Human Capital Development in Nigeria: Does Financial Deepening Matter?

Osuka, B. O.¹  Ihejirika, Peters O.¹  Chinweze, Reginald M.²

¹Department of Banking and Finance, Faculty of Business Administration, Imo State University, Owerri
²Department of Banking and Finance, Faculty of Business Administration, School of Post-Graduate Studies, Imo State University, Owerri

Abstract
This study investigated the impact of Financial Deepening on Human Capital development in Nigeria. Human Development Index (HDI) was used as proxy for Human Capital development due to its multidimensional nature while the ratios of Credit to the Private Sector, Broad Money Supply and Market Capitalization were used to proxy financial deepening. Data sourced from Central Bank of Nigeria Statistical Bulletin (2015) and World Development Indicators from 1981 to 2015 were used. Johansen Cointegration Test was employed to determine the existence of long-run relationship between Financial Deepening and Economic Development while Error Correction Model was used to determine the adjustment factor and causality. It was found that there is a unidirectional causality running from financial deepening to Human Capital Development. The study concluded that financial deepening is important and beneficial in improving Human Capital in Nigeria. The study therefore recommends that Policy Makers should sustain existing financial deepening policies to improve education and health care delivery and ultimately increase the economic outputs of the nation.

Keywords: Human Capital, Financial Deepening and Economic Growth

1. INTRODUCTION
The economic prosperity and functioning of any nation depends on its physical and human capital stock, Almendarez (2011). No nation can develop without skilled Human Capital and there cannot be any highly skilled personnel without investment in education and health to develop it. Human Capital is the investment that people make in themselves to increase their productivity Rosen (1999). According to Wikipedia (2016), Human Capital can be referred to as a collection of traits such as knowledge, skills, education, abilities, experience, attitude and behaviour embedded in individuals that contribute to their productivity. Being a multivariate concept, the United Nations Development Programme (UNDP), developed the Human Development Index (HDI) as a multidimensional measure to proxy Human Capital development. HDI is a composite statistics of life expectancy, education and income per capita indicators and it measures the extent to which a country has developed in the three broad areas of (per capita income, health in the form of life expectancy and education).

Countries with low human capital development are classified as underdeveloped because there is not enough skilled staff to drive the economy resulting from low education, poor health care and low income and such economies are characterized by high unemployment rate and poverty. Kern (2009) opined that modern economists seem to concur that education and health care are the key to improving human capital. Therefore the availability of skilled Human Capital is fundamental to driving and sustaining growth in any economy including Nigeria. CBN (2005).

Financial Deepening according to Shaw (1973) cited in Obonyo (2014) “is the increased provision of financial services with a wider choice of services geared to all levels of society. It generally means an increased ratio of money supply to GDP or some price index. It refers to liquid money. The more liquid money is available in an economy, the more opportunities exist for continued and sustainable growth. It is the accumulation of financial assets at a faster pace than the accumulation of non-financial wealth and total output.”

Evidence from the literature suggest that financial deepening plays a vital role in facilitating economic growth and higher growth benefits the poor by creating more jobs, enabling the government to allocate more fiscal resources on social spending such as education and increasing funds available to the poor for investment. By broadening access to finance for the poor and the vulnerable groups, the income of the people will increase and they will consume more by spending on education and health thereby improving their human capital and standard of living. (Claessens and Feijen, 2006 cited in ADB, 2009).

According to Obonyo (2014), one of the key features of financial deepening is that it accelerates economic growth by expanding access to finance for those who do not have adequate finance. But in a poorly developed financial system, it is only incumbents who have access to financial services through relationship banking and they could finance their growth through internal resource generation, whereas the rest of the population is marginalized. Financial institutions are better placed to assess and award credit to new business initiatives and through this process; the citizens can improve their education and take care of their health, leading to higher productivity and higher income.

Financial deepening transfers these benefits to the economy through the transmission mechanisms of
extending credit to the private sector, the poor and the vulnerable in the society measured by the ratio of Credit to Private Sector to GDP (CPS/GDP), increasing Broad money supply (M2) ratio to GDP measured by M2/GDP and Capital Market Development measured by Market Capitalization to GDP (MC/GDP) ratio.

However, economists differ in their views regarding the role of finance in human capital development as a function of economic development. Schumpeter (1911), Shaw (1973) argue that it is the financial sector that causes economic growth and development of the real sector leading to the supply hypothesis while Robinson (1952) argue that it is the development of the real sector that causes financial deepening (the Demand-following hypothesis). And Lucas on the other hand asserts that “the role of finance in economic development has been significantly overrated” implying that finance is not the only factor influencing economic development.

In Nigeria, the financial sector has made an appreciable significant improvement over the years. Credit to the Private Sector rose from 8.57 billion Naira in 1981 to 18,674 billion naira in 2015 and Broad Money Supply rose from 14.47 billion Naira in 1981 to 18,901.30 billion Naira in 2015 while Market Capitalization increased from five billion Naira in 1981 to 17,003.4 billion Naira in 2015 (CBN Statistical Bulletin, 2015). Akinlo (2014) argued that this development in the financial sector was brought about by the creation of an enabling environment which witnessed increased number of financial institutions including the Deposit Money Banks (DMB) and their net-work of branches and specialized banks for Agriculture, Industry and Commerce.

With this evidence from the literature, the interest of this study is, has Nigeria’s level of financial deepening created any significant improvement in human capital development? Besides, there are different arguments in the literature regarding the influence of finance on economic growth and by extension to human capital development leading to the supply-leading hypothesis, demand-following hypothesis and the feedback hypothesis. And the concern of this study is which one of the above hypotheses is empirically supported in Nigeria?

The objective of this study is essentially to evaluate if financial deepening promotes Human Capital Development in Nigeria by seeking to find out the direction of causality.

2. LITERATURE REVIEW
The World Bank (1932), as cited in Nzotta & Okereke (2009) contend that financial deepening encompasses the increase in the stock of financial assets. From this perspective, financial deepening implies the ability of financial institutions in general, to effectively mobilize and allocate financial resources for development. This view accepts the fact that a financial system’s contribution to the economy depends on the quality and quantity of its services and the efficiency with which it performs them.”

A solid and well-functioning financial sector is a powerful engine behind economic growth and development. It generates local savings, which in turn lead to productive investments in local business. Financial sector development also entails establishing robust financial policies and regulatory framework. The absence of adequate financial sector policies could have disastrous outcome, as illustrated by the global financial crisis. Financial Deepening has the capacity to bring about improvement in human capital development in two different ways - through the indirect channel of economic growth and through the direct channel of access to finance.

The financial sector as described in the World Bank (2004) report is all the wholesale, retail, formal and informal institutions in an economy offering financial services to consumers, businesses and other financial institutions. In its broadest definition, it includes everything from banks, stock exchanges, and insurers, to credit unions, microfinance institutions and money lenders. And there are many different ways in which the financial sector can be said to ‘develop or deepen’. For example:

- the efficiency and competitiveness of the sector may improve;
- the range of financial services that are available may increase;
- the diversity of institutions which operate in the financial sector may increase;
- the amount of money that is intermediated through the financial sector may increase;
- the extent to which capital is allocated by private sector financial institutions, to private sector enterprises, responding to market signals (rather than government directed lending by state owned banks), may increase;
- the regulation and stability of the financial sector may improve;
- Particularly important from a poverty reduction perspective, more of the population may gain access to financial services. (World Bank Report, 2004)

According to Rosen (1999), Human Capital is the investment that people make in themselves to increase their productivity while Wikipedia (2016), posit that Human Capital can be referred to as a collection of traits such as knowledge, skills, education, abilities, experience, attitude and behaviour embedded in individuals that contribute to their productivity. The concept of human capital has also been defined as ‘an amalgam of factors such as education, experience, training, intelligence, energy, work habits, trustworthiness, and initiative that affect the value of a worker’s marginal product’ (Frank and Bemanke 2007). According to the Organization for Economic Co-operation and Development (OECD) as reported by Kwon, Dae-Bong, the new approach of
Human Capital measurement as developed by the United Nations Development Programme (UNDP) has reported Human Development Index (HDI) as measuring a country's human development and well-being (http://hdr.undp.org/en/statistics/indices/hid). The structure of the index is constituted to health, knowledge, and standard living with many sub-variables such as life expectancy at birth, adult literacy rate, gross enrollment ratio, and GDP per capita. Considering that the HDI includes quality aspects, the approach of HDI focuses on all of individuals' life quality and economic situation. The report concluded that it is necessary that the advanced measurement of human capital considers the concept of 'human development'.

The theoretical link between financial deepening and Human Capital Development as a component of economic development in the literature can be divided into three hypotheses: the Supply leading hypothesis, the Demand following hypotheses and the feedback hypothesis.

Dushimumukiza (2010), argues that the ‘supply-leading’ hypothesis posits a unidirectional causation that runs from financial deepening to economic development implying that new functional financial markets and institutions will increase the supply of financial services. This will definitely lead to high but sustainable real economic growth. This hypothesis performs two roles namely to transfer resources from low growth sectors to high growth sectors and to promote entrepreneurial response in the later sector while creating the enabling environment for human capital development.

Earlier scholars such as Schumpeter (1912), Goldsmith (1969), Shaw (1973) and McKinnon (1973), emphasized the importance of the financial system in economic growth. Hicks (1969) argued that the industrialization process in England was promoted by the development of the financial sector which increased the access of the government and people to funds that were used to finance capital projects which led to the development of the economy. This view was also supported by (King and Levine 1993).

On the other hand, the ‘demand-following’ hypothesis posits a unidirectional causation from economic development to financial development. This implies that it is the increasing demand for financial services by the real sector that leads to the aggressive expansion of the financial system as a result of the growth in the real sector of the economy. Robinson (1952) declares that "where enterprise leads finance follows." According to this view, economic development creates demands for particular types of financial arrangements and the financial system responds automatically to these demands. Previous studies that support this hypothesis include (Gurley and Shaw 1955, 1967, Goldsmith 1969 and Jung 1986).

The feedback hypothesis presupposes that there is a bi-directional causality between financial deepening and economic development. This is empirically supported by the research studies of (Levine 1997, Luintel & Khan 1999, Demetriades & Andrianova 2003, Odeniran & Udeaja 2010 and Osuji & Chigbu 2012).

As noted above, there are two channels through which financial sector deepening can impact on human capital development. First is the indirect channel through economic growth and the second is the direct channel through gaining access to financial services.

A deep and mature financial system will lead to greater availability of financial services to all levels of society, lead to the increase in money being intermediated (the ratio of money supply to GDP) and increased access to finance. By mobilizing savings, facilitating payments and trade of goods and services, and promoting efficient allocation of resources, the financial sector is seen as playing a critical role in facilitating economic growth which in turn will improve human capital development. (ADB, 2009).

More so, as the financial system performs its function of intermediation, businesses are able to access finance including the SMEs and the Micro businesses especially in the rural areas. For example, in the present economic situation of Nigeria, many people have gone into agro allied businesses such as fishing etc. thereby providing employment for them. And the SMEs are known to be labour intensive units employing more people than the bigger factories. It therefore implies that as more people and businesses access finance, there is room to improve their education and health.

According to Almendarez (2011), “Human capital theory rests on the assumption that formal education is highly instrumental and necessary to improve the productive capacity of a population. In short, human capital theorists argue that an educated population is a productive population. Human capital theory emphasizes how education increases the productivity and efficiency of workers by increasing the level of cognitive stock of economically productive human capability, which is a product of innate abilities and investment in human beings. The provision of formal education is seen as an investment in human capital, which proponents of the theory have considered as equally or even more worthwhile than that of physical capital Woodhall, (1997) cited in Almendarez, (2011).

Human Capital Theory (HCT) therefore concludes that investment in human capital will lead to greater economic outputs. Modern economists seem to concur that education and health care are the key to improving human capital and ultimately increasing the economic outputs of the nation Becker (1993).

This theory is ideologically and politically supported because it aims to achieve social equity through the provision of services to the poor, such as education and health care, and providing job opportunities that leads to an increase in the gross domestic product (GDP) and also to achieve prosperity and develop human capital.
Almendarez (2011) Empirical literature on the relationship between financial deepening and human capital development are scanty but many researchers considered this relationship under financial deepening and economic growth/development nexus.

Dandume (2014), investigated financial sector development, economic growth and poverty in Nigeria from 1970-2011 using ARDL bound testing approach and Toda and Yamamoto No causality test. The result reveals that economic growth and development causes the deepening of the financial sector but does not reduce poverty in Nigeria, thereby supporting the demand-following hypothesis.

Balago (2014), also examined the relationship between Financial Sector Development and Economic Growth in Nigeria. Time series data from 1990-2009 were fitted into the regression equation using Augmented Dickey Fuller (ADF) test, Johansen Multivariate Co-integration Test, Ordinary Least Square Regression and Vector Error Correction Model (VEC). The result shows that development in financial sector variables viz: banking sector credits, total market capitalization and foreign direct investment positively affect economic growth. This result is consistent with the supply-leading hypothesis.

Nkoro and Uko (2013), examined financial sector development-economic growth nexus in Nigeria using time series data from 1980 to 2009. They employed the Cointegration/ Error Correction Mechanism (ECM) using five financial deepening variables; M2/GDP, CPS/GDP, MCP/GDP, Bank Liquidity/GDP and Prime Interest Rate. The result shows that there is a positive effect of financial sector deepening on economic growth and by extension to economic development supporting the supply-leading hypothesis.

Idris (2012), investigated financial deepening and economic development in Nigeria using annual data from 1981 to 2010. He employed Augmented Dickey Fuller (ADF), Phillip Perron tests, Johansen Cointegration test and Vector Error Correction Mechanism (VECM) in his analysis and found that there is a positive relationship between financial deepening and economic development. His findings validate the supply leading hypothesis.

Studies on the relationship between financial deepening and Human Capital Development in Nigeria are scanty. Even in the reviewed literature, researchers’ findings were not unanimous but agreeing to various theoretical hypotheses. In other words, some findings supported the Supply-leading hypothesis and some the Demand-following hypothesis while others are consistent with the Feedback hypothesis.

Some studies reviewed used only the money market indicators, Aliero et al (2013), Obonyo (2014), Odhiambo (2010a, b) while neglecting the Capital Market in their modeling. This study considered the capital market as an integral part of the financial sector as it represents actual savings that has been invested for production which has to generate income that will improve the welfare of the workers or create new jobs for their empowerment for human capital development.

This research work filled this gap identified in the literature by including Market Capitalization to GDP as an indicator for the capital market thereby giving our model the required balance to represent the Nigerian financial system. This is based on the understanding that an effective financial intermediation will require the collective contribution of all the various subsectors of the financial sector simultaneously.

To achieve this, this study analyzed the relationship between financial deepening and Human Capital development using CPSGDP, M2GDP and MCGDP as proxies for financial deepening while relying on the Supply-leading hypothesis.

3. METHODOLOGY
The research design adopted for this study is the quasi experimental design because it seeks to explore the causal effect of financial sector deepening on Human Capital development. The data used was obtained from the Central Bank of Nigeria Statistical Bulletin 2015 and from the World Development Indicators published by the World Bank.

Model Specification
The study adopted Johansen Co-integration Test to determine the existence of long-run relationship between Financial Deepening and Economic Development while Error Correction Model was used to determine the adjustment factor. Market Capitalization to GDP ratio (MCGDP) with two other variables, Credit to Private Sector to GDP (CPSGDP) and Broad Money Supply to GDP was used to proxy financial deepening based on the ordinary Least Square (OLS) method.

This is expressed in its functional form as follows:

\[ HDI = f(CPSGDP, M2GDP, MCGDP) \]  \[ = \]  \[ HDI = \text{Human Development Index} \]
\[ CPSGDP = \text{Credit to Private Sector to GDP ratio} \]
\[ M2GDP = \text{Broad Money Supply to GDP ratio} \]
\[ MCGDP = \text{Market Capitalization to GDP ratio} \]

The above functional equation is further stated in econometric form as presented below:
HDIt = β0t + β1CPSGDPt + β2M2GDPt + β3MCGDPt + Ui --------- (2)

Where:
Ui = Error Term
β0 – β3 = the Parameters
A prior Expectation = β1, β2, β3 > 0
(Implying that β1, β2, β3, will improve Human Capital)

Analytical Procedure
To achieve the objective of this study, the study adopted the Error Correction Model with the following procedure:

i. Augmented Dickey Fuller (ADF) Test
ii. Johansen Cointegration Test
iii. Error Correction Model (ECM)

Time series data from 1981 – 2015 was used for the estimation of all the variables. Their properties were examined to avoid spurious results occasioned by the non-stationary of the time series data.

Augmented Dickey Fuller (ADF) Test (a Unit Root Test) was employed to test for the stationary of the data. The probability value (P-Value) will be used to check the null hypothesis which states that the variable has a unit root meaning that it is not stationary. If the P-Value is below 5% which is the chosen level of significance we should reject the null hypothesis and accept the alternative hypothesis and conclude that the data is stationary and vice versa.

Johansen Co-integration Test was used to check for the long-run relationship after the optimum lag length selection because of its sensitivity to Cointegration test. Johansen’s co-integration methodology is a system model and is typically used in a setting where all variables in the model are of the same order of integration and in this case they must all be stationary at first differencing, that is Order I(1). Two test statistics, the Trace test and the Maximum Eigenvalue test, will be used to determine the number of co-integrating equations by comparing either the trace statistics or the maximum eigenvalue statistics respectively with this study’s chosen 5% critical value. And when the variables are co-integrated, then there is a long-run equilibrium relationship among the variables which is the pre-condition for running an Error Correction Model (VECM).

Error Correction Model (ECM) is useful for estimating both short-run and long-run effects of one time series on another. The term Error Correction relates to the fact that the last-periods deviation from a long-run equilibrium, which is the error, influences it short-run dynamics. In other words, the ECM integrates short-run dynamics with the long-run equilibrium without losing long-run information. Thus ECM directly estimates the speed at which a dependent variable returns to equilibrium after a change in other variables. This will be done with the help of E-View analytical tool.

The Decision Criteria for ECM: The coefficient of the error-correction term is a short term adjustment coefficient and represents the proportion by which the long-run disequilibrium in the dependent variable is being corrected in each short period, Masih & Masih, (1997). Also the significant coefficients of the error-correction terms for each time series imply that all the variables cause one another in the long run, Mukhtar & Rasheed (2010). Therefore when the coefficient of the Error Correction Term (ECT) is negative in sign and the p-value is significant, it validates the existence of a long-run equilibrium relationship between the dependent variable and the explanatory variables and confirms the stability of the system or model which implies that in the case of any disturbance in the system they will quickly convergence back to equilibrium. It also establishes that causality runs from the independent variables to the dependent variable. Besides, it also gives the speed of adjustment towards equilibrium through the value of the ECT coefficient. But when the coefficient of the ECT is positive in sign and it is statistically significant, it implies that in the occurrence of any disturbance in the system, a divergence from equilibrium will take place (that is, sustained divergence) which will make the system unstable.

4. DATA ANALYSIS AND DISCUSSION OF FINDINGS

The data for this study are Human Development Index as the dependent variable and the ratios of credit to the private sector to GDP (CPSGDP), Broad money supply to GDP (M2GDP) and Market Capitalization to GDP (MCGDP) as the independent variables. They all span from the year 1981 to 2015.

Unit Root Test
Prior to cointegration and any other econometric analysis, it is important to establish the stationarity of the data to be used. None of the variables was stationary at level. All variables became stationary at first differencing, that is Order I(1) as presented below:
Table 4.1 – Order of integration of the variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>P-value @ Level</th>
<th>P-value @ First Differencing</th>
<th>Order Of Integration, I(d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDI</td>
<td>0.8333</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
<tr>
<td>CPSGDP</td>
<td>0.3266</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
<tr>
<td>M2GDP</td>
<td>0.2542</td>
<td>0.0001</td>
<td>I(1)</td>
</tr>
<tr>
<td>MCGDP</td>
<td>0.2188</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
</tbody>
</table>

Source: Author’s Computation with E-view 7 at 5% critical value.

Johansen Cointegration Test

After establishing the stationarity properties of the time series and obtaining the optimal lag length, Johansen Cointegration test was conducted. Both the Trace Test and the Max-eigenvalue result indicated 2 cointegrating equations at 5% level of significance implying that all the variables in the model all converge to a long run equilibrium meaning that all the variables move together in the long-run.
Error Correction Model (ECM)

The ECM is a causality model and the result presents both the short run and the long run dynamics. It has the advantage of combining both the short run coefficient and the long run coefficient without losing long run equilibrium. The Error Correction Term (ECT) is both negative in sign (-0.488332) and is significant with P-value of 0.0108 at 5% level of significance chosen for this study. This regression result validates the cointegration and the long-run equilibrium existing among the variables in the model. It also confirms a causality running from financial deepening to human capital development and this is consistent with the supply-leading hypothesis. The coefficient of the ECT which is -0.488332 suggest that the disequilibrium experienced in the system in the previous period is being corrected at the speed of approximately 49 percent indicating that if there is any disturbance in the short run they will quickly converge back to the long-run equilibrium at the speed of 49 percent.

5 Conclusion and Recommendations
The financial deepening variables, Credit to Private Sector, Broad Money Supply and Capital Market Development were found to jointly improve Human Capital in the Long-run. And this is consistence with the supply-leading hypothesis and with the findings of Dabwor & Abimiku (2016), Obonyo (2014) and Odhiambo (2010a). The study therefore concludes that financial deepening matters in improving Human Capital in Nigeria. From the above conclusion this study recommends that Policy Makers (the Government) should pursue policies that will improve financial deepening in Nigeria for the advancement of education and health care delivery and ultimately increase the economic outputs of the nation.

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