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DOES THE LEVEL OF FINANCIAL DEEPENING AFFECT THE LEVEL OF HUMAN CAPITAL DEVELOPMENT IN NIGERIA?

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Abstract

The paper was undertaken to find out if the level of financial deepening affects the level of human capital development in Nigeria. To achieve the objectives, four research hypotheses were formulated and relevant data were sourced from the central bank of Nigeria (CBN) statistical bulletin (2019) and the united nation development programme (UNDP) database (2019), 1997 to 2019. The study used the human development index (HDI) as a proxy for human capital development (HCD) while the ratio of Broad Money Supply (M2) to Gross Domestic Product (GDP), the Credit to Private Sector (CPS) to GDP, the ratio of Commercial Banks Deposit (CBD) to GDP, and the ratio of Liquid Liabilities (LL) to GDP as independent variables. The ordinary least square (OLS) estimation results show that the independent variables M2/GDP, CDB/GDP, have a positively insignificant effect on HDI in Nigeria while CPS/GDP and LL/GDP have a negatively insignificant effect on HDI in Nigeria. The study, therefore, recommends amongst others that; the government should make the economy more liquid (i.e financial assets), the government should continuously reform the financial sector to meet with the best global practices, the government through the CBN should bring out policies that will encourage banking habits among the citizens (financial inclusion) and government should make the financial sector more responsive to investors and access to credits should be made easier for investment in order to improve human capital development vis-à-vis the economy.

Introduction

The Nigeria Government, in search of ways to improving the human capital development and standard of living of citizens has opened the corridors for alternative viewpoints on paradigms of economic growth and development (Andabai, 2015). Financial deepening refers to the totality of actions geared towards improving economic performance indicators by increasing efficiency among financial markets entities for the overall benefits of both the financial and non-financial sectors of an economy (Chiawa and Abur, 2016). The availability of a developed financial market is a major incentive that spurs an entrepreneurial mindset to establish an enterprise and for emancipation from

poverty (George, Okoye, Efobi, and Modebe 2017).

The United Nations Development Programme (UNDP), describes the Human Development Index (HDI) as a multidimensional measure to proxy Human Capital Development (HCD). HDI is a composite statistic 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.

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). With this evidence from the literature, the interest of this study seeks to explore financial deepening and human capital development in Nigeria.

Previous empirical studies examining financial deepening variables have mostly been linked to economic growth, and scanty linked to HCD. It further established in the literature that credit constraints have a major role in limited human capital investment choices in developing countries. Likewise, human capital may affect financial deepening as well because skilled and well-educated people (people with high human capital levels) have generally better access to information and are less risk-averse. Additionally, education makes for movement between the informal sector and formal sector in terms of opportunities created for easier access to formal financial services. Human capital may create financial innovations necessary for financial deepening which in turn facilitates the acquisition of new human capital. Thus, it can be concluded that there could be a causality running either way.

The studies on the effect of financial deepening on human capital development in different countries of the world are mixed (see Hakeem and Oluitan (2012) study on South Africa, Nik, Nasab, Salmani & Shahriari (2013) on Iran, Sehrawat and Giri (2014) on India; Uddin and Masih (2015) on Malaysia; Turkey, Demirci and Ozyakisir (2017) on Turkey. A recent study by Hatemi and Shamsuddin (2016) obtained a unidirectional causality running from human capital to financial development. The evidence from the literature in the various countries is mixed and inconclusive; their findings cannot be generalized to the Nigerian context.

A few previous studies have explored the nexus of financial deepening and economic growth in Nigeria has identified Broad money supply (M2), 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 as the measures of financial deepening in relation to human capital development (proxy by human development index). However, the findings from their studies have also reported mixed results (see Osuka, Ihejirika, and Chinweze (2018) and Nkoro and Uko 2013). A few of the studies used only the money market indicators, Aliero, Ibrahim & Shuaibu (2013), Obonyo (2014), Odhiambo (2010) while neglecting the capital market in their modeling. This study addresses the gap identified in the.

Review of Related Literature

Financial Deepening Conceptual Issues

A well-functioning financial institution will lead to economic efficiency, expanded liquidity, mobilized savings, capital accumulation, and the transfer of resources from non-growth sectors to the more growth-inducing sectors. Besides, financial deepening encourages a competent entrepreneur response in these growth-induced economies. Financial deepening has been found to enable the financial intermediaries to effectively perform their functions into productive capital and human capital development (Ndege, 2012).

Financial deepening is measured in terms of broad money, liabilities of non-bank financial intermediaries, treasury bills, the value of shares in the stock market, and money market funds. Indicators of financial deepening differ from country to country. In Nigeria according to Mukundi (2013), some of the indicators of financial deepening include liquid liabilities, private sector credit, market capitalization, and value of shares traded and gross domestic product. Different financial markets have different levels of financial deepening while some have lower financial deepening ratios; others have higher financial deepening ratios.

However, this study made use of Broad money supply (M2), Credit to Private Sector (CPS), Commercial Bank Deposits (CBD), Liquid liabilities (LL), and Market Capitalization (MCAP).

Economic Growth Conceptual Issues

Economic growth is the increase in the output (goods and services) of a country from one period to another. Economic growth is widely measured using the gross domestic product which would be nominal or real. Olowofeso, Adeleke, and Udoji (2015) observe the existence of divergent conceptions of economic growth and ways of measuring it, but the primary definition is in terms of growth in the long-run productive capacity of the economy, typically measured by real GDP growth.

Human Development Index (HDI) Conceptual Issues

This is a social factor assessment parameter that was developed by the United Nations to measure the level of social development attained by each country as the GDP/Gross National Income (GNI) is used to measure the level of economic growth attained by a given country. The HDI can be measured around three specific areas that include school enrolment rates (average years of schooling and expected years of schooling), Quality of health delivery (life expectancy at birth), an index of an acceptable standard of living (GNI per capita) (Egungwu, 2018).

In essence, the HDI is used to assess the extent to which a given country is able to recognize the social components in assessing its level of economic development. The index ranges from 0 points to 100 points and is calculated using some parameters. If the index is closer to zero, it indicates poor performance. The United Nations Development Programme (UNDP) calculates the index for every country and publishes the same annually. In 2016, Nigeria was ranked 152nd out of 188 countries assessed during the period (Egungwu, 2018).

As observed by Saugweme, and Mufaedza (2013), economic growth, a component of economic development generates wealth, income, goods, and services and when these are efficiently utilized, they will reduce the country's poverty level and also promote self-reliance and reduce, heavy dependence on external financing. The wealth of a nation could

depend on its production base and if there is a boost, it will have a positive impact on national income, employment level, inflation, and social service provision.

Theoretical Literature

This study relies on four theories established in the literature namely Supply Leading and demand-following hypothesis the bi-directional causality hypothesis and the neoclassical growth theory.

Supply Leading and Demand Following Hypothesis

This theory was authored by Schumpeter (1911) and later adopted by scholars such as McKinnon (1973); Shaw (1973); Gupta (1984); Fry (1988); Greenwood and Jovanovich (1990) and Bencivenga and Smith (1991). This theory postulates that financial development in any country causes economic growth. In an economy with no friction in transaction, information, and monitoring costs, no financial intermediaries are needed. According to the theory, if the transaction, information, and monitoring costs are sufficiently high, then, no exchange among economic agents is necessary. These desires led to the manifestations of institutions and markets that make up the financial sector. The "supply leading hypothesis" and "demand following hypothesis" in line with following Patrick (1960) postulates a feed**b**ack relationship between human capital development and financial development. The 'supply leading hypothesis argues unidirectional causation that runs from financial deepening to human capital development. On the other hand, the 'demand following hypothesis posits unidirectional causation from economic growth to financial development. Thus, this study posits in line with the supply leading hypothesis that a well-developed financial sector will have a positive effect on human capital development.

Human Capital Theory (HCT)

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. 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. The human capital theory implies that an improvement in education to the populace with lead to human capital development through formal and informal education. A well-educated population and good financial deepening in the economy by extended bank credit to the populace brought about the necessary and needed economic development in the Nigerian economy.

Bidirectional Causality Hypothesis

The model was first developed by Greenwood and Jovanovic (1990), got support from Saint-Paul (1992); Berthelemy and Varoudakis (1996); and Harrison, Sussman, and Zeira, (1999), state that financial deepening and economic growth are mutually or bi-directionally causal. Financial deepening gradually induces economic growth and this, in turn, causes feedback and induces further financial deepening. This theory is important to this study since it points to the relationship that exists between financial deepening and human capital development. However, it suggests that the two variables affect each other simultaneously.

Neo-Classical Growth Theory

The model of Solow (1956) and Swan (1956) has been the backbone of economic growth theories in the recent past. The Solow-Swan growth model as it is sometimes called, predicts that in steady-state equilibrium the level of per capita income is a function of prevailing technology, the rates of saving, population growth, and technical progress, all assumed to be exogenous. Since these rates differ across countries, the Solow-Swan model yields different predictions about how differing saving rates and population growth rates might affect different countries‟ per capita income. Other held constant, countries with higher saving rates tend to have higher levels of per capita income and vice versa. Recently, the Solow-Swan model has been substituted with “endogenous growth” models which assume constant or increasing returns to capital. This is because the standard neoclassical model has been accused of failing to explain observed differences in per capita income across countries.

The difference in the two growth models has in recent years sparked the empirical review. Solow‟s model takes the rate of savings, population growth, and technological progress as exogenous. There are two inputs, capital, and labour which are paid their marginal products. Assuming a Cobb Douglas production function, production at time t is given by:

$Y(t) = K(t)^{\alpha} (A(t) L(t))^{\beta}$ $\alpha <1, \beta < 1$

Y= Output, K= Capital, L= Labour, A= Level of technology.

Thus, based on the theory, financial deepening will not have much impact on human capital development.

Empirical Review

Osuka, Ihejirika & Chinweze (2018) investigated the impact of Financial Deepening on Human Capital development in Nigeria, 1981-2015. Data sourced from the Central Bank of Nigeria Statistical Bulletin (2015) and World Development Indicators were used. Using Johansen Cointegration, and the Error Correction Model (ECM) the authors found that there is a unidirectional causality running from financial deepening to Human Capital Development. The authors then concluded that financial deepening is important and beneficial in improving Human Capital in Nigeria.

Hakeem & Oluitan (2012) investigated human capital and financial development in South Africa, 1965-2005. Their results suggest evidence of reverse causality for different measures of human capital. Olowofeso, Adeleke, and Udoji (2015) ascertained the effect of private sector credit on economic growth in Nigeria using the Gregory and Hansen (1996) co-integration test. They found a co-integrating relationship between output and its selected determinants. Idris (2012) analyzed the subject using Nigeria's annual data from 1981 to 2010 and found that there is a positive relationship between financial deepening and economic development. His findings validate the supply leading hypothesis.

Moshabesha (2017) undertook a study to determine the relationship between financial deepening and growth in Southern African Customs Union (SACU) countries of Botswana, Lesotho, South Africa, and Swaziland between 1976 and 2015. The independent variable included the ratio of credit to the private sector provided by commercial banks and the ratio of liquid liabilities of commercial banks to GDP. The dependent variable, economic growth was measured by growth in manufacturing. The results revealed a very weak and insignificant relationship between

manufacturing growth and Financial Deepening across the four countries.

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

Methodology

Nature and Source of Data

The study used secondary data sourced from the CBN Statistical Bulletin (2019) and United Nation Development Programmes (2019) Annual Statistics for the period 1981 to 2019. The independent variable of the study which is financial deepening was proxy with Broad money supply (M_2), Credit to Private Sector (CPS), Commercial Bank Deposits (CBD), Liquid liabilities (LL) and Market Capitalization (MCAP) while the dependent variable (human capital development) was proxy with Human Development Index (HDI).

Model Specification

The model for the study was adopted from the study of Osuka, Ihejirika & Chinweze (2018) in their study titled "Human Capital Development in Nigeria: Does financial development matter". They used the model stated below:

HDI = ƒ (CPS/GDP, M2/GDP, MCAP/GDP)…… Model I

Where:

CPS/GDP = ratio of the credit to private to GDP; M2/GDP = ratio of the money supply to GDP; MCAP/GDP = ratio of market capitalization to GDP

However, for this study, we adopted the forgoing model with the addition of CBD/GDP and LL/GDP that makes the difference. Our model is expressed in its functional form as follows:

HDI = ƒ (M2/GDP, CPS/GDP, CBD/GDP, LL/GDP)…..Model II

Where:

HDI = Human Development Index; M2/GDP = Ratio of the broad money supply to GDP

CPSGDP = Ratio of Credit to Private Sector to GDP, CBD/GDP = Ratio of Commercial Banks' Deposit to GDP, LL/GDP = Ratio of Liquid Liabilities to GDP

The above model is further stated in econometric form as presented below:

$HDI_t = \beta 0t + \beta 1M2GDPt + \beta 2CPSGDPt + \beta 3CBDGDPt + \beta 4LLGDPt + \mu i$……

……Equation I

Where:

μi = Error Term

β0 – β3 = the regression parameters

Analysis of Data

Data and Descriptive Statistics

The characteristics of the variables in this study are presented in Table 4.1. The descriptive statistics include: mean, median, maximum, minimum, kurtosis, Jarque-Beran probability, and observations. The mean is the average value of the series; the median is the middle value of the series when the values are arranged in an ascending or descending order. Maximum and minimum represent the highest value and the lowest value of each of the series. The kurtosis measures the peak of the series in a graphic form. The Jarque-Beran probability is used to confirm the normality of the series while the observations show the number of series.

Table 4.1: Description Statistics

	HDI	M_2/GDP	CPS/GDP	CBD/GDP	LL/GDP
Mean	0.431739	16.50304	14.03217	0.086669	0.117687
Median	0.490000	18.24000	16.93000	0.103710	0.116110
Maximum	0.550000	21.31000	20.77000	0.134060	0.201240
Minimum	0.070000	10.05000	7.670000	0.034460	0.059470
Kurtosis	3.828243	1.518687	1.126859	1.391554	2.735664
Jarque-Bera Probability	0.012775	0.294876	0.185003	0.277875	0.563828
Observations	23	23	23	23	23

Source: Author's Computation from E-Views 9.

Human development index (HDI): Second column in table 4.2 is the HDI with a maximum value of 0.55 as shown in 2017 and a minimum of 0.07 in 1997. The mean value stood at 0.431739 and the median at 0.49 which is indicated in 2008 and 2009. The kurtosis is 3.828243, showing a leptokurtic slope. The Jarque-Bera probability is at 0.012775 depicting normality of 10%. The steady increase in the human development index can be attributed to the rise in the credit to the private sector, broad money supply, etc.

The ratio of Money Supply to Gross Domestic Product (M2/GDP): Column four in table 4.1 is the M2/GDP. The mean value stood at 16.50304 and the median at 18.24 as shown in 2014. The maximum value stood at 21.31 as shown in 2016 and a minimum of 10.05 in 1997. The kurtosis is 1.518687, showing a mesokurtic slope. The Jarque-Bera probability is at 0.294876 depicting a normality of 10%. The fluctuation in the M2/GDP figures for the period under study can be attributed to the effect of the various reforms in the banking industry vis-à-vis the financial reform of deepening.

The ratio of Credit to Private Sector to Gross Domestic Product (CPS/GDP): This appears in the third column in table 4.1. The mean value is 14.03217 while the median value is 16.93 as shown in 2011. These measures of centre tendencies are very impressive. On average for the period under study, 14% of the CPS has contributed to the amount of GDP and when the figures are arranged in an ascending or descending order, the middle range of 15% is attained. The maximum value of 20.77 is shown in 2016 and a minimum of 7.67 in 1998. This indicates a steady growth over the years under study. For the measure of the kurtosis, it shows a mesokurtic slope with a value of 1.126859 while Jarque-Bera probability is at 0.185003 depicting normality of 10%. This impressive outlook can be a result of the reforms in the financial sector that encourages lending to the small and medium scale enterprises of the economy.

The ratio of Commercial Banks Deposit to Gross Domestic Product (CBD/GDP): This appears in the fifth column in table 4.1. The mean value is 0.086669 while the median value is 0.103710 as shown in 2011. The maximum value of 0.134060 is shown in 2014 and a minimum value of 0.034460 in 1997. This indicates a steady

growth over the years under study. For the measure of the kurtosis, it shows a mesokurtic slope with a value of 1.391554 while Jarque-Bera probability is at 0.277875 depicting normality of 5%. This impressive outlook can be as a result of the huge deposits from aggressive marketing of financial services as a result of the financial deepening in the country for the period under study.

The ratio of Liquid Liabilities to Gross Domestic Product (LL/GDP): LL/GDP appears in the sixth column in table 4.1. The mean value is 0.117687 while the median value is 0.116110 as shown in 2011. The maximum value of 0.201240 is shown in 2008 and a minimum of 0.059470 in 1998. This indicates a steady growth over the years under study. For the measure of the kurtosis, it shows a mesokurtic slope with a value of 2.735664 while Jarque-Bera probability is at 0.563828 depicting normality of 5%. This mediocre outlook can be a result of the bottleneck policies in the administration of the loans of the financial sector of the economy.

Augmented Dickey-Fuller (ADF) Unit Root Test

The results of the ADF test is presented below in table 4.3.

Table 4.2: Augmented Dickey-Fuller (ADF) Unit Root Test

Variables	ADF Statistics	1% Critical Values	5% Critical Values	10% Critical Values	Order of Integration	Level of Significance
HDI	-2.065096	-3.788030	-3.012363	-2.646119	1(1)	0.2593 (10%)
M_2/GDP	-1.635148	-3.769597	-3.004861	-2.642242	1(0)	0.4487 (10%)
CPS/GDP	-0.950890	-3.769597	-3.004861	-2.642242	1(0)	0.7518 (10%)
CBD/GDP	-1.313043	-3.769597	-3.004861	-2.642242	1(0)	0.6046 (10%)
LL/GDP	-2.740600	-3.788030	-3.012363	-2.646119	1(0)	0.0841 (10%)

Source: Author's Computation from E-Views 9.

Table 4.2 above shows the Augmented Dickey-Fuller unit root test for stationarity of the variables. The result shows that HDI, M2/GDP, CPS/GDP, and CBD/GDP have an ADF statistics value of -2.065096, -1.635148, -0.950890, and -1.313043 respectively that are less than 1%, 5%, and 10% critical level values in absolute term. LL/GDP has an ADF statistical value of -2.740600 that are less than 1% and 5% critical values in the absolute term but greater than 10% critical values in the absolute term. The result reveals that the variables of financial deepening are stationary at 1(0). Thus, ordinary least squares of data estimation can be applied in the analysis of data.

Johansen Co-integration Test

Johansen co-integration test is conducted to ascertain the existence of the long-run relationship among the variables for each of the models in the study. The Johansen co-integration test contains two types of co-integration tests. These are unrestricted co-integration, rank test (Trace), and unrestricted co-integration, rank test (Maximum Eigenvalue).

According to Johansen, 1991, the decision rule is to accept the null hypothesis if the probability of the critical value is greater than the 5% level of significance. Otherwise, we reject the null hypothesis.

Table 4.4: Johansen Co-integration Test

Hypothesized No of CE(s)	Eigenvalue	Unrestricted Cointegration Rank Test (Trace)			Unrestricted Cointegration Rank Test (Maximum Eigenvalue)		
		Trace Statistics	5% Critical Value	Prob.**	Maximum Eigenvalue Statistics	5% Critical Value	Prob.**
None *	0.881425	119.7633	69.81889	0.0000	44.77645	33.87687	0.0017
At most 1 *	0.808917	74.98688	47.85613	0.0000	34.75603	27.58434	0.0051
At most 2 *	0.615977	40.23085	29.79707	0.0022	20.09813	21.13162	0.0692
At most 3 *	0.522812	20.13272	15.49471	0.0093	15.53674	14.26460	0.0313
At most 4 *	0.196563	4.595984	3.841466	0.0320	4.595984	3.841466	0.0320
Trace test indicates 5 cointegrating eqn(s) at the 0.05 level Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values							

Source: Author's Computation from E-Views 9.

The model examined the long-run relationship between financial deepening variables; M2/GDP, CPS/GDP, CBD/GDP, and LL/GDP and HDI; a proxy for economic development was tested for the null hypothesis of no co-integration on the assumption of the linear deterministic trend. The results from the Trace probability show five (5) co-integration equations and Maximum-Eigen probability shows two (2) co-integration equations. The results are based on the probability of the critical values less than 5% level of significance. The study then indicates that there is co-integration among the variables in the model. This connotes that there is a long-run relationship between financial deepening and the human development index in Nigeria.

Correlations

Correlation analysis is used to examine the relationship between dependent and independent variables. It measures the linear association between two variables. Its values lie between -1 and +1. +1 indicates that there is a positive linear relationship between two variables, and are perfectly related while -1 indicates a negative.

Table 4.5: Correlations

Variables	HDI	M_2/GDP	CPS/GDP	CBD/GDP	LL/GDP
HDI	1				
M_2/GDP	0.7775	1			
CPS/GDP	0.7067	0.9491	1		
CBD/GDP	0.7789	0.9574	0.9701	1	
LL/GDP	0.6279	0.8331	0.7874	0.8215	1

Source: Researcher's Computation from E-Views 7.

The correlation in Table 4.5 shows the coefficient of the type of relationship that exists between the independent variables and the dependent variable. The

M_2/GDP, CPS/GDP, CBD/GDP and LL/GDP have a coefficient of 0.7775, 0.7067, 0.7789, and 0.6279 respectively revealing that they have a strong positive correlation with HDI; this implies that a unit increase in M_2/GDP, CPS/GDP, CBD/GDP and LL/GDP would have the same proportionate effect on HDI in Nigeria.

Ordinary Least Square (OLS)

In other to examine the impact of financial deepening on HDI and to also test the formulated hypotheses given, the study used a panel multiple regression analysis, using Ordinary Least Squares (OLS) estimation method.

The result of the OLS for the model formulated is reported below. The decision rule is that if the E-View Prob. Value is greater than (>) the chosen level f-significance (0.05), we accept the null hypothesis but if not, we accept the alternative hypothesis.

Table 4.6: Ordinary Least Square (OLS)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.023465	0.134537	-0.174412	0.8635
M_2/GDP	0.027596	0.018437	1.496745	0.1518
CPS/GDP	-0.027744	0.014279	-1.943068	0.0678
CBD/GDP	5.357558	2.639384	2.029852	0.0574
LL/GDP	-0.639258	0.880781	-0.725785	0.4773
R-squared	0.687358	Mean dependent var		0.431739
Adjusted R-squared	0.617882	S.D. dependent var		0.139240
S.E. of regression	0.086072	Akaike info criterion		-1.877603
Sum squared resid	0.133351	Schwarz criterion		-1.630756
Log likelihood	26.59243	Hannan-Quinn criter.		-1.815522
F-statistic	9.893464	Durbin-Watson stat		1.588782
Prob(F-statistic)	0.000205			

Source: Researcher's Computation from E-Views 7.

In table 4.6, the result of the estimated model based on the ordinary least squares (OLS) technique was analyzed to show the impact of each of the variables of financial deepening on the human development index of Nigeria. The result shows that M2/GDP and CBD/GDP have an insignificant positive impact on HDI in Nigeria with a probability of 0.1518 and 0.0574, and a coefficient of -0.027596 and 5.357558. CPS/GDP and LL/GDP have an insignificant negative impact on HDI in Nigeria with a probability of 0.0678 and 0.4773, and a coefficient of -0.027744 and -0.639258 respectively.

The coefficient of determination, R-squared (R2) is 0.687358 and indicates that about 69% of the changes in HDI in Nigeria are explained by the variation in the financial deepening indicators of M2/GDP, CPS/GDP, CBD/GDP, and LL/GDP. The F-statistic explains the overall significance of the variables of financial deepening on the human development index. The F-statistic is 9.893464 with a probability value of 0.000205 less than a 5% level of significance.

Based on the F-probability, the study concludes that financial deepening variables have an overall significant impact on the human development index in Nigeria. Although, the coefficient of Durbin-Watson is 1.588782 and is approximately 2, shows that the model is free of autocorrelation.

This study corroborates the works of the following authors in line with the financial deepening variables of M2, CPS, and LL; Nkoro & Oluitan (2012), Olowofeso, Adeleke & Udoji (2015), and Moshabesha (2017) respectively while the study opposes to the following authors in line with the financial deepening variables of M2, CPS, CBD, and LL; Osuka, Ihejirika & Chinweze (2018), Idris (2012), Nwanna & Chinwudu (2016), and Dandume (2014) respectively.

Conclusion and Recommendations

Based on our findings, the study accepted that the variables of the financial deepening indicators have a significant impact on the human development index for human capital development in Nigeria. Although, individually it shows that all the financial deepening indicators are insignificant at a 5% significant level. Also, there is no autocorrelation among the variables. This shows that there is confidence in the level of reliability of the results.

The Johansen co-integration test showed five co-integration equations among the variables for the trace statistics and two co-integration equations among the variables for the maximum eigenvalue statistics. These are the ratio of the money supply to gross domestic product (M2/GDP) and LEAB, the ratio of credit to the private sector to gross domestic product (CPS/GDP) and human development index (HDI), the ratio of commercial banks deposit to gross domestic product (CBD/GDP) and HDI, and the ratio of liquid liabilities to gross domestic product (LL/GDP) and HDI in Nigeria. By implication, this implies that there is a long-run relationship existing between the human development index proxy for human capital development and the variables of M2/GDP, CPS/GDP, CBD/GDP, and LL/GDP in Nigeria.

The correlation matrix test indicated that the variables of financial deepening indicators; M2/GDP, CPS/GDP, CBD/GDP, and LL/GDP have a positive correlation-ship with the human development index proxy for human capital development in Nigeria. The ordinary least square results show that the financial deepening indicators as contained in the model for Nigeria have a significant positive impact on human capital development.

Recommendations

From the findings, financial deepening is adjudged to be a big player for human capital development in Nigeria and as such, the essence of increasing the financial deepening indicators of the Nigerian economy is a must for the government to advance the human development index. Thus, the government should implement the following recommendations suggested.

i. On the M2/GDP the study recommends that government should bring about a more liquidity economy in Nigeria (i.e. increase in M2). This will bring about a significant impact on the present human development index and Nigerians economic development vis-à-vis their contribution to the growth of the country's gross domestic product.
ii. On the CPS/GDP, the study recommends that government should always reform the financial

sector in line with the financial deepening of the CPS. The government should encourage more credit lines for the private sector in Nigeria to help complement and alleviate human capital development. The government should encourage the private sector to boost their output and increase employees' welfare. This will in turn bring about the human development index vis-à-vis gross domestic product.

iii. On the CBD/GDP, the study recommends that the Nigerian government should put financial reforms in place that will encourage deposit habits amongst the population (i.e. financial reform of financial inclusion). Also, the government should put in place a financial policy through the Central Bank of Nigeria that will make the money market investment-oriented (i.e. investment in money market instruments). This kind of investment will rapidly help in building a solid and enviable human development index that will boost the Nigerian economy.

iv. On the LL/GDP, the study recommends that the government should encourage the granting of more loans at minimal costs to the public and private sectors in the Nigerian economy. In doing so, the human development index at both sectors will get better and the outcome will be tremendous toward the overall development of the country.

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