# Impact of External Debt on Human Capital Development in Nigeria

Ikenna C Egungwu

Department of Banking & Finance, Chukwuemeka Odumegwu Ojukwu University, Anambra State, Nigeria

## Abstract

The need to finance budget gaps often compel nations to seek external sources of fund with the intention that such funds would be applied on projects that will enable her deepen the economy. Thus, the issue of external debt and economic development has attracted a wide discourse among researchers, analysts, practitioners etc, with the main intension to ascertain how the nation has indeed applied such funds and the effect. Extant studies have revealed conflicting results on the interaction between economic development dynamics and external debt fundamentals. Also, few of these studies have attempted to consider the linkage between the human factor matrix and external debt financing. It is against this backdrop that this study sought to examine the impact of increase in external debt stock and its servicing on human capital development. Four hypotheses were formulated and tested at 5% level of significance. Ex-post facto research design was adopted and time series data spanning 30 years (1986-2015) were processed using the models earlier formulated. Ordinary Least Square (OLS) regression technique was used to test the hypotheses. The study found that both external debt stock and external debt servicing had significant negative effect on human capital development; external debt stock borrowed from Paris club and multilateral creditors had insignificant negative effect; those borrowed from London club had insignificant positive effect while those borrowed from bilateral creditors had significant positive effect. On debt servicing, all the creditors showed insignificant positive effect except London club that had significant positive effect. The study concluded that nations could finance their budget deficits with external funds but should ensure that such funds are applied on priority projects that have the capacity to deepen the economy and improve the well fair of her citizens. Among other recommendations is the fact that both the state and federal government should create investment window that will significantly reduce the level of unemployment prevalent in the country and also embark on industrial revolution that will greatly widen the nation's revenue base and reduce her reliance on oil and gas as the main source of revenue.

## 1. Introduction

The history of developing nations reveal that they have been subjected to repeated economic crises with serious consequences for their long term growth prospects and that the links of these crises to the external sectors performance including the problem of external debt and its sustainability have attracted prolonged debate (Claudio, 2004:4),. Nations have various reasons for contracting external debt with other nations and borrowing by countries occurs as a result of their inability to generate enough domestic savings to carry out productive activities (Ezeabasili, et.al., 2011). In Nigeria for instance, external debt is secured and channeled to serve as balance of payment support, project tied loans, budget deficit financing, meeting some developmental goals of the various levels of government, embarking on infrastructural development etc. Osinubi, and Olaleru (2006) observe that the need for government to finance its deficit budget leads to incurrence of external debt. Ezeabasili (2006), Adam (2007) and Anyanwu (1997) are of the opinion that countries borrow to supplement their domestic savings and allow the affected countries to carry out productive activities and if the borrowed funds are channeled to productive investments and the investments enjoy macroeconomic stability, they will be able not only to accelerate their economic growth but also to settle their debt obligations comfortably (Hameed, Ashirat and Chowdhurry l., 2008). Other studies that have found relationship between debt and growth include Cohen (1995), Borenszteim (1990), Elbadawi, et.al. (1997), Patilo, Doirson & Luca. (2002), Adeyemi (1996) and Indermi and Brian (2005). The first external loan contracted in Nigeria was US $28 million in 1958. As a measure to curtail the rising debt profile, the federal government in 1978 promulgated Act No 30 of the same year limiting Federal government external loan to ₦5 billion. In the same year, a jumbo loan of US $1 billion was raised from the international capital market. Thereafter, the spate of borrowing increased with the entry of state governments into external loan contractual obligations coupled with fall from oil revenue (Adesola, 2009). Fajana (1990); Olukoshi and Nwoke (1990), observe that although the windfall from oil exports led to a considerable economic activities in Nigeria, it did very little

to create a solid economic foundation for the country. Muttalab (1984) and Obi (2005) also observe that although the loans obtained by Nigeria from the international financial market were ear marked for specific projects, the disbursement was unrelated to the rate of progress of the projects on ground suggesting that the fund may have been looted by few government officials in collusion with or knowledge of the creditors.

The need to separate debt management from the Ministry of Finance gave rise to the creation of Debt Management Office in 2000 and the office was charged with the responsibility of managing both domestic and foreign debt in Nigeria. Again, in 2005 the government established a fiscal responsibility council and subsequently enacted a fiscal responsibility Act, 2005. These and other efforts were made to keep the nation's debt stock at a sustainable level.

Claudio (2004) has observed that external debt sustainability is consistent with the objective to keep a debt level that promotes economic growth and enhance the well fair of her citizens. Arrow (2007) observes that sustainable development is an economic programme along which average well being of present and future generations taken together does not decline over time. As Metwally and Tamaschke (1994) and Geiger (1990) observe, capital inflows have significant impact on growth-debt relationship because when there is a considerable level of inflow of capital, economic growth will be accelerated, thus less need for further external borrowing. Ogunmuyiwa (2011) Savvides (1992), Edo (2002), Udoka, Anyingang. (2010) and Bullow, Rogoff (1990) are of the opinion that debt overhang acts like a high tax margin on the country and could provide disincentive to domestic capital formation. This virus inflicted the Nigerian economy before her total exit from the strong hold of Paris and London club of creditors. Shortly before the exit, her total external debt stock was ₦4.9 trillion in 2004 (CBN Statistical Bulletin, 2009). In 2006, Nigeria external debt stock was $3.54 billion, in 2007 it rose marginally to $3.67 and in 2008, it further inched up to $3.72billion, dropped slightly in 2009 to $3.62billion only to rise sharply to $8.43billion in March 2010 (Mgboji, 2010). As at 30th September 2011, the external debt stock stood at $5.63 billion made up of $3.316 billion owed by federal government and $2.317 billion owed by the states (Onwuka, 2011). Since then, the external debt stock has maintained an increase. According to the figure released by National Bureau of statistics

**\*Corresponding Author,**

**E-mail address:** ikennaegungwu@yahoo.com

(NBS) as at 30th June 2017, the debt stock had risen to $15.05 billion. The creditor composition of the debt is multilateral $9.67 billion, bilateral $218.25m and Eximbank of China $5.15 billion. Of this amount, the Federal government borrowed 74% while the states and Federal Capital Territory borrowed 26% (The Guardian Newspaper Vol 34 No 14145, 2017). These figures are alarming considering the fact that the country is expected to keep a sustainable level of debt stock after her debt relief experience in 2005. As Sacks (1989), Arslanalp and Henry (2004) argue, the problem faced by debt relief countries is lack of good institutions and if the poor institutional framework is not corrected, any new debt relief initiative would not achieve the objective to promote economic growth.

It is worrisome to note that in spite of the relief package secured in 2005, the World Bank ranked Nigeria as the 87th most indebted country in the World and 139th for purchasing power parity per capita GDP and debt service ratio (ratio of debt service to export) of 1.10% as against the international threshold of 20% (World Bank Report 2010). These phenomena contrast with the expectations that the resources freed from Paris and London Club as well as further debt procured externally would add value to the economy through employment creation, promotion of quality health care delivery, increased capacity utilization, infrastructural development, reduction in inflation rate, enhanced export revenue, reduction in foreign exchange risk, all of which will translate to economic growth (Uzochukwu, 2011; Lora and Olivera, 2006).

As already observed, studies have been conducted on Nigeria external debt and economic growth nexus reflecting on related developments before and shortly after the debt relief. The findings revealed various degrees of interaction on the effect of aggregate external debt stock on gross domestic product but failed to relate these interactions (whether positive or negative) to the various sources of external debt to ascertain the extent to which each source of external borrowing contributes to economic growth in Nigeria. This information is necessary to enable the Debt Management Office (DMO) reappraise Nigeria's bilateral relationship with her external creditors The timing and scope of the study also failed to accommodate data relating to recent developments, including the exit from both the Paris and London Club which drastically reduced the external debt stock owed by Nigeria. Also, one of the reasons for extending debt relief package to Nigeria was to free resources to improve the standard of living in Nigeria.

Bearing the above short comings in mind, this study is considered timely as it is designed to espouse on the need to disaggregate debt stock and debt services to the various creditors (Paris Club, multilateral, London Club and Bilateral creditors) to ascertain the contribution of each source to human capital development, a measure that would enable Nigeria reappraise both her bilateral trade and other associated forms of external relationship.

## 2. Statement of the Problem

The inability of a developing country like Nigeria to conserve enough domestic resources to bridge her budget gaps necessitates her continued reliance on external sector financing which is usually characterized by very stringent lending conditions, unfavorable foreign exchange variations and repudiation tendencies that cause debt overhang. This as revealed by previous studies (Savvids, 1992; Edo, 2002; Udoka ,et. al. 2010; and Bullow, 1990) has been a disincentive to domestic capital formation and consequently lead to deprivation of adequate basic necessities to the citizens (Karagol, 2002 and Fosu, 2007). Extant studies and literature have produced conflicting opinions on the nexus between external debt and economic development dynamics. For instance Levy and Chowdhurry (1993); Malik (2010) and Audu (2004), observe that high debt stock is associated with rising debt burden; and could also cause pervasive poverty rate, endemic corruption and decayed infrastructural facilities ( Okonjo-Iweala, Soludo and Muhtar, 2003). Uzamere (2011) opines that government is expected to borrow for projects that could repay the amount borrowed and create jobs rather than borrowing to finance budget gaps that are largely recurrent; this

has associated foreign exchange risk (Muoghalu, 2006) and stringent borrowing conditions that could contribute to the poor performance of external capital in debtor countries and thus inhibit delivery of welfare packages to the citizens (Dinneya, 2006). It could also cause a drop in the standard of living of the citizens (Uzochukwu, 2011).

The problem therefore exists and revolves around the scenario whether the nation's aggregate and disaggregated external debt stock could have contributed significantly to improvement in the nations human capital development and whether the external debt servicing conditions in aggregate terms and also paid to the various creditors could have freed resources to improve the standard of living, health care delivery and the quantum and quality of education in Nigeria.

## 3. Objectives of the Study

The specific objectives that guided the study are to: assess the effect of increase in external debt on human capital development (HCD) in Nigeria, using Human Development Index (HDI) as proxy for human capital development;

examine the effect of loans from each of the external debt sources (Paris Club, Multilateral, London Club and Bilateral Creditors) on Human Capital Developmen in Nigeria; examine the effect of external debt services on Nigeria's Human Capital Development (HCD); and analyze the effect of external debt service outlets to each of the creditors (Paris Club, Multilateral, London Club and Bilateral Creditors) on HCD.

## 2.1. Research Hypotheses

The following hypotheses are formulated for the study:

$H_1$. Increase in external debt stock does not have significant positive impact on Human Capital Development in Nigeria.

1. $H_2$. The application of loans borrowed from each of the external debt sources has no significant positive effect on Nigeria's Human Capital Development (HCD)?

2. $H_3$. External debt services have no significant positive effect on Human Capital Development (HCD)?

3. $H_4$ The external debt service outlets do not have significant positive impact on Human Capital Development (HCD)?

## 2.2 Scope of the Research

The period covered by the study is between 1986 and 2015. This period is significant because a major macroeconomic policy framework tagged structural adjustment programme was initiated in 1986 and also was within the period the nation joined the league of Highly Indebted Poor Countries (HYPC)

Scope as per content of the study examined a segment of the nation's total public debt obligation that was owed to external creditors and the extent to which these obligations impacted on the citizens of this country around three specific areas that include health delivery, education of her citizens and per capita income.

## 2.3 Significance of the Study

This study will be of immense benefit as-

### 2.3.1 Government and its Agencies

External debt management is a key management initiative that enables developing countries to appraise the need for external sector financing in relation to the contributions of the various sources of financing in not only deepening the economy but also integrating the economic conditions to the global economic network. As a developing country therefore, Nigeria needs a sound and pragmatic debt management policy that will enable the debt management office (DMO) to balance the need for economic and social transformation with the desire to fill this need with external sector financing. Other government agencies like the Central Bank of Nigeria (CBN) and Fiscal Responsibility Council will benefit from the study as it will act as an impetus for them to draw and implement debt related policies. Such policies revolving around placement of debt ceilings, establishment of debt sustainability indices as well as the need to prosecute defaulters if properly implemented will help to build strong institutions. The study will also be useful to the government and its agencies to reappraise her bilateral and multilateral relationship with

her creditors more so as the study is also designed to identify the extent of contribution to economic growth by each of the sources of external debt.

### 2.3.2 Nigeria Citizens

One of the responsibilities of every government is to improve the standard of living of her citizens. This can be done by making the health care delivery accessible and also affordable ensuring that every citizen is offered free and compulsory education up to secondary school level and making university education affordable and also ensuring that per capita income is comparable with or better than those countries that enjoy similar economic resource leverage. It is expected that from the findings of this study, the recommendations will serve as a veritable tool to assess the extent to which the government has been able to meet her sovereign obligations to her citizens and advise them accordingly.

### 2.3.3 Private Business Units

These are the private businesses, agencies, organizations and institutions which activities are designed to add value to the economy. They require external financing to facilitate their programmes and such funds are usually provided by creditors who also operate within the context of both external and domestic economy. The findings and recommendations of the study will serve as impetus for prudent management of the resources including the borrowed funds and the knowledge gained will be of immense benefit to them.

### 2.3.4 Public

The findings and recommendations of the study are expected to avail the reading public information on debt related issues that will enable them carry out self assessment exercises on the performance of projects that require the external fund, especially as they affects their communities and living standard. Reactions emanating from such exercises are expected to ignite the interests of the various pressure groups on the need for prudent management of the borrowed funds by the beneficiaries. Such interest will provoke the consciousness of the users of borrowed funds on the need for prudent application of the nation's resources to the critical areas.

### 2.3.5 Academics

As an academic exercise designed to contribute and fill knowledge gap, it is expected that students and researchers especially in finance and other related discipline will gain literature awareness and empirical consciousness on the impact of external debt on economic growth. Such awareness will create a basis for embracing further studies in this context.

## 3. Review of Related Literature

### 3.1 Conceptual Review

### 3.1.1 Meaning of public debt

Public Debts (internal and external) are debts incurred by government through borrowing in the domestic and international markets in order to finance domestic investment (Anyanwu, 1997 :Pp 210).

Anyanwu, cited in Obi (2005) also defines public debt as "all claims against the government held by the private sector of the economy, or by foreigners" whether interest bearing or not (and including bank held debt and government currency (if any), less any claims held by the government against the private sector and foreigners).

Benedict (2003) defines debt as "the resource of money in use in an organization which is not contributed by its owners and does not in any other way belong to them."

Abubakar (1990) identifies public debt from the purpose for which it is secured and feels that if the loan is secured to purchase a real asset, the debt incurred is said to be reproductive and a "dead weight " if it is not covered by any real asset.

External debt is foreign currency legal instrument that is held by foreign investors (Gelpem, 2006).

External indebtedness is a phenomenon of natural consequences of economic activities created when a nation seeks to invest capital in excess of its own financial resources and is met by external borrowing (Diallo, 2007).

### 3.1.2 Meaning of external debt

External (foreign) debt is that part of a country's total debt that is owed to creditors outside the country. The debtors can be the government, corporate bodies or private households while the debt includes money owed to private commercial banks, other governments or international financial institutions such as the International Monetary Fund (IMF) and World Bank. (World Bank, 1988).

IMF (2010) defines gross external debt as the outstanding amount of those actual current liabilities that require payment(s) of principal and/or interest by the debtors at some points in the future and that are owed to non residents by residents of an economy. Residency in this situation is determined by where the debtor and creditor have their centers of economic interest i.e. where they are ordinarily located and not by their nationality.

External debt is generally classified into four heads(World Bank 2009) and include:

-      Public and publicly guaranteed debt
-      Private non-guaranteed credits
-      Central bank deposits
-      Loans due to the IMF

Dooley (2000) views external debt as that portion of externally sourced fund which has not been paid and which is usually secured for developmental purposes and balance of payment support. The main essence of borrowing therefore is to channel the fund to yield anticipated revenue. This means that various levels of government, institutions, countries, individuals etc sign debt contract as an additional source of funding for project execution.

Adreas (1996) defines external debt as the sum total of debts owed by the central government.

### 3.1.3 Meaning of Debt Servicing

Debt servicing generally refers to that compelling need and obligation on a borrower to pay the interest on a loan as and when due and also to effect repayment of principal amount when it falls due and if a nation has the capacity to redeem these obligations, accumulation of arrears will be nonexistent and thus no cases of "debt overhang" which cripples economic growth.

Abubakar (1990) holds a wider perspective on debt servicing as according to him "debt serving involves payment of interest, repayment of outstanding loans, refinancing and rescheduling of debt. The main essence of repayment is to postpone repayment so as to ease the medium-term foreign exchange liquidity squeeze suffered by debtors while debt rescheduling is meant to deter payment of maturing loans so as to allow a breathing space for some measures to be taken to expand the country's productive capacity"

Interest payment and principal repayment constitute a drain in the resources of the borrowing country and the higher the debt stock, the more severe the impact of debt servicing obligations which create a burden on the nation's resources. Debt servicing burden is measured using some scenarios. For instance,

- Debt servicing as percentage of export receipts measures the ability of debt repayment and creditworthiness of a country. The international threshold provides that when debt servicing of a country goes beyond 20 percent of its export earnings then its debts become unsustainable.

- Debt servicing as a percentage of foreign exchange earnings is another important indicator of indebtedness of a country as it measures the ratio of debt service to foreign exchange earnings.

- The most important indicator determining long-run results is the ratio of debt service to GDP which determines the burden of debt service on the country's income. As this ratio goes up so does increases in the burden. Nagassan (1992) conducted a research employing a logic model and found that the higher the debt service ratio, the lower the GDP will be and this will produce constraint for external debt servicing capacity of African Nations.

### 3.1.4 External Debt Sustainability

Sustainable debt is the level of debt which allows a debtor country to meet its current and future debt obligations in full without recourse to further debt relief or rescheduling, thus avoiding accumulation of arrears, while allowing an acceptable level of economic growth (UNDP, 1996).

IMF and World Bank(2004) in their assessment indices states that external debt sustainability can be obtained by a country "by bringing the net present value (NPV) of external public debt down to about 150 percent of a country's exports or 250 percent of a country's revenues. World Bank and IMF (2004) stipulate that a country can be said to achieve external debt sustainability if it can meet its current and future external debt service obligations in full, without recourse to debt rescheduling or accumulation of arrears and without compromising growth. Growth could be measured on the basis of GDP, reduction in inflation rate, improvement in employment or reduction of unemployment. From the views expressed by the two authorities, external debt is sustainable when the following conditions are attained:

- The debtor nation redeems and is capable of redeeming its debt obligations as and when due.
- Debt relief in form of rescheduling or cancellation appeals is not being sought.
- There is no build up of arrears, and
- The debt service burden does not jeopardize growth potential of the economy.

## 3.2 Meaning of Human Development Index (HDI)

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 Gross Domestic Product/ 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 metric (average years of schooling and expected years of schooling), Quality of health delivery (life expectancy at birth) and index of an acceptable standard of living (GNI per capita)

In essence, the HDI is used to assess the extent to which a given country is able to recognize the social components in assessing her level of economic development. The index ranges from 0 point to 100 point 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 same annually. In 2016,Nigeria was ranked 152nd out of 188 countries assessed during the period (www.premiumtimesng.com)

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

## 3.3 Types, Sources and Structure of External Debt in Nigeria

### 3.3.1 Types of external debt

The types of external debt reflect the purpose for which the debt was incurred. These debts were mainly due to the inability to repay trade arrears, balance of payment and project-tied loans on schedule.

### 3.3.2 Trade Arrears

A trade debt arises when Nigeria trades with other countries and is unable to pay, either partly or wholly for the goods and services supplied.

### 3.3.3    Balance of Payments Support Loan

The overall economic transactions between a country and the rest of the world, classified into current and capital accounts and official settlement balance, constitute the balance of payments position which may be favorable when it is a surplus or unfavourable when it is a

deficit. However, a persistent unfavorable balance of payments, often referred to as balance of payments disequilibrium, may inform government's decision to seek for balance of payments support loan. Such loans coming in form of capital inflow and other accommodations are provided by institutions such as the International Monetary Fund (IMF)

### 3.3.4 Project-tied Loans

Investments which have good potentials and prospects of accelerating economic growth and development may lead government into contracting project-tied loans. As implied, this type of debt which is for the execution of a particular project is supposed to be self-liquidating.

### 3.3.5 Loans for Socio-Economic Needs

The provision of the socio-economic needs of the people such as infrastructure, health, education and other social amenities may necessitate borrowing by government to finance them.

### 3.4 Sources, structure and major institutions of external debt in Nigeria

Nigeria has contracted a number of debt obligations from external sources. These could be grouped into two main categories (Adesola 2009), and include

#### 3.4.1 Official Debt

This consists of Paris Club debt, multilateral debts and bilateral debts

#### 3.4.2 Private Debts

This is made up of uninsured short-term trade arrears contracted through the medium of bills for collection, open account, etc.

### 3.5 Commercial bank debts acquired through loans/letters of credit with the London club. These are further categorized into four

1.  The first category is debt owed to fourteen creditor countries belonging to the Paris club. Paris club debt is government to government credits or market-based term loans, which are guaranteed by various export credit agencies of the creditor countries. The Paris club is a cartel of creditor countries that provides an information forum where countries experiencing difficulties in paying their official debt meet with creditors to reschedule the debts. Paris club members that Nigeria was indebted to before 2006 were: Australia, U. S. A, Spain, France, Switzerland, Japan, the U. K, Belgium, Russia, Finland, Denmark, Germany, Italy and Netherland. The total amount owed to members of the club as at Dec. 31 2004 amounted to US$30.8 billion and nil US Dollar by December 2015.

2.  The second category is the multilateral debts. These are project loans owed to multilateral financial institutions like the World Bank Group, the African Development Bank Group, the European Investment Bank Group, IFAD and ECOWAS Fund by federal and state governments and their agencies. The total amount owed to multilateral institutions by Nigeria as at June 30, 2017 was $9.67billion.

3.  The third category of debts is bilateral debt otherwise called Non-Paris club bilateral debt. These are debt owed to countries which are not members of the Paris club but whose debts are not insured by the export credit agencies. The amount owed to this category by Nigeria as at June 30, 2017 was $218.25m.

4.  The fourth category of debts is the commercial debts. They are further divided into two groups.

a.  **London Club**: This is a group of commercial banks that join together to negotiate loan contracts and other claims against debtor countries. London club debts are arrears of commercial bank term loans. They also include some arrears of letters of credit, bills for collection, open account, dividends, and airline remittances. The total amount owed by Nigeria as at December 2004 was US$1.4billion and nil US Dollar as at June 2017.

b.  **Central Bank of Nigeria (CBN) Promissory Notes**: These were trade arrears contracted by ordinary Nigerians between 1981 and 1986 but who deposited the local currency with which to make the remittances. The outstanding balance of promissory

notes as at December 2004 was US$0.783billion and nil US$ as at December 2017.

## 4. Theoretical Framework

This work is anchored on both the classical theory as well as the theory on standard of living developed by A.A. Konus and Summarized by Ragner Frich.

The modern concepts of economic growth, a component of a nation's development indices began with the critique of mercantilism, such as David Hume and Adam Smith. The theory of the physiocrats was that productive capacity, itself, allows for growth and also contributes to the improvement and increase of capital which itself allows an increasing capacity that causes increases in the wealth of nations. Whereas they stressed the importance of agriculture and saw urban industry as "sterile", Smith extended the notion that manufacturing was central to the entire economy and this process usually creates emergence of strong economy if the nation has the resources and also the penchant to transform the resources positively. The theory on cost of living index applies directly to the measurement of consumption prices such as the price index for the personal consumption expenditure (CE) which measures the changing cost of a constant standard of living while the quantity index measures increases in the standard of living. Standard of living is largely enhanced if the index of school enrolment, health care delivery and per capita income are improved.

## 5. Empirical Studies

Uzochukwu (2011) posits that a reasonable level of external debt would help finance productive investment to enhance economic growth and improve poverty status, beyond certain levels an additional indebtedness might hinder growth and consequently affect social welfare negatively. To investigate the effect of debt (domestic and external) and growth on poverty using the per capita income approach, the study augments a growth and debt specifications based on conditional convergence by adding several debt and growth variables. Empirical evidence shows that population, domestic debt, external debt, debt service rates are all on the high side while investment rates, school enrolment rates (secondary school), terms of trade and fiscal balance are on the low side. Evidence from the study suggests that these variables have played very crucial role towards poverty escalation in Nigeria.

Muoghalu, Ezirim and Elike (2007) investigated and attempted to explain how and to what extent investment burden is affected by exchange rate conditions and external debt crisis in Nigeria, in the light of international oil prices movements. The study specified four foreign investment models to determine the relationships between foreign investment income remittances and such predictors as exchange rates, external debt burden, and oil prices in the international market. The paper estimated these models using two different methods namely the OLS and the Exact Maximum Likelihood (EML) techniques. These methods were applied to time series annual Nigerian data derived from 1970- 2001. The result indicates that the foreign investment debt crisis or burden varies with previous rates of foreign investment burden but negatively and significantly relate with exchange rates conditions and international oil prices.

Udoka and Anyingang (2010) appraised the relationship between external debt management policies on the economic growth of Nigeria from 1970- 2006. One null hypothesis was formulated to determine the effect of external debt on Gross domestic investment, exchange rate, fiscal deficit, and terms of trade. Ex-post facto research design was adopted for the study. Ordinary least square multiple regression technique was used to analyze data gathered for the study. The findings revealed that, GDP, exchange rate, fiscal deficit, London Interbank offered rate, and terms of trade are the major determinants of external debt in Nigeria. The severity of the debt within the period is reflected in the country's inability to meet the debt service obligations particularly scheduled debt services in relation to its foreign currency earnings, it explains why the country

had rescheduled its debt from time to time ( first in 1986, 1989,1991, and last in October 2000).

Edo (2002) analyzed the African external debt problem with particular reference to Nigeria and Morocco. Statistical indicators show that it is severe and has adverse effects on investment. The analysis also finds that fiscal expenditure, balance of payments and global interest rate are the crucial factors in explaining the accumulation of external debt in the two countries. Although the problem tends to exhibit some differences in characteristics between the two countries, the fact remains that they both belong to the same category of highly indebted countries until Nigeria exited the Paris and London club of creditors. debt relief programme (HIPC initiative) to accommodate both countries.

Ajayi and Oke (2012) investigated the effect of external debt on economic growth and development in Nigeria and found that external debt burden had an adverse effect on the nation income culminating in currency devaluation, increase in retrenchment, continuous industrial strike and poor education system.

Adegbite, Ayadi and Ayadi (2008) analysed the impact of Nigeria's external debt on economic development using the neoclassical model that incorporate external sector, debt indicators and other macroeconomic variables. The study revealed that external debt stock as well as its servicing conditions exert negative influence on growth especially in the long run.

Osugi and Ozurumba (2013) assessed the impact of external debt financing on economic development in Nigeria using the vector error correction model. The study found that London club financing had positive impact on growth while Paris club, multilateral and promissory notes were inversely related to growth.

Azam, Emirullah, Probhakar & Khan (2013) adopted the Ordinary Least Square (OLS) to ascertain the role of external debt in economic growth of Indonesia and found that external stock constituted a burden in the country as it had a negative impact on growth.

Mba, S. Umunna & Agu (2016) used the ARDL bound testing approach to investigate the impact of external debt on economic growth in Nigeria and found the existence of a long run relationship among the variables and specifically that external debt impacts negatively on output.

Ijirshar, Joseph and Godoo (2016) examined the relationship between external debt and economic growth in Nigeria using VEC model and found that external debt stock impacted positively on growth while external debt servicing contributed negatively to growth.

Adeniran, Azeez & Aremu (2016) used the Vector Auto-Regression (VAR) approach to examine the relationship between external debt and economic growth in Nigeria and found that external debt impacts negatively on real GDP per capita growth. A unidirectional causation was also found to exist from real GDP to external debt stock and from external debt service payment to real GDP.

Oke & Sulaiman (2012) examined the relationship between external debt, economic growth and investment in Nigeria and found growth stimulus among the variables even though there was evidence of decline in the private sector investment.

Sulaiman and Azeez (2012) investigated the effect of external debt on economic growth in Nigeria and found a positive contribution of debt in the Nigerian economy.

Hassan, Sule and Abu (2015) applied the Dual Gap Theory implication of external debt on the Nigerian economy. The study found insignificant contribution of government debt to economic growth and possibilities that if the penchant for consistent borrowing is not curbed, the economy will slump further and produce antisocial welfare effects like unemployment, higher inflation, increased poverty, etc.

## 6. Methodology

### 6.1 Research Design

The study is largely quantitative and ex-post facto research design was used to investigate the impact of external debt on human capital development in Nigeria. The design type is necessitated by the fact that the variables on external debt and human capital development

revolve around issues that are vital and already documented by highly research based institutions.

### 6.2 Nature and Sources of Data
The study is based on secondary data. Secondary data were generated from CBN Statistical Bulletin, CBN Annual Report and Statements of Account, Debt Management Office Annual Reports and other relevant official records.

[Sources:            CBN          statistical          bulletin http://knoema.com/atlas/Nigeria/topics/World-Rankings/World-Rankings/Human- development-index?mode=amp]

 *The HDI values for 2002, 2001, 1999, 1997-1990, and 1986 were derived by extrapolation

Table1: Year wise Inflation Rate, Index of HDI related variables

| Year | Human Development Index | External debt (=N=Million) | External Debt Service (US$"m") | Per Capita Income | Foreign Exchange Rate(=N=/US$1.00) | Inflation Rate (%) |
|---|---|---|---|---|---|---|
| 1986 | 0.47 | 41452.4 | 1278.6 | 804 | 2.0206 | 5.4 |
| 1987 | 0.32 | 100789.1 | 740 | 1182 | 4.0179 | 10.2 |
| 1988 | 0.53 | 133956.3 | 1581.9 | 1512 | 4.5367 | 56.0 |
| 1989 | 0.58 | 40393.7 | 2168.3 | 2331 | 7.3916 | 50.5 |
| 1990 | 0.56 | 298614.4 | 3572.4 | 2816 | 8.0378 | 7.5 |
| 1991 | 0.52 | 328453.8 | 3435 | 3218 | 9.9095 | 12.9 |
| 1992 | 0.49 | 544264.1 | 2392.6 | 5326 | 17.2984 | 44.5 |
| 1993 | 0.44 | 633144.4 | 1772.5 | 6640 | 22.0511 | 57.3 |
| 1994 | 0.43 | 648813 | 1843 | 8489 | 21.8861 | 57.0 |
| 1995 | 0.42 | 716865.6 | 1620.6 | 17575 | 21.8861 | 73.1 |
| 1996 | 0.41 | 617320 | 1876.6 | 23918 | 21.8861 | 29.1 |
| 1997 | 0.38 | 595931.9 | 1496.6 | 24155 | 21.8861 | 8.5 |
| 1998 | 0.34 | 633017 | 1272.54 | 22570 | 21.8861 | 10.0 |
| 1999 | 0.33 | 2577374.4 | 1724.9 | 25968 | 92.6934 | 6.6 |
| 2000 | 0.33 | 3097383.9 | 1716.01 | 36657 | 102.1052 | 6.9 |
| 2001 | 0.35 | 3176291 | 2128.17 | 37205 | 111.9433 | 18.9 |
| 2002 | 0.36 | 3932884.8 | 1168.4 | 53172 | 120.9702 | 12.9 |
| 2003 | 0.45 | 4478329.3 | 1809.3 | 63812 | 129.2 | 14.0 |
| 2004 | 0.46 | 4890269.6 | 1754.76 | 84526 | 133 | 15.0 |
| 2005 | 0.47 | 2695072.2 | 8939.92 | 105581 | 131.1 | 17.8 |
| 2006 | 0.48 | 451461.7 | 6727.47 | 132604 | 128.14 | 8.2 |
| 2007 | 0.48 | 431079.8 | 1022.04 | 142464 | 125.06 | 5.4 |
| 2008 | 0.49 | 493180.2 | 930.93 | 166404 | 117.77 | 11.6 |
| 2009 | 0.49 | 590441.1 | 428.03 | 161002 | 147.27 | 12.4 |
| 2010 | 0.50 | 673857 | 354.41 | 183684 | 149.17 | 11.9 |
| 2011 | 0.51 | 689840 | 351619 |  | 153.86 | 10.9 |
| 2012 | 0.51 | 1026900 | 293003 |  | 156.15 | 12.2 |
| 2013 | 0.52 | 138733 | 297329 |  | 159.93 | 8.5 |
| 2014 | 0.53 | 1631520 | 346723 |  | 183.09 | 8 |
| 2015 | 0.53 | 2111530 | 331059 |  | 192.44 | 9 |

### 6.3 Model Specification
Model (1) below is built to test hypothesis one on whether increase in external debt stock had significant positive impact on human capital development, measured by human development index (HDI).
The model is specified as:
HDI=f(ExtD+ExR+InfR)          (1)
HDI = Human Development Index
ExtD = External debt stock
ExR =  Exchange Rate
InfR = Inflation Rate
Te equation from the model becomes
HDI=$\alpha_o$+$\alpha_1$ExtD+$\alpha_2$ExR+$\alpha_3$InfR+$\mu$          (2)
$\alpha_o$ = intercept and $\alpha_1$, $\alpha_2$, $\alpha_3$ are  the coefficient of the regression equation.
$\mu$ is error term. A priori expectation is that $a_1$ is >0, $\alpha_2$>< 0 and $\alpha_3$ <0

The second hypothesis was derived from the model that tested the relationship between the creditor composition of external debt (Paris Club, Multilateral, London Club and Bilateral (non Paris (others) and promissory note) creditors and Human Development Index and is stated as:
HDI = f (ExtDbP + ExtD bm + ExtDbL + ExtDbb)          (3)
HDI = Human Development Index
ExtDbp = External debt stock borrowed from Paris club
ExtDbm = External debt stock borrowed from the multilateral
ExtDbL = External debt stock borrowed from the London club
ExtDbb = External debt stock borrowed from the bilateral creditors
The equation from the model becomes
HDI= $b_o$ + $b_1$ ExtDbp + $b_2$ ExtDbm + $b_3$ ExtDbl + $b_4$ ExtDbb +$\mu$ (4)
$b_o$ = intercept and $b_1$, $b_2$, $b_3$ and $b_4$ are the coefficients of each variable of the regression whereas $\mu$ represents the error term. A priori expectation is that $b_1$, $b_2$, $b_3$ and $b_4$ > 0
The model that tested the effect of external debt services on economic growth is specified below:
HDI = f(E x tDs + E x R + InfR)          (5)
HDI = Human Development Index
ExtD= External Debt Service
ExR = Exchage Rate
InfR = Inflation Rate
The equation from the model becomes.
HDI = $c_o$ + $c_1$ ExtDs +($c_2$ x R + $c_3$ InfR + $\mu$          (6)
$c_{o=}$ intercept and $c_1$, $c_2$, $c_3$ are  is the coefficients of the regression equation
$\mu$ is error term. A priori expectation is that $c_1$ is  $c_1$>0, $c_2$ >< 0 and $c_3$<0

The fourth hypothesis was derived from the model that tested the effect of external debt services to the Paris club, Multilateral, London Club and Bilateral (Non Paris/others and Promissory notes) on Human Capital Development Index.
The model is specified as:
HDI = f (ExtDsp + ExtDsm + ExtDsl + ExtDsb)          (7)
HDI = Human Development Index
ExtDsp = External debt services to Paris Club
ExtDsm = External debt services to multilateral
ExtDsl = External debt services to London club
ExtDsb = External debt services to bilateral creditors
The equation from the model becomes
HDI = $d_o$ + $d_1$ ExtDsp + $d_2$ ExtDsm + $d_3$ ExtDsl + $d_4$ ExtDsb + $\mu$ (8)
$d_o$ = intercept and $d_1$, $d_2$, $d_3$ and $d_4$ are the coefficients of the regression equation
$\mu$ is error term
A priori expectation is that $d_1$, $d_2$, $d_3$, and $d_4$ > O

### 6.4 Further Tests
This study used time series analyses to interpret the nature of interaction between the variables used and their impact on one another.

### 6.4.1 Unit Root Tests
According to Nelson and Plosser (1982) and Konya (2004), there exists a unit root in most macroeconomic time series. Therefore, it is necessary to analyze whether the series are stationary or not whenever time series data are involved. The presence of a unit root implies that the time series under investigation is non-stationary; the absence of a unit roots shows that the stochastic process is stationary (Iyoha and Ekanem, 2002).

### 6.5 Data Analysis Techniques
### 6.5.1 Ordinary Least Square (OLS) Technique
The OLS technique was used to confirm the significance of the interactions and contributions of the individual explanatory variables to be included in the models. The analyses also involved t-test and Durbin-Watson test. These analyses described the interaction between the dependent variable and the independent variables and the contributions of the individual variables to the other.

### 7.Data Analyses and Results

## 7.1 Descriptive Statistics

The individual characteristics of the variables are examined in table 2.

**Table 2: Summary of the Descriptive Statistics**

| Variables | Mean | Maximum | Minimum | Std. Dev. | Jarque-Bera | Prob. |
|---|---|---|---|---|---|---|
| HDI | 0.456452 | 0.580000 | 0.320000 | 0.072597 | 2.076014 | 0.354160 |
| EXTD | 1246564 | 4890270 | 17300.60 | 1393878 | 9.484077 | 0.008721 |
| EXR | 81.08194 | 168.3600 | 0.890000 | 64.80110 | 4.059458 | 0.131371 |
| INFR | 20.08484 | 72.81000 | 4.670000 | 19.06516 | 12.74383 | 0.001709 |
| EXTDBP | 752060.0 | 4196845 | 0.000000 | 1223302 | 16.07889 | 0.000322 |
| EXTDBM | 375724.9 | 1489410 | 1293.500 | 380866.1 | 8.402529 | 0.014977 |
| EXTDBL | 61569.27 | 228950.2 | 0.000000 | 79384.60 | 6.832758 | 0.032831 |
| EXTDBB | 69166.96 | 622120.0 | 842.5000 | 138832.0 | 144.5352 | 0.000000 |
| EXTDS | 54032.39 | 351619.1 | 367.6700 | 120748.9 | 21.10726 | 0.000026 |
| EXTDSP | 781.6761 | 8070.790 | 0.000000 | 1609.591 | 266.7570 | 0.000000 |
| EXTDSM | 28429.26 | 230867.2 | 98.20000 | 66388.17 | 30.72569 | 0.000000 |
| EXTDSL | 5669.566 | 83450.52 | 12.00000 | 17755.31 | 211.8841 | 0.000000 |
| EXTDSB | 20498.84 | 152250.9 | 1.000000 | 47722.44 | 27.15829 | 0.000001 |

[*Source: Computation from E-view Version 8.0]

From the table above, human development index (HDI) was found to have an average value of 0.456452 with a maximum and minimum value of 0.580000 and 0.320000 respectively. External debt stock (EXTD) was found to have an average value of 1246564 with a maximum and minimum value of 4890270 and 17300.60 respectively. Exchange rate (EXR) recorded an average value of 81.08194 with a maximum and minimum value of 168.3600 and 0.890000 respectively. Inflation rate (INFR) recorded an average value of 20.08484 with 71.81000 and 4.670000 respectively as the maximum and minimum values. External debt from Paris Club (EXTDBP) recorded an average value of 752060.0 with a maximum and minimum value of 4196845 and 0.0000 respectively. External debt from multilateral (EXTDBM) recorded an average value of 375724.9 with a maximum and minimum value of 1489410 and 1293.500. On a similar note, External debt from London club (EXTDBL) recorded an average value of 61569.27 with a maximum and minimum value of 228950.2 and 0.0000 respectively. External debt from bilateral creditors (EXTDBB) recorded an average value of 69166.96 with a maximum and minimum value of 622120.0 and 842.5000 respectively. Finally, external debt servicing has an average value of 54032.39 with a maximum and minimum value of 351619.1 and 367.6700.

Some of the variables recorded a standard deviation which is greater than their respective means which shows these variables recorded a fast growth within the review period and vice versa. Jarque-Bera statistics which measures whether the series is normally distributed shows that all the variables are normally distributed with the exception of human development index (HDI) and exchange rate (EXR). This implies that external debt stock (EXTD), Inflation rate (INFR), external debt from Paris Club (EXTDBP), external debt from multilateral (EXTDBM), external debt from London club (EXTDBL), external debt from bilateral creditors (EXTDBB) and external debt servicing (EXTS), external debt services to Paris Club

(EXTDSP), external debt services to multilateral (EXTDSM), external debt services to London club (EXTDSL), external debt services to bilateral creditors (EXTDSB) are normally distributed.

## 7.2 Unit Root Test

Establishing stationarity is essential because if there is no stationarity, the processing of the data may produce biased result. The consequences are unreliable interpretation and conclusions. We test for stationarity using Augmented Dickey-Fuller (ADF) tests on the data. The result of the unit root test is summarized and presented in the table 3.

**Table 3 Summary of the Unit Root Result**

| Variables | T-statistics | Probability | Order of Integration |
|---|---|---|---|
| HDI | -6.088595 | 0.0000 | 1(1) |
| EXTD | -3.867397 | 0.0063 | 1(1) |
| EXR | -4.619034 | 0.0010 | 1(1) |
| INFR | -5.760530 | 0.0001 | 1(2) |
| EXTDBP | -5.531824 | 0.0001 | 1(2) |
| EXTDBM | -9.281478 | 0.0000 | 1(1) |
| EXTDBL | -8.135873 | 0.0000 | 1(2) |
| EXTDBB | -13.86355 | 0.0000 | 1(2) |
| EXTDS | -4.812621 | 0.0005 | 1(0) |
| EXTDSP | -5.878288 | 0.0000 | 1(1) |
| EXTDSM | -5.73683 | 0.0000 | 1(1) |
| EXTDSL | -4.873287 | 0.0009 | 1(2) |
| EXTDSB | -6.747945 | 0.0000 | 1(1) |

[*Source: Computation from E-view Version 8.0]

The table above shows that only external debt servicing (EXTDS) was stationary at level. Human development index (HDI), external debt stock (EXTD), exchange rate (EXR), external debt from multilateral (EXTDBM), external debt services to Paris Club (EXTDSP), external debt services to multilateral (EXTDSM), and external debt services to bilateral creditors (EXTDSB) were differenced once to assume stationarity. Finally, inflation rate (INFR), external debt from Paris Club (EXTDBP), external debt from London club (EXTDBL), external debt from bilateral creditors (EXTDBB) and External debt services to London club (EXTDSL) were differenced twice to assume stationary. Therefore, all the variables are all stationary.

## 7.3 OLS Regression Result for Model One

This model seeks to determine whether increase in external debt stock had significant positive impact on human capital development measured by human development index (HDI). The summary of the result of model one is presented below.

**Table 4:** Summary of OLS for Model One

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 0.868793 | 0.117383 | 7.401372 | 0.0000 |
| EXTD | -0.038234 | 0.009708 | -3.938363 | 0.0005 |
| EXR | 0.000848 | 0.000237 | 3.577279 | 0.0013 |
| INFR | 0.001377 | 0.000651 | 2.113945 | 0.0439 |
| R-squared | 0.401638 | Mean dependent var | | 0.456452 |

| Adjusted R-squared | 0.335153 | S.D. dependent var | 0.072597 |
|---|---|---|---|
| S.E. of regression | 0.059194 | Akaike info criterion | -2.696071 |
| Sum squared resid | 0.094607 | Schwarz criterion | -2.511041 |
| Log likelihood | 45.78910 | Hannan-Quinn criter. | -2.635756 |
| F-statistic | 6.041062 | Durbin-Watson stat | 1.978317 |
| Prob(F-statistic) | 0.002762 | | |

[Source: Computation from E-view Version 8.0]

From table 4, it is observed that the regression line has a positive intercept as presented by the constant (c) = 0.868793 which is statistically significant at 0.05%. The coefficient of determination ($R^2$) is 0.401638, which shows that the explanatory power of the variables is moderate. The F-statistic value of 6.041062 and a probability value of 0.002762 shows that there is significant impact between the dependent and independent variables in the model. The Durbin-Watson statistics value of 1.978317 shows the variables in the model are not autocorrelated and that the model is reliable for predications.

**7.3.1 External Debt Stock (EXTD)**

External debt stock has a negative regression coefficient of -0.038234 with a t-statistics value of -3.938363 and a probability value of 0.0005. This implies that a unit increase in external debt stock will bring about 0.038234 decreases in human development index (HDI). Therefore, we reject the null hypothesis which states that external debt stock had no significant positive impact on human capital development measured by human development index (HDI).

**7.3.2 Exchange Rate (EXR)**

Exchange rate recorded a regression coefficient of 0.000846 with a t-statistics value of 3.577279 and a probability value of 0.0013. This implies that a unit change in exchange rate will bring about 0.000848 changes in human development index.

**7.3.3 Inflation Rate (INFR)**

Inflation rate has a regression coefficient of 0.001377 with a t-statistics value of 2.113945 and a probability value of 0.0439. This implies that a unit changes in inflation rate will bring about 0.000848 changes in human development index. As the two variables are inversely related, a rise in the value of the foreign currency (Dollar) will cause deterioration in the value of our domestic currency and subsequently a decrease in human capital development (HCD) in Nigeria.

**7.3.4 OLS Regression Result for Model Two**

This model tests the relationship between the creditor composition of external debt (Paris Club, Multilateral, London Club and Bilateral (non Paris (others) creditors and Human Development Index. The summary of the result of model two is presented in table 5.

**Table 5:** Summary of OLS for Model Two

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 0.301739 | 0.146105 | 2.065220 | 0.0555 |
| EXTDBP | -0.041448 | 0.021113 | -1.963169 | 0.0673 |
| EXTDBM | -0.013367 | 0.019159 | -0.697686 | 0.4954 |
| EXTDBL | 0.051059 | 0.033448 | 1.526521 | 0.1464 |
| EXTDBB | 0.028410 | 0.012804 | 2.218839 | 0.0413 |
| R-squared | 0.550802 | Mean dependent var | | 0.433810 |

| Adjusted R-squared | 0.438503 | S.D. dependent var | 0.077941 |
|---|---|---|---|
| S.E. of regression | 0.058403 | Akaike info criterion | -2.638627 |
| Sum squared resid | 0.054575 | Schwarz criterion | -2.389931 |
| Log likelihood | 32.70559 | Hannan-Quinn criter. | -2.584654 |
| F-statistic | 4.904765 | Durbin-Watson stat | 1.943816 |
| Prob(F-statistic) | 0.008962 | | |

[Source: Computation from E-view Version 8.0]

It can be observed that the regression line has a positive intercept as presented by the constant (c) = 0.301739 which is statistically significant at 10%. The coefficient of determination ($R^2$) is 0.550802, which shows that the explanatory power of the variables is on the average. The F-statistic value of 4.904765 and a probability value of 0.008962 shows that there is over all significant impact between the dependent and independent variables in the model. The Durbin-Watson Statistics value of 1.943816 shows that the variables in the model are not autocorrelated and that the model is reliable for predications.

**7.3.5 External Debt from Paris Club (EXTDBP)**

External Debt from Paris Club has a regression coefficient of -0.041448 with a t-statistics value of -1.963169 and a probability value of 0.0673. This implies that a unit increase in external debt from Paris Club will bring about 0.041448 decrease in human development index. This shows that external debt from Paris Club has a negative and insignificant relationship with human development index. This is statistically significant at 10 percent level but insignificant at 5 percent.

**7.3.6 External Debt from Multilateral (EXTDBM)**

External debt from multilateral has a regression coefficient of -0.013367 with a t-statistics value of -0.697686 and a probability value of 0.4954 which is insignificant even at 10%. This shows that external debt from multilateral has a negative and insignificant relationship with human development index.

**7.3.7 External Debt from London Club (EXTDBL)**

External Debt from London Club has a positive and insignificant relationship with human development index. This is based on its t-statistics value of 1.526521 and a probability value of 0.1413 which is statistically insignificant.

**7.3.8 External Debt from Bilateral Creditors (EXTDBB)**

External Debt from Bilateral Creditors recorded regression coefficient of 0.028410 with a t-statistics value of 2.218839 and a probability value of 0.0413 which is statistically significant. This implies that External Debt from Bilateral Creditors has a positive and significant relationship with human development index

This model tests the effect of external debt services on human development index. The summary of the result of model three is presented in table 6.

**Table 6:** Summary of OLS for Model Three

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 0.310584 | 0.055914 | 5.554644 | 0.0000 |
| EXTDS | -0.015749 | 0.006919 | -2.276341 | 0.0310 |
| EXR | 1.39E-05 | 0.000243 | 0.057323 | 0.9547 |
| INFR | 0.000724 | 0.000731 | 0.990086 | 0.3309 |

| | | | |
|---|---|---|---|
| R-squared | 0.509589 | Mean dependent var | 0.456452 |
| Adjusted R-squared | 0.421766 | S.D. dependent var | 0.072597 |
| S.E. of regression | 0.068034 | Akaike info criterion | -2.417714 |
| Sum squared resid | 0.124972 | Schwarz criterion | -2.232684 |
| Log likelihood | 41.47457 | Hannan-Quinn criter. | -2.357399 |
| F-statistic | 2.386482 | Durbin-Watson stat | 1.635116 |
| Prob(F-statistic) | 0.091094 | | |

Source: Computation from E-view Version 8.0

From table 6 above, it can be observed that the regression line has a positive intercept as of 0.310584 which is statistically significant at 0.05%. The coefficient of determination ($R^2$) is 0.509589, which shows that the explanatory power of the variables is within average. The F-statistic value of 2.386482 and a probability value of 0.091094 shows that there is significant impact between the dependent and independent variables in the model at 10% level of significance. The Durbin-Watson Statistics value of 1.635116 shows that the variables in the model are not autocorrelated and that the model is reliable for predications.

### 7.3.9 External Debt Servicing (EXTDS)
External debt servicing has a negative regression coefficient of -0.015749 with a t-statistics value of 2.276341 and a probability value of 0.0310. This implies that a unit increase in external debt servicing will bring about 0.015749 decrease in human development index in Nigeria. This implies that external debt servicing has a significant negative effect on human development index in Nigeria.

### 7.3.10 OLS Regression Result for Model Four
This model analyzed the effect of external debt service outlets to each of the creditors (Paris Club, Multilateral, London Club and Bilateral Creditors) on HCD. The summary of the result of model four is presented in table 7.

Table 7, revealed that the regression line has a negative intercept as of -1.966508 which is statistically significant at 0.05. The coefficient of determination ($R^2$) is 0467210, which shows that the explanatory power of the variables is below average. The F-statistic value of 3.726870 and a probability value of 0.023561 shows that there is significant relationship between the dependent and independent variables in the model. The Durbin-Watson Statistics value of 1.714065 shows that the variables in the model are not autocorrelated and that the model is reliable for predications.

### 7.3.11 External Debt Services to Paris Club (EXTDSP)
External debt services to Paris Club has a positive regression coefficient of 0.024685 with a t-statistics value of 0.865227 and a probability value of 0.3990 which is insignificant. This implies that external debt services to Paris Club has no significant effect on human development index.

**Table 7**: Summary of OLS for Model Four

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | -1.966508 | 0.719288 | -2.733966 | 0.0141 |
| LEXTDSB | 0.029809 | 0.027625 | 1.079041 | 0.2956 |
| LEXTDSL | 0.126764 | 0.038324 | 3.307660 | 0.0042 |

| | | | | |
|---|---|---|---|---|
| LEXTDSM | 0.018633 | 0.106789 | 0.174482 | 0.8635 |
| LEXTDSP | 0.024685 | 0.028531 | 0.865227 | 0.3990 |
| R-squared | 0.467210 | Mean dependent var | | -0.845430 |
| Adjusted R-squared | 0.341847 | S.D. dependent var | | 0.179121 |
| S.E. of regression | 0.145315 | Akaike info criterion | | -0.823109 |
| Sum squared resid | 0.358980 | Schwarz criterion | | -0.575145 |
| Log likelihood | 14.05420 | Hannan-Quinn criter. | | -0.764696 |
| F-statistic | 3.726870 | Durbin-Watson stat | | 1.714065 |
| Prob(F-statistic) | 0.023561 | | | |

Source: Computation from E-view Version 8.0

### 7.3.12 External Debt Services to Multilateral (EXTDSM)
External Debt Services to Multilateral has a regression coefficient of 0.018633 with a t-statistics value of 0.174482 and a probability value of 0.8635 which is insignificant. This implies that external debt services to multilateral creditors have no significant effect on human development index.

### 7.3.14 External Debt Services to London Club (EXTDSL)
External Debt Services to London Club has a positive regression coefficient of 0.126764 with a t-statistics value of 3.307660 and a probability value of 0.0042 which is statistically significant. This implies that external debt services to London Club have a significant effect on human development index.

### 7.3.15 External Debt Services to Bilateral Creditors (EXTDSB)
External debt services to bilateral creditors has a regression coefficient of 0.029809 with a t-statistics value of 1.079041 and a probability value of 0.2956 which is statistically insignificant. This implies that external debt services to bilateral creditors has an insignificant effect on human development index.

## 8 Conclusions
The study concludes that developing countries including Nigeria are encouraged to seek for external financing to augment their domestic resources for project financing. It is however expected that these borrowed funds should be channeled to priority projects that have the capacity to generate enough income to redeem the debt servicing obligations and also free resources for improvement in the nation's health care, education, reduction in unemployment and ultimately improvement in the standard of living of an average citizen.

The Nigeria situation is however worrisome for in spite of the nations exit from the Paris and London club that consequently trimmed her external indebtedness to N451 billion in 2006, the penchant for borrowing made the debt stock to rise in five years from N690 billion in 2010 to N2.111 trillion in 2015, translating to 206.09% increase for the period and an annual average increase of 41.22%. Within the same period, HDI (Human Development Index) increased from 0.50 point in 2010 to 0.53 point in 2015, representing 6% increase and an annual average increase of 1.2% within the period.

The wide differential in the two indices suggests that the human factor has indeed not benefited from the over bearing commitment in external borrowing which also requires enomous resource commitment in terms of debt service. Confirming this scenario, the analyses above gave credence to the fact that external debt stock (C= -0.038, P=-0.0005) and its servicing conditions (C=-0.016, P=0.0310) made significant negative contributions to human factor development. In spite of its posture as a mono-product economy, the country seems to be reluctant in resource based diversification programmes like industrial revolution, human resource development, infrastructural development, etc.

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Consequently, the spate of unemployment among the youths increases at a worrisome rate yearly with its ugly implications like restiveness, crime, premature death, etc.

The study recommends that feasibility studies should precede any request for funds that require external or internal financing and both levels of government should create project monitoring units that will supervise the projects regularly and involve the communities where the projects are sited in the monitoring exercise.

Both the federal and state government should embark on industrial revolution and provide sites for both private and government participation. The power sector should be made functional to provide uninterrupted power supply. The government should trim down her recurrent expenditure even if it means closing down or reactivating institutions that are not productive. The road network should be improved both in the urban and rural areas to open access to every community.

Youth restiveness should be addressed by opening institutions that will make them productive, including providing training and development, interest free loans, scholarships etc.

Externally sourced funds should be denominated in currencies that do not enjoy stringent fluctuation dynamics as the US Dollar.

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