Financial Inclusion:
A Panacea for Balanced Economic Development

Okoye, Lawrence Uchenna - Department of Banking and Finance, Covenant University, Ota, Ogun State, Nigeria. lawrence.okoye@covenantuniversity.edu.ng

Adetiloye, Kehinde A. - Department of Banking and Finance, Covenant University, Ota, Ogun State, Nigeria. kehinade.adetiloye@covenantuniversity.edu.ng

Erin, Olayinka - Department of Accounting, Covenant University, Ota, Ogun State, Nigeria. erinolayinka@yahoo.com

Modebe, Nwanneka J. - Department of Banking and Finance, University of Nigeria, Nsukka, Nigeria modebenwanneka@gmail.com

Abstract
The major objective of this paper was to determine the effect of financial inclusion on economic growth and development in Nigeria using historical data on selected variables over the period 1986-2015. Ordinary Least Squares regression technique was adopted. Financial inclusion was measured in the study using loan to deposit ratio (LDR), financial deepening indicators (FDI), loan to rural areas (LRA), and branch network (Bbranch). Measures of financial deepening adopted in the study are ratios of private sector credit to GDP and broad money supply to GDP. Economic growth was proxied as growth in gross domestic product (GDP) over successive periods while per capita income (PCI) was adopted as a measure of poverty and hence an index of development. The main findings are (i) credit delivery to the private sector (an index of financial inclusion) has not significantly supported economic growth in Nigeria (ii) financial inclusion has promoted poverty alleviation in Nigeria through rural credit delivery. The study recommends that the monetary authorities should not only deepen financial inclusion efforts through enhanced credit delivery to the private sector but should also strengthen the regulatory framework in order to ensure efficient and effective resource allocation and utilization.

Keywords: Financial inclusion, Poverty alleviation, Economic growth, Financial deepening.

Introduction
The subject of financial inclusion has continued to attract global attention in development finance and economic fora over the years due, largely, to its capacity to drive the growth and sustainability of an economy. Given that millions of people are excluded from formal financial services globally, there is a potential loss of deposits or savings, loss of investible funds and an attendant loss of capacity of the global economy to generate wealth. Access to financial services is widely acknowledged as capable of promoting credit creation and enhancing capital accumulation thereby raising the level of investment and economic activity. Martinez (2011) posits that access to finance is an essential policy tool used by governments and policy makers to stimulate economic growth. By making finance available and affordable to economic agents, there is a growth of economic activities and hence growth of output. Financial inclusion offers a platform for both low and high income earners to be integrated in the financial system for inclusive growth.

Khan (2011) opines that policy makers in Nigeria have identified financial inclusion as a veritable tool for the attainment of sustainable economic growth and development. There is substantial evidence in literature that countries with high financial inclusion index tend to achieve high level of economic growth and development. Ashraf et al (2006) posit that as more people become financially included in the economic system, there is a higher the level of investment in real or productive activities leading to higher levels of output, income per capita and, by extension, economic growth and development. Inclusive engagement of economic agents in productive activities promotes growth, development and sustainability of an economy.
Sanusi (2011) attributes the high incidence of poverty in Nigeria to increase in the number of people who are financially excluded, noting that an optimal level of financial inclusion is needed to boost growth, increase GDP and improve economic sustainability. According to Sanusi, to achieve high level of economic sustainability and development in Nigeria, there is need to fully implement the financial inclusion strategy. He further argues that no economy will achieve financial stability, economic sustainability and inclusive growth without possibly achieving a high level of financial inclusion.

The history of financial inclusion in Nigeria dates back to 1976 with the constitution of a 14-member committee under the chairmanship of a distinguished economist, Dr. Pius Okigbo to, among other things, examine the adequacy, relevance or otherwise of the structure of the Nigerian financial system to meet the needs of the economy for rapid development (Okigbo et al, 1976). Following from the committee’s report, the rural banking scheme was introduced in 1977 to, among other things, promote the habit of banking among the rural population, harness their savings, enhance delivery of credit to the active rural poor and thereby reduce the flight of both funds and people from the rural to urban areas (Okafor, 2011). Over the years, the scheme which started with the extension of conventional banking services to the rural areas through establishment of commercial banks’ branches in those areas has taken various forms such as People’s banking, community banking and lately, microfinance banking. The programme was re-launched in Nigeria in 2012 as financial inclusion strategy for promotion of enhanced economic growth and development. However, in spite of the about four decades of implementation of financial inclusion in Nigeria, available statistics show sub-optimal performance. In terms of credit accessibility, Nigeria’s financial inclusion index is not encouraging compared to other countries within its bracket. For instance, about 32% of South Africans have access to credit while only about 2% of Nigerians have access to formal credit (World Bank, 2014). Only about 21.6% of Nigerians have access to formal payment system compared to South Africa with 46% (Mckinsey, 2014). Also, research conducted by Cyn-Young and Ragelio (2015) shows that Nigeria is ranked 135 out of 176 countries on financial inclusion index.

In line with the basic objective of promoting rapid economic growth and development through inclusive participation of all economic agents in the financial system, this study seeks to examine the link between financial inclusion, economic growth and poverty reduction in Nigeria. Studies in this area have been quite scant for developing economies generally and for those of sub-Saharan Africa in particular. The specific objectives of this study are: (i) to examine the effect of financial inclusion on economic growth in Nigeria (ii) to determine the effect of financial inclusion on poverty reduction in Nigeria. These objectives are stated in the null hypotheses as follows:

H₀₁: Financial inclusion has no significant positive impact on economic growth in Nigeria.

H₀₂: Financial inclusion has no significant positive impact on poverty reduction in Nigeria.

Literature Review

Conceptual Issues

The concept of financial inclusion in literature has different definitions but they all seem to have similar information content and therefore tend to convey the same meaning. Aduda and Kalunda (2012) view financial inclusion as a process of making available an array of financial services, at a fair price and at the right place without any form of discrimination to all members of the society by the service provider. The Bank of India (2013) views financial inclusion as a way weaker group and low income earners have access to appropriate financial services at an affordable cost in a transparent and fair manner. World Bank (2014) defines financial inclusion as the way financially excluded and underserved people in a society have access to a range of available financial services without any discrimination.
Hariharan and Marktanner (2012) conceptualize financial inclusion as a strategy aimed at increasing the number of people in the society who have access to formal financial services. Chibba (2009) conceives financial inclusion as a financial intervention strategy that is aimed at overcoming the market challenges that hinder the poor and underprivileged from having access to financial services.

In the work of Sarma and Pias (2011), financial inclusion was explained as the provision of wide range of financial services such as savings, insurance services, credits, remittance and payment services.

As a global phenomenon, the subject of poverty has continued to receive immense attention from governments, civil society organizations, donor agencies, international organizations, etc. As a concept, there are income and non-income dimensions to poverty but no universal agreement as to what constitutes poverty. It has often been defined according to the conventions of the society in which it occurs. According to Aboyade (1975:25), this is why some scholars have rightly observed that poverty is more easily recognised than defined.

Poverty has been defined as a state or condition that depicts inability of individuals to enjoy the minimum acceptable standard of life and well-being as result of lack of the financial and other basic essentials (Investopedia (undated)). Ajakaiye (1998:12) defines poverty as a condition of not being able to afford basic necessities of life like food, water, clothing, shelter, education….in addition to basic non-essentials such as participation, identity, etc.

Though poverty is often defined in absolute terms of low income, in reality, the consequences of poverty exist on a relative scale (http://www.who.int/topics/poverty/en/). Poverty, according to Latifee (2003) may arise from economic, social, and political deprivations in the forms of lack of income, lack of coping capacity, lack of basic human capabilities, lack of institutional defences, a combination of these or, in extreme cases, a lack of all these.

Theoretical Review

The relationship between finance and real activity can be traced to Smith (1776) who argues that real growth in an economy is driven by activities of the financial system because increased production and specialization is facilitated by enhanced resource (credit) acquisition offered by the system. Also, Bagehot (1873) posits that the 19th century industrial revolution in Europe was propelled by the financial system which mobilized funds in unusually ‘big form’ for industry. Corroborating the views of Smith (1776) and Bagehot (1873), Schumpeter (1912) avers that technological innovation (a requirement for productivity growth) is facilitated by the financial sector through efficient resource mobilization and allocation. Schumpeter maintains that a developed and functional financial sector is a condition precedent to a successful entrepreneurial engagement in technological innovation because translating innovative thinking (ingenuity) into real output has cost implications which may not be covered by entrepreneurs themselves. He argues that an efficient financial system is able to identify and fund entrepreneurs who have the greatest chances of successfully transforming innovative ideas into marketable products through innovative production processes.

The arguments presented above imply a positive or growth-inducing impact of finance on the real economy, an indication that increased access to finance promotes productivity, enhances welfare and alleviates poverty. As more people get integrated into the formal financial sector they become economically empowered and through active engagement in productive activities they are able to lift themselves out of poverty as well as grow the economy.

The performance of Nigeria’s financial inclusion indicators relative to those of some other emerging economies are presented below:
Nigeria’s financial inclusion indicator compared to selected lower middle income economies

This section presents a cross-country showing Nigeria’s position on the financial inclusion index relative to some selected lower middle income countries. Table 1 shows the percentage of account holders at a formal financial institution.

Table 1: Financial Inclusion Indicator for Lower Middle Income Economies

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Nigeria</th>
<th>Senegal</th>
<th>Egypt</th>
<th>Ghana</th>
<th>Philippines</th>
<th>Cameroon</th>
<th>Indonesia</th>
<th>India</th>
<th>Bench Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>GNI per capita($)</td>
<td>2710</td>
<td>1050</td>
<td>3140</td>
<td>1770</td>
<td>3720</td>
<td>1290</td>
<td>3580</td>
<td>1570</td>
<td></td>
</tr>
<tr>
<td>All Adults(% Age 15+)</td>
<td>44.0</td>
<td>15.4</td>
<td>14.1</td>
<td>40.5</td>
<td>31.3</td>
<td>12.2</td>
<td>36.1</td>
<td>53.1</td>
<td>42.7</td>
</tr>
<tr>
<td>Women(% of Adults)</td>
<td>43</td>
<td>11.4</td>
<td>9.3</td>
<td>39.4</td>
<td>37.9</td>
<td>10.2</td>
<td>37.5</td>
<td>43.1</td>
<td>36.6</td>
</tr>
<tr>
<td>Mobile account(% age 15+)</td>
<td>2.3</td>
<td>6.2</td>
<td>1.1</td>
<td>3</td>
<td>4.2</td>
<td>1.8</td>
<td>0.4</td>
<td>2.4</td>
<td>2.5</td>
</tr>
<tr>
<td>Use of ATM(% with an account)</td>
<td>70.5</td>
<td>23.2</td>
<td>51.3</td>
<td>19.9</td>
<td>67.1</td>
<td>27.1</td>
<td>70.9</td>
<td>33.1</td>
<td>42.4</td>
</tr>
<tr>
<td>Used account to receive wages in last year</td>
<td>8.8</td>
<td>4.1</td>
<td>2.9</td>
<td>5.8</td>
<td>6.3</td>
<td>3.7</td>
<td>6.6</td>
<td>4.0</td>
<td>5.6</td>
</tr>
<tr>
<td>Used a debit card in past year</td>
<td>14.1</td>
<td>1.6</td>
<td>3.5</td>
<td>4.4</td>
<td>11.9</td>
<td>1.5</td>
<td>8.5</td>
<td>10.7</td>
<td>9.6</td>
</tr>
<tr>
<td>Sent remittances in past year</td>
<td>39.3</td>
<td>25.6</td>
<td>5.4</td>
<td>26.5</td>
<td>21.3</td>
<td>28.5</td>
<td>17.9</td>
<td>9.9</td>
<td>14.2</td>
</tr>
<tr>
<td>Saved at a financial institution in past year</td>
<td>27.1</td>
<td>6.6</td>
<td>4.1</td>
<td>18.6</td>
<td>14.8</td>
<td>7.7</td>
<td>26.6</td>
<td>14.4</td>
<td>14.8</td>
</tr>
<tr>
<td>40% of poorest Adults</td>
<td>34.4</td>
<td>4.9</td>
<td>5.6</td>
<td>30.0</td>
<td>17.8</td>
<td>2.7</td>
<td>22.2</td>
<td>43.9</td>
<td>33.2</td>
</tr>
<tr>
<td>Borrowed from a financial institution in past year</td>
<td>5.3</td>
<td>3.5</td>
<td>6.3</td>
<td>8.1</td>
<td>11.8</td>
<td>1.9</td>
<td>13.1</td>
<td>6.4</td>
<td>7.0</td>
</tr>
</tbody>
</table>


The above cross-country analysis shows that Nigeria leads in terms of gross national income and adult population but lags behind countries like Egypt, Ghana and Indonesia in terms of borrowing from financial institutions. It also lags behind in the usage of mobile account when compared to Senegal and Ghana respectively.
Nigeria’s financial inclusion indicator compared to selected upper middle income economies

Table 2: Financial Inclusion Indicator for Upper Middle Income Economies

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Nigeria</th>
<th>Malaysia</th>
<th>Brazil</th>
<th>South Africa</th>
<th>China</th>
<th>Costa Rica</th>
<th>Thailand</th>
<th>Colombia</th>
<th>Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>GNI per capita($)</td>
<td>2710</td>
<td>10430</td>
<td>11690</td>
<td>7410</td>
<td>6560</td>
<td>9550</td>
<td>5340</td>
<td>7590</td>
<td></td>
</tr>
<tr>
<td>All Adults(% Age 15+)</td>
<td>44.0</td>
<td>80.7</td>
<td>68.1</td>
<td>70.3</td>
<td>78.9</td>
<td>64.6</td>
<td>78.1</td>
<td>39.0</td>
<td>70.5</td>
</tr>
<tr>
<td>Women(% of Adults)</td>
<td>43</td>
<td>78.1</td>
<td>64.8</td>
<td>70.4</td>
<td>76.4</td>
<td>60.2</td>
<td>75.4</td>
<td>34.0</td>
<td>67.3</td>
</tr>
<tr>
<td>Mobile account(% age 15+)</td>
<td>2.3</td>
<td>2.8</td>
<td>0.9</td>
<td>14.4</td>
<td>NA</td>
<td>NA</td>
<td>1.3</td>
<td>2.2</td>
<td>0.7</td>
</tr>
<tr>
<td>Use of ATM(% with an account)</td>
<td>70.5</td>
<td>72.1</td>
<td>75.4</td>
<td>81.8</td>
<td>51.2</td>
<td>83.2</td>
<td>62.3</td>
<td>80.8</td>
<td>55.7</td>
</tr>
<tr>
<td>Used account to receive wages in past year.</td>
<td>8.8</td>
<td>30.8</td>
<td>22.9</td>
<td>26.8</td>
<td>17.7</td>
<td>18.7</td>
<td>8.3</td>
<td>4.8</td>
<td>18.1</td>
</tr>
<tr>
<td>Used a debit card in past year.</td>
<td>14.1</td>
<td>18.6</td>
<td>41.7</td>
<td>40.8</td>
<td>17.3</td>
<td>35.3</td>
<td>7.9</td>
<td>17.5</td>
<td>19.9</td>
</tr>
<tr>
<td>Sent remittances in past year.</td>
<td>39.3</td>
<td>27.7</td>
<td>5.8</td>
<td>41.5</td>
<td>15.5</td>
<td>16.4</td>
<td>36.7</td>
<td>19.8</td>
<td>15.4</td>
</tr>
<tr>
<td>Saved at a financial institution in past year.</td>
<td>27.1</td>
<td>33.8</td>
<td>12.3</td>
<td>32.7</td>
<td>41.2</td>
<td>24.2</td>
<td>40.6</td>
<td>12.3</td>
<td>32.2</td>
</tr>
<tr>
<td>40% of poorest Adults</td>
<td>34.4</td>
<td>75.6</td>
<td>58.5</td>
<td>57.8</td>
<td>72.0</td>
<td>61.3</td>
<td>72.0</td>
<td>24.4</td>
<td>62.7</td>
</tr>
<tr>
<td>Borrowed from a financial institution in past year.</td>
<td>5.3</td>
<td>19.5</td>
<td>11.9</td>
<td>12.1</td>
<td>9.6</td>
<td>12.7</td>
<td>15.4</td>
<td>15.6</td>
<td>10.4</td>
</tr>
</tbody>
</table>


The above cross-country analysis shows a clear and wide gap in the financial inclusion index between Nigeria and other emerging economies in the upper middle income. Nigeria is still far behind in all the financial inclusion indices compared to their peers in this group. There is therefore an urgent need to deepen its financial inclusion strategy efforts if its quest to be listed among the top 20 economies by 2020 is to be realized.

Empirical Review

Different researchers have, at different times, investigated the effect of financial inclusion on economic growth and development in different economies. For instance, Cyn-Young and Ragelio (2015) examined the relationship between financial inclusion, poverty and income inequality in Asia. The study which focused on developing Asian economies sought to determine country-specific factors and macroeconomic variables that affect the level of financial inclusion for selected 37 developing Asian countries. They find that demographic factors and per capita income significantly affect financial inclusion. The study also shows that financial inclusion reduces income inequality and poverty. The study suggests that strong financial regulatory oversight, rule of law and enforcement of financial contract would improve financial inclusion efforts.
Migap et al (2015) examined financial inclusion as a strategy for inclusive growth in Nigeria. The study compared Nigerian financial inclusion index with other emerging economies in the upper middle income strata. They find that Nigerian financial inclusion indicator is still shallow compared to emerging economies both within and outside Africa. The study suggests that active participation of media and educational institutions should be encouraged to promote financial literacy in Nigeria.

Nkwede (2015) examined financial inclusion and economic growth in Africa, using Nigeria as a case study. Data for the study covered the period 1981 to 2013. The study shows a negative relationship between financial inclusion and growth of Nigerian economy. He attributes the finding to high level of financial exclusion of adults from financial services. Onaolapo and Odetayo (2012) studied financial inclusion in Nigeria from the perspective of microfinance banks using a survey design method. They find that access to financial services through microfinance institutions by less privileged people promotes employment generation, reduction in poverty and overall economic growth.

Joseph and Varghese (2014) studied the role of financial inclusion in the development of Indian economy. The study investigated the activities of five private sector banks and five state banks from June to November, 2013. Onsite and offsite ATM usage, number of bank branches, credit cards and debit cards per customers were used as proxies for financial inclusion variable focusing on rural and semi-urban areas in India. They find that quite a number of people are still excluded from financial services even after the introduction of inclusive banking initiatives in the country.

Aduda and Kulanda (2012) examined financial inclusion and financial sector stability with reference to Kenyan economy. The study which is exploratory in nature reveals that financial inclusion is a prerequisite for economic growth and development in Kenya because various financial inclusion programmes have impact on Kenya financial stability. The study suggests that government should intensify its financial inclusion strategies so that more people would have access to financial services especially people in the informal sector. Similarly, Allen, Carletti et al (2013) revealed that commercial banks can enhance access to financial services to underprivileged households in Kenya by deepening its impact on the rural and vulnerable groups. Brune et al (2012) also find that increased financial access through mobilization of rural savings improves the livelihood of Malawian rural population because poor households have access to savings for agricultural inputs.

Theoretical Framework

According to basic economic theory, under equilibrium conditions, realized investment must equal realized savings. But investment (I) is a function of marginal efficiency of capital (MEC) and interest rate (IR) while savings (S) is a function of interest rate. This theoretical relationship can be expressed as:

\[ I = S \text{ or } I (MEC, IR) = S (IR) \]

The above expression shows a direct or positive impact of savings on investment, an indication that higher levels of investment are associated with higher levels of human and physical capital accumulation. Schumpeter (1912) argues that through the basic services offered by financial institutions such as mobilization of deposits, project selection, risk reduction, delegated monitoring, cost mitigation, reduction of information asymmetry, allocation of funds to the most competent entrepreneurs, etc. they are able to promote technological innovation and hence economic development. Fitzgerald (2006), however, contends that the extent to which financial intermediaries are able to perform these functions depends on the level of financial intermediation (proxied as the depth of the financial system), the efficiency of the financial system (which according to Ziorklui (2001) is measured by the financial deepening impact of the banking system) and the structure or composition of the financial system (viewed in terms of number and variety of financial institutions constituting the structure).
Methodology
This study is purely longitudinal in nature because it employs time series data covering a thirty-year period, 1986 to 2015. Data were sourced from Central Bank of Nigeria (CBN) statistical bulletin 2015, Nigerian Deposit Insurance Commission (NDIC) statement of account 2015 and website of Nigeria Bureau of Statistics (NBS). Financial inclusion was adopted as the independent variable while economic growth was adopted as the dependent variable. Loan to deposit ratio (LDR), financial deepening indicators (FDI), liquidity ratio of commercial banks (LQR), loan to rural areas (LRA), branch networks (Bbranch) were adopted as proxies for financial inclusion. To adequately capture the research objectives, GDP and per capita income (PCI) adopted as dependent variables for the models are proxies for economic growth and poverty reduction respectively.

Model Specification
Two econometric models were employed to test the research hypotheses as follows:

Model 1: Financial inclusion and economic growth

Economic growth refers to the sustained rise in the economic activities over a given period of time within a country. Economic growth in this study is measured by Gross Domestic Product (GDP); while financial inclusion is measured by financial deepening indicators (FDI), loan-to-deposit ratio (LDR) and liquidity ratio (LQR). Financial deepening refers to an increase in financial services to a wider spectrum of a larger society geared towards the development of a nation (Nwagwugwu, 2008). The model assumes a linear relationship between the dependent and independent variables.

Based on this background, this study adopts the model developed by Ighodaro and Oriakhi, 2011 and Onaolapo, 2015.

\[ \text{GDP} = \alpha + \beta_1 \text{FD1} + \beta_2 \text{FD2} + \beta_3 \text{LDR} + \beta_4 \text{LQR} + \mu_t \]  
(1)

Where: GDP is the aggregate worth of an economy
FD1 is the ratio of broad money to GDP (M2/GDP)
FD2 is credit to private sector to GDP (CPS/GDP)
LDR is aggregate ratio of loan to deposit
LQR is the liquidity ratio of commercial banks

Model 2: Financial Inclusion and Poverty Reduction

A major goal of financial inclusion is to reduce the poverty level in the society. Poverty level in this model is measured by per capita income level at any given point in time. Per capita income (PCI) is a good indicator for measuring the economic well-being of people in any country. A high level of PCI signals a better standard of living whereas a low or declining PCI indicates a slide towards poverty level. Here financial inclusion is measured by the number of bank branches (BBranch), demand deposit from the rural areas (DRA) and loan to rural areas (LRA). Based on the discussion, the following model was developed.

\[ \text{PCI} = \alpha + \beta_1 \text{LRA} + \beta_2 \text{DRA} + \beta_3 \text{BBranch} + \mu_t \]  
(2)

Empirical Result and Discussion of Findings

This section presents the empirical results of the models. E-view statistical package was used to process the data whereas the econometric analyses were based on the ordinary least square regression technique. Evaluation of results was based on rule of thumb criterion.

Model 1: GDP = f (FD1, FD2, LDR, LQR)
Dependent Variable = GDP  
Method: Ordinary Least Square Regression  
Sample: 1986-2015 (No. of Observation 30)

### Table 3: Regression Analysis Result

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-statistics</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>557.243</td>
<td>182.7242</td>
<td>4.474826</td>
<td>0.0024</td>
</tr>
<tr>
<td>FD1</td>
<td>0.167816</td>
<td>0.112474</td>
<td>1.521482</td>
<td>0.0002</td>
</tr>
<tr>
<td>FD2</td>
<td>-0.024151</td>
<td>0.008241</td>
<td>-2.452101</td>
<td>0.0014</td>
</tr>
<tr>
<td>LDR</td>
<td>0.014721</td>
<td>0.007421</td>
<td>1.754102</td>
<td>0.0001</td>
</tr>
<tr>
<td>LQR</td>
<td>0.001712</td>
<td>0.004241</td>
<td>2.51421</td>
<td>0.0002</td>
</tr>
</tbody>
</table>

| Durbin-Watson Stat | 1.741208 | Mean dependent var. | 1142.952 |
| Log Likelihood     | 205.1418 | S.D dependent var.  | 423.1143 |
| Sum Squared Residual | 1820142 | Akaike info Criterion | 13.29412 |
| S.E of regression  | 252.7452 | Schwarz Criterion   | 13.12492 |
| R- Squared         | 0.814241 | F-Statistic          | 21.45321 |
| Adj. R-Squared     | 0.762429 | Prob. (F-Statistics) | 0.0000   |

*Source: E-View Output, 1986-2015 Survey Data*

We observed from table 4.1 that the ratio of broad money to GDP (FD1) and loan to deposit ratio (LDR) have non-significant positive impact on the dependent variable (GDP). However, liquidity ratio of commercial banks has significant positive impact while ratio of credit to private sector to GDP (FD2) shows significant negative impact. The R-squared (81.42%) and adjusted R-squared (76.24%) show that variations in GDP are significantly explained by the dependent variables. Durbin- Watson statistics (1.74) does not show evidence of multicollinearity. The estimated F-statistics shows that the overall regression analysis is statistically significant.

Model 2: PCI = f (LRA, DRA, BBranch)  
Dependent Variable = PCI  
Method: Ordinary Least Square Regression  
Sample: 1986-2015 (No. of Observation 30)

### Table 4: Regression Analysis Result

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-statistics</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>424.8571</td>
<td>514.9847</td>
<td>18.8741</td>
<td>0.0147</td>
</tr>
<tr>
<td>LRA</td>
<td>0.214571</td>
<td>0.574129</td>
<td>4.54734</td>
<td>0.0000</td>
</tr>
<tr>
<td>DRA</td>
<td>0.057468</td>
<td>0.111257</td>
<td>2.56412</td>
<td>0.0004</td>
</tr>
<tr>
<td>Bbranch</td>
<td>0.034571</td>
<td>0.004714</td>
<td>1.54871</td>
<td>0.0003</td>
</tr>
</tbody>
</table>

| Durbin-Watson Stat | 1.80141 | Mean dependent var. | 880.3471 |
| Log Likelihood     | 575.2487 | S.D dependent var.  | 418.8741 |
| Sum Squared Residual | 15784120 | Akaike info Criterion | 39.5871 |
| S.E of regression  | 722.2475 | Schwarz Criterion   | 37.01475 |
| R- Squared         | 0.867148 | F-Statistic          | 28.35711 |
| Adj. R-Squared     | 0.796741 | Prob. (F-Statistics) | 0.0002   |

*Source: E-View Output, 1986-2015 Survey Data*
Based on the presentation in table 4.2, it was observed that loan to rural areas (LRA) and deposit from rural areas (DRA) have significant positive effect on per capita income (PCI) but number of banks branches (BBranch) have non-significant positive impact on PCI. The R-squared (86.71%) and adjusted R-square (79.67%) show that the exogenous variables significantly explain variations in PCI (proxy for poverty reduction). The Durbin-Watson statistics (1.80) shows evidence of no multicollinearity. The estimated F-statistics (28.35711) shows that the overall regression analysis is statistically significant.

**Summary of Finding, Conclusion and Policy Recommendations**

The work examined the effect of financial inclusion on economic growth and development in Nigeria for the period 1986 to 2015. The study shows that (i) credit to private sector to GDP ratio has significant negative effect on economic growth (ii) liquidity ratio of commercial banks has significant positive effect on economic growth (iii) loans to rural areas and deposit from rural areas have significant positive on poverty reduction in Nigeria.

Based on the above findings, the study concludes that financial inclusion has (i) not supported economic growth in Nigeria (ii) supported poverty reduction in Nigeria.

Following from the above findings, it is recommended that the authorities in Nigeria should not only deepen financial inclusion efforts through enhanced credit delivery to the private sector but should also strengthen the regulatory framework in order to ensure efficient and effective resource allocation and utilization.

**References**


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