with an insurance outlet to insure customers against unforeseen circumstances in Kenya and South Africa. In Tanzania, about 4.3 million mobile financial transactions took place since the services started in 2007, which according to the AfDB (2013) is equivalent to 40 percent of the country,'s annual GDP. In addition, mobile e-wallet was adopted in the country while customers were encouraged to link such wallet to their financial institutions. Meanwhile, several mobile financial services such as business to business (B2B), business to person (B2P) mobile transactions were encouraged.

In Nigeria, according to CBN (2016), financial exclusion was conspicuously high, with the greater part of money hanging outside the banking system. Prior to 2012, to include the excluded, the government adopted customary strategies such as providing platform for mobilising savings, encouraging banking habits, providing credit for small-scale industries and promoting balanced development. However, a policy was instituted to reinforce financial inclusion in 2012, with the aim of reducing the ratio of adults excluded from financial services to 20 percent in 2020 as against 46 percent in 2010 (CBN, 2016). In a bid to actualize the policy, the authority set targets in terms of improving access to ATM and POS terminals. As a follow-up, the National Financial Inclusion Steering Committee and the National Financial Inclusion Technical Committee were inaugurated. Based on the recommendations of the committees and groups, the mobile money operators were licensed by the Central Bank of Nigeria (CBN) while the Nigerian Deposit Insurance Corporation (NDIC) extended deposit protection to the customers of microfinance banks, primary mortgage banks as well as non-interest banks. At the same time, the National Pension Commission created a department for the coverage of informal pensions (CBN, 2016). A good example of the frameworks put in place to foster inclusion in Nigeria is the Financial System Strategy 2020, which has financial inclusion as one of its major objectives. Another framework is the microfinance policy, which aims at alleviating poverty by bringing banking closer to the low-income earners through micro banking. In addition, in 2011 the CBN instituted the non-interest banking framework through the Islamic banking products. Another great measure to improve financial inclusion is the advent of e-banking products, electronic payment system, the cashless policy and emergence of Fintech (Financial technology) start-ups.

Technology has been proved to aid financial inclusion. These technological tools include ATMs, POS terminals, and mobile and internet (web) banking. The ATM is a computerised telecommunications device that fosters financial transactions in terms of cash withdrawals, transfers, deposits, or account balances enquiry, at any time such that the direct involvement of the staff of the financial institutions is not necessary. A POS terminal is a portable computerised telecommunications machine that accepts bank debit and credit cards for paying for goods and services. Both ATM and POS allow the cardholders real-time online access to funds and information in their bank accounts. Mobile banking transaction is conducted with smartphones while internet banking is performed on computers and smartphones. The National Financial Inclusion Steering Committee and the National Financial Inclusion Technical Committee had built-in financial literacy in their strategy to achieving the 2020 target: education is needed to expose the people to the capabilities of the tools they carry.

2.2 Role of Fintech in Financial Inclusion

Financial technology (Fintech) is an interdisciplinary subject that transverses finance, innovation and technology management (Leong & Sung, 2018). According to Leong and Sung (2018), it is any innovative idea that seeks to boost the processes involved in financial services through the development of technological solutions that are modelled after specific business situations as well as such technological ideas that can spur the establishment of new businesses and financial models. In a bid to ensure that everyone is integrated into the financial system, there is a need for technology in finance such as the adoption of mobile devices like the M-Pesa, artificial intelligence, ATMs, advanced algorithms and machine learning to move the financial system towards a nearly perfect market with very minimal transaction costs and information asymmetries. In extant practice, Fintech has gained prominence in promoting an all-inclusive financial system in Nigeria and in other countries. For example, in France, Finexkap offers financial services to provide credit to several businesses exclusively through a fully integrated digitalised process.

M-PESA is a pragmatic African example of Fintech as a catalyst to financial inclusion. The dominance of M-PESA in Kenya has guaranteed a wider access to financial services and has played a significant role in increasing the rate of possessing bank accounts from 18.5% prior to its launch in 2006 to 55.7% in 2017. This is because mobile financial services as provided by the M-PESA do not only provide access to financial services but also guarantee the users the eventual adoption of a traditional or conventional bank account (BIS, 2016). In Nigeria, several financial institutions have decided to join the global train with the development of Fintech strategies to integrate more people into the system. For instance, the capital market introduced CAPNET,

a digital trading system into the Nigeria capital market. In addition, payment systems have also been made easier with the introduction of CowryWise, Paystack, OPay, Remita and FirstMonie. FirstMonie is an initiative launched by First Bank Plc in Nigeria's first banking digital laboratory in 2018 in a bid to get the financial system closer to everyone (Mittal, 2019). However, to regulate the system, the CBN has developed a regulatory sandbox to control Fintech modalities in the country. Meanwhile, Fintech has been engaged aggressively as a financial inclusion strategy especially through the introduction of licensed POS terminals across the country. This aggressive use of Fintech has increased the number of POS terminals in the country from 20 million in 2014 to an astounding 295 million in 2018 (CEIC, 2020). Thus, in the next few years, through a thorough implementation of Fintech strategies, Nigeria may achieve the Sustainable Development Goal that seeks to ensure financial access for all.

2.3 Theoretical Literature: Theory of Financial Intermediation

The financial system is a network of financial institutions or intermediaries in the economy and, over time, it has been considered as engine of growth in the economy. In fact, taking into cognisance the issue of financial inclusion, the onus is on the financial intermediaries to either include or exclude a portion of the population in having access to some financial services. In line with the above, Schumpeter (1912) had described financial intermediation as the pooling of funds from the surplus unit to the deficit unit of the economy. According to Spence (1973), financial intermediation reduces information asymmetries as well as transaction costs in the economy. Furthermore, Claus and Grimes (2003) assumed that financial intermediation naturally makes fund available in the economy and changes the risky nature of financial assets. However, intermediaries can be considered necessary due to the loopholes or inadequacies within the financial system. It is therefore essential for intermediaries to exist, as there is no perfect financial system in the real world. This alone justifies their existence.

In support of the concept of financial inclusion, Schumpeter (1912) opined that technological innovation can be adopted as a system to bring more people into the financial system as the system can identify and fund entrepreneurs with transforming innovative ideas. In consonance with this, Okoye, Adetiloye, Erin and Modebe (2017) averred that the inclusion of more people in the formal financial sector will boost productive activities and lead to the development of the economy, as people would become empowered as they are included in the intermediation process.

2.4 Empirical Review

In Nigeria, Enueshike and Okpebru (2020) studied the economic consequence of financial inclusion between 2000 and 2018. Adopting the

ARDL technique, it was discovered that rural deposits and loans to SMEs, exert a negative effect on economic growth. Tah (2019) investigated the relationship between remittances and access to financial services between 2004 and 2015 in Sub-Saharan Africa. The study used the GMM technique and revealed that remittances have a positive impact on access to financial services in the region. Bakari, Donga, Hedima, Babayo and Ibrahim (2019) examined the impact of financial inclusion on poverty alleviation in the sub-Saharan region between 1980 and 2017. The study used the panel regression analysis and showed that financial inclusion has a positive effect on poverty reduction. Chinoda and Kwenda (2019) assessed the determinants of financial inclusion in 49 African countries between 2004 and 2016. The study used the S-VAR technique and observed that bank competition, economic growth, smartphones and bank stability largely determine financial inclusion.

Harley-Tega, Adetoso and Adegbola (2017) examined the role of financial inclusion in economic growth and poverty alleviation between 2006 and 2015. The study used ordinary least square regression technique and observed that financial inclusion has no significant effect on economic growth in Nigeria. Hence, they recommended that attempts made by banks to finance agriculture should be encouraged. Okoye, Adetiloye, Erin and Modebe (2017) studied the effect of financial inclusion on economic growth in Nigeria between 1986 and 2015. The ordinary least square technique was adopted and it revealed that financial inclusion had no effect on economic growth but that it had a positive effect on poverty alleviation. Hence, it was suggested that the regulatory framework for credit delivery to the private sector should be strengthened.

Onaolapo (2015) scrutinized the effect of financial inclusion on economic growth in Nigeria between 1982 and 2012. The study employed the ordinary least square technique for analysis as per capita income, gross domestic product and deposit to rural areas were used as dependent variables. It was observed that financial inclusion had a positive effect on economic growth. Hence, it was recommended that deposit and borrowing windows should be created for the poor at affordable costs.

Meanwhile, the review of the foregoing studies revealed some gaps which this study seeks to fill. First, noticeable in the review is the presence of mixed results such that while some discovered a significant positive relationship between the variables, some others discovered a negative relationship. In addition, most studies focused on economic growth because of financial inclusion while none considered economic development. However, because growth does not automatically translate to development, it becomes imperative to consider the effect of financial inclusion on economic

development Furthermore, most studies in the review failed to consider the causal relationship between financial inclusion and economic development, thus, this study seeks to employ the Pairwise causality test for this purpose.

3   Methodology

The Nigerian financial inclusion performance was compared with those of the countries in the BRICS block (Brazil, Russia, India, China and South Africa), three developed countries from Europe, Middle East and America (the UK, Israel and the USA) and five African countries (one from each region). Meanwhile, the ARDL and Pairwise Causality techniques were used to assess the effect of financial inclusion on economic development in Nigeria between 1986 and 2018. Thus, countries were selected as shown in the table 1.

Table 1. Sample Selection

Type	Countries	Number
BRICS	Brazil, Russia, India, China, South Africa	5
African Regions	Ghana, Tanzania, Kenya, Egypt, Gabon	5
Developed Countries	USA, UK, Israel	3
Case Study	Nigeria	1
TOTAL		14

Source: Compilation by Authors (2020)

The BRICS is selected for comparison because Nigeria aspires to catch up with the block, economically. The indicators were selected based on the data available on the most recent global Findex database of the World Bank (2017).

Chart 1. BRICS Economies
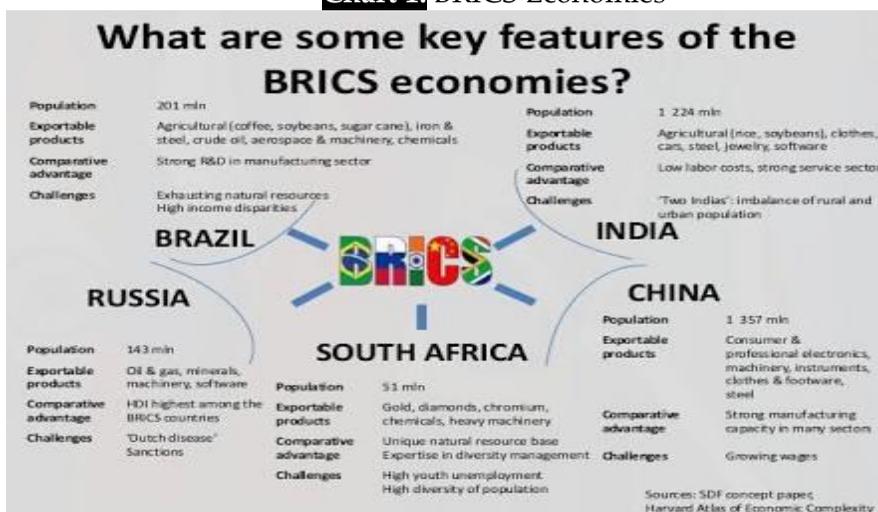
Source: Global Education Future (2018)

Thus, in addition to South Africa that is included in the BRICS block, the five other African countries came one each from the West, South, Central, East and North Africa. To meet this target, Ghana, Tanzania, Gabon, Kenya and Egypt were included. The three developed countries (USA, UK and Israel)

were included so that the top performers would be available as standards for comparison, thus, traversing the globe, analytically.

3.1 Model Specification

The objective of the study is to assess the relationship between financial inclusion and economic development in Nigeria between 1986 and 2018. The study used the correlation analysis, Auto Regressive Distributed Lag (ARDL) and Pairwise Causality techniques for analysis, and with pre-estimation (Unit Root Test) and post estimation tests. The data used for this study were sourced from the CBN statistical Bulletin and World Bank Database.

3.2 Model Specification

The model formulated for the study, which was adopted from Onaolapo (2015), is as stated below:

$$PCI = f(LRBB, DRBB, NBB, INTR) \qquad (3.1)$$
$$PCI = \alpha + \beta_1 LRBB + \beta_2 DRBB + \beta_3 NBB + \beta_4 INTR + \mu \qquad (3.2)$$

Where PCI = Per Capita Income, LRBB = Loans to Rural Bank Branches, DRBB = Deposit from Rural Bank Branches, NBB = Number of Bank Branches, INTR = Interest Rate

3.3 Estimation Techniques

The pre-estimation tests such as the Unit Root Test (URT) and Optimal Lag Selection Criteria were conducted prior to the Auto Regressive Distributed Lag (ARDL) modeling analysis. This is because the URT can reveal the stationarity of data needed for the analysis as non-stationary data would yield spurious results. Moreover, the Lag Selection criteria were used to determine the appropriate lags that suited the ARDL analysis. Thereafter, the Ordinary Least Square (OLS) and ARDL techniques were used to test for the effect of financial inclusion in the short and long run respectively. The ARDL bounds test was used to determine the presence of a long run equilibrium relationship especially in the presence of a mixed order of integration. However, post estimation tests such as the autocorrelation and heteroscedasticity tests were conducted to test for the validity of the ARDL results. Thereafter, the Causality test was used to determine the direction of causality between financial inclusion and economic growth.

4 Result and Discussion

4.1 Empirical Result

This segment of the study presents and discusses the result of the study right from the correlation analysis in table 2. Thereafter, the study proceeded to the Unit Root Test, Optimal Lag Length selection criteria, OLS and ARDL frameworks as well as the Pairwise causality.

Table 2. Correlation Analysis

	LRBB	DRBB	NBB	INTR	PCI
LRBB	1.000000				
DRBB	-0.030086	1.000000			
NBB	0.810065	-0.174060	1.000000		
INTR	-0.489969	0.438394	-0.617792	1.000000	
PCI	0.839265	-0.051651	0.944429	-0.685990	1.000000

Source: Authors' Computation (2020)

The correlation analysis revealed that the deposits from rural bank branches and interest rate have no correlation with economic development. This implies that the deposits from rural bank branches and the rate of interest in the economy have not translated to economic development whereas the number of bank branches and loans to rural areas have greater correlation with economic development.

Table 3. Test for Stationarity of Data

Variables	ADF Test			PP Test			Order of Integration
	ADF T-Stat	5% Critical Value	Prob. Value	PP T-Stat	5% Critical Value	Prob. Value	
PCI	-3.7183	-2.9571	0.0085	-3.3031	-2.9571	0.0000	I(0)
LRBB	-5.8628	-2.9640	0.0000	-14.9589	-2.9604	0.0000	I(1)
DRBB	-4.2394	-2.9604	0.0023	-4.2604	-2.9604	0.0022	I(1)
NBB	-4.0630	-2.9604	0.0037	-4.0373	-2.9604	0.0039	I(1)
INTR	-5.4774	-2.9640	0.0001	-6.9410	-2.9604	0.0000	I(1)

Source: Authors' Computation (2020)

The Augmented Dickey Fuller and Philips Perron Unit Root Tests revealed that all variables are stationary at first difference except for per capita income, which had no unit root at level. Thus, the mixed order of integration will necessitate the use of the ARDL bounds test for determining the presence of a long run equilibrium relationship. This requires the use of the optimal lag length selection criteria to select the appropriate number of lags for the ARDL analysis.

Table 4. Optimal Lag Length Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-144.6263	NA	0.014784	9.975085	10.20862	10.04979
1	-6.479160	221.0354*	8.05e-06	2.431944	3.833141*	2.880199
2	20.07702	33.63783	8.44e-06	2.328199	4.897060	3.150000
3	60.19081	37.43954	4.77e-06*	1.320613*	5.057139	2.515960*

Note: * denotes the suitable lag length according to each criterion
Source: Authors' Computation (2020)

The lag selection criteria according to the Akaike Information Criteria (AIC) which was employed in the study selected "3" as the appropriate number of lag suitable for the study. Therefore, this was put into consideration during the ARDL analysis.

Table 5. ARDL Bounds Test

Model	F-Statistics	No. of Regressors (k)
PCI = *f*(LRBB, DRBB, NBB, INTR)	6.3434	4
Critical Value Bounds		
Level of Significance	Lower Bound I(0)	Upper Bound I(1)
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Source: *Authors' Computation (2020)*

The ARDL Bounds test revealed that there is presence of a co-integrating relationship between the variables as the F-Statistics was found to be greater than the critical value upper bounds at all levels of significance.

Table 6. OLS (Short Run) and ARDL (Long Run) Relationship Results
Dependent Variable: PCI

| Variable	Coefficient	T-Statistics	Prob.
(i)		OLS Short Run Relationship	
LRBB	0.1694	2.2856	0.0301
DRBB	0.1359	4.0452	0.0004
NBB	2.6297	8.7559	0.0000
INTR	-1.1661	-4.6835	0.0001
C	-23.8154	-10.3828	0.0000
(ii)		ARDL Long Run Relationship	
LRBB	0.5625	5.5165	0.0001
DRBB	0.1624	6.3847	0.0000
NBB	0.6915	2.1923	0.0488
INTR	-3.0913	-8.2714	0.0000
C	-8.3479	-3.3760	0.0055

Source: *Authors' Computation (2020)*

The first part of Table 6, above, which presents the short run oriented result as provided by the classical Ordinary Least Squares (OLS) technique revealed a significantly positive relationship between financial inclusion indices and economic development while interest rate attested otherwise in the short run. Explicitly, loans from rural bank branches, deposit to rural bank branches and number of bank branches were found to be positively related to economic development to the approximate tune of 0.169, 0.136 and 2.630 units respectively. This implies that a unit increase in these variables will increase economic development by.169, 0.136 and 2.630 units respectively in the short run. Thus, number of bank branches has the highest positive contribution to economic development in the short run followed by loans by rural bank branches and then, deposits to rural bank branches. Conversely, interest rate was discovered to exert a negative effect on economic development to the approximate tune of 1.166 units, which connotes than a unit increase in interest rate will reduce economic development by the same units in the short run.

Furthermore, the second part of Table 6presents the long run oriented result as provided by the ARDL technique, which revealed that just like in the short run analysis, financial inclusion indicators were found to be significant and positively related to economic development while interest rate was found to be negatively related to economic development in the long-run. Specifically, loan from rural bank branches, deposits to rural bank branches and number of bank branches are positively significant and valued at 0.563, 0.162 and 0.692 units respectively which denotes that a unit increase in these variables will spur economic development in the same proportion. On the other hand, interest rate was found to be negatively related to economic development by 3.09 units, which connotes that a unit increase in interest rate would reduce economic development by the same proportion in the long-run.

Table 7. ARDL Post Estimation Diagnostics

Serial Correlation Test		Heteroscedasticity Test		Ramsey Reset Test		Normality Test	
Statistics	Prob.	Statistics	Prob.	Statistics	Prob.	JB Statistics	Prob.
0.8546	0.4986	0.3115	0.9859	1.3269	0.2738	1.3383	0.5122

CUSUM TEST
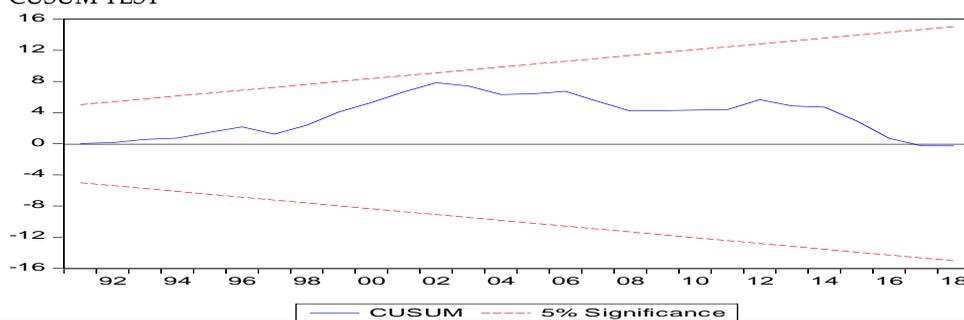
Source: Authors' Compilation (2020)

The post estimation diagnostics that validates the viability and reliability of the ARDL results revealed that, based on the five tests, the model could be adjudged as viable and a bedrock for policy recommendations. The tests (namely: serial correlation, heteroscedasticity, normality, Ramsey reset) revealed that serial correlation, heteroscedasticity, abnormal distribution of data and instability were absent in the study model. In addition, the CUSUM test, which had its CUSUM line fall in between, the 5% critical bounds line revealed that the model is stable.

Table 8. Pairwise Causality Test

No Causality		Unidirectional Causality		Bidirectional Causality	
DRBB ━━━ PCI		PCI ➝ LRBB		PCI ⬌ INTR	
NBB ━━━ PCI		NBB ➝ LRBB		LRBB ⬌ INTR	
NBB ━━━ DRBB		NBB ➝ INTR			
INTR ━━━ DRBB					

Source: Authors' Computation (2020)

Table 8 revealed that economic development causes financial inclusion especially through the channel of loans to rural bank branches. However, number of bank branches was found to determine loans to rural bank branches and interest rate. In addition, there exists a bidirectional causality between economic development and interest rate, the same bidirectional causality was discovered between interest rate and loans to rural bank branches. However, there was no evidence of causality between deposit to rural bank branches and number of bank branches on the one hand and economic development, number of bank branches, interest rate, and deposit to rural bank branches on the other hand.

4.2 Discussion of Findings

The ARDL result revealed that financial inclusion has a significantly positive effect on economic development. This result is consistent with the crux of the financial intermediation theory as advanced by Schumpeter (1912) as well as the findings of Bakari *et al.* (2019), Saab (2017), and Onaolapo (2015). Thus, the results imply that financial inclusion improves economic development. This is plausible because financial inclusion is the absorption of the largely unbanked population into the financial system: thus, participation is increased in the system. Therefore, many unbanked funds lingering outside the precincts of the financial system can then be mobilized and repackaged into credits, which would be channelled into investment in productive and development activities within the economy. Moreover, people in the rural areas would have more access to funds to contribute their quota to the development of those areas within the economy through their improved productive activities. However, this result contradicts the discovery of Enueshike and Okpebru (2020) and Harley-Tega, Adetoso and Adegbola (2017).

In particular, loans to and deposits from rural areas were found to exert a positive impact on economic development. This implies that an increase in the loans extended to and deposits received from rural areas will improve the development of the economy. The mainstay of the rural areas exists in the primary industry such as agriculture, which is the foundation of national productivity. Thus, intermediation of funds in such areas will boost national productivity, per capita income and economic development. Similarly, the number of bank branches was found to spur economic development: this connotes that an increase in the number of bank branches will improve economic development. This is because an increase in the number of bank branches is a major step in bringing financial services to the doorstep of everyone including the financially excluded: the financial access created will increase the access of people to credit for productive purposes as well as reduce the existence of unbanked funds. Moreover, in rural areas where most people have to travel to the next city to access financial services, the bulk of

funds in such rural areas may be hidden in local conventional or informal channels and kept outside the financial system and become unavailable for developmental purposes. As such, an increase in bank branches will bring the financial system close to the rural people and relieve them of the stress of travelling to city centres. On the other hand, interest rate was found to discourage economic development. This is plausible because an increase in interest rate will automatically increase costs, thereby discouraging borrowings, and thus reduce investment in developmental activities.

Chart 2. Development Hypothesis

1. Early Stage: Supply Leading Hypothesis

| 1 | Interest Rate | Funds Availabilty | Econ Development |

2. Later Stage: Demand Following Hypothesis

| 2. | Econ Development | Funds Supply | Interest Rate |

Source: Authors' Design (2020) as inferred from Patrick (1966)

In addition, evidence from the causality test revealed that economic development drives financial inclusion. This implies that a change in the behaviour of the economy will cause a change in financial inclusion especially through the channel of loans advanced to rural areas. This is plausible because the state of the economy will largely determine the availability and direction of funds in the economy. As such, availability and direction of funds to rural areas will majorly be determined by the state of the economy, such that in times of recession (e.g. the 2008 recession and the Covid-19 pandemic), more funds would be extended to the rural areas. This will cushion the effect of the recession while in times of economic boom; more deposits are received from such areas. Similarly, the number of bank branches determines loans to rural areas as well as the interest rate. This is plausible because the higher the number of banks in the rural areas, the higher the suppliers of funds and the availability of funds. Moreover, when supply begins to exceed demand, prices fall, therefore, the increase in number of bank branches (suppliers of funds) will bring down the interest rate because participants in the financial system now have a wide range of choice and competition now exists in the system. However, bidirectional causality was discovered between interest rate and each of economic development and loans to rural dwellers. This is in line with the stage of development hypothesis expounded by Patrick (1966) which birthed the 'demand following and supply leading' hypothesis. Thus, at the early stage

of development, interest rate as fixed by the financial system determines the availability of funds and economic development while at the later stage of development, economic development determines the rate of financial development at a point and as such determines the supply of funds and the price of funds (interest rate). This is depicted in Chart 2.

4.3 Comparative Analysis

A comparative analysis of the 14 selected countries as shown in Table 9 below revealed that Nigeria still lags behind as regards financial inclusion as compared to other countries, even African countries. Taking into cognisance the ratio of the issuance of debit cards to its use during the period, it can be deduced that Nigeria still lags behind other countries at similar level of development. Countries like Gabon and Tanzania, often considered to be behind Nigeria, are performing better on the financial inclusion indicators. This probably exists because of the inadequate ATM and POS machines in Nigeria, and the network hassles that most users encounter. Although, Nigeria performs better than Egypt in financial inclusion implementation when considered holistically, it still lags behind Ghana and Gabon in the aspect of the adoption of mobile banking services and credit card ownership, which remains a call for concern for the Nigerian policy makers to improve on mobile banking and the cashless policy. Sadly, the Nigerian situation as well as that of Africa as a whole stands worse when compared with the developed countries of the world, like the USA, Russia, China and the UK.

Also, very noticeable in Table 9, is the absence or reduced existence of mobile money accounts in developed countries of the world. This means that most people in such advanced countries prefer making transactions online via the internet rather than through mobile money. This is confirmed by the high rate of digital transactions in such countries. Although, mobile money exists in Nigeria at a low rate, other African countries like Gabon proved to be more inclined to mobile money. However, despite the low rate of mobile money in Nigeria, the country do not possess a well-developed inclusive system like the other developing countries because its rate of digital transactions stands very low at 29.66% as compared to that of Ghana at 49.47% and the United Kingdom at 95.61%. Israel issued fewer debit cards than Nigeria; yet, she recorded more card transactions than Nigeria. This alone shows that few people carry too many cards, such that many cards remain idle. It also shows that the banking structure has not included some people: it has not been brought to the doorsteps and within the reach of the rural population. In addition, Brazil seemed to have outpaced Nigeria going by every indicator on Table 9, especially the use of debit cards, which stood at 72.51% as compared to Nigeria's 9.46%. In the same vein, South Africa outpaced Nigeria in individual specific indicator as well as in the overall performance.

Table 9. Selected FinancialInclusion Indicators for selected countries as at 2017

S/N	INDICATORS	Debit card ownership	Debit card used in past one year	No of accounts with financial Institutions.	Made or received digital Payments in the	Mobile Money Account	Credit card ownership	Total Score (FIP - Financial Inclusion Performance)
1	Egypt	24.75	1.83	32.07	23.60	1.79	3.34	87.38
2	Ghana	18.56	5.38	42.28	49.47	38.95	5.75	160.39
3	Gabon	16.30	5.51	33.98	54.00	43.58	5.89	159.26
4	Tanzania	13.27	4.42	20.97	42.99	38.54	0.54	120.73
5	Kenya	37.55	10.98	55.72	78.96	72.93	5.69	261.83
6	U. K.	91.45	82.40	96.37	95.61	-	65.37	431.20
7	USA	80.23	68.18	93.12	91.11	-	65.60	398.24
8	Brazil	59.35	72.51	70.04	57.86	4.84	27.03	291.63
9	Russia	56.60	41.52	75.76	70.52	-	20.08	264.48
10	India	32.72	11.65	79.84	28.69	1.99	3.00	157.89
11	China	66.75	38.75	80.23	67.94	-	20.82	274.49
12	South Africa	34.13	22.64	67.44	59.00	19.02	8.87	211.10
13	Israel	31.01	25.84	92.81	90.85	-	75.01	315.52
14	Nigeria	31.55	9.46	39.41	29.66	5.61	2.59	118.28

Source: World Bank (2020) database

Based on the total scores in Table 9, the countries were ranked. The ranking presented in Table 10 showed that Nigeria stands as the thirteenth position, behind all other countries except Egypt. Hence, considering the African countries selected in the comparative analysis, Nigeria still has a long way to go in her financial inclusion efforts. This is a reality, as she still lags behind most African countries with clear difference in points. This connotes that Kenya, Ghana and South Africa may soon be economically and financially ahead of Nigeria if proper measures are not taken to extend financial services further into the rural areas, and more importantly because this has a multiplier effect on the economy.

Table 10. Financial Inclusion Rankings

Country	FIP	Ranking
U. K.	431.20	1
U.S.A.	398.24	2
Israel	315.52	3
Brazil	291.63	4
China	274.49	5
Russia	264.48	6
Kenya	261.83	7
South Africa	211.10	8
Ghana	160.39	9
Gabon	159.26	10

India	157.89	11
Tanzania	120.73	12
Nigeria	118.28	13
Egypt	87.38	14

Source: *Authors' Computation (2020)*
Key: *FIP - Financial Inclusion Performance*

5   Summary and Recommendations

The study examined the impact of financial inclusion on economic development in Nigeria between 1986 and 2018. The study took per capita income as the dependent variable and used loans from rural bank branches, deposits with rural bank branches, number of bank branches and interest rate as independent variables. In the course of analysis, the study utilized correlation analysis, the Ordinary Least Square, Auto Regressive Distributed Lag modelling and the Engle Granger causality techniques. The OLS and ARDL analysis revealed similar results for the short and long run periods. Empirical findings revealed that financial inclusion was found to exert a positive influence on economic development. Meanwhile, the causality test revealed that there exists a unidirectional causality running from economic development to financial inclusion through the channel of loans from rural bank branches. In addition, the comparative analysis revealed that considering certain financial inclusion indicators, Nigeria still lags behind the BRICS and some major African countries in the quest to achieve financial inclusion.

Consequent on these findings, the following recommendations are apt. For bank branches and loans to rural areas to exert a positive effect on economic development, the interest rate on loans should be reduced to single digits while deposits emanating from rural areas should be granted as credits to people in the same environment and not expatriated for developmental purposes in other areas, particularly the urban areas. In addition, the communication networks in Nigeria should be incorporated into the financial system to ensure that the mobile banking system, like the M-Pesa in Kenya, is replicated in Nigeria. Deposit money banks (DMBs) should join hands with the CBN in fostering the financial inclusion agenda of the government. Digital (card and mobile) financial services have the potential to substantially decrease the number of the unbanked in Nigeria, thus enhancing savings and reducing the cost of doing business. Regrettably, CGAP/DFID, cited in AfDB (2013), had observed that only eight African countries utilized technology-based government to persons (G2P) transactions in 2009. It is therefore recommended that governments at all levels make payments such as staff salaries and pensions, and collect taxes, fees, bills and levies with technology-based solutions. This would reduce mistakes, errors or frauds, and delays currently experienced in G2P

transactions. The federal government, CBN and DMBs should offer financial literacy programmes to the people in order to promote financial inclusion through digital channels. Lastly, Fintech companies should be given the regulatory and venture capital support to thrive, for they will help put many unbanked people in the financial system without the need to visit bank branches.

Meanwhile, as the Fintech start-up companies are growing up in the country, it would be appropriate, in further studies, to establish their effect on financial inclusion. Covid-19 pandemic has taught individuals, households and companies that digital channels are available as alternative to most financial transactions (Wale-Awe, 2020). A post covid-19 study on financial inclusion may show a significant improvement in financial inclusion in Nigeria. Moreover, financial inclusion can be considered for further studies through the use of other techniques such as lag and sensitivity analysis. Furthermore, region specific analysis can be carried out to determine the major regions that must be focused on in improving financial inclusion in Nigeria.

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