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Budgetary allocation and social services deterioration in the fourth Nigerian republic (1999 to 2021)

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Abstract

The deterioration in the education and health sectors is alarming and a concern to major stakeholders in Nigeria. This study examined the effect of the budgetary allocation based on 20% United Nations Educational Scientific and Cultural Organization (UNESCO) benchmark for education and 15% 2001 African Union Abuja declaration on the social services deterioration in the fourth Nigerian republic. Specifically, the study examined the effect of budgetary allocation efficiency in education and health sectors on human development index from 1999 – 2021. Corruption perspective index (CPI) and gross national income (GNI) per capita was introduced as control variables. Robust multiple regression analysis was used to analyzed the data. Results revealed that budget allocation efficiency in the education sector has significant negative effect on human development index while budgetary allocation efficiency on the health sector has positive significant effect on human development index. The implication of these findings is that the Nigerian state didn't take education serious or that endemic corruption and budgetary indiscipline has overwhelmed the entire process. We recommend that state of emergency should be declared on education funding to avert further degeneration; funding of health sector should be increased at least to the level of the 2001 Abuja declaration; and increase citizen participation in the budgetary process to address the menace of corruption to foster accountability and transparency.

Keywords: Budgetary allocation, Social services deterioration, Corruption, Human Development Index (HDI), Gross National Income (GNI) per Capita

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1. Introduction

In Nigeria, the social services sectors have been degenerating (Kabiru. 2016; Abada & Ugwunta, 2016; Muhammad & Allahnana 2018), and are faced with numerous challenges as the population of the country grows rapidly (Kabiru. 2016). Education has been relegated at all levels to the dilapidated, decayed, unkempt and congested academic environment in public schools (Oriakhi & Amah, 2014). For instance, the Academic Staff Union of the Universities (ASUU) has embarked on 16 strikes in 23 years of this fourth Nigeria republic wasting a total of 81 academic months due to the FG/ASUU 2009 Memorandum of Action disagreement (**Tolu-Kolawole, 2022**). Resultantly, thousands of Nigerian students are seeking admission to study abroad and in other neighbouring countries like the Benin Republic and Ghana; and the standard and global recognition of certificates issued by Nigerian schools have worsened.

Also, the health sector in Nigeria has suffered from decades of neglect resulting in derisory healthcare centres and personnel, inadequate health facilities and medical equipment, inaccessibility of healthcare services and poor human resource management (Kabiru, 2016), thus endangering the lives of citizens. The cumulative effect of these conditions is that thousands of experienced professionals (Lecturers, Medical Doctors and Nurses) are also leaving the shores of the country in search of greener pastures. This condition certainly impacts negatively on the human development index determined by aggregate achievement in knowledge, long and healthy life and decent living standard of a country (United Nations Development Programme [UNDP], 2022).

Globally, human capital development is treated as a vital component of national development, and quality education and healthcare have been identified as critical indicators (Oriakhi & Amah, 2014; Ewurum *et al.,* 2015; Schultz, 1961; Becker, 1964; Oster *et al.,* 2013 cited in Shuaibu & Oladayo, 2016). Oriakhi and Amah (2014) observed that the quality of citizens both in knowledge and sound health is fundamental to achieving sustainable economic growth and development as enshrined in the sustainable development goals. Gaps in human capacities, skills and creative abilities perpetuate inequalities and poverty (Adedigba, 2017). Therefore, ensuring that citizens have rights to quality education and health services is critical for inclusive social development and requires deliberate efforts and serious investments. For this reason, there is a growing global focus on the need for adequate domestic government expenditure on social services and the education and health sectors attract major attention.

To this end, the government set priorities and allocates resources to respective government goals and objectives through the process of budget. In Nigeria, the approximated average budgetary allocation to education and health sectors is 7% and 5% respectively from 1999 to 2021. Among the E9 countries, Pakistan, Nigeria, Mexico, Indonesia, India, Egypt, China, Brazil and Bangladesh, and D8 countries, Turkey, Pakistan, Malaysia, Iran, Indonesia, Nigeria, Egypt and Bangladesh, only Nigeria allocate less than 20% of its annual budget to education (Mallam, Adamu Adamu in Adedigba, 2017). Also, in April 2001, there is a declaration among the heads of state of African Union countries on funding national health with at least 15% of the annual budget, yet no appreciable commitment has been observed towards this target (World Health Organization [WHO], 2011).

The above evidence can only suggest two scenarios; first, the government didn't take the education and healthcare of the citizen as a top priority. Second, the challenge of allocation inefficiency and budgetary indiscipline has overwhelmed the entire process. Scholars have also tried to investigate the reasons for the continual worsening condition of social services in Nigeria from different perspectives. Most of these studies almost arrived at common findings narrowed down to fiscal and budgetary indiscipline, lack of financial accountability, lack of transparency and public participation resulting in inefficient resource management, endemic corruption among government and public officials, political instability which stems from violence and criminality as well as terrorism among others (Oke, 2013; Olaoye *et al*, 2017; Egbide, 2015; Asogwa, 2013; Abiola, 2015; Olurankinse, 2013, Akinde and Ayeni, 2012).

However, a critical examination of the budgetary allocation to the social services sector in Nigeria particularly, the education and health sectors suggests that funding is one of the root causes of the problem. Budgetary allocation efficiency is achieved from the efficient combination of inputs to attain an optimal combination of outputs (Burnby & Robinson, 2007). It involves assigning resources to programmes based on predetermined priorities (Assian Development Bank [ADB], 2001). But, apart from trend analysis of the budgetary allocation to the education and health sectors, studies examining the effect of the allocation efficiency on the state of the social service sector in Nigeria are scarce or lacking. Hence, the objective of this study is to examine the effect of budgetary allocation on the deterioration of social services in the fourth Nigerian republic (1999 to 2021). However, the specific objectives are to:

1. Examine the effect of budgetary allocation efficiency in the education sector on human capital development of the fourth Nigerian republic.
2. Ascertain the effect of budgetary allocation efficiency in the health sector on human capital development of the fourth Nigerian republic.

2. Literature Review

2.1.1 Budgetary Allocation

The budgetary allocation is the review of the request from ministries, departments and agencies, and the determination and recommendation of what each of them should receive. It is the stock in trade of the central budget office (OECD, 2001), in the Nigerian instance, the Office of Budget and National Planning. The budget

office has the leading role in deciding where increments should be allocated and whether reallocation is necessary because the total requests of ministries, departments and agencies are customarily over available resources. Centralization of budget allocation and reallocation is supported by several arguments such as a broad understanding of the budget objective and strategic government interest and priorities; objectivity in the reallocation process; adequate analysis of future costs of the programme and the guard against evasion of fiscal discipline and so on (OECD, 2001). However, the key issue is to eliminate behaviours that would undermine both aggregate control and the government's capacity to establish programme priorities.

Therefore, the effectiveness of the system depends on its capacity to distribute resources based on the government's priorities and programmes. Accordingly, the effectiveness of budgetary allocation could be assessed by the efficiency of distribution of resources to the goals and objectives which the budget is set to pursue such as quality education and human capacity building, healthy living and promotion of the wellbeing of all citizens, poverty eradication and provision of food security, national security and so on (OECD, 2001). Therefore, budgetary allocation efficiency is the ability of the budget system to assign resources to programmes based on predetermined priorities (Assain Development Bank [ADB], 2001). In line with this thought, (Weihrich and Koontz, (2003); Olomola, (2006) cited in Egbide, (2013) observed that efficiency is a fundamental quality of a sound budgeting system as it measures the extent to which the government attained the targeted objectives as enshrined in the budget with minimum resources.

According to Burnby and Robinson (2007), allocation efficiency is achieved when the optimal combination of outputs is derived from an efficient combination of inputs. It was also observed that allocation efficiency in the public sector is cumbersome because of the problem of preference revaluation and aggregation (ADB, 2001) and lack of articulated tastes or outputs, input costs and welfare measurement, input price distortion and transparency, as well as the validity of production costs value chain (Burnby & Robinson, 2007). However, allocation efficiency could be achieved by increasing public participation in the budgetary processes where citizens' based priorities and feedback to the government are given due consideration (Olurankinse, 2013). Akindele and Ayeni (2012) also argued that when government adopt citizens-based priority rankings for its programmes, projects, services and benefits, the allocation of resources to low-priority items is reduced, and feedback, as well as transparency and accountability, will advance.

i. Budgetary Allocation to Education Sector (1999 – 2021)

Budgetary allocation to education is the proportion of the total annual budget that was assigned to educational services. It measures the percentage of the annual budget that is expendable in the sector in the form of recurrent and capital expenditures in a particular year. Studies that analyzed the trend of budgetary allocation to the education sector noted obvious low allocation (Odigwe & Owan, 2019; Adeoye *et al*, 2020). The average education allocation from 2009 to 2018 is 7% (Odigwe & Owan, 2019) and from 2010 to 2019 is 7.24% (Adeoye *et al*, 2020). This ratio as a percentage of the global benchmark on education reveals the efficiency of the Nigerian state in resource allocation and funding of education. Notably, there is lingering debate on the actual UNESCO benchmark, most studies used 26% of total budgetary allocation (Oriakhi & Ameh, 2014; Matthew, 2016; Muhammad & Allahnana, 2018; Odigwe & Owan, 2019) others used 15% – 20% (Adeboye *et al.,* 2020). But, the Education Minister, Mallam Adamu argued that UNESCO refuted the 26% benchmark (Adedigba, 2017) but seem to agree with the 15% to 20% range. Therefore the current study used 20% as the benchmark.

ii. Budgetary Allocation Efficiency to Health Sector (1999 – 2021)

Budgetary allocation to the health sector is the proportion of the total annual budget that was allocated to healthcare services. It is the ratio of the annual budget that is disbursal in the sector as recurrent and capital expenditures in a fiscal year. Studies that analyzed the trend of budgetary allocation to the health sector observed poor budgetary allocation, precisely 5% (Kareem *et al.*, 2017; Adebisi *et al.*, 2020). These studies regretted that Nigeria has shown no commitment to the Abuja 2001 African Union declaration agreement of 15% annual budgetary allocation to the health sector. Therefore, in this study, the allocation efficiency is measured as the proportion of budgetary allocation to the health sector to the 15% Abuja 2001 African Union declaration.

2.1.2 Social Services Deterioration in Nigeria

Social services are basic services provided by the government to the citizens. The Central Bank of Nigeria (CBN) Statistical Bulletin on public finance for various years classified social services into education and health and other community services. These categories are the structural framework with which budgetary allocation and public expenditure on social services are allocated, implemented and reported. Research on the social service sector has shown that quality education and the healthcare system are vital to national development (Mesagan &

Ezeji, 2016; Kabiru, 2016; Egbewumi, 2017). Evidence from previous studies revealed that over the past decades, these two basic social services sectors in Nigeria have been degraded and degenerated (Kabiru. 2016; Abada & Ugwunta, 2016; Muhammad & Allahnana, 2018), and are faced with numerous challenges as the population of the country grows rapidly (Kabiru, 2016).

The educational sector in Nigeria is bedeviled by a myriad of chronic challenges that resulted in incessant strike actions over the years. For instance, the Academic Staff Union of Universities (ASUU) has embarked on 16 strikes in 23 years of this fourth Nigeria republic wasting a total of 81 academic months due to the FG/ASUU 2009 Memorandum of Action disagreement (**Tolu-Kolawole, 2022**). Another shocking example is the x-ray of the impact of the outbreak of COVID-19 on the education sector. As noted by Adeboye *et al*. (2020), the outbreak of COVID-19 halted all academic activities in Nigeria's public schools while most private schools in Nigeria and schools in other parts of the world swiftly adopted the e-learning option. One would have wondered how Nigeria schools with cramped lecture theatres and overcrowded hostels, even in the secondary levels could curtail the spread of the virus if not for the complete closure of schools. Adeboye *et al*. (2020) regretted that most public institutions in Nigeria have not been able to embrace e-learning platforms to the detriment of Nigerian students, the country's human capital development and national development at large. He noted preparedness in form of huge sustainable infrastructure and internet facilities gap, training of lecturers and students, and crowded population of students in public universities as major problems confronting the adoption of e-learning among other infrastructure challenges.

Like the educational sector, the health sector in Nigeria is confronted by various challenges such as poor infrastructure in the form of specialists in medical matters and laboratory types of equipment, outdated technologies and poor funding (Kabiru, 2016). Adeyinka (2014) cited by Kabiru (2016) averred that the public health care system is grossly inefficient in all aspects despite the media propaganda and health reforms. Ewurum *et al.* (2015) observed that Nigeria is one of the most horrible performers even among the developing countries based on the three indices of healthcare: infant mortality rate, under-five mortality rate and maternal mortality rate. They conclude that this position is impeding the productivity and rate of development of the countries. The life expectancy index of Nigeria in 2021 is 52.7 as against the 69.9 average for developing countries. Resultantly, there has been a mass exodus of professionals, and experienced practitioners in the medical field (Doctors and Nurses) seeking greener pastures in other countries.

The deterioration of the Social Services sector can also be assessed from the position of Nigeria in the global community. In 2021, Nigeria was ranked among the low human development countries below African countries like Angola, Cameroon, Congo, Côte d'Ivoire, Equatorial Guinea, Ghana, Kenya, Morocco, Zambia and Zimbabwe. Nigeria was ranked 163 of the 190 countries in the world. Nigeria's HDI (0.535) is below the average of developing countries (0.685) according to UNDP [HDI] 2021 report. Globally, human capital development is critical for national development and quality education and healthcare services are key determinants (Oriakhi & Amah, 2014; Ewurum *et al.,* 2015). Another strand of literature, Schultz, (1961); Becker, (1964) Oster *et al., (*2013) cited in Shuaibu and Oladayo (2016) noted that early theories of human capital suggested that investment in training and education and sound healthcare services develops human capital. Thus, the human development index (HDI) is the weighted aggregate index of long and healthy life (life expectancy at birth), knowledge or education index measured by the expected average years of schooling and the gross national income per capita (PPP) that is the GNI index. As important as this index is, social services (education and healthcare) are very critical. Therefore, the deterioration of education and health services will greatly impact the HDI of the nation.

2.2 Theoretical Review

This study is anchored on two principal theories: the ***Participatory Budgetary Theory of Change (PB ToC)*** propounded by Carolin Hagelskamp, Josh Lerner, and Nikhil Kumar in 2021 and the ***Theory of Unbalanced Growth*** proposed by Alfred O Hirschman in 1958 and supported by Hans Singer in 1958, Walt Whitman Rostow, 1960 and Fleming, Marcus (1962). According to the participatory budgetary theory of change, desired change for the people, communities and government can only be achieved by understanding the complexity of the daily practices and careful articulation of the four overlapping stages in the participatory budgetary process. This theory assumes that there are four overlapped stages of change in the participatory budgetary system: the inputs, activities, outcomes and impacts. Hagelskamp, Lerner, and Kumar (2021) contend that the input is the most critical component of the participatory budgetary process that shapes the other three stages (activities, outcomes and impacts). These include inputs (money, time, technology and material) and people (political class, civil servants, technical advisers, and civil society groups and community partnerships). Therefore, the efficacy of the inputs will articulate the activities (collecting ideas, developing proposals,

planning, voting, funding winning projects, implementation and monitoring and evaluation); and greatly affect the outcome and the long-run impact.

On the other hand, the ***"Theory of Unbalanced Growth"*** suggests that economic growth is best stimulated through unbalancing investment series that is convergent or divergent. Accordingly, the basic assumption of this theory is that economic investment choices and activities have linkages which induce growth and externalities in the system with imbalances. Hirschman explained that convergent series of investments (***Direct Productive Activities [DP])*** are those investments that appropriate more external economies more than it creates and divergent series of investments (***Social Overhead Capital [SOC])*** create more external economies more than they appropriate. He further stressed that investments in the ***SOC and DPA*** cannot be taken up concurrently in less developed countries, due to the broad-spectrum lack of resources. Therefore, he contends that economic growth could be achieved by deliberately unbalancing investment programs through either ***SOC or DPA.***

These theories are very relevant to this work. Participatory budgeting has been acknowledged as a means of achieving allocation efficiency (ADB, 2001; Olurankinse, 2013). Therefore the former is set to provide the understanding of the complexity in the budgetary process through critical intelligible of the practices of the four overlapping stages that yield the desired changes such as reduction in the allocation of resources to low-priority items, increased government feedback as well as transparency and accountability of the entire process (Burnby & Robinson, 2007; Akindele & Ayeni, 2012); the later revealed the specific investments programs that the policymakers and the government should adopt to generate an imbalance in the economy to spur divergent investment and external economies which will accelerate growth and development in the economy.

2.3 Empirical Review

A good number of studies have tried to establish the nexus between budgetary allocation and human capital development across the globe. For instance, Oriakhi & Ameh (2014) adopted co-integration and the Granger Causality test to show that improved budgetary allocation and spending on the education sector increases educational development and literacy level in Nigeria. Ewurum et al. (2015) showed a long-run co-integrating relationship between government spending on the health sector, improved sanitation facilities (LISF), mortality rate under 5 years and GDP per capita. Abada and Ugwunta (2016) used the regression technique and found a positive insignificant connection between budgetary allocations to the health sector and life expectancy. Mesagan and Ezeji (2016) studied the effect of investment in socio-economic infrastructure on the performance of manufacturing firms in Nigeria using multiple regression techniques. The study found that growth in public spending on electricity generation, electricity consumption; health and inflation negatively affect manufacturing sector value added while growth in both total public and capital spending positively affects manufacturing sector value added the study of Kabiru (2016) examined the impact of poor social infrastructure in the health, education, energy and transportation sectors on national development found that social infrastructure in Nigeria is significantly inadequate to foster national development in Nigeria.

In like manner, Odo *et. al.* (2016) adopted the Cointegration techniques to analyze the relationship between expenditure on education and health in Nigeria. The study found public expenditure on education and health has a significant positive effect on the gross domestic product. Shuaibu and Oladayo (2016) also found health, infrastructure and institutions as potential drivers of human capital development with a stable long-run effect. Another study by Kareem, et al. (2017) showed a positive relationship between recurrent expenditure and capital expenditure on public Healthcare and economic growth in Nigeria from 1981-2013 using the ordinary least square method (OLS) and Augmented Dickey-Fuller. Likewise, Obialor (2017) employed the Cointegration techniques and Vector Error Correction mechanism (ECM) on panel data from Ghana, Nigeria and South Africa from 1980 to 2013 to provide empirical evidence that validated that public spending on human capital, particularly education and health have a significant positive effect of economic growth while literacy ratio (LR) has a positive but insignificant effect.

Recently, a study of the impact of investment in social infrastructure on sustainable development conducted by Ojo and Nwalupue (2019) used a descriptive and survey approach and fathom that the poor state of social infrastructure in Nigeria is caused by poor funding, bad governance and corruption. Imandojemu *et al.* (2020) employed Autoregressive Distributed Lagged Model (ARDL) to examine the determinant of human capital development in Nigeria from 1990 to 2018. The study found that public expenditure on education and health, and life expectancy are positive predictors of human capital development while the fertility rate negative impact on human capital development. The study of Okpalaoka (2021) on the challenges of infrastructure in Nigeria found that continual negligence, wastefulness, corruption and lack of accountability as major factors contributing to the poor state of infrastructure in Nigeria. Onwube et al. (2021) examined the determinant of life expectancy

using the Autoregressive Distributed Lag estimation approach and found real GDP per capita, imports, household consumption expenditure, government consumption expenditure, exchange rate and inflation are strong determinants of life expectancy at birth.

3. Methodology

3.1 Research Design

The study adopted an *ex-post facto* research design as an ideal technique for this study and in steering analysis in business and social sciences based on historical data. The study focused on budgetary allocation and the deterioration of the social services of the public sector in the fourth Nigeria republic 1999 to 2021. Data were sorted from various sources including national health budget analysis (2020), approved budget analysis of various years, and websites of the United Nations, transparency international, and the central bank of Nigeria.

3.2 Model Specification

We adopt and modify the model suggested by Eze *et al*, (2022). The budgetary allocation is the ratio of the amount assigned to a sector to the total value of the annual budget presented mathematically as follows:

Budgetary Allocation Ratio: $BALR = \frac{SBAL}{TABV}$ ..... ***Eq. (1)***

Budgetary Allocation Efficiency: $BALE = \frac{BALR}{SAAB}$ ..... ***Eq. (2)***

$HDI = f(balee\ baleh)$ ..... ***Eq. (3)***

$hdi = \beta_0 + \beta_1\ balee + \beta_2\ baleh + \beta_3\ gni + \beta_4 cpi + \mu$ ..... ***Eq. (4)***

Where:

SBAL = *Sector Budget Allocation*

TABV = *Total Annual Budget Value*

SAAB = *Sector Annual Allocation Benchmark .*

Dependent Variable: hdi = ***Human Development Index***

f = ***Mathematical Function***

Independent Variables:

balee = *Budgetary allocation efficiency to the Education Sector proxies by Budgetary Allocation Ratio of Education Sector scaled by 20% UNESCO benchmark.*

baleh = *Budget Allocation Efficiencies to the Health Sector proxies by Budgetary Allocation Ratio of Health Sector scale by 15% Health Allocation Benchmark*

Control Variables:

gni = *Gross national income (GNI) per capita*

cpi = *Corruption Perspective Index*

3.6 Method of Data Analysis

The study employed robust linear regression techniques to analyze the data. Specific regression diagnostics tests such as Skewness/Kurtosis and Shapiro Wilk 'W' for normality, Variable Inflation Factor (VIF) for multicollinearity, Breusch-Pagan/Cook-Weisberg for heteroskedasticity, Ramsey mis-specification and Durbin-Watson for autocorrelation were conducted.

4. Results

4.1 Analyses

The results as depicted in table 1 show an **R-squared of 0.7867** indicating that the regressors **(*budgetary allocation efficiency in the education sector, budgetary allocation efficiency in the health sector, the GNI per capita and CPI)*** can explain approximately 79% of changes in the regressand **(*human development index*)**. The **F-statistics = *17.47 and Prob.* = *0.0000*** < 0.05 which shows the overall statistical significance of the predictors in the model and reinforces that the 79% explanatory powers of the regressors are statistically significant in explaining changes in the human development index in the fourth Nigerian republic.

Table 1. Test of Hypotheses

Linear regression					***Number of obs 23***						
F(4, 18)	***17.47***										
Prob > F	***0.0000***										
R-squared	***0.7867***										
Root MSE	***0.0997***										
			Robust						Skewness/Kurtosis		Shapiro-Wilk W test
hdi	Coef.	Std. Err.	t	***P>|t|***	[95% Conf.	Interval]	VIF	1/VIF	------joint ------		
									adj chi2(2)	***Prob>chi2***	***Prob>z***
hdi									10.00	***0.007***	***0.000***
balee	-0.57867	0.23926	-2.42	***0.026***	-1.08134	-0.07600	7.30	0.13696	4.43	***0.109***	***0.420***
baleh	1.01107	0.39436	2.56	***0.020***	0.18254	1.83960	7.13	0.14023	11.28	***0.004***	***0.002***
cpi	0.18409	0.09964	1.85	***0.081***	0.02525	0.39342	1.59	0.62822	4.12	***0.127***	***0.003***
gni	0.00004	0.00004	1.00	***0.332***	0.00005	0.00014	1.37	0.72804	5.02	***0.081***	***0.008***
_cons	-0.28605	0.11491	-2.49	***0.023***	0.52747	-0.04464					
heteroskedasticity: chi2(1)		***7.50***				***Mean VIF***	***4.35***				
Prob > chi2		***0.0062***									
Ramsey RESET test: F(3, 15)		***6.59***									
Prob > F		***0.0047***									
Durbin-Watson:		***1.51***									

Source: Stata 14.2 Output

Hence the model equation is restated thus:

hdi = 0.28605 – 0.57567balee + 1.01107baleh + 0.18409cpi + 0.0004gni

The normality tests, Skewness/Kurtosis and Shapiro Wilk 'W' carried out to test the null hypothesis that the data is normally distributed. Given the results as shown in table 1 revealed that all the variables except for budgetary allocation efficiency in the education sector revealed a very significant value at 5% confidence levels. This shows that only budgetary allocation efficiency of the education sector is normally distributed and others are not. For the multicollinearity test, the VIFs of the explanatory variables lie between 1.37 and 7.30 with an average of 4.35 which is less than 5. We, therefore, conclude there is mild multicollinearity in the dataset. In the case of heteroskedasticity which tests the null hypothesis that the model is homoscedastic, that is constant variance, the result shows a Prob>chi2 = 0.0062 < 0.05, which suggests the presence of a heteroskedasticity problem on the dataset. Also, the Ramsey Reset tests using powers of fitted values to test the null hypothesis that the model is over-specified shows the results F (3, 318) = 6.59 with P-value (0.0047) significantly < 0.05. Therefore we reject the null hypothesis and conclude that the model is not over-specified. Finally, The Durbin-Watson statistics is 1.51 which is closer to 2 than 1 indicating the absence of severe positive serial autocorrelation in the time series data.

4.2 Test of Hypotheses

We have two hypotheses in this paper. The hypotheses were stated in two statistical ways, that is, H_0, the null or

negative and H_1, the alternative or positive hypothesis. We used robust multiple regression analysis to test the hypotheses. As noted in Gujarati *et al* (2009), we accept the alternate hypothesis H_1 if the coefficient for the regressors is either positive or negative, the modulus of the t-Statistic > 2.0 and the P-value of the t-Statistic < 0.05. Otherwise, we reject H_1 and accept H_0.

H_0: Budgetary allocation efficiency in the education sector has no significant effect on the human capital development of the fourth Nigerian republic.

H_1: Budgetary allocation efficiency in the education sector has a significant effect on the human capital development of the fourth Nigerian republic.

This hypothesis produced the coefficient β (-0.57567), p-value 0.0246 < 0.05 and z-statistic > |2| at 2.46, therefore we reject the null hypothesis and conclude that budgetary allocation efficiency in the education sector has a significant negative effect on human development index of the forth Nigeria republic. Albeit significant, this result negates the finding of Oriakhi and Amah (2014) who found that budgetary allocation to education contributes significantly to national development. The result of this study also agrees with the outcome of Kasim (2016) who averred that investment in education, health and other social infrastructure is inadequate to boast national development in Nigeria.

H_0: Budgetary allocation efficiency in the health sector has no significant effect on the human capital development of the fourth Nigerian republic.

H_1: Budgetary allocation efficiency in the health sector has a significant effect on the human capital development of the fourth Nigerian republic.

The result of the test regarding the coefficient (β) indicates that a unit change in allocation efficiency in the health sector will increase the human development index by 1.01107 units. Precisely, this variable exhibited a very strong positive influence on the human development index with p-value = 0.020. Since the p-value < 0.05 at 0.020, and z-statistic > |2| at 2.56, we accept the alternate hypothesis and conclude that budgetary allocation efficiency has a significant positive effect on the human development index of the fourth Nigerian republic. The result supports the findings of Ewurum *et al,* (2015) and Abada and Ugwuta (2016) who found the effect of investment in healthcare services on human capital development to be significantly positive.

5.1 Conclusion

The continuous deterioration of the service sectors in Nigeria particularly the education and health sectors has generated a lot of concerns over the last two decades. Many stakeholders have attributed the root causes to poor budgetary allocation and funding, budgetary indiscipline and corruption. Based on this premise, this study examined the effect of budgetary allocation efficiency based on the 20% UNESCO benchmark for the education sector and 15% 2001 Abuja declaration for the health sector on the human development index in the fourth Nigeria republic and fathomed that budgetary allocation to education is significantly affecting the human development negatively while budgetary allocation to health sector contributes significantly to human development index in the fourth Nigeria republic (1999 to 2021). Although the results show that the corruption perspective index has an insignificant effect on the human development index, its effect on national development is endemic. Finally, the Gross national income (gni per capita) a strong measure of a decent standard of living didn't contribute significantly to human development in the fourth Nigeria republic. This is an ugly condition and a big policy challenge for the government going forward.

5.2 Recommendations

1. There is an urgent need to declare a state of emergency in the funding of education in Nigeria in other to foster improvement in the human development index. Improved allocation to the education sector up to the UNESCO 15-20% benchmark will greatly improve the learning standard and will also boast national development.
2. Although the health sector was found to be contributing significantly to the human development index over the years, the government must concert genuine efforts to level up the budgetary allocation to the health sector to the 15% Abuja declaration of 2001 to improve its contribution to the human development index.
3. Increase public participation in the budgetary process to address the issue of corruption, increase accountability and transparency, foster changes and citizen based prioritization.

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