



Financial Inclusion and the Nigerian Economy: Empirical Evidences

Ugbede Onalo^{1*}, Mohd Lizam¹ and Ahmad Kaseri¹

¹*Faculty of Technology Management, Universiti Tun Hussein Onn Malaysia, Malaysia.*

Authors' contributions

This work was carried out in collaboration between all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJEBA/2017/26842

Editor(s):

(1) Gerasimos T. Soldatos, American University of Athens, Athens, Greece.

Reviewers:

(1) Subhamoy Chakraborti, India.

(2) B. C. M. Patnaik, KIIT University, India.

Complete Peer review History: <http://www.sciencedomain.org/review-history/21615>

Original Research Article

Received 5th May 2016
Accepted 23rd September 2017
Published 28th October 2017

ABSTRACT

The Nigeria government and particularly, monetary authorities have over the years initiated changing policies and programmes targeted at deepening financial inclusion in the context of rural populace and with the ultimate view to enhancing the economy. This study therefore, evaluates the effects of financial inclusion in the context of banking habits of rural population on the Nigerian economy. Specially, this study evaluates the effects of deposit (RDDEPOSIT) and loan (RDLOAN) of rural dwellers with rural branches of commercial banks on Gross Domestic Product (GDP). Secondary data were used for this study. The source of data for this study is the Central Bank of Nigeria statistical bulletin. Data were collected over a period of 33 years (1982-2014). Variables were subjected to stationarity test with the view to establishing the stationarity or nonstationarity of variables. Also, Johansen cointegration check was conducted to investigate whether variables are cointegrated or not. Results established that variables were cointegrated. Thereafter, this study estimated short run and long run Causality model using VECM. Findings interestingly established that there is no long run causality running from RDDEPOSIT and RDLOAN to GDP. In other words, in the long run, results established that rural dwellers' deposit and loan with rural branches of commercial banks have influence on the performance of Nigeria economy in terms of GDP. However, results demonstrated that rural populace deposit and loan with rural branches of commercial banks have no effect on the performance of the Nigeria economy in terms of GDP in

*Corresponding author: E-mail: ugbesonas@yahoo.com;

the short run. Findings have both practical and theoretical implications; particularly, for policy makers and the Nigeria government at large. Based on these results, this study recommended that efforts and attention should be given to measures and policies capable of delivering formal financial services to rural dwellers by Nigeria government, particularly, policy makers.

Keywords: Financial inclusion; financial exclusion; deposits; loan; GDP.

1. INTRODUCTION

Globally and nationally, the concept of financial inclusion has assumed higher level of prominence in recent times as a result of its apparent importance as a driver of economic growth [1,2,3,4,5]. However, achieving pervasive financial inclusion has been a major challenge globally. Precisely, Kama & Adigun [3] established that worldwide, about 54.0 per cent of adults are financially excluded. In other words, 54.0 per cent adults are without access to financial services globally. Although developed economies such as UK, Germany, Sweden, Belgium, France, Canada, US among others have developed specific legal and policy pronouncements geared towards encouraging activities (predominantly by banks) that ensure incessant expansion and sustainable financial inclusion, for developing economies like Nigeria, the story is different.

According to Kama & Adigun [3], developing economies exhibit about 70.0 per cent financial exclusion levels. Focusing on Nigeria, CBN [6] established that in 2012, a total of 39.2 million adult Nigerians representing 46.3% of the adult population of 84.7 million were financially excluded. In addition, World Bank Global Findex data showed that merely about 30 per cent of Nigerian adults transact through/with formal financial institutions [7]. According to Ajakaiye & Olowookere [7], the value of about 30% of financially included Nigerian adults is less compared to Kenya and South African with respective value of 42 per cent and 54 per cent. Generally, Nigeria's rate of adult financial inclusion estimated at 30% per cent is one of the lowest in Sub-Saharan Africa.

Kama & Adigun [3] worryingly established that financial exclusion is conspicuously predominant in Nigeria. Their conclusion is hinged on the fact that the greater part of the money in the Nigerian economy is outside the banking system. Specifically, they established that although the average proportion of the money outside the banking system (COBs) to narrow money supply (M) dropped from 61.1 per cent during the 1960s

to 44.3 per cent during the 1970s and subsequently to 40.9 per cent during the 1980s, the nominal value was still high bearing in mind the growth in the level of narrow money in the economy. In nominal value, while Obinna [8] put currency outside banks as at October, 2014 to N1.185 trillion, CBN [9] estimated N1.471 trillion as at March 2015. This is indicative of upward trend in nominal value of currency outside banks.

In appreciation of the importance of financial inclusion as an instrument of economic growth and development, Nigeria has attempted and implemented changing policies and programmes to promote financial inclusion considering the idiosyncrasies of the economy and local population features. The embracing of the rural banking scheme in the later part of 1970s was one of the chief policies and programmes of the Nigerian government targeted at promoting financial inclusion [3]. Specifically, the scheme which was launched by the Central Bank in 1977 was geared towards achieving minimum, one bank branch in every local government areas in Nigeria [3]. In other words, the scheme required commercial banks to establish rural branches.

The Nigerian government expected that the rural banking programme would help achieve the transformation through the provision of platforms capable of mobilising savings from the rural populace resulting from the dispersed network of branches; provision of credit to grow the small and medium scale industries and entrepreneurs; encouragement of banking habits among the chiefly agricultural rural populace and in all, promote stable development and eventual decrease in the rural-urban migration [3,10]. Logically, inclusive finance that affords availability and usage of formal financial system for all members of an economy especially vulnerable and financially excluded group at an affordable cost will ultimately influence economic activities [11]. According to Babajide, Adegboye, & Omankhalen [12], Sharma [5] and Jisha & Varghese [13], economic growth would be achieved at a faster rate, if all segments of the population have access to financial services – financial inclusion.

Nigerian Government expectation is consistent with Kama & Adigun [3], Babajide et al., [12] and Andrianaivo & Kpodar [14]. Specifically, more access to deposits, no doubt will improve the ability of financial intermediaries to mobilise savings and greater access to finance will facilitate economic growth by increasing the capacity of individual households to venture into productive undertakings [3,14]. Ajakaiye & Olowookere [7] also affirmed that development of the financial sector is expected to encourage savings and capital formation, minimizes external financing constraints faced by companies and ultimately, engender higher growth. Overall, financial inclusion has potentials to engender inclusive growth of the economy [1,13,15,16].

Giving the high nominal value of currency outside banks including evidences of its continuous upward increase, the crucial question is: are government previous and contemporary efforts at stimulating financial inclusion in Nigeria to accelerating economic growth yielding desired outcomes? Providing answer to this question is the motivation of this study. Since rural banking is key to financial inclusion, this study precisely provide an evaluation of the effects of deposit and loan of rural populace with rural branches of commercial banks on gross domestic product (GDP) as proxy for the performance of the economy.

The remaining of this paper is structured as follows: Section 2 contains a brief statement of the problem that this study addresses. Significance of the study is discussed in section 3. Discussions on Financial Inclusion and Financial Exclusion are contained in section 4. Nigeria Journey thus far touching Financial Inclusion is provided in this section. Section 4 equally offered strategies and stakeholder of Financial System System 2020 (FSS 2020) including challenges of financial inclusion. Section 5 discusses the methodology of this study. Empirical analyses and results are presented in section 6. Section 7 contains the conclusions, implications and recommendations of the paper.

2. PROBLEM STATEMENT

According to Kama & Adigun [3] and Stephen, Fiona, & Louise [17], financial inclusion is a situation in which all people have access to banking and insurance services including financial literacy and capabilities. Thus, Kama & Adigun [3] established that financial inclusion

emphasizes that consideration should be given to human and institutional issues like quality of access, affordability of products, provider sustainability, and outreach to the most excluded populaces. In the case of Nigeria, the most excluded population is the rural population. Nwankwo & Nwankwo [18] emphatically observed that the sustainability of financial inclusion to rural dwellers in Nigeria remains the mainstream for economic growth and development.

Emeka & Udom [19] established that notwithstanding the Central Bank of Nigeria's (CBN) initiatives to ensure that banks extend their services and facilities to rural areas, a high proportion of the rural residents are still unbanked. In other words, the CBN initiatives seem not to encourage financial inclusion services amid the poor in Nigeria. This is suggestive that the pioneer initiative of Nigerian government was targeted towards increasing the access of more members of the Nigerian rural populace to banking services, particularly, savings and money transfer facilities. In other words, for financial inclusion to be a reality in Nigeria, innovations and actions must be intended at enlisting more rural populaces into the financial inclusion process.

However, studies on the likely effects of financial inclusion on economic development and growth in the setting of including the 'excluded' rural dwellers (poor) are relatively scarce and the extent to which enhanced rural banking intermediation activities in terms of deposit and loan can support economic development in the Nigeria case has not been exhaustively addressed. This study is an attempt to bridge the gap in this critical area and thus, add to existing studies geared towards achieving the full financial inclusion and its attendant benefits by the Nigerian government. The aim of this study, therefore, is to assess how well do accepting of deposits and advancing of loan as the most important functions of commercial banks focusing on the rural populace improve the economy.

Specifically, this study is designed to evaluate the effects of financial inclusion activities at rural level in terms of deposit and loan of rural dwellers with rural branches of commercial banks on the GDP as a key proxy of the economy. In other words, since rural banking scheme consists basically of provision of platforms for mobilising savings and credit in rural regions, this study

distinctively evaluate the effects of deposit and loan of rural persons with rural branches of commercial banks on the Nigeria economy as proxied by GDP. Thus, this paper provides an explanation of the nature of predictive relationship between fundamental indices of financial inclusion and Nigerian economic growth. Obviously, this study is one of the few studies that actually consider the true rudiments and intricacies of financial inclusion in the context of rural populace basic banking activities and habit.

3. SIGNIFICANCE OF THE STUDY

The CBN and other interested parties intend to implement a National Financial Inclusion Strategy to among others, increase the number of Nigerians that are included in the formal sector which was 30.0% in 2010 to 70.0% by the year 2020. This journey calls for periodic evaluation of progress made. Therefore, findings of this apt study shall no doubt be a gauge for stakeholders (Banks, Other Financial Institutions, Insurance, Regulators, Technology / Telecommunications firms, Public Institutions and Development Partners/experts) in assessing the extent of progress made thus far. By implication, findings of this study would suggest allocation of more attention and resources to areas and issues where exigencies are imminent.

4. WHAT ARE FINANCIAL INCLUSION AND FINANCIAL EXCLUSION?

The concept of financial inclusion has attracted different definitions and measured differently by various researchers and stakeholders depending on their institutional settings and objectives, hence, disallowing uniformity in standard and cross-country comparisons [7]. However, focusing on Nigeria, CBN [6] established that financial inclusion is achieved when adult Nigerians have easy access to a broad range of formal financial services that meet their needs at affordable cost. Specifically, financial inclusion links people to banking services including their attendant benefits [3]. According to Ajakaiye & Olowookere [7], increased savings can be achieved by including the poor and underprivileged groups in the formal financial system. Given the large number of the poor and deprived, this small saving group signifies a means of financial diversification capable of enhancing financial stability and economic growth of a nation [7].

However, Onaolapo [11] defined financial exclusion as those processes that serve to prevent certain social groups and individuals from gaining access to the formal financial system or the inability of some societal groups within an economy to access the financial system. According to Kama & Adigun [3] and Mohan [20], financial exclusion represents lack of or inadequate access by some members of the society to appropriate low cost, fair and safe financial products and services from conventional providers. Bayero [21] simply defined financial exclusion as the inability to access appropriate financial services. Consequentially, when financial development is not entirely inclusive (a situation of financial exclusion), especially when it tilts heavily towards the wealthy, it may dampen economic growth [7].

4.1 Nigeria Financial Inclusion: The Journey thus Far

An investigation done by the Enhancing Financial Innovation and Access (EFInA) in 2010 showed that Nigeria has the highest proportion of financially excluded adults of about 46.3 per cent, compared with 26.0 per cent in South Africa, 33.0 per cent in Botswana and 32.7 per cent in Kenya. In other words, the rate of exclusion is worst for Nigeria compared to other African countries erstwhile. However, past efforts of Nigeria government at improving financial inclusion in Nigeria are suggestive that the issue of financial exclusion has been a main concern economically, thus, received the attention of several governments.

Most policies and programmes of previous governments targeted at encouraging financial inclusion through the adoption of the rural banking scheme in the late 1970s are central in this regard. Fundamental also, are other initial policies geared towards promoting the spread of financial services and products through the introduction of guidelines prescribing minimum levels of lending to small and medium scale businesses and loan extended in rural regions. Other specific institutional initiatives aimed at promoting financing and growth of small and medium-scale enterprises (SMEs) and small businesses, particularly, of members of the rural populace included the National Economic Reconstruction Fund (NERFUND) and Family Economic Advancement Programme (FEAP). Furthermore, to stimulate increased savings values and grow banking habit, government

established the People's Bank and community banks [3].

However, the relatively poor state of financial inclusion in Nigeria today is indicative that perhaps, past policies and programs were poorly implemented, short-lived or rather impotent in achieving set goals. This led to a rethink and subsequent innovation of a stratagem that could deliver the Nigeria financial inclusion objective. Precisely, as parts of its efforts to tackle the problem of poor state of financial inclusion, Nigeria has designed a National Financial Inclusion Strategy which is geared towards increasing the number of Nigerians that should be included in the formal financial sector to 70 per cent by the year 2020 [7]. The latest scheme is called Nigerian Financial System System 2020 (FSS 2020). The FSS 2020 represents a complete and strategic road map and framework for developing the Nigerian financial sector. The FSS 2020 is also aimed at transforming the Nigerian financial sector into a growth catalyst that will enable Nigeria to be one of the 20 largest economies of the world by 2020 [3].

4.2 Strategy and Stakeholder of Financial System System 2020 (FSS 2020)

Obviously, the heightened interest in financial inclusion in Nigeria can be traced to incredible practical and theoretical evidences of positive effects of financial development on economic growth [7]; thus, the continuous commitment of the governments of Nigeria to ensuring full financial inclusion. Strategies for achieving the financial inclusion targets of Financial System System 2020 (FSS 2020) are clearly documented. Specifically, CBN [6] identified and clarified the following strategies. First of the strategy concentrates on Agent banking; ensuring the delivery of banking services outside conventional bank branches, through additional touchpoints such as current retail stores and petrol stations or via technology such as 'Point of Sale' (POS) devices and mobile phones. This is followed by Mobile banking/ mobile payments intended to enhance the access to financial services through devices such as mobile phones that are either directly linked to a bank account or use of mobile wallets as intermediary virtual money accounts. Also, linkage models capable of enhancing financial and business collaboration between mainstream financial institutions such as deposit money banks and development finance institutions; government and micro-finance banks / institutions for wholesale funding

and on-lending transactions is a fundamental strategy. Finally, client empowerment as a strategy would increase bankability of population through coordinated national financial literacy initiatives that are complemented by consumer protection.

Essentially, the Financial System Strategy (FSS2020) recognized six stakeholders within the financial sector whose committed combined efforts have the potentials of realizing the FSS2020 objectives and overall translate Nigeria to be one of the 20 largest economies by 2020 [3]. According to CBN [6], the stakeholders in enhancing Financial Inclusion, as specified by FSS 2020, are: Banks (Deposit money banks, primary mortgage institutions, microfinance banks), Other Financial Institutions (Discount houses, pension fund administrators, development finance institutions), Insurance (insurance companies, losses adjusters, insurance agents), Regulators (Central Bank of Nigeria, Nigeria Deposit Insurance Corporation, NAICOM, Pension Commission, NIMC, NCC), Technology / Telecommunications firms (Settlement Providers, ATM service providers, Mobile service providers, E-payment/e-channel operators), Public Institutions (Federal ministries, Government Agencies / programs, Nigeria Postal Services) and Development Partners/ experts (International finance agencies, Donor institutions, Consulting companies, advisors). It is obvious from the above listing that though financial inclusion is expedient to achieving the National economic goals, the interconnectivity in effective and efficient service delivery by these stakeholders is more exigent.

4.3 Challenges of Financial Inclusion

No matter how simple or complex strategies in achieving the blissful gains of financial inclusions, it is an illusion to believe that the whole process is cost free. CBN [6] identified three categories of barriers to financial inclusion. CBN [6] established that while demand-side barriers are occasioned by various reasons, such as irregular income, unemployment and high illiteracy levels; supply-side barriers are brought about by long distance to access points, excessive high cost of services and unsuitable products. CBN [6] also demonstrated that regulatory barriers include cumbersome Know your Customers (KYC) requirements, lack of confidence and trust in the financial service provider and high rate of corruption.

Overall, with FSS 2020 in focus, there is an investigation demand to continuously evaluate the extent of progress made per time. In 2011, Nigeria was a signatory to the Maya Declaration; a statement of common principles regarding the development of financial inclusion policy made by a group of developing nation regulatory institutions during the 2011 Alliance for Financial Inclusion (AFI) Global Policy Forum held in Mexico [6]. Thus, 5 years after Nigeria consented to this declaration and 5 years to the deadline to achieving the FSS 2020, this study deemed it fit to empirically evaluate the effects of financial inclusion thus far on the Nigerian economy focusing on rural dwellers deposit and loan with commercial banks rural branches. The findings of this study will obviously provide a gauge of how far Nigeria has gone in becoming one of the 20 largest economies by 2020. Apparently, this study is just-in-time as there is no other appropriate time to undergo this kind than now.

5. METHODOLOGY

5.1 Type, Sources and Period of Data Used

Existing data, also known as secondary data were used for this study. Data were sourced from the CBN Statistical Bulletin. Thirty three year data (1982-2014) were used.

5.2 Techniques and Tool of Analysing Data

Multiple regression technique was specified to numerically estimate the causality in association between GDP and deposit and loan of rural dwellers with rural branches of commercial banks in both the long run and short run. Unit Root Tests for stationarity was performed using Augmented Dickey-Fuller method. Johansen test of cointegration was used to determine whether variables are cointegrated or not. Short run and long run Causality model using VECM was also performed. Eviews was used in performing mentioned analyses.

5.3 Model Development

The multiple regression model specified for this study has GDP as dependent variable and deposit and loan of rural populace with rural branches of commercial banks as independent variables. Thus, this model explores the connection between variables representing

economic performance (GDP) and basic banking activities of rural dwellers.

$$GDP_t = a_0 + a_1 RDDEPOSIT_t + a_2 RDLOAN_t + \varepsilon_t \quad (1)$$

Where:

GDP_t = Gross domestic product;

RDDEPSIT_t = Rural dwellers deposit with rural branches of commercial banks;

RDLOAN_t = Rural dwellers loan from rural branches of commercial banks;

ε_t = White noise error term, with the usual stochastic assumptions.

6. ANALYSES AND RESULTS

6.1 Unit Root Tests for Stationary

Consistent with Griffiths, Hill, & Lim [22] and in order to avoid the danger of obtaining regression results that are spurious, this study first test for the stationarity or nonstationarity of time series using Augmented Dickey-Fuller test. To perform this test, this study hypothesized that:

H0: Variables have unit root

H1: Variables have not unit root

Hypothesis is rejected or not rejected at 5% significance level. Augmented Dickey-Fuller tests are performed for three equations when there is intercept, when there is trend and intercept and when there is none for level and first difference. Schwarz Info Criterion automatically selected maximum lag length of 8 years. First, Augmented Dickey-Fuller tests results at Level are offered in Table 1.

According to Table 1, all variables at Level based on equation with intercept, equation with trend and intercept and equation with none, are nonstationary. In other words, this study failed to reject stated hypothesis at 5% level of significance. However, except for equation with none for GDP and RDLOAN, negative sign on variables coefficient is suggestive that the model is good. Essentially, it is econometrically imperative to convert these nonstationary variables to stationary variables. This study, thus converted nonstationary variables to stationary variables by performing Augmented Dickey-Fuller tests at 1st Difference. Earlier stated hypothesis also applies. Results of Augmented Dickey-Fuller tests at 1st Difference are offered in Table 2.

According to Table 2, all variables at 1st difference based on equation with intercept, equation with trend and intercept and equation with none, are now stationary. In other words, this study reject stated hypothesis at 5% level of significance. Basically, negative sign on variables coefficient is suggestive that the model is good. Overall, this study established that all the variables are integrated of same order. In other words, at level, they are non-stationary, but using 1st difference, they were converted to stationary. This condition placed a statistical demand on this study to run Johansen test of cointegration.

6.2 Johansen Test of Cointegration

Trace statistic and Max-Eigen Statistic cointegration test were performed. Results of Trace statistic and Max-Eigen Statistic

cointegration test are respectively presented in Tables 3 and 4.

According to Tables 3 and 4, Trace statistic and Max-Eigen Statistic cointegration test show contradictory results. While Trace test indicates 2 cointegration equations at the 0.05 level, Max-Eigenvalue test indicates no cointegration at the 0.05 level. Where contradiction exists between Trace statistic and Max-Eigen Statistic, Trace test is considered superior [23]. Thus, going by Trace test, causality exists between the three series. However, Trace test establishing the existence of 2 cointegration equations at the 0.05 level failed to identify the direction of causal relationship. Therefore, this study proceeded to estimate short run and long run Causality model using VECM. This is because, if there is evidence of cointegration between variables, then a valid correction model should also exist between these variables.

Table 1. Augmented Dickey-Fuller tests results at level

Level					
Equation	Variable	t-Stat	5%	Prob	Coef
Intercept	GDP	-0.192821	-2.957110	0.9296	-0.003506
Trend & Intercept	GDP	-1.842658	-3.557759	0.6602	-0.208299
None	GDP	5.396905	-1.951687	1.000	0.025022
Intercept	RDDEPOSIT	-2.056368	-2.957110	0.2627	-0.209510
Trend & Intercept	RDDEPOSIT	-2.058231	-3.557759	0.5484	-0.210251
None	RDDEPOSIT	-0.191712	-1.951687	0.6093	-0.005550
Intercept	RDLOAN	-0.296074	-2.960411	0.9145	-0.025431
Trend & Intercept	RDLOAN	-2.512255	-3.568379	0.3204	-0.514719
None	RDLOAN	1.874187	-1.951687	0.9832	0.036434

Table 2. Results of augmented Dickey-Fuller tests at 1st difference

1st Difference					
Equation	Variable	t-Stat	5%	Prob	Coef
Intercept	GDP	-4.919392	-2.960411	0.0004	-1.028034
Trend & Intercept	GDP	-4.800465	-3.562882	0.0029	-1.032418
None	GDP	-2.393482	-1.952066	0.0184	-0.416049
Intercept	RDDEPOSIT	-4.551471	-2.960411	0.0010	-0.912294
Trend & Intercept	RDDEPOSIT	-4.531170	-3.562882	0.0055	-0.961539
None	RDDEPOSIT	-4.623086	-1.952066	0.0000	-0.912727
Intercept	RDLOAN	-6.916513	-2.960411	0.0000	-1.249208
Trend & Intercept	RDLOAN	-6.830448	-3.562882	0.0000	-1.252773
None	RDLOAN	-1.850121	-1.952473	0.0420	-0.548880

Table 3. Unrestricted cointegration rank test (trace)

Unrestricted cointegration rank test (trace)				
Hypothesized no. of CE(s)	Eigenvalue	Trace statistic	0.05 critical value	Prob. **
None*	0.461170	37.56989	29.79707	0.0052
At most 1*	0.419411	18.40085	15.49471	0.0177
At most 2	0.048641	1.545772	3.841466	0.2138

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level

**denotes rejection of the hypothesis at the 0.05 level*

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

Table 4. Unrestricted cointegration rank test (maximum eigenvalue)

Unrestricted cointegration rank test (maximum eigenvalue)				
Hypothesized no. of CE(s)	Eigenvalue	Max-Eigen statistic	0.05 critical value	Prob. **
None	0.461170	19.16904	21.13162	0.0921
At most 1*	0.419411	16.85508	14.26460	0.0190
At most 2	0.048641	1.545772	3.841466	0.2138

Max-eigenvalue test indicates no cointegration at the 0.05 level

**denotes rejection of the hypothesis at the 0.05 level*

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

Short run and long run Causality model using VECM where GDP remains the dependent and target variable generated variables coefficients, standard error and t-statistic but did not generate p-value. This study is interested in knowing the p-value for each variable. Therefore, to estimate p-value this study used system equation. The system equation was used to estimate cointegration equation where GDP is the dependent variable. The residual of the cointegration equation where GDP is the dependent variable was thereafter estimated. Essentially, C(1), the coefficient of the cointegrated model provided statistics on speed of adjustments towards long run equilibrium. However, for C(1) to serve this purpose, the rule of thumb is that its coefficient must be significant at 0.05% level of significance and the sign must be negative. Estimation of the target model where GDP is the dependent variable produced a C(1) negative coefficient of -0.168903 with a p-value of 0.0072. This result suggests that there is long run causality from the two independent variables (RDDEPOSIT and RDLOAN). In other words, the two independent variables have influence on the dependent variable-GDP- in the long run.

This study equally estimated whether RDDEPOSIT and RDLOAN have short run causality or not. According to the system equation target model, $C(5)=C(6)=0$ represents RDDEPOSIT null hypothesis. However, $C(7)=C(8)=0$ represent RDLOAN null hypothesis. Wald statistics is used to check the short run causality from RDDEPOSIT and RDLOAN to GDP respectively by testing stated hypotheses. If null hypotheses are rejected, it means that there is short run causality running respectively from RDDEPOSIT and RDLOAN to GDP. On the other hand, if results fail to reject the null hypotheses, then there is no short run causality running from RDDEPOSIT and RDLOAN to GDP.

In the case of RDDEPOSIT, Wald test Chi-square statistics of 0.372704 and corresponding p-value of 0.8300 indicated that the null hypothesis of $C(5)=C(6)=0$ is zero and thus, should not be rejected. Results therefore established that there is no short run causality from RDDEPOSIT to GDP. Similarly, for RDLOAN, Wald test Chi-square statistics of 5.810579 and corresponding p-value of 0.0547 revealed that the null hypothesis of $C(7)=C(8)=0$ is zero and thus, should not be rejected. Results therefore established that there is no short run causality from RDLOAN to GDP. Summarily, results established that there is long run causality from RDDEPOSIT and RDLOAN to GDP. However, there is no short run causality from RDDEPOSIT and RDLOAN to GDP. Model with R^2 of 49%, Adj. R^2 of 30%, F-Statistic of 2.537148 and Prob(F-statistic) of 0.041725 is a good model. Also, while residuals of this model are normally distributed, the model did not suffer from heteroskedasticity.

7. CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

Access to Financial Services in Nigeria 2010 Survey established that financial inclusion is most advanced in the urban areas of Nigeria, particularly, in the southern regions of Nigeria [6]. Consequently, the National Financial Inclusion Strategy call to increase the number of Nigerians that are included in the formal sector to 70.0% by the year 2020 logically has the rural populace in focus. However, existing studies failed to provide empirical evidences of financial inclusion in the setting of basic banking activities of rural dwellers. Five years after this goal was initiated and five years to the target year of achieving full financial inclusion, this study distinctively evaluated the effects of the rural population captured in the formal banking sector in terms of their deposit and loan with rural

branches of commercial banks on economic performance.

Findings established that rural dwellers deposit and loan with rural branches of commercial banks influence the performance of Nigeria economy in terms of GDP in the long run. However, in the short run, findings demonstrated that the two independent variables do not impact on the Nigeria economy in terms of GDP. In other words, results evidenced that capturing banking activities of rural populace is crucial to realizing full financial inclusion and overall enhance Nigeria economy in the long run. By implication, the results of this study is suggestive that a lot more is expected of stakeholders, particularly, policy makers and the Nigeria government as a whole, to include quantum number of rural dwellers into the formal financial sector if the Nigeria goal of full financial inclusion by 2020 must be a reality.

Obviously, this study is a goal-evaluation study. Therefore, this study recommends that adequate attention should be given to measures and policies capable of delivering more formal financial services to rural dwellers by Nigeria government, particularly, policy makers. In other words, specific legal and policy pronouncements should be made to encourage actions of banks, particularly, that will ensure continuous expansion and sustained financial inclusion concentrating on rural populace as the most excluded.

ACKNOWLEDGEMENT

The authors are highly grateful to referees for their valuable comments and suggestions which were helpful in improving this paper.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. David L. Financial inclusion-Key to economic & social development. CSR Mandate. June-July 2013;14–17.
2. Ikhide SI. The finance and growth debate in Africa: What role for financial inclusion? South Africa: SUN MeDIA; 2015. Available:[http://www.sun.ac.za/english/Inaugurallectures/InauguralLectureProfIkhide.pdf](http://www.sun.ac.za/english/Inaugurallectures/Inaugurallectures/InauguralLectureProfIkhide.pdf)
3. Kama U, Adigun M. Financial inclusion in Nigeria: Issues and Challenges (No. 45). 2013;1–45. Abuja. Available:<http://www.cenbank.org/Out/2014/RSD/Occasional Paper No. 45 Issues and Challenges.pdf>
4. Robert C, Tilman E, Nina H. Financial inclusion and development: Recent impact evidence. Focus Note. 2014;92:1–12. Available:<http://www.cgap.org/sites/default/files/FocusNote-Financial-Inclusion-and-Development-April-2014.pdf>
5. Sharma D. Nexus between financial inclusion and economic growth: Evidence from the emerging Indian economy. Journal of Financial Economic Policy. 2016;8(1):1–10.
6. CBN. National financial inclusion strategy (No. 1). 2012;1–64. Abuja. Available:<http://www.afi-global.org/sites/default/files/publications/mf-g-en-paper-national-financial-inclusion-strategy-oct-2012.pdf>
7. Ajakaiye O, Olowookere A. Financial inclusion in Nigeria. Newswatch Times. July 7, 2013;1–56. Lagos. Available:<http://www.mynewswatchtimesng.com/financial-inclusion-in-nigeria/>
8. Obinna C. Credit to private sector rises to N17.789t. Thisday. November 26, 2014; 1–72. Abuja. Available:<http://www.thisdaylive.com/article/s/credit-to-private-sector-rises-to-n17-789tn/195059/>
9. CBN. Money and credit statistics (Million Naira). Data and Statistics; 2015. (Retrieved February 23, 2016) Available:<http://www.cenbank.org/rates/mnycrredit.asp>
10. Okorie A. Rural banking in Nigeria: Determining appropriate policy variables. 1990;1–16. Kenya. Available:https://books.google.com.my/books/about/Rural_Banking_in_Nigeria.html?id=SfxEAAAAYAAJ&redir_esc=y
11. Onalapo AR. Effects of financial inclusion on the economic growth of Nigeria (1982-2012). International Journal of Business and Management Review. 2015;3(8):11–28. DOI: 10.1017/CBO9781107415324.004
12. Babajide AA, Adegboye FB, Omankhalen A. Financial inclusion and economic growth in Nigeria. International Journal of Economics and Financial Issues. 2015; 5(3):629–637.

13. Jisha J, Varghese T. Role of financial inclusion in the development of Indian economy. *Journal of Economics and Sustainable Development*. 2014;5(11):6–12.
14. Andrianaivo M, Kpodar K. ICT, financial inclusion, and growth evidence from African countries (No. WP/11/73). IMF Working Papers. 2011;11:1–46. Washington DC.
DOI: 10.5089/9781455227068.001
15. Andrianaivo M, Kpodar K. Mobile phones, financial inclusion, and growth. *Review of Economics and Institutions*. 2012;3(2):1–30.
DOI: 10.5202/rei.v3i2.75
16. Migap JP, Okwanya I, Ojeka G. Financial inclusion for inclusive growth: The Nigerian perspective. *International Journal of Information Technology and Business Management*. 2015;37(1):1–8.
17. Stephen S, Fiona M, Louise D. Understanding financial inclusion - Using action research and a knowledge exchange review to establish what is agreed, and what remains contested. United Kingdom: Friends Provident Foundation. 2009;1–64.
Available:<http://www.loot.co.za/product/stephen-sinclair-understanding-financial-inclusion/jxhl-1048-g660>
18. Nwankwo O, Nwankwo ON. Sustainability of financial inclusion to rural dwellers in Nigeria: Problems and way forward. *Research Journal of Finance and Accounting*. 2014;5(5):24–31.
19. Emeka EE, Udom IA. Impact of microfinance in promoting financial inclusion in Nigeria. *Journal of Business Theory and Practice*. 2015;3(2):139–158.
20. Mohan R. Economic growth, financial deepening and financial inclusion. *BIS Review*. 2006;113:1–18.
Available:http://books.google.com/books?hl=en&lr=lang_en&id=zbXfRqODnzUC&oi=fnd&pg=PA92&dq=Financial+Inclusion&ots=KHZyTV-1Hy&sig=movQQMIrlqKXcggLiEPSF2Tpic4
21. Bayero MA. Effects of cashless economy policy on financial inclusion in Nigeria: An exploratory study. In *Procedia -Social and Behavioral Sciences Global Conference on Business & Social Science*. Kuala Lumpur: Elsevier B.V. 2015;172:49–56.
DOI: 10.1016/j.sbspro.2015.01.334
22. Griffiths WE, Hill CR, Lim GC. *Using EViews for principles of econometrics (3rd ed.)* USA: John Wiley & Sons. 2008;1–351.
23. Lütkepohl H, Saikkonen P, Trenkler C. Maximum eigenvalue versus trace tests for the cointegrating rank of a VAR process. *The Econometrics Journal*. 2001;4(2): 287–310.
DOI: 10.1017/CBO9781107415324.004

© 2017 Onalo et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:
The peer review history for this paper can be accessed here:
<http://sciencedomain.org/review-history/21615>