Effects Of Public Expenditure On Economic Development In Nigeria (1987 - 2021)

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ABSTRACT

This study examined the effect of public expenditure on human capital development in Nigeria. The study specifically examined the effect of public expenditure in administration on human capital development in Nigeria; effect of public expenditure in economic services on human capital development in Nigeria, effect of public expenditure in social and community services on human capital development in Nigeria and effect of public expenditure in transfer of payment on human capital development in Nigeria. The study adopted Ex-post facto research design and multiple linear regression model. Annual data for the period 1987-2021 collected from the Central Bank of Nigeria Statistical Bulletin was analyzed using Ordinary Least Square estimation techniques and Eview 9.0 econometric software. The study found that public expenditure in administration has significant effect on human capital development in Nigeria; public expenditure in economic services have significant effect on human capital development in Nigeria, public expenditure in social and community services have no significant effect on human capital development in Nigeria and public expenditure in transfer of payment has significant effect on human capital development in Nigeria. The implication of the findings is that public expenditure in social and community services has not translated to improved human development index in Nigeria. Another implication of the finding is that public expenditure of the government even though it has witnessed increasing dimensions in principle over the period under review; but in practice, its effects has not reflected on the indices of human capital development in Nigeria. It was concluded that public expenditure in transfer payment, administration and economic services significantly affect human development index in Nigeria. The study recommended that Nigeria needs to increase its spending from its current very low levels; there should be an increase in the annual investments in the education and health sectors to at least 10% to 15% of the total budget, there is an urgent need to significantly increase the level of fiscal revenues to fund the public spending needed to deliver critical public services and the government is encouraged to allocate funds to its best uses and strictly monitor these processes from budgetary to execution.

Keywords:*Public expenditure, Economic services, Human capital development, Social and community services*

I. INTRODUCTION

Background of the Study

Government expenditure remains an essential instrument deployed in the process of development. It plays a pivotal role in the functioning of any economy at almost all stages of growth and development. Many scholars have supported the fact that increases in government expenditure on socio-economic and physical infrastructures encourage economic development. For instance, studies conducted by Abu and Abullahi (2010), Al-Yousif (2000), Abdulla (2000) and Cooray (2009) all concluded that expansion of government expenditure

induces economic development. Their studies simply suggest that government expenditure on health and education raises the productivity of labour and increases the growth of national output. Similarly, expenditure on infrastructure such as roads, communication, as well as power reduces costs, increases private sector investment and profitability of firms, thus fostering economic improvement (Abu, 2010). This has given rise to massive increases in government expenditure in order to achieve economic growth and development.

Experience in Asian countries has shown that as expenditure is increasing, the economy is growing in leaps and bounds not just in terms of GDP growth as reflected in figures but also in the life of an average citizen, as in consonance with the theories of public sector growth, but unfortunately Nigeria is an exception in this regard in spite of the steady increase in the size of government expenditure. Table 1 below reflects the increases in government expenditure in Nigeria and GDP per capita.

Table 1: Public Expenditure and GDP per capita in Nigeria

Year	GDP per capita	Public Exp. (₦'b)
2016	543.59	5,858.56
2017	593.79	6,456.70
2018	650.64	7,813.74
2019	716.38	9,714.65
2020	740.53	10,231.73
2021	825.10	12,164.15

Source: Trading Economies Historical Data, 2022

From Table 1 above, it can be seen that public spending in Nigeria increased by almost 285% between 2016 to 2021 whereas GDP per capita which relates growth in GDP to the people trickled by average of 7.31 % in Nigeria. The begging question, therefore, is: Why does a 285% increase in expenditure generate only 7.3% GDP per capita in Nigeria? It appears that these increases in government expenditure have not really reflected in the Life of an ordinary man in the street.

Although statistics have recorded some level of growth for the country under study by way of the GDP figures, given the theoretical assumption as well as empirical postulation of a significant and positive relationship between government expenditure and economic development, one would expect the recorded increase to translate to more job opportunities, access to affordable health care, and an improvement in the quality of life of the people. It has, therefore, become worrisome that the massive funds expended by public fund managers do not translate to tangible improvement in the well-being of the people. Impressive GDP growth rates in Nigeria have not translated into the elimination of hunger and malnutrition and creation of jobs (Helen, 2011).

The basic objective of development as Haq (1990) captured in the first Human Development Report "is to create an enabling environment in which people can enjoy long, healthy and creative lives". Nwezeaku (2010) rightly pointed out, poverty, unemployment and inequality are indeed incontestable indices to measure whether development has taken place in any economy. In other words, if any one or two or even the three mentioned variables are static or deteriorating, it would be incorrect to assert that economic development has taken place even if per-capita income had increased or doubled.

Human Development has become prominent and is one of the most important variables to check effective growth of a system. There is a direct linkage between growth of an economy and Human Development of the same economy. Human Development is the situation whereby individuals are allowed or given leverages to make choices, positive choices to increase the level of their total well-being. Kubalu et al (2017) opined that the social development of every society is very critical but political entities in the world especially in less developed countries like Nigeria do not invest much of the annual budget on social development which is critical to Human Development. Most times researchers try to examine growth in terms of constant increasing GDP (gross domestic product) annually while they ignore the Human Development of the citizens in the society. Adelakun (2011) further wrote that society depends on the society's increase in productivity levels as its major source of output which is measured per capita.

Nigeria is a constantly growing nation in the place of human resources. The nation is the most populous

African nation with abundant natural resources. Adelakun (2011) argues that despite the abundant resources in Nigeria both in human resources and natural resources, the country has been unable to reach the level it should be. The health system is impoverished, security levels is alarming, education is constantly declining. Omolara (2017) opined that the performance of the Human Development indicators in Nigeria is so alarming compared to the indicators with other developing countries.

Human capital is an important factor for the wealth of a Nation due to its influence on the overall production of the Country. Technological progress can provide more efficient production methods like Machines and Computers, but skilled labour is necessary to manage and develop them as well as to improve the quality and productivity of the existing labour. The formation of Nigeria's human capital is therefore of great importance in the coming years if Nigeria wants to be competitive in the future.

The Human Development Index (HDI) provides a measure of Human Capital Development in three dimensions: Income, Health and Education. HDI (2010) showed that Nigeria is ranked 156 with the value of 0.459 among 187 countries. The value places Nigeria in the bottom, meaning that Nigeria is considered to have low level of human development.

Statement of the Problem

In the midst of this rising expenditure, available statistics shows that Nigeria still falls among the poorest countries of the world as many of her citizens continue to live in abject poverty. Thus, it becomes increasingly worrisome that this rising public expenditure may not have translated to the desired growth and development in the country.

GDP growth rate for the past decade has been averagely 6-8%, which is above the regional target of 2-3%. Unfortunately, the rate of unemployment is not reducing as poverty rate (evidenced by the number of people living in shanties, with little or no access to quality education, medical care, potable water etc.). This situation contradicts the ever-growing expenditures and the impressive GDP growth rates being recorded. This goes to show that the country has been experiencing Jobless growth because the growth has not translated to more jobs. It also shows that a large proportion of Nigeria's population does not benefit from the expenditures of her government (Akpan, 2005).

The struggles of the ordinary citizens seem to negate the records of GDP growth. It, therefore, suggests that we are either not measuring growth in its true sense or what we are measuring does not capture the true situation of the ordinary citizens. Despite the persistency in prioritizing human development in Nigeria especially in the education and health sector, Nigeria is still ranked poorly in human development.

However, little attention has been paid to human capital development in Nigeria; this is as shown by low government expenditures on health and education and reflected in the Human Development Index. It is seen that government expenditures on health and education in Nigeria are far below these benchmarks. The low investment in these sectors is reflected in the poor state of existing infrastructures, lack of modern equipment and infrastructures in these sectors, continuous outcry of workers on non-payment of salaries, and other enumerations, resulting in the low overall performance in these sectors. Nigeria was placed in 158th position out of 182 countries on United Nations Development Program report (2009).

Objectives of the Study

The broad objective of this study is to examine the effect of public expenditure on human capital development in Nigeria. The specific objectives of the study were as follows:

1. To examine the effect of public expenditure in administration on human capital development in Nigeria.
2. To determine the effect of public expenditure in economic services on human capital development in Nigeria.
3. To ascertain the effect of public expenditure in social and community services on human capital development in Nigeria.
4. To investigate the effect of public expenditure in transfer of payment on human capital development in

Nigeria.

Research Questions

The following questions were put forward in this study:

1. To what extent does public expenditure on administration affect human capital development in Nigeria?

2. To what extent does public expenditure on economic services affect human capital development in Nigeria?

3. To what extent does public expenditure on social and community services affect unemployment human capital development in Nigeria?

4. To what extent does government expenditure on transfer of payment affect human capital development in Nigeria?

Research Hypotheses

The following null hypotheses were formulated to guide the study:

$H0_1$: There is no significant effect of public expenditure in administration on human capital development in Nigeria.

$H0_2$: There is no significant effect of public expenditure in economic services on human capital development in Nigeria.

$H0_3$: There is no significant effect of public expenditure in social and community services on human capital development in Nigeria.

$H0_4$: There is no significant effect of public expenditure in transfer of payment on human capital development in Nigeria.

Scope of the Study

The study covered the period of 35years (1987 – 2021). The reason for selecting this period is to comprehensively capture the effect of government expenditure on human capital development in Nigeria during the post-Structural Adjustment Programme era (1987-2021).

The study covered all the conventional classification of public expenditure in Nigeria - Administration, Economic Services, Social and Community Services and Transfers as well all the major indices of economic development. The essence is to have a comprehensive view of the effect of public expenditure on human capital development in Nigeria.

II.   REVIEW OF RELATED LITERATURE

Conceptual Review

Public Expenditure

Government expenditures are also called public sector spending or government purchases. Government expenditure has been growing over the years and is very large. Therefore, the determination of the size of the public sector is done by dividing the total expenditures of government by the total national output (GDP).

According to Bingilar and Oyadonghan (2020), government expenditure is the government's costs for providing and maintaining itself as an institution, the economy, and society. Public expenditure refers to all expenses made by the government of any country on the satisfaction of the needs of her citizens. Therefore, government expenditure is incurred by public authorities like central, state, and local governments to satisfy the collective social wants of the people.

Composition of Public Expenditure in Nigeria

Mogdali (2001), public expenditure are money expended by a government to pay for defense, development projects, education, health, infrastructure, maintenance of law and order, agriculture, housing, transport wages/salaries as well as other expenses incurred in pursuance of the socio-economic goal of the country. Composition of public expenditure means the systematic arrangement of items on which the government makes expenditure in Nigeria. It is discussed here under the following sub headings:

i.   Public expenditures on Administration

The public expenditures on administrative category comprises general administration, defense, internal security and national assembly.

ii.   Public expenditures on Social and Community Services

This consists of government expenditures on health, education and other social and community services. Therefore, this session plays a critical role in deciding the level of human capital development in Nigeria.

iii.   Public expenditures on Economic Services

Government expenditures on agriculture, road and construction, transport and communication and other economic services are grouped in this category.

iv.   Public expenditures on Transfers

This includes public debt servicing (including domestic and foreign), pension and gratuities, FCT/other CFR charges, contingencies and subventions (CBN, 2020).

Human Capital Development in Nigeria

It is believed that significant investment in human capital is compulsory if a nation seeks to attain economic development. This is because human capital constitutes the most valuable resource of a country; in its absence, there will be the non-performance of physical capital (tools, machinery, and equipment) which will impede economic growth (Jaiyeoba, 2015).

Nigeria was rated 10th out of 10 developing countries selected in that report. The human development index (HDI) report of 2011 showed that Nigeria ranked 156 with a value of 0.459 among 187 countries, while in 2013, Nigeria ranked 153 with a value of 0.471 among 187 countries. The United Nations Development Programmes (UNDP) 2019 report placed Nigeria in the 158th position underneath the low Human Development category (UNDP, 2021). Between 2005 and 2019, Nigeria's HDI value increased from 0.465 to 0.539, an increase of 15.9 %. The 2020 ranking maintained the country's low human development category positioning it at 161 out of 189 countries and territories (UNDP, 2021).

Human Development Index (HDI)

Biswas and Caliendo (2007) opined that the HDI assesses how well countries are doing in terms of non-income measures. It calculates the simple average of life expectancy, education and GDP indexes. The link between economic growth and Human Development can only be sort out in comparison of basic life indexes for more detailed information which cannot be gotten in studying yearly gross domestic product (GDP)

Graham (2010) wrote that HDI provides an opportunity for the international development community to reevaluate the ways by which welfare is measured and human progress. Graham defined it as a simple statistic of life expectancy, education and per capita indicators which are used to rank countries based on Human Development. .

HDI is a three-dimensional tool used in measuring Human Development. Kovacevic (2011) and Graham (2010) opined that HDI was conceived using three basic dimensions and they are; longevity (long and healthy life), education (knowledge) and living standards (a decent standard of living).

Empirical Review

Anaele and Nyenke (2021) examined the effect of fiscal policy on misery index in Nigeria from 1981 to 2018. The fiscal policy variables such as capital expenditure, recurrent expenditure and external debt were used. Direct policy was coded zero (0) while indirect or market based policy was coded one (1). Misery index was measured by the sum of unemployment, inflation and lending rates less growth rate of real GDP per capita. This study adopted the ordinary least square method of regression analysis. From the results of the analysis, it was shown that capital expenditure, recurrent expenditure and external debt conformed to the Keynesian theory of government expenditure. That is, increase in government capital expenditure and recurrent expenditure reduced misery index in Nigeria in the current period. It implies that rising external debt in current period worsened misery index in Nigeria. The analysis further revealed that the fiscal policy alone under the current regime of market based policy performed poorly in tackling economic misery in Nigeria due to the fact that it is insignificant.

Atan and Effiong (2021) investigate the influence of government activities on inflation in Nigeria from 1991 to 2019. The study utilized the Augmented Dickey-Fuller unit root test, Bounds test for cointegration, and the error correction model. The results indicated that government activities do not propel inflation in Nigeria both in the long and short runs. The paper concluded that increased government expenditure in Nigeria is still needed as it is not inflationary in nature. The reason for this is because the activities of government have not reached the 25% critical limit as set by Collin Clerk.

Olisaji and Onuora (2021) employed the econometrics technique of ordinary least squares to investigate the impact of fiscal policy on the growth of the Nigeria's economy spanning 2015 to 2019. The result revealed the existence of a positive and significant association between companies' income tax and growth of the economy. At the same time, an insignificant and negative association was observed between government expenditure and growth of Nigeria's economy.

With the aid of generalized linear model, Udeze and Obi (2020) examine the impact of fiscal policy on urban unemployment in Nigeria spanning 1981 - 2018. The outcome of the study revealed that capital expenditure and government revenue have helped to reduce urban unemployment in Nigeria. However, recurrent expenditure and fiscal deficit did not exert significant influence on urban unemployment. Also, public debt reinforces unemployment in urban areas in Nigeria during the period under consideration.

Abiodun and Osagie (2018) empirically investigated the impact of educational expenditure on economic growth in Nigeria from 1987 to 2016 using Autoregressive Distributed Lag (ARDL) bound test approach. The findings revealed that recurrent educational expenditure exhibited significant relationship with economic growth. At the same time, capital expenditure on education was insignificant. Generally, the study concluded that the impact of educational expenditure on real GDP is mainly a function of the expenditure type in Nigeria.

Obayori (2016) employed co-integration and ECM methods to investigate the impact of fiscal policy on unemployment rate in Nigeria. The findings revealed that government capital and recurrent expenditure have negative and significant association with unemployment in Nigeria. The result also revealed a long run relationship between fiscal policy and unemployment. The study concluded that fiscal policy is active in reducing unemployment rate in Nigeria.

Omodero and Azubike (2016) used time series data from 2000 to 2015 and multiple regression analysis to appraise education expenditure and economic development in Nigeria. The outcome revealed that education expenditure impacted on the economy meaningfully. While social and community services, as well as enrolment in school revealed a significant association with the economic growth.

Nwosa (2014) employed ordinary least squares technique to examine the impact of government spending on unemployment and poverty rates in Nigeria for the time 1981 - 2011. The result revealed on one hand that government spending has positive and noticeable impact on unemployment. On the other hand, government spending has negative but unimportant impact on poverty rate.

Abomaye-Nimenibo and Inimino (2016) examined the impact of fiscal policy on unemployment rate in Nigeria using data on capital expenditure, recurrent expenditure, tax revenue and unemployment rate sourced from the statistical bulletin of Nigeria's apex bank. The econometrics method of Error Correction Mechanism was employed as the analytical tool. From the analysis, capital expenditure appeared with the right sign i.e., negative and statistically significant at 5% level of significance in reducing unemployment rate in Nigeria. But recurrent expenditure and tax revenue were not statistically significant in reducing Nigeria's unemployment rate.

Theoretical Framework

The theories adopted for the study were Musgrave theory and Wagner's law of increasing state activities.

Musgrave Theory of Public Expenditure Growth

Musgrave (1969) propounded this theory as he found changes in the income elasticity of demand for public services in three ranges of per capita income. He posits that at low levels of per capita income, demand for public services tends to be very low, this is so because according to him such income is devoted to satisfying primary needs and that when per capita income starts to rise above these levels of low income, the demand for services supplied by the public sector such as health, education and transport starts to rise, thereby forcing government to increase expenditure on them. He observes that at the high levels of per capita income, typical of developed economics, the rate of public sector growth tends to fall as the more basic wants are being satisfied.

Wagner's Law of Increasing State Activities

Most notable of the theories of public expenditure is Wagner's law of increasing state activities. Adolph Wagner was a German economist who lived in the period 1815-1917. He based his law of increasing state activities on historical facts in Germany. According to him, different layers of government tended to increase their activities both intensively and extensively. A functional relationship between the growth of an economy and government activities is observed, showing that the government sector grows faster than the economy. This means that as the economy developed, government tended to spend more in the quest for industrialization and social development as observed by Bhatia (2002) and Gujarati (2013).

This was the crux of Wagner"s law which posited expenditure to be positively correlated to the level of economic growth and development. The theories try to find out a positive relationship between government spending and national income and or a unidirectional growth. The Wagner"s theory is appreciated because in many ways it attempts to explain the relationship between public expenditure and economic growth. Its short coming is in the inherent assumption of viewing the state as separate entity capable of making its decisions ignoring the constituents populace who in actual fact can decide against the situates of the Wagner law. (Muthui et al, 2013).

III. METHODOLOGY

Research Design

This study shall adopt *Ex-post facto* research design. Onwumere (2009) states that *Ex-post facto* research design is the type of research involving events that have already occurred.

Sources of Data

Time series data was sourced from Central Bank of Nigeria Statistical Bulletin and the Federal Office of Statistics for the period under review.

Model Specification

The study adopted multiple regression model to express the relationship between public expenditure and economic development.

First, the functional relationship was expressed as follows:

HDI = f(PubExp) … (1)

Where;

HDI = Human Development Index (Dependent variable), PubExp = Public Expenditure (independent variable) was measured based on the government expenditures in administrative (PEOA); economic services (PEES), social and community services (PESC) and transfers (PEOT) in Nigeria. The linear relationship was expressed in the multiple linear regression model specified bellow:

$HDI_t = \beta_0 + \beta_1 PEOA_t + \beta_2 PEES_t + \beta_3 PESC_t + \beta_4 PEOT_t + \mu_t$ … (2)

Where;

HDI = Human Development Index; PEOA = Public Expenditure on Administration, PEES = Public Expenditure on Economic Services; PESC = Public Expenditure on Social and Community services; PEOT = Public Expenditure on Transfers; β_0 = constant term; μ_t = error term, $\beta_1, \beta_2, \beta_3$ and β_3 are the coefficients of the parameter estimate.

Method of Data Analysis

Data for this study was analyzed using descriptive tests, diagnostic tests and multiple regression tests. Descriptive statistical test was performed to determine the characteristics of the dependent and independent variables. Correlation test was used to determine the sign and strength of the relationship between the dependent and independent variables. Multiple regression test was performed to examine the level of significance of the relationship between the dependent and independent variables. E-views 9.0 software was used for data analysis. The decision rule was to accept the null hypothesis if t-stat < 2.000 or P-value > 0.05, otherwise reject it and accept the alternative hypothesis. The data gathered were subjected to various econometric tests, sing E- views 9.0 versions.

IV. RESULTS

Stationarity Tests

In order to carry out the tests captured in the table below, it is assumed that the series of the various variables possess an intercept but no trend. As a rule once the ADF statistic is greater than the critical value at any chosen level of significance we reject the null hypothesis and that implies that the data series are stationary.

Table 1: Stationarity Tests Result.

Variables	ADF statistic	Level of significance	Lagged difference	Critical value	Order of integration	Assumption
LHDI	-5.148492	1%	2	-3.653730	I(0)	intercept
LPEES	-4.283881	1%	8	-3.711457	1(0)	intercept
LPEOA	-8.041737	1%	1	-3.646342	1(1)	intercept
LPEOT	-6.941786	1%	1	-3.646342	1(1)	intercept
LPESC	-7.126077	1%	1	-3.646342	1(1)	intercept

Source: E-views 9.0 Econometric Package.

The result in table 1, HDI and PEES are stationary at level, while the variables PEOA, PEOT and PESC are all stationary of the first difference, but the variable GNI is stationary at second difference. This signifies that Human Development Index and Public Expenditure on Economic Services are of order 0 {i.e. I(0)}, whereas Public Expenditure on Administration, Public Expenditure on Transfer, Public Expenditure on Social and Community Services and Poverty Rate are of order 1 {i.e. I(1)}. All the variables were significant at 1% level of

significance.1%.

Johansen Cointegration Test

The essence of this test is to establish the presence of a short or long-run equilibrium existing between the variables, hence the various estimated regression equation results. The co-integration test result was shown in the table 2 below.

Table 2: Johansen Co-integration Test for the model
$$HDI_t = \beta_0 + \beta_1 PEOA_t + \beta_2 PEES_t + \beta_3 PEOT_t + \beta_4 PESC_t + \mu_t$$

Variables	Eigenvalue	Trace statistics	5% critical value	Probabities	Hypothesis no of ce(s)
LHDI	0.728731	95.96852	69.81889	0.0001	None*
LPEES	0.568130	52.91526	47.85613	0.0155	At most 1*
LPEOA	0.386614	25.20749	29.79707	0.1542	At most 2
LPEOT	0.205311	9.078391	15.49471	0.3582	At most 3
LPESC	0.044288	1.494858	3.841466	0.2215	At most 4

From table 2, it was observed that the null hypothesis of no co-integration for HDI and PEES are rejected because their trace statistic are greater than their critical values at 5% level of significance. The null hypothesis of no co-integration for the other variables cannot be rejected at 5% level of significance because their trace statistic are less than their critical values. There are three co-integrating equations at 5% level of significance. It then means that there is long run relationship between Human Development Index and other explanatory variables.

Table 3: Correlation Matrix

	LPEES	LPEOA	LPEOT	LPESC
LPEES	1.000000			
LPEOA	0.469000	1.000000		
LPEOT	0.327446	0.372864	1.000000	
LPESC	0.460442	0.591671	0.471972	1.000000

The correlation matrix (table 3) showed that there is a moderate positive correlation between index of public expenditure on economic services (PEES) and public expenditure on social and community services (PESC). There is a weak positive correlation between the index of public expenditure on economic services (PEES) and public expenditure on transfer (PEOT). There is also a weak positive correlation between the index of public expenditure on administration (PEOA) and public expenditure on transfer payment (PEOT). There is a moderate positive correlation between the index of public expenditure on administration PEOA) and expenditure on social and community services (PESC).

Estimated Model

Having verified the existence of long-run relationships among the variables in our model. The model was subjected to ordinary least square (OLS) and the Newey-West method was adopted in order to hedge against the consequences of autocorrelation and heteroskedasticity on the standard errors and t-values. The result is presented as follows in table 4.

Table 4: Summary of Regression Result for Human Development Index

	CONSTANT	LPEES	LPEOA	LPEOT	LPESC
Dependent Variable: LHDI					
Method: Least Square					
Sample: 1987 – 2021					
Coefficient	-0.547758	0.050987	-0.097549	0.135084	-0.006411
Std. Error	0.025501	0.017599	0.039172	0.023093	0.030512
T-statistic	-21.47958	2.897181	-2.490257	5.849615	-0.210124
Probability	0.0000	0.0070	0.0185	0.0000	0.8350
R-Squared = 0.871293			Adjusted R-squared = 0.854132		
F-statistic = 50.77187			Durbin Watson = 1.869738		
Prob (F-stat.) = 0.000000			S.E of regression = 0.020897		

Source: E-views 9.0 Statistical Package.

The estimated model can be expressed in mathematical form as follows:

LHDI = -0.547758104513 + 0.0509868344457*LPEES - 0.0975492024337*LPEOA + 0.135084231879*LPEOT - 0.00641130984025*LPESC

For this model, F_{cal} > the critical value of 2.911, so we reject H_0 and accept H_1 and conclude that the explanatory variables are statistically significant. The explanatory variables jointly influence the dependent variable (LHDI). The probability of the calculated F being 0.000000 is also less than 0.05 significance level which signifies that the model is statistically significant.

Table 5: Summary of t-statistic for Model

Variables	t-calculated	Critical value	Conclusion
C	-21.47958	±2.040	REJECT H_0
LOGPEES	2.897181	±2.040	REJECT H_0
LOGPEOA	-2.490257	±2.040	REJECT H_0
LOGPEOT	5.849615	±2.040	REJECT H_0
LOGPESC	-0.210124	±2.040	ACCEPT H_0

The index of the public expenditure on economic services (PEES), expenditure on transfer (PEOT), and expenditure on administration (PEOA) from table 5**,** indicates that these variables have significant effect on human development index. The absolute values of PEES, PEOA and PEOT are greater than the critical value of ±2.040. This was depicted in their high probability values. But expenditure on social and community services (PESC) is not statistically significant because its absolute value (-0.210124) is less than the critical value.

A Priori Expectation and Coefficients
Table 6: The Expected and Obtained Signs of the Parameters Estimate

REGRESSORS	EXPECTED SIGN	OBTAINED SIGN	REMARK
PEES	+	+	Conforms
PEOA	+	-	Does not conform
PEOT	+	+	Conforms
PESC	+	-	Does not conform

From table 6, the index of public expenditure on economic services and public expenditure on transfer payment conformed to a priori expectation. Other variables such as expenditure on administration and expenditure on social services did not conform to their a priori expectation. Also, all the regressors are inelastic (i.e. elasticity less than 1). This is based on the fact that the estimated coefficients of the regressors are less than unity. Therefore, changes in any of these variables (regressors) will command less than proportionate response to human

development index. This implies that a unit change in these variables will prompt a less than one unit change in human development index.

One percent increase in public expenditure on economic services and public expenditure on transfer will increase human development index by 0.05% and 0.14% respectively. Conversely, an equal percentage rise in public expenditure on administration and expenditure on social and community services will warrant a 0.10% 0.01% respectively fall in human development index.

Test of Research Hypotheses
Tables 4 and 5 were used for test of hypotheses

Test of Hypothesis One
$H0_1$: There is no significant effect of public expenditure in administration on human development index in Nigeria.

HA_1: There is significant effect of public expenditure in administration on human development index in Nigeria.

The findings reveal that in Nigeria the relationship between public expenditure in administration and human development index is negative. This is different from our expectation. The relationship does not conform to the a priori expectation, revealing that when expenditure on administration increases, the human development index will decrease. The coefficient shows that a percent increase in expenditure on administration will result in a 0.1% decrease in human development index. There is also an existence of long run relationship between index of public expenditure in administration and human development index as confirmed from the co-integration test. The t-test indicates a significant effect of the expenditure in administration on human development index. Therefore, we reject the null hypothesis and accept the alternative hypothesis and conclude that there is a negative and a significant effect of expenditure in administration on human development index in Nigeria.

Test of Hypothesis Two

$H0_2$: There is no significant effect of public expenditure in Economic Services on human development index in Nigeria.

HA_2: There is significant effect of public expenditure in Economic Services on human development index in Nigeria.

The result showed that public expenditure in economic services is inelastic and also has a positive relationship with human development index, and this not conforms to its a priori expectation. Consequently, a percent increase in expenditure in economic services, will lead to 0.05% increase in human development index. The t-test reveals that public expenditure in economic services contributes significantly to human development index in Nigeria. Based on the outcome of the t-test, we reject the null hypothesis and accept the alternative hypothesis and conclude that public expenditure in economic services has a significant effect on human development index in the Nigerian economy.

Test of Hypothesis Three
$H0_3$: There is no significant effect of public expenditure in social and community services on human development index in Nigeria.
HA_3: There is significant effect of public expenditure in social and community services on human development index in Nigeria.

From the result of the analysis, it was discovered that public expenditure in social and community services have negative relationship with human development index. |This does not conform with the a priori expectation. It means that increase in public expenditure in social and community services decreases human development index. Thus, one percent increase in public expenditure in social and community services increases human development index by 0.01%. As deuced from the co-integration test, there is a long run relationship existing between public expenditure in social and community services and human development index in Nigeria. The t-test reveals that there is no significant effect of public expenditure in social and community services on

human development index. We therefore accept the null hypothesis and conclude that there is no significant effect of public expenditure in social and community services on human development index in Nigeria.

Test of Hypothesis Four

H0$_{4b}$:   There is no significant effect of public expenditure in transfer of payment on human development index in Nigeria.

HA$_{4b}$:   There is significant effect of public expenditure in transfer of payment on human development index in Nigeria.

The result reveals that there is a positive relationship between expenditure in transfer payment and human development index in Nigeria. This conforms with its a priori expectation. Consequently, a percentage rise in expenditure in transfer payment will lead to an increase in human development index by 0.14%. A long run relationship exist between both variables as confirmed from the co-integration test.

The t-test confirms that expenditure in transfer payment has a significant effect on inflation. This leads to the rejection of the null hypothesis and acceptance of the alternative hypothesis. Consequently, we conclude that there is a significant effect in transfer payment on human development index during the period of this study.

V.   DISCUSSION
Effect of Public Expenditure on Human Development Index in Nigeria

The model (equation 2) showed the relationship between public expenditure and human development index. None of the variables is statistically significant. The Human Development Index (HDI) is a summary measure of achievements in three key dimensions of human development: a long and healthy life, access to knowledge and a decent standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions.

The index of the public expenditure on economic services (PEES), expenditure on transfer (PEOT), and expenditure on administration (PEOA) in tables 4 and 5, indicated that these variables with p-values (0.0070, 0.0185 and 0.0000) and t-values (2.897181, -2.90257 and 5.89615) respectfully have significant effect on human development index. Public expenditure on social and community services (PESC) with p-value of 0.8350 and t-value of -0.21012 has no significant effect on human development index in Nigeria.

Public expenditure in economic services and transfer payments responded positively to human development index. They complied with the a priori expectation but expenditure in administration and social and community services responded negatively. A country with high physical growth which is not followed by high levels in Human Development will one day find out that their growth will eventually be unsustainable. Omolara (2017) opined that the performance of the Human Development indicators in Nigeria is so alarming compared to the indicators with other developing countries.

This model, with an R-squared of 22.1% has shown that the changes in the explanatory variables taken together, have been able to explain only, 22.1% of the total variations in the dependent variable, gross national income per-capita, thus, leaving about 77.9% to chance occurrence. The estimated regression result is presented thus:

VI.   SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary of Findings

The study found as follows:

i.   The study found that public expenditure in administration with p-value and t-value of 0.0185 and -2.4902257 respectively has negative and significant effect on economic development in Nigeria as proxied by human development index.

ii.   The study found that public expenditure in economic services with p-value and t-value of 0.0070 and 2.897181 have positive and significant effect on economic development in Nigeria as proxied by human development index.

iii. The study found that public expenditure in social and community services p-value and t-value of 0.8350 and -0.210124 have negative but no significant effect on economic development in Nigeria as proxied by human development index.

iv.   The study equally found that public expenditure on transfer of payment with p-value and t-value of 0.0070 and 2.897181 has positive and significant effect on economic development in Nigeria as proxied by human development index.

Conclusion

On the basis of these findings, the study concluded that public expenditure in transfer payment has the highest contribution to human development index and conforms to the a priori expectation. It is also statistically significant even at 1% level of significant. Expenditure in economic services is also statistically significant and also conforms to a priori expectation. But expenditure in administration being statistically significant thwarts human development index.

Recommendations

The study recommended as follows:

1. The study recommended that Nigeria needs to increase its spending from its current very low levels. Despite its vast development needs, Nigeria spends only $220 per Nigerian per year, and at merely 12% of GDP, this is one of the lowest levels of spending in the world.

2. There should be an increase in the annual investments in the education and health sectors to at least 10% to 15% of the total budget.

3. There is an urgent need to significantly increase the level of fiscal revenues, to fund the public spending needed to deliver critical public services.

4. The government is encouraged to allocate funds to its best uses and strictly monitor these processes from budgetary to execution. There is also a need for accountability and transparency in government processes.

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