Financial System, Financial Inclusion and Economic development in Nigeria

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Abstract
The possibility exists that a financial system may leave out the less-privileged in benefiting from the synergy created by the bridging of the financial gap between providers and users of finance in an economy. The importance of financial systems and by extension, financial inclusion to economic growth has become even more pronounced in recent years because the development of a financial system is determined by the extent to which it improves access to financial services for poorer sections of the population. It is against this backdrop that the research has been carried out, using empirical data, to study the link between financial system, financial inclusion and economic development in Nigeria. Correlation and regression analyses were applied to explore relationships among study variables. The research found out that financial inclusion has a positive impact on economic development. It is the recommendation of this research that more financial institutions should be established in rural areas. Financial products that address the peculiarities of the financially disadvantaged should also be introduced in order to further reach the unbanked public. The study also makes a case for financial inclusion as an important corporate social responsibility and sustainable development perspective that financial institutions should embrace.

Key words: Financial System, Financial Inclusion, Economic Development, Small Scale Enterprises

1. Introduction
The financial system is a set of complex and closely interconnected financial institutions, markets, instruments, services, practices, and transactions (Gurusamy, 2008). Financial system can operate on a global, regional or firm specific level and it brings about financial intermediation, which is the transfer of money between savers, investors and borrowers. There are possibilities that a financial system may leave out certain people in benefiting from the synergy created by the bridging of the financial gap between providers and users of finance in an economy. In effect, this class of people will be excluded from the financial interconnection. Financial inclusion strategy will therefore have to be crafted to bring the financially disadvantaged and excluded to the loop, because the goal of a financial system development is to improve access to financial services for poorer sections of the economy.

Financial inclusion implies the provision of financial services to the public, with special focus on/ and target at the disadvantaged members of the public who may not ordinarily access the regular financial services. The financial inclusion strategy brings in the previously excluded and unbanked public by encouraging patronage of financial services.

The importance of financial systems and by extension, financial inclusion to economic growth has become even more pronounced in recent years. The issue of financial inclusion is increasingly becoming a ubiquitous phenomenon requiring attention from all stakeholders in the society, hence its relevance for management research. The government of nations are facing the financial inclusion issues and crafting different policies to tackle the problem. Consider for example, the case of Nigeria where federal government

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in October 2012 inaugurated National Financial Inclusion Strategy (NFIS) in Abuja, the Federal Capital Territory. The presidency submitted that lack of access to finance has been one of the major factors militating against economic growth and development; it was important to have structures that will enable all Nigerians have access to financial services as well as funds.

The president explained that the financial inclusion strategy midwife by the Central Bank of Nigeria (CBN) would enable more Nigerians have access to funds and help reduce poverty, especially in the rural areas. The president asserted that his administration would support the strategy and mobilise the relevant departments of government to implement it for the benefit of Nigerians. The importance of small and medium enterprises as the major vehicle to create employment in an increasingly industrial world was recognized, and the need for a new strategy to provide access to funds was further reiterated (Thisday, 2012).

The Central Bank of Nigeria (CBN) Governor, Sanusi Lamido Sanusi (2012), stated that the initiatives for the establishment of the National Financial Inclusion Strategy (NFIS) was to reduce the number of Nigerians that are financially excluded, which according to him, was about 46.3 per cent of Nigeria’s adult population. It was noted that the strategy provided the roadmap for the activities of all stakeholders in the provision of financial services in the country and added that the strategy also aims to reduce the exclusion rate to 20.0 per cent by year 2020.

While the importance of small and medium enterprises as the major vehicle to create employment in an increasingly industrial world, and provision of access to funds has been noted by Gurusamy (2008) and Franklin & Douglas (2001). Other researchers (Keats, 2012; Crepon et al, 2011; Burgess and Pande, 2005) have identified the interconnectedness among various financial inclusion variables such as deposits of rural branches of Commercial Banks, Loans and advances of rural branches of Commercial Banks, Commercial Banks Loans to Small Scale Enterprises, Number of community/Microfinance banks in the society and Number of Commercial bank branches located in rural areas.

There are replete studies on financial inclusion subject matter in other countries but researches on practice domestication in Nigeria still leaves much to be desired. Exploring the relationships among other variables—such as how the Gross Domestic Product is affected by loans and advances to SMEs, low-income earners, and residents of sub-urban regions—could provide further insights into unraveling some unexplored phenomenon.

The paper therefore seeks to investigate how financial systems can bring about financial inclusion through the extension of financial services to the unbanked public, with particular focus on the financially disadvantaged in Nigeria, for the overall development of the economy.

In order to achieve the stated objectives, two research hypotheses stated in their null form were conjectured as follows:

\[ H_0^1 \text{ "Loans & Advances to the financially disadvantaged do not positively impact on the Nigerian economy"} \]

\[ H_0^2 \text{ "There is no significant relationship between Financial Inclusion and Economic development in Nigeria"} \]

2. Literature review

Financial inclusion connotes ensuring that the low income earners, illiterates, people living in rural areas and the financially disadvantaged in the society all have access to requisite financial services by bringing the services closer to them at an affordable cost. This implies that the normal banking practices, requirements and documentations for account-opening and loan accessing, collateral requirements, pricing of loans and advances and service charges for routine banking services which serves as barriers/constraints to the less-privileged will have to be relaxed in order to cater for their banking needs. It also connotes that the penetration of bank services both geographically and demographically through the establishment of branches in rural areas.
The importance of financial systems and by extension, financial inclusion to economic growth has become even more pronounced in recent years. This is evidenced by various researches in different countries by different authors all over the world. Burgess and Pande, (2005) from India and Bruhn and Love (2009) and; Ruiz, (2010) from Mexico studied how expanding access to microfinance affects the economy. Their finding was that increased access to both credit and savings services have positive, important impacts on the welfare of the society. Studies by Banerjee et al, 2010; Crépon et al, (2011); Karlan and Zinman (2010) however suggest that expanding access to microfinance alone has no significant effect on the economy.

Franklin and Douglas (2001) submitted that financial systems are crucial to the allocation of resources in a modern economy. They channel household savings to the corporate sector and allocate investment funds among firms; they allow intertemporal smoothing of consumption by households and expenditures by firms; and they enable households and firms to share risks. These functions are common to the financial systems of most developed economies, yet the form of these financial systems varies widely.

Studies have suggested that expanding access to microfinance alone has no significant effect on the economy (Banerjee et al, 2010; Crépon et al, 2011; Karlan and Zinman, 2010). In contrast, studies of programs that increased access to both credit and savings services have found important welfare impacts (Burgess and Pande, 2005 in India; and three studies in Mexico by Aportela, 1999, Bruhn and Love, 2009, and Ruiz, 2010).

The degree of banking exclusion vary across the world, but it is the same group of people who are affected, people having low income or who have similar history of bad debt. These sections of people are excluded from the mainstream because they do not have sufficient income to repay the loan or to keep the asset as collateral security against whom the borrower can take loan (Satya and Rupayan, 2010; World Bank, 2005)

In Nigeria, some of the factors responsible for financial exclusion are:
- Non-existence of bank branches in rural areas
- The existence of few bank branches whose services are grossly inadequate to meet the financial service needs of residents in the rural community
- The preference and servicing of high-income earners over the low-income earners
- Elaborate documentation and initial deposit required for the opening of accounts in commercial banks which the disadvantaged may not possess, thereby hindering bank patronage
- Preference and Allocation of credits to preferred sectors that will generate high and ‘quick’ returns to commercial banks
- Discriminatory and preferential practices by banks of funding well-established businesses over the start-up Small and Medium scale Enterprises (SMEs)
- Collateral requirements for granting loans and advances
- Perception of the public as to the unwillingness of banks to grant credit as well as the bureaucratic procedural process (turnaround time) of accessing loans and advances
- High cost of borrowing. In Nigeria, the average minimum prevailing interest rate for all class of credit is 22% per annum.
- High maintenance charges and penalties attached to banking products and services which make them unaffordable
- Other miscellaneous factors such as age, gender (preference of male proprietors over female), illiteracy, lack of possession of managerial skills by SMEs proprietors.
Inability to access credit from formal financial institutions is one of the causes of financial exclusion. The loaning of SMEs by banks is provided in the table reveals that the proportion of loan given to small and medium scale enterprises in relation to the entire loan allocation has been declining.

Table 1: Loans to SME by commercial banks in Nigeria, 1992 to 2008

<table>
<thead>
<tr>
<th>Year</th>
<th>Loans to SMEs in N’ million</th>
<th>Total bank loan in N’ million</th>
<th>% of bank loan to MSMEs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>20,400</td>
<td>41,810</td>
<td>48.8</td>
</tr>
<tr>
<td>1993</td>
<td>15,462.90</td>
<td>48,056</td>
<td>32.2</td>
</tr>
<tr>
<td>1994</td>
<td>20,552.50</td>
<td>92,624</td>
<td>22.2</td>
</tr>
<tr>
<td>1995</td>
<td>32,374.50</td>
<td>141,146</td>
<td>22.9</td>
</tr>
<tr>
<td>1996</td>
<td>42,302.10</td>
<td>169,242</td>
<td>25</td>
</tr>
<tr>
<td>1997</td>
<td>40,844.30</td>
<td>240,782</td>
<td>17</td>
</tr>
<tr>
<td>1998</td>
<td>42,600.70</td>
<td>272,895.50</td>
<td>15.5</td>
</tr>
<tr>
<td>1999</td>
<td>46,824</td>
<td>353,081.10</td>
<td>13.3</td>
</tr>
<tr>
<td>2000</td>
<td>44,542.30</td>
<td>508,302.20</td>
<td>8.7</td>
</tr>
<tr>
<td>2001</td>
<td>52,428.40</td>
<td>796,164.80</td>
<td>6.6</td>
</tr>
<tr>
<td>2002</td>
<td>82,368.40</td>
<td>954,628.80</td>
<td>8.6</td>
</tr>
<tr>
<td>2003</td>
<td>90,176.60</td>
<td>1,210,033.10</td>
<td>7.5</td>
</tr>
<tr>
<td>2004</td>
<td>54,981.20</td>
<td>1,519,242.70</td>
<td>3.6</td>
</tr>
<tr>
<td>2005</td>
<td>50,672.60</td>
<td>1,899,346.40</td>
<td>2.7</td>
</tr>
<tr>
<td>2006</td>
<td>25,713.70</td>
<td>2,524,297.90</td>
<td>1</td>
</tr>
<tr>
<td>2007</td>
<td>41,100.40</td>
<td>4,813,488.80</td>
<td>0.9</td>
</tr>
<tr>
<td>2008</td>
<td>13,383.90</td>
<td>7,725,818.90</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Source: CBN statistical bulletin

The figure graphs the Number of community/Microfinance banks (NoOfMFB), Number of Commercial bank branches located in rural areas (NoComBchRural) and the Gross Domestic Product (GDP) in Nigeria for the period 1960 to 2011.

In figure 1, the Geographic and Demographic Penetration of Bank Services in rural areas -- depicted by the number of community banks and the number of commercial bank branches located in rural areas -- is graphed with the economic growth parameter (GDP). The visual inspection of the graph shows an upward sloping, positive relationship. However, the number of microfinance banks started increasing on a decreasing basis between the period 1990 and 2000, while the number of commercial bank branches in rural areas was initially increasing and remained steady between 1990 and 2010.

The World Bank (2005) presented some indicators of banking sector penetration across 99 countries based on a survey of bank regulatory authorities in developed economies, emerging markets and transition economies, which are as follows:

a) Geographic branch penetration number of bank branches per 1000 Km.
b) Geographic ATM per 1000 Km.
c) Demographic branch penetration number of branches per 100,000 people.
d) Demographic ATM penetration number of ATMs per 100,000 people
The financially excluded group in the economy seeks the service of the non-formal financial service providers to meet their finance needs. This explains the reason why the capital structure of most SMEs at start-up and continuation remarkably exclude credits from banks but is instead made up of Equity (personal savings and plough back profit) and Debt (borrowing from relations, friends and informal financiers).

3. Methodology

Correlation and time-series regression model were used for quantitative analyses, with the aid of gretl statistical package. Secondary data were sourced from Central Bank of Nigeria (CBN) statistical bulletin. In operationalizing study variables, economic development was measured using the Gross Domestic Product (GDP). Financial inclusion was measured using three variables namely- Deposits attracted by rural branches of Commercial Banks, Loans & advances of rural branches of Commercial Banks and, Commercial Banks Loans to Small Scale Enterprises respectively for a 16-year period of 1992 to 2007. The variables cover this period because of the challenges in sourcing data for other periods and in order to use equal number of samples for the four variables of the study for the data available, making a total number of 64 observations, sufficient to explore relationships among variables.

The study model is specified as follows:

\[
\ln(GDP) = f(\text{FINCLU}) \quad \vdots \quad \text{Equation 1}
\]

\[
\text{FINCLU} = \{\ln(DRCB), \ln(LRCB), \ln(CLSS)\} \quad \vdots \quad \text{Equation 2}
\]

Substituting for equation (2) in equation (1) yields the equation below:

\[
\ln(GDP) = f(\{\ln(DRCB), \ln(LRCB), \ln(CLSS)\}) \quad \vdots \quad \text{Equation 3}
\]

Stating equation (3) in the linear form yields:
\[ \ln\text{GDP} = C_0 + C_1\ln\text{DRCB} + C_2\ln\text{LRCB} + C_3\ln\text{CLSS} + e \] Equation 4

Where:
- \( \text{FINCLU} \) is Financial Inclusion
- \( \text{DRCB} \) is Deposits of rural branches of Commercial Banks
- \( \text{LRCB} \) is Loans and advances of rural branches of Commercial Banks
- \( \text{CLSS} \) is Commercial Banks Loans to Small Scale Enterprises
- \( \text{GDP} \) is Gross Domestic Product
- \( e \) is the error term

We therefore adopted the decomposed equation (4) for our multivariable regression analysis.

Pearson correlation was used to explore the relationship between Loans to SMEs and GDP to test the first hypothesis using a 26-year time frame. Regression analysis was used to test the second hypothesis. Robustness check was carried out using Durbin Watson for Autocorrelation and White test for heteroskedasticity.

4. Results Presentation and Analysis

Correlation analysis

**Table 2:** Correlation between Loans to Small Scale Enterprises and Gross Domestic Product in Nigeria for 26 years (period 1982 to 2007)

<table>
<thead>
<tr>
<th>Correlation</th>
<th>Loans and advances by commercial bank branches in rural areas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GDP</strong></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.849**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>26</td>
</tr>
</tbody>
</table>

Regression analysis

In time series regressions, the data need to be stationary (i.e. the means, variances and covariances of the data series cannot depend on the time period in which they are observed), before statistical procedures can be applied.

To examine stationarity, a test was carried out using the ADF (Augmented Dickey Fuller Test) unit root test statistics. Variables were found to be stationary at the first order of integration:

**Table 3:** Unit root: ADF test for stationarity

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimated value</th>
<th>Test statistics (at 5%)</th>
<th>asymptotic p-value</th>
<th>Order of integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \ln\text{GDP} )</td>
<td>-0.217485</td>
<td>-2.12992</td>
<td>0.5284</td>
<td>I (1)</td>
</tr>
<tr>
<td>( \ln\text{DRCB} )</td>
<td>-0.122263</td>
<td>-0.621248</td>
<td>0.9774</td>
<td>I (1)</td>
</tr>
<tr>
<td>( \ln\text{LRCB} )</td>
<td>-0.305989</td>
<td>-1.84566</td>
<td>0.6824</td>
<td>I (1)</td>
</tr>
<tr>
<td>( \ln\text{CLSS} )</td>
<td>-0.329132</td>
<td>-1.43222</td>
<td>0.8065</td>
<td>I (1)</td>
</tr>
</tbody>
</table>

Source: Authors' computation

Co-integration was tested using the Engle-Granger procedure. The regression model generated estimated value of -1.18523 and test statistic of -2.95037, with asymptotic p-value of 0.4384.
There is evidence for a co-integrating relationship if:
(a) The unit-root hypothesis is not rejected for the individual variables.
(b) The unit-root hypothesis is rejected for the residuals from the cointegrating regression.

Given that these two conditions do not apply to the results, we conclude that co-integration does not exist.

The multivariable regression analysis outcome using equation (4) is presented below:

### Table 4: Ordinary Least Square regression

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-ratio</th>
<th>p-value</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>const</td>
<td>-0.792421</td>
<td>2.01015</td>
<td>-0.3942</td>
<td>0.70034</td>
</tr>
<tr>
<td>lnDRCB</td>
<td>-0.608395</td>
<td>0.122478</td>
<td>-4.9674</td>
<td>0.00033 ***</td>
</tr>
<tr>
<td>lnLRCB</td>
<td>0.984938</td>
<td>0.144116</td>
<td>6.8343</td>
<td>0.00002 ***</td>
</tr>
<tr>
<td>lnCLSS</td>
<td>1.19713</td>
<td>0.266383</td>
<td>4.4940</td>
<td>0.00073 ***</td>
</tr>
</tbody>
</table>

Mean dependent var 15.18856  S.D. dependent var 1.126787
Sum squared resid 2.485473  S.E. of regression 0.455107
R-squared 0.869493  Adjusted R-squared 0.836866
F(3, 12) 55.35211  P-value(F) 2.67e-07
Log-likelihood -7.806012  Akaike criterion 23.61202
Schwarz criterion 26.70238  Hannan-Quinn 23.77028
rho -0.069982  Durbin-Watson 2.116313

***significant at 1%

### Table 5: ANOVA Test for Significance of Model

<table>
<thead>
<tr>
<th>ANOVA^b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), lnDRCB, lnLRCB, lnCLSS
b. Dependent Variable: lnGDP

Robustness check for model validity

Model fit
To examine the fitness of our regression model, we compare the standard error of the estimate with the mean value of the dependent variable contained in table 4. If the standard error of the estimate is less than the
mean value of the dependent variable, the model is preferred and vice versa (Gupta, 1999). The model is preferred since \(0.455107 < 15.18856\).

**Durbin Watson test for Autocorrelation**

In a positive serial correlation a positive error for one observation increases the chances of a positive error for another observation (Gupta, 1999). The presence of autocorrelation (a relationship between values separated from each other by a given time lag) was tested using the Durbin–Watson statistics.

The observed Durbin-Watson value produced by the regression model, \(d\), is 2.116313. The Critical values for \(k\) (number of regressor=3), \(N\) (sample size=16) at 5% significance are

- Lower bound, \(d_{L,\alpha}\) = 0.8572
- Upper bound, \(d_{U,\alpha}\) = 1.7277.

We infer that there is no statistical evidence that the error terms are positively auto-correlated since \(d > d_{U,\alpha}\).

**White test for heteroskedasticity**

To ensure that the ordinary least squares estimators are reliable and efficient and the confidence intervals based on usual standard errors are correct, heteroskedasticity should not occur among variables (Gupta, 1999). We therefore proceeded to carry out a test for heteroskedasticity using the white test.

The white test is calculated by multiplying the R-Square by the number of observations (N).

The R-squared generated by running the OLS test for heteroskedasticity is 0.636687.

White test = \(N \times R\) square = 16X0.636687 = 10.186992

Critical chi-square for 16 degree of freedom at 5% significance = 26.2962

The null hypothesis (\(H_0\)) is that there is no heteroskedasticity and the decision rule is:

- If white’s test > critical \(\chi^2\) then reject \(H_0\) and conclude heteroskedasticity exists, but
- If white’s test < critical \(\chi^2\) then accept \(H_0\) and conclude that there is no heteroskedasticity.

Since 10.186992 < 26.2962, we infer that there is no heteroskedasticity.

**Collinearity test**

To check for the presence of collinearity in the regression model, we utilized the Variance Inflation Factors (VIF) diagnostics. The VIF provides an index of that measures how much the variance of an estimated regression coefficient is increased because of collinearity. If the VIF > 5, then multicollinearity is high (Adkins, 2010).

The VIF between the dependent variable (lnGDP) and the independent variables are: lnDRCB = 1.342, lnLRCB = 1.219 and lnCLSS = 1.437.

The VIF < 5 in all cases, hence collinearity does not exist.

5. **Result Analysis**

Table 2 contains the correlation analysis between Loans & Advances to the financially disadvantaged located in rural areas and growth of the Nigerian economy. The correlation co-efficient is 0.849 at 1% significance level, meaning that there is a strong positive relationship between the variables. We therefore conclude that we are 99% confident that there is 85% positive relationship between loans to the financially disadvantaged and the GDP. Revisiting hypothesis 1, we do not accept the \(H_0\) but the alternative (\(H_1\)) that loans and advances to the financially disadvantaged positively impact on the Nigerian economy.

Tables 4 and 5 respectively contain the regression results of our model. Table 5 presents the overall fitness of the model. The \(p\)-value is less than 0.01, meaning the model is significant at 1%. Table 4 also presents the regressor co-efficients. The independent variables— Deposit in rural branches of commercial
banks, Loans & Advances by rural branches of commercial banks, and Commercial Banks Loans to Small Scale Enterprises—are all significant at 1%. Since the p-value for all the three regressors are less than 1%, the estimators are reliable.

The reliability, accuracy and validity of the model is further established by other statistical tests carried out such as: standard error estimate, Durbin-Watson test for autocorrelation, white’s test for heterodaskadicity and VIF collinearity diagnostics, which have been presented in section 4.3 of the work.

The coefficient of determination (the R-square) shows how much of the variance in the dependent variable is explained by the model. Considering that the r-square coefficient is 0.869493, it can be stated that the regressors explain 87% of the variance in the Gross Domestic Product while 13% is left unaccounted for which is attributable to error term.

Since the significance level of each of the three regressor co-efficients is less than 1% , we do not accept the null hypothesis two (H₀²) but the alternative hypothesis that there is a significant relationship between financial inclusion and economic development in Nigeria.

We therefore conclude that financial inclusion has a positive impact on economic development. This agrees with earlier research carried out by Masroor (2012) where the impact of financial inclusion on the poverty levels in India was studied and it was observed that there is a significant negative correlation between financial inclusion and the poverty.

6. Conclusion and Recommendation

Financial inclusion is an emerging issue that has global relevance, because the extent to which a financial system is developed is dependent on how it can provide access to financial services to the public, particularly the unbanked. Advances to the financially disadvantaged positively impacts on the Nigerian economy because a positive relationship exists between loans to the financially disadvantaged and development of the Nigerian economy. Financial inclusion has a positive impact on economic growth and development.

It is our submission that more financial institutions should be established by the private sector through branch expansion by commercial banks to rural areas and the setting up of microfinance banks situated in rural areas as well. Government should also encourage the establishment of community banks in rural areas to reach the unbanked. Financial products which consider and balance the risk appetite of individual financial institutions with the peculiarities of the illiterates, less-privileged and financially disadvantaged, that will require less documentation for account-opening, affordable interest rate, bearable maintenance and service charges, relatively rapid turnaround time for loan-processing, should be designed and introduced by commercial banks to encourage more participation and inclusion in the financial system. Financial education is also recommended to enlighten the public on the benefits of a financial system.

We are of the view that financial inclusion is a key corporate social responsibility and sustainable development perspective that financial institutions should embrace, as providing financial services is expected to impact the social and economic lives of people. Performance assessment metrics for financial institutions should not be limited to financial measures (profitability) only, but should also assess extent to which organizations positively affect the society by helping the financially-disadvantaged, given that there is a strong positive relationship between financial inclusion and economic development.

The growth and development of a country is significantly dependent on the expansion of banking and financial services to the currently financially-excluded class of citizens in the economy, as they possess untapped valuable potentials that could be of tremendous benefit to the economy at large.
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