EFFECTS OF FINANCIAL INCLUSION ON SELECTED MACROECONOMIC VARIABLES IN NIGERIA

EZENWAKWELU, GODFREY CHINWEOBI
Department of Entrepreneurship
Madonna University Nigeria, Okija
E-mail: chinweobi4ever2006@yahoo.com
Phone: +2348062340338

Abstract
This study assessed the effect of financial inclusion on economic growth, unemployment and human development in Nigeria for the period 2007 to 2015. The specific objectives were to determine the nature of the relationship between financial inclusion and gross domestic product; financial inclusion and level of unemployment; and financial inclusion and human development. The problem was that a large proportion of the adults in Nigeria do not have access to formal financial services despite efforts being made by various stakeholders, such as Central Bank of Nigeria, banks, and the Government. This study adopted an ex-post facto research design. The data for this study were obtained from secondary sources - IMF e-library, and World Development Indicators. Three models were specified and ordinary least squares regression technique was used to analyze the data with the aid of Eviews version 8 application software. The main findings were that no significant relationship existed between financial inclusion and gross domestic product while significant relationship existed between financial inclusion, unemployment and human development. The conclusions drawn from the study were that financial inclusion had an insignificant effect on GDP, very significant relationship with unemployment level and significant relationship with human development. The recommendations include creating deposit and borrowing windows at affordable costs to the poor and the unbanked group; making policy for improvement of collateral framework, as well as policy on financial literacy, training and empowerment among others.

Keywords: financial inclusion, economic growth, unemployment, human development, and Nigeria.

Introduction
Financial inclusion has gained importance since the early 2000’s as a key driving force towards the realization of self-sustained inclusive economic growth. It has continued to assume increasing recognition across the globe among policy makers, researchers and development oriented agencies. Financial inclusion refers to the process of ensuring access to appropriate financial products and services needed by all members of the society in general and vulnerable groups in particular, at an affordable cost, in a fair and transparent manner by mainstream institutional players. It ensures ease of availability, accessibility and usage of formal financial system to all members of the economy (Sharma, 2008). Full financial inclusion is a state in which all people who can use financial services have access to a full suite of quality financial services provided at affordable prices, in a convenient manner and with dignity for the clients. The merits of inclusive financial system include facilitating efficient allocation of productive resources thereby potentially reducing the cost of capital, as well as significantly improving the day-to-day management of finances by ensuring access to appropriate financial services. It also involves helping in reducing the growth of informal sources of credit such as money lenders which are often found to be exploitative. In addition, the merits entail enhancing efficiency and welfare by providing avenues for secure and safe savings practices; and by facilitating a whole range of efficient financial services, thereby making it possible for the government to use the bank accounts of people for providing various security services to the vulnerable section of the society.
Notwithstanding the obvious benefits of financial inclusion, the stark reality is that most poor people in the world still lack access to sustainable financial services whether it is savings, payments, credits or insurance. Globally, more than 2.5 billion adults do not have a formal account, most of them in developing countries (Demirguc- Kunt & Klapper, 2012). With regards to the provision of financial services, Nigeria lags behind some of its peer African countries. In 2010, for example, only 36% about 31million out of an adult population of 84.7million were served by formal financial institutions compared to 68% in South Africa and 41% in Kenya (Enhancing Financial Innovation and Access (EFInA) to Financial Services in Nigeria 2010 Survey). About 46.3% of adult Nigerians were financially excluded and 17.4% was informally included resulting to 53.7% being financially served. Financial inclusion is most progressive in the urban areas of Nigeria especially in Southern parts of the country. Northern Nigeria is particularly disadvantaged as 68% of adults in the North East and North West zones respectively are excluded (EFInA, 2010). In an attempt to boldly tackle the challenge of financial exclusion, the Central Bank of Nigeria enunciated the National Financial Inclusion Strategy (NFIS) on 23th October, 2012 with the major objective of reducing the exclusion rate to 20% by 2020 as committed to in the Maya Declaration 2011 of which Nigeria is a signatory. The problem of financial exclusion is not limited to the emerging economies. In most countries it is a phenomenon restricted to rural areas, but in recent times it manifests in the urban areas where in spite of the existence of bank branches, some segments of the population still remain excluded owing to constraints such as access, timing and income potentials.

Since financial inclusion is perceived as an essential condition for financial deepening which assists in addressing the basic issues of economic growth and income inequality, it is therefore a step towards inclusive development. Although the literature contains ample studies on financial inclusion, there is no consensus on the exact effects in various countries owing to country specific factors such as literacy level, age and income among others. It is in the light of the above that this study aims to ascertain the impact of financial inclusion on GDP growth, unemployment and human development of Nigeria. This introduction is followed by the related literature in section 2. Section 3 is methodology. Section 4 covers results and discussion while section 5 contains conclusion and recommendations.

Statement of the Problem
In spite of the broad acceptance of the importance of financial inclusion as a powerful economic development tool, over 2.5 billion people globally, most of them in developing economies, continue to be excluded from the financial system resulting to their languishing in a cycle of deprivation and segregation from the mainstream economies. Without inclusive financial systems, poor people must rely on their limited savings to invest in their education or become entrepreneurs and micro and small enterprises must rely on their earnings to pursue promising growth opportunities. This can contribute to persistent inequality and slower growth (Demirguc-Kunt & Klapper, 2012). Empirical evidence suggests that not only is financial inclusion pro-growth, but it is also pro-poor helping to reduce income inequality and poverty (Kasprzicz & Rynie, 2013).

A large proportion of the adults in Nigeria do not have access to formal financial services and there is still shortage of information regarding actual access to financial services in Nigeria despite the efforts being made by various stakeholders such as the Central Bank of Nigeria, World Bank, National Poverty Eradication Programme (NAPEP), German Technical Corporation (GTC), Enhancing Financial Innovation and Access, Deposit Money Banks (DMBs), and Microfinance Banks, among others. According to National Financial Inclusion Strategy for Nigeria (2012), a total of 39.2million adult Nigerians (46.3% of the adult population of 84.7million) were financially excluded in 2012. Further analysis revealed that 54.4% of the excluded population was women, 73.6% was aged less than 45 years, and 34.0% had no formal education while 80.4% resided in rural areas. EFInA Access to Financial Service Survey (2010) revealed that only 36%, about 31million out of an adult population of 84.7million were served by formal financial institutions compared to 68% in South Africa and 41% in Kenya. In the same vein, although the Nigerian economy had recorded an average annual growth rate of about 5.5% per annum, there is still no
consensus on the exact impact of financial inclusion on economic growth. Furthermore, although the literature contains ample studies on financial inclusion and growth, there is still no consensus on the exact effects on various countries owing to country specific factors like literacy level, age and income among other factors. The fact that the aim of the National Financial Inclusion Strategy for Nigeria (2012) includes decreasing the number of Nigerians that are excluded from financial services from 46.3% in 2010 to 20% by 2020 as contained in Maya Declaration 2011, and increasing the number of Nigerians that are included in the formal financial sector from 30% in 2010 to 70% by 2020, is a clear evidence that FI is still below average performance in Nigeria. It is on the basis of the above problem that this study is being undertaken to assess the impact of FI on Nigeria’s GDP, unemployment and human development.

Objectives and hypotheses
The primary objective of this study is to assess the effect of financial inclusion on economic growth of Nigeria while the specific objectives are to determine the nature of the relationships between financial inclusion and gross domestic product (GDP) of Nigeria; financial inclusion and level of unemployment; financial inclusion and human development in Nigeria. This study seeks to answer the following questions: what is the nature of the relationship between financial inclusion and GDP growth rate of Nigeria; is there any significant relationship between financial inclusion and the level unemployment in Nigeria?; how significant is the nature of the relationship between financial inclusion and human development in Nigeria?

The null hypotheses formulated to guide this study are: there is no significant relationship between financial inclusion and: GDP growth rate; the level of unemployment; and human development in Nigeria.

Theoretical Review
Financial inclusion is essential for employment, equitable economic growth and development and financial stability. To achieve these goals, policy makers need good national data. Greater financial inclusion is essential for sustained economic welfare and for reducing poverty. It also supports economic, monetary and financial stability by making savings and investment decisions more efficient; enhancing the effectiveness of monetary policy instruments and facilitating the functioning of the economy (Ibrahim, 2012). Economic stability helps to develop and strengthen a smoothly functional financial system that can support financial inclusion. Chakrabarty (2012) drew on the various initiatives implemented in India in measuring financial inclusion to highlight the trinity - financial inclusion, financial literacy and consumer protection that can make financial stability possible.

According to Subbarao (2009) as cited in Mbutor and Uba (2013), financial inclusion is a necessary condition for sustainable and equitable growth; very few economies transit from an agrarian system to a post-industrial modern society without a broad-based financial inclusion strategy; economic opportunity is strongly intertwined with access to financial services; and that such access is especially influential on the poor as it enables them grow savings, make investments and benefit from credit.

Yorulmaz (2012) reported that the nexus between financial market development and economic development has always been an important topic in economics. Since the onset of the financial crisis in 2007, the relationship between financial development and economic growth has drawn more interest. While the crisis had its biggest impact on the developed world, the role of financial intermediation on economic growth and development is not well understood and still widely debated among economists. For one, the direction of causality is not clear: does economic development lead to financial development or is it the case that financial development leads to economic growth? It is likely that the causation runs both ways. Yorulmaz (2012) further reported that early works by Schumpeter (1912) and Hicks (1969) found that financial development causes economic growth. However, Robinson (1952) & Levine (1997) argued that economic growth promotes financial development. According to their studies, economic growth creates demand and the automatic response of the financial system for this demand causes development in the financial system.
According to Beg (2010), the old theories of development concentrated on labour, capital and organization, etc as the factors for growth and development. The pioneering work on development hardly includes finance as a factor of economic growth. Mishkin (2005) said that the importance of finance to economic growth has also been frequently ignored by economists. The main reason for ignoring the link between finance and growth can be understood from the assumption that markets are perfect and there are no frictions as believed by the initial finance theories like Modigliani – Miller theorems and Efficient Market Hypotheses of Eugene Fama & Kenneth French. However, later developments showed that there are imperfections in the financial market and how various financial entities led to the reduction of these imperfections.

According to Babajide, Adegboye and Omankhalem (2015), studies on financial development have identified four distinct areas as driving force of economic growth. The first one is the provision of a low-cost reliable means of payment to particularly the low income group. The second is the role financial intermediation plays in increasing the volume of transactions and allocation of resources from the surplus unit to the deficit unit of the economy and in the process improve resource distribution (Odeniran & Udeaja, 2010). The third has to do with the risk management effect that the financial system provides by curtailing liquidity risks, thereby enabling the financing of risky but more productive investments and innovations within the economy (Greenwood & Jovanovic, 1990). The fourth is that the financial sector provides information on possible investments and availability of capital within the system, thereby ameliorating the effects of asymmetric information.

A growing body of empirical analysis including firm-level studies, industry-level studies, individual country-level studies and broad cross-country comparisons demonstrate a strong positive link between the functioning of the financial system and long-run economic growth. However, theory and evidence make it difficult to conclude that the financial system merely and automatically responds to industrial and economic activity or that financial development is an inconsequential addendum to the process of economic growth (Levine, 1997).

Since there have been numerous research works analyzing how financial system helps in developing economies, this study will not only examine how finance contributes to GDP growth but also social aspects like unemployment and human development. Findings in earlier studies have been diverse and the consensus is that finance helps but the magnitude of impact differs.

**EMPIRICAL REVIEW**

**Relationship between Financial Inclusion and Economic Growth**

Sahay et al. (2015) examined the linkages of financial inclusion with economic growth, financial and economic stability and inequality and found that: i, financial inclusion increases economic growth up to a point; greater access of firms and households to various banking services as well as increasing women users of these services, lead to higher growth; sectors dependent on external finance grow more rapidly in countries with greater financial inclusion; the marginal benefits for growth wane as both inclusion and depth increases; and as such, these benefits could be low and even negative for some advanced countries. ii). Financial stability risks increase when access to credit is expanded without proper supervision; financial buffers decline with broader access to credit, other things being equal; in countries with weaker supervision, the erosion of buffers is larger; countries with strong supervision would see some financial stability goals from higher inclusion. The paper reveals large supervisory gaps across countries, signaling the potential risks to financial stability from an unchecked broadening of access to credit. iii). In contrast to credit access, increasing other types of access to financial services does not impact on financial stability adversely. Increasing access to automated teller machines (ATMs), branches and transaction accounts fall in this canopy; closing gender gaps in account usage and promoting diversity in the depositor base would help to promote growth without impairing financial stability. Therefore, these services can be promoted extensively from a financial stability perspective; overall, financial inclusion can meet multiple
macroeconomic goals but macroeconomic gains wane as both financial inclusion and depth increase and there are trade-offs with financial stability.

Mukherjee and Mallik (2015) examined the extent of causal relationship between financial inclusion and macroeconomic variables such as agricultural growth, industrial growth, progress in elementary and secondary education in India for the period 2008 – 2012 and the results of a panel data analysis claim strong one-way causality between financial inclusion, agricultural growth and elementary education; and that reverse causality which is acclaimed by the theory does not occur.

Onaolapo, (2015) conducted a study on the effects of financial inclusion on the economic growth of Nigeria for the period 1982 – 2012 and attempts to evaluate the impact of financial inclusion on the performance of the Nigerian economy and found that: there is a significant relationship between financial inclusion and economic growth in Nigeria; positive relationships exist between demand deposit from rural areas and bank loan to rural areas, as well as, loans to small scale enterprises; and a negative relationship between demand deposit from rural areas and capital adequacy ratio.

Babajide, Adegbeyoke and Omankanhen (2015) carried out a study on financial inclusion and economic growth for the period 1981 – 2012 and found that: financial inclusion is a strong determinant of the total factor production; capital per worker plays a significant role in the determinant of bank deposits within the banking system; and only commercial bank deposits used as a proxy for financial inclusion significantly increased capital per worker.

Dabla-Norris, Yan, Townsend, and Unsal (2015) conducted a study on identifying constraints to financial inclusion and their impact on GDP and inequality for the period 2005 – 2008 and found that alleviating different financial frictions have a differential impact across countries with country specific characteristics playing a central role in determining the linkages between financial inclusion, gross domestic product, inequality and the distribution of gains and losses.

Alter & Yontcheva (2015) carried out a study on financial inclusion and development in the CEMAC countries and found that: macroeconomic variables like inflation, income and natural resources explain most of the private credit to GDP rates; financial development is positively linked to the number of bank branches, availability of credit information and registry coverage but negatively impacted by banks’ operational costs, cost- income ratio and poverty head count; inflation, new technology and operational costs are important determinants of financial development gap in Africa; improved financial supervision and financial sector governance contribute to promoting financial sector development; and that income does not explain the financial development gap as richer and poorer countries may be equally far from their expected final development levels.

Oruo (2013) investigated the relationship between financial inclusion and GDP growth in India for the period 2002/2003 to 2011/2012 and found that: GDP growth in Kenya has a strong positive relationship with financial inclusion; GDP growth has a strong positive relationship with the branch network, a weak relationship with the number of mobile money users/accounts, weak negative relationship with ATMs and strong negative relationship with bank lending rates in Kenya; and concludes that branch network has the highest influence on the GDP growth followed by mobile money users/accounts.

Yorulmaz (2012) conducted a study on financial inclusion and economic development in Turkey and cross country analysis of European Union and found that a broader financial system enhances economic growth.

Dacanay, Nito and Buensuceso (2011) carried out a study on microfinance, financial inclusion and financial development and found a positive relationship of financial inclusion to financial development and a weak link between index of financial inclusion and gross domestic product. They concluded that index of financial inclusion is weak in explaining the inclusion of microfinance in the formal financial system.

Andrianaivo and Kpodar (2011) examined ICT, financial inclusion and growth in 44 African countries from 1988 – 2007 and the results showed that: financial inclusion measured by the number of deposits and loans per head is conducive to economic growth and appears to be one of the transmissions from mobile phone development to growth.
Harihanan and Marktanner (2011) investigated the growth potential from financial inclusion and found that financial inclusion is still a huge untapped source of economic growth and development; and specifically noted that financial inclusion is a robust and significant correlate of a country’s total factor productivity and ability to form capital.

Sarma and Pais (2008) found from the regression of index of financial inclusion on banking sector variables that; the proportion of non-performing assets (NPAs) is inversely associated with financial inclusion, indicating that attempts by different countries towards greater financial inclusion have not contributed in any way to the non-performing assets of the banking system; the capital assets ratio (CAR) is seen to be negatively associated with financial inclusion. In other words, when the CAR of a country is high, the banking system tends to be more cautious in opening their doors to the financially excluded; and that foreign ownership in the banking sector is seen to be negatively affecting financial inclusion, while government ownership does not have a significant effect.

Badajena and Gundimeda (2008) examined a Self Help Group bank linkage model and financial inclusion in India and found a positive impact of economic development and financial literacy on financial inclusion, whereas branch density (population per branch) exhibits an inverse relationship with financial inclusion; and a positive and significant impact of SHG bank linkage program on financial inclusion in terms of credit deepening. They concluded that in spite of the increased spread of formal banking network in the recent past, access to bank financial services is still beyond the reach of large sections of the society. SHG bank linkage model exhibits the potential to provide an alternative mechanism to extend financial services to large unbanked sections of the society.

Laha and Kuri (2011) found from their study of determinants of financial inclusion in India that the principal factors which have significant bearings in creating an enabling environment to reduce the obstacles in the process of financial inclusion are greater degree of awareness of basic banking services, diversification of rural non-bank sector, literacy drive to rural households and expansion of household land asset.

**Link between Financial Inclusion and Unemployment**

Onaolapo (2015) conducted a study on the effects of financial inclusion on the economic growth of Nigeria for the period 1982 – 2012 with the objective of determining how or whether financial inclusion improves the financial wellbeing of the Nigerian poor or low income earners and found that there is a significant relationship between financial inclusion and poverty reduction in Nigeria.

Yorulmaz (2012) found that unemployment rate has a negative and highly significant association with financial inclusion in an economy; and concluded that the higher the employment rate, the higher is the financial inclusion.

Beg (2012) examined financial inclusion as a gateway for poverty and unemployment and found a negative correlation between composite index of financial inclusion and unemployment ratio and noted that enhancement in the composite index of financial inclusion brings about reduction in the unemployment ratio. The result also showed that there is negative correlation between financial inclusion and the poverty ratio which infers that there is significant impact of financial inclusion on the poverty levels. He concluded that financial inclusion should be measured not only by the number of bank accounts held by the weaker sectors, but also by the amount borrowed by them which so far shows dismal picture. He added that financial inclusion could no doubt be inhibited by the higher transaction costs of dealing with large number of small accounts rather than a small number of large accounts.

**Relationship between Financial Inclusion and Human Development**

Rao (2013) examined the status of financial inclusion in rural households in Andhra Pradesh – India and the results showed that out of 34 mandals, 22 mandals have the least index of financial inclusion (IFI) ranks; and out of 37 mandals, 27 mandals are in the low level of financial inclusion.
Yorulmaz (2012) found that the level of financial inclusion and the level of human development are strongly and positively correlated although few exceptions exist. Sarma and Pais (2008) carried out a cross-country analysis of financial inclusion and the results showed that: index of financial inclusion (IFI) and human development index (HDI) move in the same direction; all countries with high and medium IFI values belong to the group that is classified by the United Nations Development Programme (UNDP) as countries with high human development; some exceptions exist - Saudi Arabia, a high HDI country has a low IFI values; other countries having high or medium HDI but a low IFI are Brazil, Lebanon, Venezuela, Argentina and Mexico. They generally concluded that countries having high level of human development are also those with a relatively high level of financial inclusion.

Methodology
This study adopts ex-post facto research design to assess the impact of financial inclusion on Nigeria’s GDP growth, unemployment and human development, using time-series data for the period 2007 to 2015. The population comprises of all adults of 18 years and above who ought to have access to financial services from formal financial institutions which include banks (commercial, merchant, specialized and microfinance banks), pension institutions, insurance companies, and other non-bank financial institutions. The sample is made up of individuals and organizations that have access to financial services from commercial banks in Nigeria. The main dataset for this work is sourced from IMF e-library data- FAS by country report on Nigeria, world development indicators from World Bank, UNDP human development report on Nigeria 2015, Nigeria MDGs reports 2013 to 2015, CBN statistical bulletins and National Bureau of Statistics, among others.

The variables comprised of six (6) explanatory variables and three (3) dependent variables. The explanatory variables are made up of: 2 access to financial services variables namely number of commercial bank branches per 1000km² (CBBK), number of ATMs per 1000km² (ATMK), and 3 usage of financial services indicators – borrowers from commercial banks per 1000 adults (BCBA), outstanding deposits with commercial banks as % of GDP (ODCB), outstanding loans from commercial banks as % of GDP (OLCB), and three control variables namely maximum lending rates (BLRM) and foreign exchange rates (FERN) and inflation rates (INFR). The dependent variables are: GDP growth (annual percentage) (GDPG), unemployment rates (UNPR), and human development index (HDI).

The three models used in this study are:

A Model of the Relationship between Financial Inclusion and GDP Growth rate of Nigeria.
This work builds on the model used by Oruo (2013) and Andrianaivo and Kpodar (2011) with slight modification. The functional form of the model is:

\[ \text{GDPG} = f (\text{CBBK}, \text{ATMK}, \text{BCBA}, \text{ODCB}, \text{OLCB}, \text{INFR}). \]

The operational form of the model as modified for this study is as follows:

\[ \text{GDPG} = \text{a}_0 + \text{a}_1 \text{CBBK} + \text{a}_2 \text{ATMK} + \text{a}_3 \text{BCBA} + \text{a}_4 \text{ODCB} + \text{a}_5 \text{OLCB} + \text{a}_6 \text{INFR} + e_t \]

Where: \( \text{a}_0 \) = constant, \( \text{a}_1 \ldots \text{a}_6 \) = coefficients of the regression equation, \( e_t \) = stochastic error term.

A Model of the Relationship between Financial Inclusion and Unemployment in Nigeria.
This model builds on the earlier ones used by Andrianaivo and Kpodar (2011) and Mbutor & Ubah (2013) with slight modification. The functional form of the model is:

\[ \text{UNPR} = f (\text{CBBK}, \text{ATMK}, \text{BCBA}, \text{ODCB}, \text{OLCB}, \text{BLRM}). \]

The operational form of the model as modified for this study is as follows:

\[ \text{UNPR} = \text{b}_0 + \text{b}_1 \text{CBBK} + \text{b}_2 \text{ATMK} + \text{b}_3 \text{BCBA} + \text{b}_4 \text{ODCB} + \text{b}_5 \text{OLCB} + \text{b}_6 \text{BLRM} + e_t \]

Where: \( \text{b}_0 \) = constant, \( \text{b}_1 \ldots \text{b}_6 \) = coefficients of the regression equation, \( e_t \) = stochastic error term.
A Model of the Relationship between Financial Inclusion and Human Development Index for Nigeria.

This model builds on the ones used by Sarma and Pais (2008) and Yorulmaz (2012) with slight modification. The functional form of the model is:

\[ \text{HDIN} = f (\text{CBBK, ATMK, BCBA, ODCB, OLCB, FERN}). \]

The operational form of the model as modified for this study is as follows:

\[ \text{HDIN} = c_1 \text{CBBK} + c_2 \text{ATMK} + c_3 \text{BCBA} + c_4 \text{ODCB} + c_5 \text{OLCB} + c_6 \text{FERN} + e_t \]

Where: \( c_0 = \text{constant}, c_1 \ldots c_6 = \text{coefficients of the regression equation, } e_t = \text{stochastic error term.} \)

Method of Data Analysis

This study employs ordinary least squares (OLS) technique to estimate the three multiple regression models specified above. The regression models will be estimated with the aid of Eviews application software for windows, version 8. The test of significance of the hypotheses is at \( p \leq .05 \).

RESULTS AND DISCUSSION

The three models used are estimated using ordinary least squares regression method computed with the aid of Eviews version 8, statistical application software.

Testing of Hypothesis One

Model one is used to estimate the relationship between financial inclusion and gross domestic product of Nigeria. A summary of the regression result of this model is as presented below.

Table 4.1

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBBK</td>
<td>0.4685</td>
<td>4.1600</td>
<td>0.1126</td>
<td>0.9286</td>
</tr>
<tr>
<td>ATMK</td>
<td>0.0638</td>
<td>0.5484</td>
<td>0.1164</td>
<td>0.9263</td>
</tr>
<tr>
<td>BCBA</td>
<td>-0.1875</td>
<td>0.6852</td>
<td>-0.2736</td>
<td>0.8300</td>
</tr>
<tr>
<td>ODCB</td>
<td>-0.9979</td>
<td>0.6022</td>
<td>-1.6572</td>
<td>0.3456</td>
</tr>
<tr>
<td>OLCB</td>
<td>0.9116</td>
<td>0.4982</td>
<td>1.8296</td>
<td>0.3184</td>
</tr>
<tr>
<td>INFR</td>
<td>0.1873</td>
<td>0.7735</td>
<td>0.2422</td>
<td>0.8487</td>
</tr>
<tr>
<td>C</td>
<td>13.72017</td>
<td>33.7012</td>
<td>0.4071</td>
<td>0.7539</td>
</tr>
</tbody>
</table>

| R-squared | 0.8927 |
| Adjusted R-squared | 0.2489 | S.D. dependent var | 1.1507 |
| S.E. of regression | 0.9973 |
| Sum squared resid | 0.9945 |
| Log likelihood | -3.011862 |
| F-statistic | 1.3866 | Durbin-Watson stat | 2.6703 |
| Prob(F-statistic) | 0.571669 |

Source: Researcher’s extraction from the regression result of model one. See details in Appendix C.

The coefficient of determination (R²) shows that 89% of the variations in GDP can be explained by the independent variables. However, the adjusted R² which penalizes for the additions which do not contribute
to the explanatory power of the model is 24.9%. It then means that the adjusted R$^2$ can only explain about 25% of the changes in GDP.

None of the variables in the model has any significant relationship with GDP growth rate. CBBK, ATMK, OLCB and INFR have insignificant positive relationship with GDP while BCBA and ODCB have insignificant negative relationship with GDP. This result is in line with the finding of Dabla-Norris, Yan, Townsend, and Unsal (2015) who found that financial inclusion has a differential impact across countries with country specific characteristics playing a role in determining the linkages between financial inclusion and gross domestic product. This result is at variance with that of Oruo (2013), who found a strong positive relationship between financial inclusion and GDP growth in Kenya.

**Hypothesis Two**

Model two is used to estimate the relationship between financial inclusion and unemployment rate in Nigeria. A summary of the regression result of this model is as presented below.

Table 2

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBBK</td>
<td>0.3721</td>
<td>0.0233</td>
<td>15.9427</td>
<td>0.0399</td>
</tr>
<tr>
<td>ATMK</td>
<td>-0.7937</td>
<td>0.0120</td>
<td>-66.0264</td>
<td>0.0096</td>
</tr>
<tr>
<td>BCBA</td>
<td>0.132914</td>
<td>0.0053</td>
<td>25.2350</td>
<td>0.0252</td>
</tr>
<tr>
<td>ODCB</td>
<td>-0.5982</td>
<td>0.0165</td>
<td>-36.3276</td>
<td>0.0175</td>
</tr>
<tr>
<td>OLCB</td>
<td>0.2184</td>
<td>0.0138</td>
<td>15.8394</td>
<td>0.0401</td>
</tr>
<tr>
<td>BLRM</td>
<td>3.0457</td>
<td>0.02010</td>
<td>145.1237</td>
<td>0.0044</td>
</tr>
<tr>
<td>C</td>
<td>-34.2603</td>
<td>0.2111</td>
<td>-162.2900</td>
<td>0.0039</td>
</tr>
</tbody>
</table>

R-squared 0.9999
Adjusted R-squared 0.9999
S.E. of regression 0.0121
S.D. dependent var 5.921375
Sum squared resid 0.0001
Log likelihood 32.2511
F-statistic 277204.0
Durbin-Watson stat 2.789644
Prob(F-statistic) 0.0015

**Source:** Researcher’s extraction from the regression result of model two.

The coefficient of determination of 99.9% and the adjusted coefficient of determination of 99.9% explain over 99% of the variations in the dependent variable. The model as a whole has high explanatory power as the F-statistic is high and its probability very significant at less than 5% level.

All the independent variables have significant relationship with the unemployment rate. CBBK, BCBA, OLCB, and BLRM have significant positive relationship with the level of unemployment while ATMK and ODCB have significant negative relationship with the level of unemployment in Nigeria.

The model estimates provide an indication that sustained efforts aimed at enhancing financial inclusion would lead to job creation and reduction in unemployment rate. The policy makers should direct their strategies towards implementing programs that would ensure active financial inclusion for all, that is, for both the urban and rural dwellers.

**Hypothesis Three**

This model is used to estimate the relationship between financial inclusion and human development in Nigeria. A summary of the regression result of this model is as presented below.
Table 4.3

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBBK</td>
<td>-0.010659</td>
<td>0.000933</td>
<td>-11.42653</td>
<td>0.0536</td>
</tr>
<tr>
<td>ATMK</td>
<td>0.003301</td>
<td>0.000235</td>
<td>14.06691</td>
<td>0.0452</td>
</tr>
<tr>
<td>BCBA</td>
<td>-0.000259</td>
<td>0.000149</td>
<td>-1.731092</td>
<td>0.3335</td>
</tr>
<tr>
<td>ODCB</td>
<td>0.001927</td>
<td>0.000234</td>
<td>8.250017</td>
<td>0.0768</td>
</tr>
<tr>
<td>OLCB</td>
<td>-0.001967</td>
<td>0.000215</td>
<td>-9.135553</td>
<td>0.0694</td>
</tr>
<tr>
<td>FERN</td>
<td>-0.000227</td>
<td>8.53E-05</td>
<td>-2.665147</td>
<td>0.2285</td>
</tr>
<tr>
<td>C</td>
<td>0.557179</td>
<td>0.005775</td>
<td>96.47418</td>
<td>0.0066</td>
</tr>
</tbody>
</table>

R-squared 0.999422
Adjusted R-squared 0.995956
S.E. of regression 0.000547
Sum squared resid 2.99E-07
Log likelihood 57.05444
F-statistic 288.3493 Durbin-Watson stat 2.885700
Prob(F-statistic) 0.045048

Source: Researcher’s extraction from the regression result of model three. See details in Appendix E.

The coefficient of determination of 99.9% and the adjusted coefficient of determination of 99.59% explain over 99% of the variations in the dependent variable. The model has good explanatory power as the probability of F-statistic is significant at less than 5% level of significance. The regression estimates reveal that ATMK has a significant positive relationship with HDIN. CBBK, BCBA, OLCB, and FERN have insignificant negative relationship with human development, while ODCB has an insignificant positive relationship with HDIN in Nigeria.

The significant positive relationship of ATMK with HDIN is an indication that efforts geared toward increasing the number of ATMK would enable more people to have access to financial services which can translate into an improvement in human development.

Summary of Findings

- There exists no significant relationship between financial inclusion and gross domestic product of Nigeria for the period 2007 to 2015.
- There is a significant relationship between financial inclusion and the level of unemployment in Nigeria during the period covered in this study
- Financial inclusion has the potential to drive human development and there exists a significant relationship between both of them.

The conclusions drawn from the study are that financial inclusion has: an insignificant relationship with gross domestic product; a very significant effect on unemployment; and a significant relationship with the human development status of Nigeria.

This study contributes to the existing literature by: i, focusing on a developing Nigerian economy and understanding of the relationship between financial inclusion, GDP, unemployment and human development; ii, helping to expand the scant literature existing in this area of study in Nigeria; and iii, making use of key performance indicators defined along the dimensions of financial inclusion proposed by the Alliance for Financial Inclusion Working Group which makes the result to be internationally comparable.
Recommendations

- Since there is no significant relationship between financial inclusion and GDP, the banks and other financial institutions should create deposit and borrowing windows at affordable costs to the poor and the unbanked group / financially excluded in order to boost output and drive GDP growth.

- The government or policy makers should make policy for the improvement of collateral framework as this can play an important role in alleviating borrowing constraints and reducing intermediation costs. For instance, the establishment or reform of registers for movable collateral like machines and equipment as opposed to fixed assets like land and building can greatly promote firm availability of finance to micro, small and medium enterprises which constitute the engine of economic growth for the economy.

- As there is a very strong relationship between financial inclusion and the level of unemployment, the government should make policy on financial literacy / financial capacity building and awareness of financial products and services. The financial capacity building should be backed up with training and financial empowerment especially in rural areas through the provision of seed capital. In addition, the channels that will reach the grassroots and the remotest parts of the country should be adopted in order to expedite the rate of financial inclusion which is significantly linked to unemployment.

- Since there is a significant relationship between financial inclusion and human development, the banks and other financial institutions should ensure that adequate and timely financial services are available to any financially included persons. The availability of such services which include savings and credits, funds transfers, insurance, automated teller machines, internet / mobile banking among others, will enable any financially included person to have access to knowledge and a decent standard of living, as well as achieve a good and healthy life which are the major drivers of human development.
References


Yorulmaz, R. (2012). Financial inclusion and economic development: a case study of Turkey and cross-country analysis of European Union. All Theses Paper 1352, Clemson University http://tigerprints.clemson.edu/cgi/viewcontent.cgi?article=2352&amp;context=all_theses