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Original Article

Financial Inclusion and Rural Development in Nigeria

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Abstract: *Financial inclusion has become a recurring theme in rural development literature since access to financial services has been projected to drive rural development. However, the empirical studies are conflicting. This study investigated the impact of financial inclusion on rural development in Nigeria. The study modeled the GDP per capita (a proxy for rural development) as a function of the variations in the financial inclusion variables (such as rural savings mobilization, banks' rural credits, and the bank lending rate). The study adopted ex post facto research utilizing time series data on the model variables. The unit root test indicated the variables were stationary and integrated of mixed order 1(0) and 1(1). The ARDL Bounds test indicated a long-run relationship between the treatment variable (financial inclusion) and the response variable (rural development proxy by the GDP per capita). The ECM result, as indicated, showed that 0.064421 or 6.44% of the short-run errors were corrected during each period. The empirical value of the adjusted coefficient of determination (Adjusted R^2 = 0.515300) shows that 55.53% of the total variations in rural GDP per capita (PCI) are explained by variations in the financial inclusion variables (rural savings, banks, rural loans, and the lending rate (interest) rate). The summary of the major findings of the study is: rural savings mobilization as a financial inclusion variable has a significant positive impact on rural development in Nigeria, bank rural credit has a significant positive impact on rural development in Nigeria, and bank lending rate has negative but insignificant impact on the rural development in Nigeria. Based on the findings, the study concluded that financial inclusion has a significant positive impact on rural development in Nigeria. Following the outcome of the various tests carried out and the major findings, the researchers, therefore, recommended that there is need for a strategic policy approach to entrenching the provision of financial services (credit facilities) to rural population as it contributes to improving the performance of the rural development; there is need to improve the ability of rural banks in mobilizing savings, this will further the savings culture of rural dwellers, boost rural investments and impact positively on the rural GDP per capita; in addition, financial institutions should be mandated to devise a special lending rate that enhances the access of rural dwellers to credits and other financial services, this will improve financial inclusion penetration and advance the economic development of the subsector.*

Keywords*: Financial Inclusion, Rural Savings, Rural Credits, Rural Development, ARDL.*

I. INTRODUCTION

Financial inclusion refers to the availability of a wide range of high-quality financial products, including insurance, payments, savings, credit, and pensions, that are appropriate, relevant, and affordable for all adult consumers, with a focus on the lower-income rural residents. The variety of financial services providers, the degree of competition amongst them, and the legal and regulatory frameworks that guarantee the integrity of the financial sector and universal access to financial services are the characteristics of an inclusive financial sector. Global research indicates that the accessibility of financial services plays a crucial role in fostering economic expansion and generating wealth, making it imperative to address the issue of poverty in Nigeria. In order to aggressively encourage the supply of financial services to the under-banked and unbanked, as well as the demand for these services, regulators and legislators must establish an enabling policy environment.

For the private sector, offering financial services and products to the countryside's economy is a huge business opportunity. Over 70% of Nigeria's impoverished people live in rural areas, accounting for 53% of the country's total population. Even though it's widely known in Nigeria that the financial exclusion of rural residents impedes development, less than 2% of rural households have access to institutional financing of any kind. One essential component of rural development is having access to financial services: It boosts incomes through profitable investments, aids in the creation of job opportunities, makes investments in health and education easier, and lessens the vulnerability of the impoverished by assisting them in gradually stabilizing their income patterns.

Financial inclusion has many objectives which differ depending on perspective, but in each case, it can contribute to better financial decisions, improved welfare and economic prosperity (Kaiser & Menkhoff, 2017). Majorly the role of financial inclusion is to enable and ease access to formal financial services, especially for rural people. People are considered to be financially included if they make use of formal financial services. Despite this role, however, many people, especially in rural

areas, do not have access to even the most basic of financial services. Demirgüç-Kunt (2018) anticipates that nearly two billion people worldwide lack access to any financial accounts and are, therefore, fundamentally excluded from the financial system. Financial inclusion has deeply permeated policy and academic space, lending credence to its role in rural development and overall economic growth. The emphasis on financial inclusion is hinged on data and empirical studies, which provide evidence that a large number of people, especially in rural areas, are excluded from the financial space. As submitted by Klapper and Lusardi (2020), It is clear that some groups do not have (complete) access to financial services, and these groups typically reside in suburban and rural areas; this is an example of financial exclusion. According to Grohmann and Menkhoff (2020), communities with low socioeconomic status—the majority of whom reside in rural areas—are referred to as financial exclusions because they struggle to manage their finances well. This could imply that people living in rural areas do not have access to traditional bank loans or do not save for retirement.

Some micro studies on the relationship between financial inclusion and rural development, such as Klapper and Lusardi (2020), show empirical evidence that there is a link between financial inclusion and the real gross domestic product of the rural economy. This, however, only discusses the relationship; it makes no mention of possible causation. A link between financial inclusion and rural development has also mostly been studied in some other macro settings. This type of study has the advantage that causality is clear and that the effect of financial inclusion can be established without bias. On how financial inclusion is measured, Dewi, Febrian, Effendi, Anwar, and Nidar (2020) have provided empirical support. They measured financial inclusion quantitatively to include the size of savings mobilized by rural branches of banks, the size of loans by banks to rural people, the rate of rural internet penetration, and the number of rural people who have formal accounts with banks.

The background problems addressed by this study are directed towards the objectives of the study. Many Nigerians, especially the rural people, they are economically excluded because they are unbanked and do not have access to formal financial services for a variety of motives. EFIA (2021) conducted a survey on access to financial services in Nigeria, and the results showed that 34.9 million adults, representing 39.7% of the adult population, were financially excluded. Only 28.6 million adults were banked, representing 32.5% of the adult population. A significant percentage of these numbers live in rural areas.

Growth theories have established a link between savings mobilization and rural development. However, rural savings mobilization in Nigeria has become increasingly difficult despite its latent potential volume. This difficulty in rural savings mobilization is an offshoot of the poor financial inclusion among the rural population. The majority of savings in rural areas have taken on traditional forms and patterns; because they are typically kept in multiple forms, mobilization becomes challenging. The majority of household savings are still in the form of non-monetary (physical goods) assets. Keeping livestock or valuables in the form of jewelry or gold for one's own prestige is an example of these methods of saving. Due to a lack of efficient financial intermediation in rural areas, the channeling of these domestic resources—which are not immediately useful to rural residents—to other areas where they may be immensely useful has become a serious issue (Edame, Udude & Etim, 2029).

The inadequate funding of the rural economy, particularly agriculture, is one of the obstacles to rural development in Nigeria. Through NACRDB, the government has given farmers loans at low or no interest, but the issues that gave rise to this credit policy and NACRDB's creation still exist (Otunaiya, Bamiro & Adeyemi, 2020). High levels of financial exclusion by way of rural people's lack of access to loans and credits pose two major threats to economies in the form of losing opportunities for business growth and, in the absence of finance, lack of opportunities to expand their businesses. Thus, rural development could be stifled. The worrisome level of inadequate financial inclusion, especially in rural areas, poses a serious challenge not only to the development of the rural economy but also to Nigeria's economic growth at large.

Furthermore, the sub-sector's sustainable development has been hampered by inconsistent government policies in rural finance. The issue is made worse by the fact that many rural actors are still financially illiterate. Data indicates that there are several highly profitable rural sector investments in Nigeria; however, initiatives that are limited to "targeted credit" have created a perception that the loan applications, as well as the activities and applicants beneath the loans, are not given enough consideration. The legacy of financial unsustainability and operational inefficiencies of the majority of government (and many non-governmental) rural finance institutions is concerning once more. While some end at the policy stamen level, others terminate mid-implementation. Studies which focus on financial inclusion are strongly advised. The number of unbanked rural dwellers (financially excluded) remains high, and its implication for rural development policy cannot be ignored; hence, this study therefore aims to further investigate the effect of financial inclusion on rural development in Nigeria.

A) Objectives of the Study

The broad objective of this study is to investigate the impact of financial inclusion on rural development in Nigeria: the specific objectives are:

- To determine the impact of rural savings mobilization on the per capita income
- To investigate the impact of bank loans on the rural economy on the per capita income
- To find out bank lending rate to the economy on the per capita income.

II LITERATURE REVIEW

A) Financial Inclusion

Financial inclusion has been defined differently by various people; however, all the definitions seem to convey the same meaning. Muraari and Didwania (2010) defined financial inclusion as the provision of financial services to different categories of the poor, low-income and disadvantaged groups in the society. Also, Sarman and Pais (2011) described financial inclusion as the process of making the required and necessary financial services available at the right place, form, time and fair price to all the populace of a society without any form of discrimination. Yaroslava, Grigolia, and Keshelava (2018) broadly defined financial inclusion as the access of households and firms (in particular low-income rural people) to financial services. Hence, financial inclusion has become one of the most important issues in modern development discourse. The presence of intermediaries in society has been argued in literature to spur economic growth through the provision of credit for developmental purposes as well as savings mobilization for investment purposes (Ozurumba&Onyeiwu, 2019), and financial inclusion has recently become a top development-related priority in many nations, especially those with emerging economies.

Again, Studies, including Inoue and Hamori (2016), Intermedia (2016), and EFIA (2017), have identified a lack of financial services knowledge, awareness, experience and skills, among others, as key inhibitors to formal financial services access. The primary cause of low utility among the majority of small businesses was specifically identified as a lack of awareness about mobile money, an inventive and affordable method of obtaining financial services digitally via mobile phones. Therefore, it is likely that initiatives like financial literacy and awareness campaigns will increase accessibility to financial services.

B) Empirical Review

Ashenafi and Mutsonziwa (2021) investigated the relationship between financial inclusion and literacy using information from a 2016 demand-side financial inclusion survey that was carried out in Kenya and Tanzania, involving 6029 people in total. Our instrumental variable regression analysis's findings supported the notion that financial inclusion is strongly influenced by financial literacy. This suggests that financial literacy campaigns must run concurrently with initiatives to advance financial inclusion in both nations.

Adegboyegun, Ademola and Kazeem (2020) evaluated the effect of financial inclusion on Nigeria's economic expansion. Data for the variables Gross Domestic Product, Loans to Rural Areas, Deposits from Rural Areas, Number of Bank Branches, and Interest Rate were examined using the Auto Regressive Distributed Lag (ARDL) and Causality techniques for the years 1986–2018. The study found that while interest rates have a significant negative impact on economic growth, financial inclusion has a significant positive impact. The causality test, however, showed an unidirectional causal connection between financial inclusion and economic growth, primarily via the channel of loans to rural areas. Therefore, it is advised that loans to rural areas be granted at lower and more affordable costs with less administrative demands due to the credibility given to financial inclusion by the study's empirical results and the role that economic growth plays in promoting inclusion. This is because the study's empirical findings indicate that financial inclusion is a major inclusion variable that guarantees growth.

Achugamonu, Adetiloye, Adegbite, Babajide, and Akintola (2020) studied the implication of financial inclusion on the growth of 27 Sub-Saharan African Countries between 2007 and 2017. The study, which centered on the financial exclusion of bankable adults, made use of ECM and GMM techniques for analysis, revealing that financial inclusion has a significant effect on economic growth in Nigeria. Enueshike and Okpebru (2020) examined the effects of financial inclusion on economic growth between 2000 and 2018. Adopting the ARDL technique, it was discovered that financial inclusion as a proxy by rural deposits and loans to SMEs exerts a negative effect on economic growth. In the ASEAN region, Suidarma (2019) examined the relationship between financial inclusion and economic growth between 2008 and 2015. The study used the Panel Vector Error Correction modeling technique for analysis, revealing that financial inclusion has a positive effect on economic growth.

Olubanjo and Olayinka (2019) used survey data from over 22,000 Nigerian participants to demonstrate the influence of financial literacy and income levels, two important factors promoting financial inclusion. The study demonstrates that while income only influences the frequency of informal savings, financial literacy strongly influences savings patterns with both formal and informal financial institutions. The demographic groups that benefit from financial literacy and other interventions meant to increase financial access are also highlighted by the results. The results will help financial services providers better segment their markets and will direct regulators to create policies that will increase and broaden financial access.

Fan and Zhang (2017) investigated the connection between financial inclusion and the emergence of entrepreneurs from a theoretical and empirical standpoint. According to the model, by reducing data asymmetry in financial transactions, the expansion of financial inclusion can lessen credit constraints on entrepreneurial endeavors. Moreover, this impact is more pronounced in sectors of the economy with less barriers to entry. By using data from 19 businesses and 31 regions in China between 2005 and 2014, the impact of financial inclusion on the emergence of entrepreneurs was quantified. The findings demonstrate the heterogeneous nature of this impact across industries and validate the positive effect of financial inclusion development on the emergence of entrepreneurs. In industries with lower entry barriers, the formation of entrepreneurs frequently benefits from the expansion of financial inclusion. However, the lack of financial literacy among entrepreneurs is caused by a lack of formal training on financial matters, and this inevitably results in financial inclusion.

C) Theoretical Framework

a. Theory of Financial Intermediation

This theory was advanced by Schumpeter in 1934. Other contributions to the theory were made by Goldsmith (1969) and Shaw (1973). According to the theory, financial organizations, also known as intermediaries, such as the money and capital markets, are crucial to the functioning of the economy because they facilitate the transfer of funds from units of surplus to units of deficit. Without this intermediation, the economy cannot grow. McKinnon (1973) supported the theory by presenting data that indicates a direct correlation between the physical accumulation of capital and the demand for money. That is, the availability of money within the economy is a prerequisite for the physical accumulation of capital and investment, and this is the underlying theory supporting the existence of financial intermediaries. This is due to the fact that intermediation causes savings to be mobilized, which can then be used to invest in real estate acquisition or other profitable ventures, whether they are in the rural economy or the broader economy.

In the furtherance of the financial intermediation theory, Patrick (1966) propounded the supply-leading and the demand-following hypotheses jointly known as the stage of development hypothesis. The theory assumes that the finance-growth link is expressed in both hypotheses at various stages of the development of the economy. Patrick (1966) assumed that at the early stage of development, the finance-growth link follows a "supply leading" pattern while it follows a "demand following" pattern at the later stage of development. The supply-leading hypothesis assumes that the development of a nation's financial system will lead to economic growth, while the demand-following hypothesis assumes that as the nation develops, financial development follows real development because an increase in real development will increase the demand for financial services. However, certain arguments abound in theory in favour of the demand-following hypothesis, such as that of Robinson (1952) and Levine (1997), who argued that finance follows the existence of enterprise within the real economy. One major assumption of both theories is the importance attached to the financial system in driving economic development through its channels, such as its financial intermediaries. Thus, financial intermediaries are vital channels for reaching the largely unbanked population (rural economy) in a bid to drive the growth and development of the subsector.

The study has reviewed the theoretical and empirical literatures above on financial inclusion and economic growth. The study reviewed the benefits of financial Inclusion (Household income, increased financial security, reduction in financial vulnerability), barriers to financial inclusion, indicators of financial inclusion; financial literacy, financial inclusion and impact of small and medium enterprises; determinants of financial literacy (Inclusion); and then economic growth.

The study also reviewed the theories of financial inclusion, such as the theory of financial intermediation and the stage of development hypothesis; the empirical literature on this topic looked at the works of Ashenafi and Mutsonziwa (2021), Adegboyegun, Ademola and Kazeem (2020), Achugamonu, Adetiloye, Adegbite, Babajide, and Akintola (2020) and Enueshike and Okpebru (2020) which assessed the impact of financial inclusion on economic growth in Nigeria.

Most of the empirical literature reviewed adopted an experimental design but utilized the autoregressive distributed lag method (ARDL). However, the major gap which this study identified was in the variables used. None of the listed authors used the volume of savings mobilization of rural banks, the total loans extended to rural dwellers by banks, or the lending rate of banks to farmers. These are very important determinants and measures of financial inclusion. This gap is closed by the current study as the researchers used these variables as the explanatory variables to explain the impact of financial inclusion on rural development.

D) Data, Model and Methods

The data employed in this research are secondary time series data sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin (2022) covering the period 1990 – 2022, the CBN Financial Inclusion Journal, and records of banks and financial institutions. *Ex post facto* research was chosen as the research design because the study's data are time series data.

This kind of design was chosen because it integrates theoretical thinking with actual observation (Baghebo & Atima, 2013). Researchers have been able to observe the effects of the explanatory variables on the explained variable with a level of accuracy that has proven to be more than satisfactory thanks to this type of design. The unit root, cointegration, and autoregressive distributed lag (ARDL) econometric methods were applied to the data used in this work in order to ascertain the coefficient of the parameter estimates.

E) Model Specification

In this study, the GDP per capita was used to proxy rural development while savings mobilized by rural banks, total bank credit to rural people, and the bank lending rate to farmers are the independent variables (components and measures of financial inclusion). This could be stated functionally as follows:

PCI = f (RSM, BRC, BLR)
Where;
PCI = GDP per capita
RSM = Rural Savings Mobilization
BRC = Banks Rural Credits
BLR = Bank Lending rate
The econometric form of the model is given as:

$$PCI_t = \beta_0 + \beta_1 RSM_t + \beta_2 BRC_t + \beta_3 BLR_t + Ut$$

Where;
Ut is a random error term representing all other variables not specified in the model.
A-priori signs of the explanatory variables are as follows: RSM> 0, BRC > 0 and BLR < 0

III. RESULT AND DISCUSSION

A pre-estimation test was first conducted to demonstrate some features of the data used in parameter estimation. This was required to improve the dependability of the results of the ensuing research. First, the suitability of the data set was demonstrated using the unit root test of stationarity.

A) Unit Root Test Results

The model series' stationarity was examined using the unit root test. Regression analysis between two non-stationary time series may yield erroneous or absurd results, according to Granger & Newbold (1974). This implies that while there shouldn't be a relationship a priori, one could find one that is statistically important. Because a time series' behavior can only be examined for the time period under consideration if it is non-stationary, stationery time series is crucial. Each set of time series data will, nevertheless, be limited to a specific time frame. As a result, it is not promising to generalize it to other periods. Therefore, the prediction of such (non-stationary) time series may be of little practical value. It is therefore necessary to ascertain that the dependent variable (per capita income – PCI) and the independent variables, rural savings mobilization (RSM), bank rural credits (BRC) and the bank lending rate (BLR) series, are stationary using the Augmented Dickey-Fuller (ADF) unit root test.

Table 1: Result of Augmented Dickey-Fuller Unit Root Test

Level Form				First Difference			
Variables	**ADF t-statistic**	**5% t-critical**	**p-v**	**ADF t-statistic**	**5% t-critical**	**P-value**	**Order**
PCI	-1.881248	-3.580623	0.6373	-4.103208	-3.574244	0.0160	1(1)
RSM	-1.955584	-3.574244	0.6001	-4.048408	-3.574244	0.0181	1(1)
BRC	-4.813119	-3.574244	0.0031	-	-	-	-
BLR	-1.727144	-3.612199	0.7074	-4.42630	-2.991878	0.0039	1(1)

Source: *researcher's computation 2023 (E-views)*

The test for stationarity conducted using the Augmented Dickey Fuller Test (ADF) approach to unit root testing shows that only the series (BRC – bank rural credits) was stationary @ level. The dependent series (PCI) and the independent variables series (RSM and BLR) did not achieve stationarity @ level because the ADF t-statistics were less than the 5% critical values (for PCI -1.881248 < -3.580623, for RSM: -1.95584 < -3.574244, and for BLR: -1.727144).; hence they were subjected to first differencing. Differencing is done when the series fails to be stationary @ level. The results, as in Table 1, showed that the series became stationary at first difference form. Hence, stationarity and integration were achieved at orders 1(0) and 1(1).

B) The Cointegration Test Result

When series are integrated of mixed order [1(0) and 1(1)], it is recommended to run the cointegration using the autoregressive distributed lag (ARDL) method test to determine the model variables' long-term tendency. Since stationary

series are presumed to be cointegrated, a model's stationary series is shown to have a long-term relationship. Because the series was integrated in mixed order, the ARDL Bounds cointegration examination was used.

Table 2: Long-run Cointegration Test Result

F-Bounds Test		Null Hypothesis: No levels of relationship		
Test Statistic	**Value**	**Signif.**	**I(0)**	**I(1)**
			Asymptotic: n=1000	
F-statistic	31.00282	10%	2.37	3.2
K	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66
Actual Sample Size	30		Finite Sample: n=30	
		10%	2.676	3.586
		5%	3.272	4.306
		1%	4.614	5.966

Source: *researcher's computation 2023 (E-views)*

The F-statistic value 31.00282 is evidently greater than the I(1)(1) critical value bound. Our decision rule in this analysis indicates that we reject the null hypothesis that there is no equilibrating relationship. The obtained f-stats are greater than the upper bounds critical value at 5% level of significance (31.00282 > 3.67). Hence, it is concluded that the variables show evidence of a long-run relationship. This means that a long-run relationship exists between the financial inclusion variables (savings mobilization by rural banks, bank rural credits, and the bank lending rates) and the rural development (proxy by the GDP per capita) as in the case of Nigeria.

C) Short Run Result

The existence of a long-term relationship (cointegration) implies the possibility of short-term errors within the system or over time, which is why an error correction mechanism is required. The study adopted the ARDL error correction regression (ARDL-ECM) because the model had a mixed order of integration 1(0) and 1(1).

Table 3: ECM result

ECM Regression				
Case 2: Restricted Constant and No Trend				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
CointEq(-1)*	-0.064421	0.004804	-13.40956	0.0000

Source: *researcher's computation 2023 (E-views)*

The mechanism for correcting errors smoothes out short-term errors related to variables that exhibit cointegration or long-term relationships. It also indicates how quickly errors are adjusted. The error correction coefficient needs to be significant, fractional, and negative in order to have smoothing effects. The obtained result showed an ECM coefficient of -0.064421, indicating that each period corrects approximately 6.44% of the short-run errors. Given that the coefficient is negative, fractional, and significant and that the error correction exhibits a moderate rate of adjustment to the long-run equilibrium, the requirements for error corrections are met.

a. Long-run Impact of Financial Inclusion on Rural Development in Nigeria

Table 4: Long-run Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LRGDP(-1)	0.935579	0.024240	38.59724	0.0000
LSMRB	0.405401	0.007121	3.158436	0.0053
LBLREC	0.095370	0.041187	2.615971	0.0125
BLRF	-0.000110	0.000190	-0.575927	0.5698
C	0.762317	0.148894	5.119870	0.0000

Source*: researcher's computation 2023 (E-views)*

From table 4: it could be observed that the rural savings mobilization (RSM), bank rural credits (BRC), and the bank lending rate (BLR) conformed to their predicted sign (RSM + and > 0, BRC + and > 0, and BLR – and < 0). An increase in savings mobilization by rural branches of banks (SMRB) will lead to an increase in the GDP per capita of the rural economy by about 0.405401 billion naira in each period; an increase in the size of bank credit extension to rural dwellers (BRC) improves

the size of the GDP per capita by about 0.095370 billion naira annually. Similarly, an increase in the banks' lending rate (BLRF) will lead to a decline in the GDP per capita of the rural economy by 0.0001 billion naira.

The results of this study pose some policy implications for rural development in Nigeria. The policy implication of the results is that in addition to the relevant traditional growth theories, the notion of the importance of financial sector development, such as financial inclusion on the rural economy, holds true and as such, policies targeting sustainable rural economic development through expansions in production should hold financial inclusion components to priority status. Such policies should be deliberate and, especially those which ensure sustained improvements in financial intermediation in the rural economy; this will improve the GDP per capita and development of the subsector.

IV. CONCLUSION

This study investigated the impact of financial inclusion on rural development in Nigeria. The study modeled the GDP per capita (a proxy for rural development) as a function of the variations in the financial inclusion variables (such as rural savings mobilization, banks' rural credits, and the bank lending rate).

At the levels test, the individual series were not stationary since the ADF statistic of the series was less than the 5% critical value, but they all became stationary after first differencing. From table 1.0, it is indicated that the ADF test statistic of the individual series is greater than the 5% critical values at the level and first difference. Hence, the variables were stationary and integrated in mixed order 1(0) and 1(1). Since all the variables were integrated of mixed order 1(0) and 1(1), implying cointegration, the ARDL Bounds approach to cointegration was conducted to test for the long-run relationship among the variables. From the results, the f-statistic was indicated to be greater than the upper bound critical value of 5%. It was safe, therefore, to conclude that a long-run relationship exists in the model for the treatment variable (financial inclusion) and the response variable (rural development proxy by the GDP per capita).

Short-term fluctuations are implied by the existence of long-term relationships. The short-run and long-run balance connections are tied by means of the error correction mechanism (ECM), which smoothes out these fluctuations. Three requirements need to be met: the error correction term's coefficient needs to be significant, fractional, and adverse. The ECM result, as indicated, showed that all three conditions were fulfilled, and it can be said that 0.064421 or 6.44% of the short-run errors were corrected during each period. The empirical value of the adjusted coefficient of determination (Adjusted R^2 = 0.515300) shows that 55.53% of the total variations in rural GDP per capita (PCI) are explained by variations in the financial inclusion variables (rural savings, banks, rural loans, and the lending rate (interest) rate). To test for the joint influence of the explanatory variables (RSM, BRC and BLR) on the explained variable (PCI), the obtained f-stat is very high (2126.347), the p-value of the *f*-statistic (0.0000) is less than 0.05 (i.e. 0.0000 < 0.05). As a result, the study found that the overall regression is statistically significant and rejected the null hypothesis. The summary of the major findings of the study are:

- Rural savings mobilization as a financial inclusion variable has a significant positive impact on rural development in Nigeria.
- Bank rural credit has a significant positive impact on rural development in Nigeria.
- Bank lending rate has a negative but insignificant impact on rural development in Nigeria.

Based on the findings, the study concluded that financial inclusion has a significant positive impact on rural development in Nigeria. Following the outcome of the various tests carried out and the major findings, the researchers, therefore, recommended that there is need for a strategic policy approach to entrenching the provision of financial services (credit facilities) to rural population as it contributes to improving the performance of the rural development; there is need to improve the ability of rural banks in mobilizing savings, this will further the savings culture of rural dwellers, boost rural investments and impact positively on the rural GDP per capita; in addition, financial institutions should be mandated to devise a special lending rate that enhances the access of rural dwellers to credits and other financial services, this will improve financial inclusion penetration and advance economic development of the subsector.

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