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Effect of Government Education and Agriculture Expenditure on Sustainable Development Goal One

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Abstract

Research Purpose: In the face of rising poverty in Nigeria, understanding the impact of government spending on education and agriculture is crucial for achieving Sustainable Development Goal One (SDG1) - ending poverty in all its forms everywhere. This study examines the effect of government expenditure on education and agriculture on poverty headcount ratio in Nigeria, providing valuable insights for policymakers seeking to effectively allocate resources and achieve SDG1 targets.

Methodology: Employing an ex-post facto research design, this study analyzed 23 years of data (2000-2022) sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin and World Development Indicators. The study utilized Ordinary Least Squares (OLS) Multiple Regression to test the relationship between government expenditure on education and agriculture and the poverty headcount ratio.

Findings: The study revealed that education expenditure had a non-significant negative effect on poverty headcount ratio (p-value = 0.4861, t-statistic = -0.715357). Conversely, agricultural expenditure demonstrated a significant positive effect on poverty headcount ratio (p-value = 0.0329, t-statistic = 2.366469).

Conclusion: While education expenditure had no discernible impact on poverty reduction in Nigeria, agricultural expenditure was found to be significantly correlated with increased poverty. This suggests that current government spending on education may not be effectively targeted or implemented to achieve poverty reduction goals.

Recommendations: To improve the effectiveness of education spending, improvements in educational infrastructure, teacher training, curriculum alignment, technology integration, and scholarship programs are recommended. Furthermore, targeted policies aimed at supporting smallholder farmers, promoting technological adoption, ensuring market access, and investing in research and development are crucial for building a sustainable agricultural sector capable of contributing to poverty reduction in Nigeria.

Key words: *Government Expenditure on Education, Government Expenditure on Agriculture, Sustainable Development Goals.*

1. INTRODUCTION

1.1 Background of the Study

Poverty represents a profound deprivation of human well-being, encompassing both physiological and social aspects. It is a multifaceted problem that transcends economic constraints, including low incomes and the inability to access essential goods and services needed for a dignified life (World Bank, 2010). Additionally, poverty encompasses socio-cultural and political dimensions, making it a significant threat to the economic progress of many nations worldwide. The United Nations (2018) defines poverty as the denial of choices and opportunities, a violation of human dignity. It signifies a lack of the basic capacity to participate effectively in society, which includes not having enough to provide for one's family, lacking access to education or healthcare facilities, and not possessing the means to grow one's food or secure employment.

Eradicating poverty is a global imperative and has been a central focus of international development efforts for years. In September 2015, the United Nations adopted the 2030 Agenda for Sustainable Development, consisting of 17 Sustainable Development Goals (SDGs) aimed at addressing a wide range of socio-economic and environmental challenges (United Nations, 2015). The primary among these goals, SDG 1, explicitly calls for the complete eradication of poverty in all its forms and dimensions by the year 2030 (United Nations, 2015).

Achieving this ambitious goal necessitates a thorough understanding of the relationship between government expenditure and the progress made in poverty eradication. Government expenditure, encompassing public spending on sectors like

education and Agriculture, plays a pivotal role in shaping a nation's socio-economic landscape. The efficient and equitable allocation of resources by governments significantly impacts the well-being of their citizens, especially those living in poverty (World Bank, 2020). Adequate government expenditure often acts as a lifeline for marginalized and vulnerable populations, granting them access to essential necessities, healthcare, education, and opportunities for economic empowerment.

Despite reasonable GDP growth in Nigeria since independence, the paradox remains that this growth has not led to a reduction in poverty levels. Poverty continues to increase in Nigeria, despite successive governments introducing various poverty alleviation programs (Binuyo, 2014). These programs include the Nigerian Agricultural and Cooperative Bank of 1972, Operation Feed the Nation of 1976, Directorate of Food, Roads and Rural Infrastructure (DFRRI) of 1986, Structural Adjustment Programme (SAP) of 1986, National Economic Empowerment and Development Strategies (NEEDS) in 2004, N-Power program of 2016, School Feeding Program of 2016, and more. Despite these initiatives, over 63 percent of Nigerians still live below the poverty line. Investigating the role of government expenditures in alleviating poverty in Nigeria is of paramount importance.

Data from the World Bank reveals that between 1970 and 2017, government spending on education increased by 95.6%, while the population increased by 70.6%. In 1970, the federal government spent N185.7 million on education. By 1980, the total educational expenditure had risen to N2.028 billion, up from N1.08 billion in 1979. Eighteen years later, in 1997, the figure had surged to N14.85 billion, a remarkable 700% increase. By 2010, government's education expenditures had risen by over N170 billion, exclusively recurrent expenditures. In the last year, 2019, the recurrent education expenditure of the government stood at N593.33 billion (CBN, 2019). As of 2021, the government's expenditure on agriculture in Nigeria was 72.27 billion Naira. These figures represent a significant increase compared to a decade earlier in 2011 when government expenditure on agriculture was 41.20 billion. Nevertheless, a closer look at the trend in government expenditure in these sectors reveals fluctuations. Data from CBN (2021) indicates that government expenditure on agriculture was highest in 2008 at 65.4 billion Naira. These figures are sourced directly from the Central Bank Statistical Bulletin (2021).

Government expenditure on infrastructure and essential services like basic education, transportation infrastructure, and more can enhance living conditions and stimulate economic activities in marginalized areas. These investments are vital for achieving Goal 1 of the Sustainable Development Goals (SDGs), which aims to eradicate poverty (UN, 2015). It is not just the amount of government expenditure that matters; the quality and efficiency of spending are equally crucial. Transparency, accountability, and effective governance in resource allocation are essential to maximize the impact on sustainable development (World Bank, 2018). This study however, investigated the impact of government Education and Agriculture expenditures on achieving Sustainable Development Goal 1 (SDG 1) of poverty eradication in Nigeria.

1.2 Statement of the Problem

Poverty is an intricate and far-reaching global dilemma, casting a long shadow over the lives of millions, depriving them of essential necessities and constraining their prospects for a brighter future. Within Nigeria, a nation with a staggering population exceeding 200 million, poverty remains an enduring and urgent challenge. The government's pledge to combat this issue is evident through its alignment with Sustainable Development Goal One (SDG 1), a global initiative aimed at completely eliminating poverty in all its dimensions by the year 2030. However, despite this dedicated commitment, poverty's grip on Nigeria endures, impacting a significant segment of the populace.

In an ideal scenario, government expenditure in Nigeria would be a powerful force in the fight against poverty. Robust investments in critical sectors like healthcare, education, infrastructure, and social welfare, underpinned by prudent fiscal policies and effective resource allocation, would lead to significant poverty reduction. This envisioned ideal is aligned with the United Nations' Sustainable Development Goal 1, which explicitly calls for the eradication of poverty in all its forms and dimensions by 2030. This ideal scenario would see Nigeria where the annual budget genuinely reflects the needs of the population, and resources are allocated efficiently to maximize the impact on sustainable development and, ultimately, poverty eradication.

Regrettably, the actual situation in Nigeria tells a different story. Despite numerous programs, declarations, and policy intentions aimed at reducing poverty, the gap between the ideal and the reality remains substantial. Nigeria's government

expenditure, while increasing in absolute terms, often falls short in relative and proportional terms compared to international benchmarks. For instance, the healthcare sector continues to receive less funding than the WHO-recommended minimum, impeding the provision of quality healthcare services to a significant portion of the population. Education, while receiving increased funding, still struggles to translate expenditures into improved educational outcomes. This discrepancy is partly due to inefficiencies in resource allocation and utilization. Agriculture, despite improvements, faces inconsistent funding trends that do not align with the urgency and potential of these sectors.

The problem lies in the stark disparity between the ideal and actual situations in Nigeria regarding the effect of government expenditure on poverty reduction. While the government's budget may allocate funds to critical sectors, the effectiveness, efficiency, and prioritization of these expenditures fall short of the desired outcome. The gulf between the intended impact and the tangible results is evident in the persistence and even exacerbation of poverty levels in Nigeria. This disparity can be attributed to several factors, including corruption, mismanagement of resources, the diversion of funds, inadequate monitoring and evaluation, and a lack of alignment with sustainable development priorities. The consequence of this disparity is the perpetuation of poverty, with millions of Nigerians still struggling to access basic necessities, quality education, healthcare, and economic opportunities, despite the government's financial allocations. As a result, poverty remains a formidable challenge that undermines the nation's potential for economic growth and societal well-being, posing a significant hindrance to Nigeria's progress toward achieving the Sustainable Development Goal of poverty eradication by 2030. In light of these, the study examined the effect of Government education and agriculture expenditure on the poverty level (poverty headcount ratio) in Nigeria.

1.3 Research Objectives

The main objective of the study is to analyze the effect of government education and agriculture expenditure on sustainable development goal one in Nigeria. The specific objectives of the study are to:

i. Evaluate the effect of government expenditures on education on poverty headcount ratio in Nigeria.

ii. Determine the effect of government expenditures on agriculture on the poverty headcount ratio in Nigeria.

2. REVIEW OF RELATED LITERATURE

2.1.1. Government Expenditure

Public expenditure, often referred to as government spending, is a multifaceted and pervasive force in the economic landscape of any nation. It encompasses the value of goods and services acquired by the government, as well as the various articulations and allocations that make up its financial activities (Huseynov, 2017). Public expenditure serves several critical functions in an economy. It contributes to the current effective demand, offering a coordinated impulse that can be harnessed for economic stabilization, business cycle management, and growth (Bhatia, 2013). Furthermore, it plays a fundamental role in increasing the public endowment of goods and services available to everyone and generates positive externalities that benefit the entire economy and society as a whole (Amusa & Oyinola, 2019).

2.1.2. Government Education Expenditure

Education is universally recognized as both a fundamental right and a societal responsibility that should be guaranteed to all generations (Anyanwu, 1997). Kumar (2015) eloquently defines education as a purposeful, conscious or subconscious, psychological, sociological, scientific, and philosophical process. As Yakubu and Akanegbu (2015) posit, "expenditure on education is an investment that can foster economic growth, enhance productivity, contribute to personal and social development, and reduce social inequality." In the context of this study, government education expenditure pertains to expenses borne by the government that have a direct impact on educational activities and the overall quality of education within the country.

Furthermore, government investment in education has a profound impact on individuals' economic prospects. It opens doors to higher-paying positions with the potential for promotions and bonuses, thereby improving people's living standards and their ability to access housing and healthcare (Hugh, et al. 2018).

2.1.3. Government Agricultural Expenditure

Agriculture has been a historically pivotal sector in Nigeria, persisting as a substantial contributor to the nation's economic landscape, still accounting for over 25 percent of

the Gross Domestic Product (CBN, 2018). It's noteworthy that approximately 60% of the labor force in the country was once engaged in this sector (Olomola et al., 2014). An even more striking facet of this statistic is the fact that roughly 60% of those employed in agriculture are women, underlining the sector's significant role in providing livelihoods, especially for women (Action Aid, 2015). Within the agricultural sector, the food crop sub-sector has played a leading role, contributing an impressive 76% to the sector's share of the GDP. Meanwhile, the livestock sub-sector made a 10% contribution, with the remaining portion being attributed to the forestry and fisheries sub-sectors (CBN, 2018).

2.1.4. Sustainable Development Goal One (Poverty Eradication)

In September 2015, the Heads of State and Government from 193 countries collectively endorsed the 2030 Agenda for Sustainable Development, marking a significant global commitment to steer the world toward sustainability. This agenda encompasses 17 Sustainable Development Goals (SDGs) comprising 169 specific targets. These targets outline quantifiable objectives spanning the social, economic, and environmental dimensions of sustainable development, all with the aim of being achieved by 2030. These goals collectively serve as a framework for coordinated action that seeks to benefit people, the planet, and prosperity.

The Sustainable Development Goals (SDGs), along with their 169 targets, have been embraced as a vital instrument for poverty alleviation by Federal, State, and Local Governments in Nigeria. The SDGs address a wide array of issues, such as poverty, hunger, health, education, and gender inequality, while introducing new topics like energy, infrastructure, economic growth, employment, inequality, cities, sustainable consumption and production, climate change, forests, oceans, and peace and security. Despite the Nigerian Government's efforts to implement SDG programs at various levels, a substantial portion of the population continues to live in poverty, and the overall standard of living remains very low (UN, 2015).

2.1.5. Poverty Headcount Ratio

The poverty headcount ratio, as defined by the World Bank in 2016, measures the proportion of a population living below the poverty line. This poverty line, according to the United Nations in 2020, represents the minimum income or consumption level required to fulfill basic human needs like food, shelter, and clothing. It is a widely recognized metric used by governments, international organizations, and researchers

to assess and oversee poverty reduction initiatives and policies, as highlighted by the U.S. Census Bureau in 2021.

Poverty headcount ratio at national poverty line (% of population) in Nigeria was reported at 40.1% in 2018, according to the world Bank collection of development indicator, complied from officially recognized sources. Nigeria poverty headcount ratio at national poverty line (% of population) – actual values, historical data, forecasts and projections would source from World Bank.

2.2 Theoretical Review

Wagner's Law of Increasing State Activity

Wagner's Law of Increasing State Activity, proposed by German economist Adolph Wagner in the 19th century, posits a positive relationship between the level of economic development in a country and the extent of government involvement in various sectors of the economy (Musgrave, 1959). This theory is essential for understanding the dynamics of government expenditure in relation to Sustainable Development Goal One in Nigeria.

The basic assumptions of Wagner's Law include: (i.) There is a proportional increase in. demand for public goods and services as a country's income and economic development increases, (ii.) The role of the state in providing these essential services becomes more significant as the economy develops, leading to an increase in government spending on defense and related areas. (iii.) Economic development is often accompanied by social and technological progress. (iv.) There is a natural tendency for citizens to demand a greater say in the allocation of public resources as societies develop.

In light of Wagner's Law basic assumptions, as the nation's economy expands, there is a growing demand for improved access to quality education, healthcare and food which aligns with the first Sustainable Development Goal of ending poverty. Government expenditure in these areas is essential to provide equitable access to education, healthcare and food, particularly for marginalized and economically disadvantaged populations (Piketty, 2014). As Nigeria's economic development progresses, there is a greater need for income redistribution policies and social safety nets to ensure that the benefits of growth are shared more equitably among the population.

2.3 Empirical Review

Omodero (2019) examined the role of government sectoral expenditure on poverty alleviation using a secondary form of data covering a millennium period from 2000 to 2017. The study employs ordinary least squares technique and the regression result indicates that government expenditure on agriculture, building and construction, education and health do not have any significant impact on poverty alleviation in Nigeria.

Oriavwote and Ukawe (2018) investigates the relevance of government expenditure on poverty reduction in Nigeria. The study covered the period between 1980 and 2016. The ECM model and cointegration models of the OLS as well as the granger causality techniques were used to analyze the data. The result of the parsimonious ECM indicates that though the one period lag government expenditure on health has a significant and positive impact on the per capita income, it has a low elasticity. The result indicates further that government expenditure on education has a significant and positive impact on the per capita income. The result indicates further that government expenditure on building and construction has a significant and positive impact on the per capita income, the elasticity is however very low. The granger causality test result indicates no causality between government expenditure on health and education. A bi-causal relationship however exists between government expenditure on education and per capita income. The result shows no causality between government expenditure on building and construction and the per capita income.

Amire (2020) ascertained the impact of government expenditures on health and education on poverty alleviation in Nigeria. This study used the Ordinary Least Square (OLS) statistical method obtained from Statistical Bulletin of the Central Bank of Nigeria (CBN) and World Development Index (WDI) over the period of 1988-2018. The Johansen Co-integration result indicates four co-integrating equations at the 0.05 level. Result shows that there exists a long-run relationship between government expenditures on health and education and poverty alleviation in Nigeria. It was also found out that expenditure on health and education exhibit positive relationship on the dependent variable (Poverty Alleviation).

Tubotamuno et al. (2021) examined government spending in education and poverty in Nigeria from 1990-2020. Secondary data were collected from CBN statistical bulletin

and World Development Index (WDI). Autoregressive Distributed Lag (ARDL) model was used. The ARDL error correction model results showed that; Government capital expenditure in education has a negative and significant impact on the rate of poverty in Nigeria. Government recurrent expenditure in education has a positive and insignificant impact on the rate of poverty in Nigeria.

Okerekeoti (2022) examined the effect of Government Expenditure on Education on economic growth of Nigeria. Secondary data was extracted from the annual series of the selected relevant macroeconomic variables from 1999 to 2020. Data for government expenditure on education were used as a public expenditure variable while real gross domestic product was used as an economic growth variable. Regression analysis was used to test the hypothesis, the findings of this study upholds that there is a positive and significant effect between government expenditure on education and RGDP at 5% level of significance.

Comfort (2020) tried to ascertain the impact of government expenditures on health and education on poverty alleviation in Nigeria. This study used the Ordinary Least Square (OLS) statistical method obtained from the Statistical Bulletin of the Central Bank of Nigeria (CBN) and World Development Index (WDI) over the period of 1988-2018. The Johansen Cointegration result indicates four co-integrating equations at the 0.05 level. Result shows that there exists a long-run relationship between government expenditures on health and education and poverty alleviation in Nigeria. It was also found out that expenditure on health and education exhibit a positive relationship on the dependent variable (Poverty Alleviation), this means that increasing government spending on health and education translates to increases in poverty alleviation.

Jimmy & Guluwa (2021) examined the impact of Government Expenditure on the agricultural sector and economic growth in Nigeria. My series data on Real Gross Domestic Product, GCEXP (Government Capital Expenditure on Agriculture) and GREXP (Government Recurrent Expenditure on Agriculture) in the Nigerian economy from 1980 to 2019 was obtained. The Auto Regressive Distributed Lag (ARDL) method was used to analyze the data. The study discovered that government expenditure on the agricultural sector has a significant impact on economic growth in Nigeria.

Megbowon, et al. (2022) investigated the effect of government agricultural expenditure on economic growth in the Kingdom of Lesotho. The government of Lesotho identified

the agricultural sector as a productive sector that is central to the achievement the economic growth goal and development plan. Descriptive statistics and inferential econometric techniques (ARDL, DOLS and VEC Granger causality) over time-series data for the period 1982-2019 were utilized in this study. The results suggest that while current level and pattern of government agriculture expenditure cannot stimulate the desired economic growth and prosperity in the country, domestic investment appear to be a stimulant of the desired economic prosperity. Consequently, any economic growth policy or strategy that is premised on government agricultural sector expenditure would fail.

Ahmed (2019) investigated the impact of agricultural output on standard of living in Nigeria via crops, livestock, forestry and fishery. Secondary data were obtained from CBN statistical bulletin from 1970-2016 and analyzed using cointegration and error correction model (ECM). It was found that standard of living is elastic with respect to crops, forestry, fishery and livestock output in the short and long run estimates. It suggests that the standard of living's response to agricultural output in the short run is higher than the long run. Furthermore, standard of living adjusts towards its long run level with 26% of the adjustment occurring in the first year. The study recommended, among other things, that more resources be allocated to agricultural sector, expansion be made in agricultural cultivation and training be conducted for farmers so that the impact of the sector can be felt on the living standard in Nigeria

Sebastian et al. (2019) reviewed the impact of government expenditure and bank credit on domestic agricultural sector output in Nigeria. It used OLS regression analytical method to evaluate the relationship between agricultural output and several factors influencing agricultural productivity in Nigeria such as government expenditure to agriculture, bank loans and advances to agriculture and index of agricultural production. Results showed that there existed a negative and significant relationship between government expenditure and agricultural output in Nigeria, while banks credit to agriculture and index of agricultural production had a positive and significant correlation with agricultural productivity. The study therefore recommends an increase in government expenditure to agricultural sector to counter its negative effects or trends over the years to raise agricultural output and thereby beef up growth of the domestic economy.

2.4 Gap in Empirical Review

The existing body of empirical research on government expenditure, economic growth, and related factors, both in Nigeria and other countries, predominantly centered on exploring the links between various types of government spending (such as education, health, agriculture, and capital expenditure) and their effects on economic growth. However, a classic literature gap existed as very little has been written on the influence of government spending on poverty levels in Nigeria. Furthermore, in the words of Oriavwote & Ukawe (2018), there exists a significant positive effect of government expenditure on health, education and construction on poverty reduction (per capita income). On the contrary, Omodero (2019) opines that government expenditure on agriculture, building & construction, education & health do not have significant impact on poverty alleviation hence creating disagreement which the current study set out to address.

3.0. METHODOLOGY

The study employed an ex-post-facto research design, a method chosen for its ability to facilitate future replication and verification of findings. The research was conducted with specific emphasis on assessing the effect of government education and agriculture expenditure on Sustainable Development Goal one in Nigeria utilizing secondary data obtained from the World Development Indicators of the World Bank database and the Central Bank of Nigeria (CBN) statistics. The population of the study was all the government expenditure in Nigeria as categorized by the CBN statistical bulletin 2022. Education expenditure, health expenditure and agriculture expenditure formed the sample size because they constitute the basic expenditure that directly cater for and improve the lives of the vulnerable group all things being equal. Consequently, the sample size is enough to capture the effect of government expenditure on the poverty rate in Nigeria.

3.1. Model Specification

Ordinary Least Square regression techniques was employed to evaluate the effect of government expenditure on poverty rate in Nigeria. The model was specified as follows:

PHCR = F (EDEX, HEX, AGREX, TRANEX, DEFEX) [Equation (1)]

Setting up the equation (2) in a linear stochastic form (or econometric form) is expressed as:

$PHR_{it} = \beta_o + \beta_1 EDEX_{it} + \beta_2 HEX_{it} + \beta_3 AGREX_{it} + \beta_4 TRANEX + \beta_5 DEFEX + c_{it} + \varepsilon_{it}$ [Equation (2)]

Introducing the moderating variables, we have:

$PHR_{it} = \beta_o + \beta_1 EDEX_{it} + \beta_2 HEX_{it} + \beta_3 AGREX_{it} + \beta_4 TRANEX + \beta_5 DEFEX + \beta_6 INFRATE + \beta_7 EXRATE + \beta_8 INTRATE + c_{it} + \varepsilon_{it}$ [Equation (3)]

According to Tama and Haliba (2022), the introduction of natural logs to equation (3) would be more efficient in estimating the parameters.

On the strength of these, taking the natural logs of some of the extreme explanatory variables in equation (3) results in the following equation (4):

$Log(PHR)_{it} = \beta_o + \beta_1 Log(EDEX)_{it} + \beta_2 Log(HEX)_{it} + \beta_3 Log(AGREX)_{it} + \beta_4 Log(TRANEX) + \beta_5 Log(DEFEX) + \beta_6 INFRATE + \beta_7 EXRATE + \beta_8 INTRATE + c_{it} + \varepsilon_{it}$ [Equation (4)]

Where;

Log	=	Natural Logarithm
PHR	=	Poverty Headcount Ratio
EDEX	=	Education Expenditure
HEX	=	Health Expenditure
AGREX	=	Agriculture Expenditure
DEFEX	=	Defense Expenditure
TRANEX	=	Transportation Expenditure
INFRATE	=	Inflation Rate
EXRATE	=	Exchange Rate
INTRATE	=	Interest Rate

β_o is the constant term or intercept for firm *i* in the year t.

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$, and β_8 are linear regression coefficients to be estimated.

c_{it} is the non-observable individual effect while ε_{it} is the disturbance or error term for firm *i* in the year t.

4.0. DATA PRESENTATION AND ANALYSIS/DISCUSSION OF RESULTS

4.1. Data Analysis

Table 4.1.1: Descriptive Statistic

	PHR	EDEX	HEX	AGREX	DEFEX	TRANEX	INFRATE	EXRATE	INTRATE
Mean	41.04130	289.5529	177.2348	37.32331	262.7502	30.41294	12.73396	200.3287	17.57085
Median	41.40000	325.1900	180.0000	36.30453	272.3000	29.38712	12.55496	153.8625	16.89333
Maximum	53.40000	702.9787	437.5212	81.86696	693.8514	90.02793	21.34000	434.7000	24.77083
Minimum	30.90000	39.88260	15.21808	6.335779	43.40232	3.034679	5.388008	101.6973	11.48313
Std. Dev.	6.068373	209.5974	136.9430	23.79125	214.4961	20.00425	4.023378	103.2870	2.908416
Skewness	0.249232	0.541480	0.573722	0.392354	0.676127	1.230181	0.177308	1.118608	0.650296
Kurtosis	2.424374	2.082610	2.089395	2.027646	2.206431	4.765314	2.484453	2.876540	3.884756
Jarque-Bera	0.555652	1.930473	2.056420	1.496188	2.355915	8.787643	0.375227	4.811194	2.371235
Probability	0.757428	0.380893	0.357647	0.473268	0.307907	0.012353	0.828935	0.090212	0.305557
Sum	943.9500	6659.716	4076.400	858.4362	6043.255	699.4975	292.8811	4607.560	404.1295
Sum Sq. Dev.	810.1533	966483.6	412574.7	12452.52	1012188.	8803.742	356.1265	234700.3	186.0955
Observations	23	23	23	23	23	23	23	23	23

Source: Authors Computation, 2024 (Eviews-10)

Table 4.1.1 revealed the following:

Poverty Headcount Ratio (PHR): The Poverty Headcount Ratio (PHR) exhibits a slightly positively skewed distribution with a skewness of 0.249232. This implies that the distribution has a longer right tail. The kurtosis of 2.424374 indicates that the distribution has tails less heavy than a normal distribution. The Jarque-Bera test, with a p-value of 0.757428, does not provide strong evidence to reject the null hypothesis of normality. Therefore, the PHR variable appears to be approximately normally distributed.

Education Expenditure (EDEX): Education Expenditure (EDEX) demonstrates positive skewness (0.541480), indicating a right-skewed distribution with a longer right tail. The kurtosis of 2.082610 suggests heavier tails than a normal distribution. The Jarque-Bera test yields a low p-value of 0.380893, rejecting the null hypothesis of normality. This implies that the distribution of education expenditure is not normal.

Agriculture Expenditure (AGREX): Agriculture Expenditure (AGREX) exhibits positive skewness (0.392354) and kurtosis (2.027646), indicating a right-skewed distribution with somewhat heavy tails. The Jarque-Bera test, with a p-value of 0.473268, suggests that the normality assumption is not strongly violated, but the distribution deviates from perfect normality.

In summary, while the Poverty Headcount Ratio appears to be relatively close to normal, the independent variables exhibit right-skewed distributions with heavy tails, as indicated by positive skewness and high kurtosis. The Jarque-Bera tests consistently reject the null hypothesis of normality for these variables, suggesting that they do not follow a normal distribution.

Table 4.1.2: Multiple Regression Result (Dependent Variable: PHR)

Variable	Coefficient	Standard Error	t-Stat	p-Value
EDEX	-0.028598	0.039978	-0.715357	0.4861
HEX	-0.037286	0.068998	-0.540392	0.5974
AGREX	0.151911	0.064193	2.366469	0.0329
DEFEX	0.015717	0.048755	0.322368	0.7519
TRANEX	-0.107882	0.061992	-1.740265	0.1037

INFRATE	0.056002	0.392750	0.142589	0.8886
EXRATE	0.055593	0.040627	1.368360	0.1928
INTRATE	1.262672	0.579768	2.177889	0.0470
C	15.37577	11.65751	1.318959	0.2084

R^2 = 0.57, Adjusted R^2 = 0.33, F-Stat = 6.357404, Prob(F-stat) = 0.006768 DW = 1.74

Source: Authors Computation, 2024 (Eviews-10)

Education Expenditure (EDEX): The coefficient of -0.028598 associated with Education Expenditure (EDEX) indicates that for every one-unit increase in EDEX, the Poverty Headcount Ratio (PHR) is expected to decrease by 0.028598 units. While this negative coefficient suggests a potential mitigating effect of education spending on poverty, the result is non-significant with a p-value of 0.4861. This implies that there is some uncertainty about the statistical significance of the effect.

Agriculture Expenditure (AGREX): The coefficient of 0.151911 linked to Agriculture Expenditure (AGREX) implies that a one-unit increase in AGREX is associated with a 0.151911 unit increase in the Poverty Headcount Ratio. This variable is statistically significant at a p-value of 0.0329, suggesting a meaningful impact of higher agricultural expenditure on increased poverty levels. The positive coefficient indicates a potential concern, emphasizing the need for careful consideration of policies related to agricultural spending to ensure they contribute positively to poverty alleviation.

Statistical Criteria (First Order Tests)

The R-squared value (R2) of 0.57 indicates that the model explains approximately 57% of the variability in the Poverty Headcount Ratio. The Adjusted R-squared (Adjusted R2) of 0.33 tells us that 33 per cent of the variations in the poverty headcount Ratio are explained by the independent variables, while the other 67 per cent are explained by other factors other than Education Expenditure, Health Expenditure, and Agricultural Expenditure. These other factors are contained in the error term. The F-Stat of 6.357404 and the associated p-value (Prob(F-stat) = 0.006768) suggest that the overall model is statistically significant. The Durbin-Watson statistic (DW) of 1.74 indicates the presence of potential autocorrelation.

4.2. TEST OF HYPOTHESIS

Test of Hypotheses

The hypotheses were tested using the following decision rule:

Statement of Decision Criteria

According to Gujarati and Porter (2009), the decision rule involves accepting the alternate

hypothesis (H1) if the sign of the coefficient is either positive or negative, the modulus of the

t-Statistic > 2.0, and the P-value of the t-Statistic < 0.05. Otherwise, accept H0 and reject H1.

Hypothesis One

Restatement of the Hypothesis in Null and Alternate Forms

H_0: Government education expenditures do not have a significant effect on poverty headcount ratio in Nigeria.

H_1: Government education expenditures have a significant effect on poverty headcount ratio in Nigeria.

Presentation of Test Results

Table 4.2.2 Multiple Regression result is used to test the above-stated hypothesis

Decision: From the regression analysis result in Table 4.2.2, the coefficient for EDEX is -0.028598, indicating that a one-unit increase in government education expenditures is associated with a -0.028598 unit decrease in the poverty headcount ratio. However, the P-value of 0.4861 is greater than the conventional significance level of 0.05. This suggests that there is insufficient evidence to reject the null hypothesis, indicating that government education expenditures do not have a statistically significant effect on the poverty headcount ratio in Nigeria.

Hypothesis Two

Restatement of the Hypothesis in Null and Alternate Forms

H_0: Government health expenditures do not have a significant effect on poverty headcount ratio in Nigeria.

H_1: Government health expenditures have a significant effect on poverty headcount ratio in Nigeria.

Presentation of Test Results

Table 4.2.2 Multiple Regression result is used to test the above-stated hypothesis.

Decision: From the regression analysis result in Table 4.2.2, the coefficient for HEX is -0.037286, suggesting that a one-unit increase in government health expenditures is associated with a 0.037286 unit decrease in the poverty headcount ratio. However, the P-value of 0.5974 exceeds the 0.05 threshold. This suggests that there is insufficient evidence to reject the null hypothesis, indicating that government health expenditures do not have a statistically significant effect on the poverty headcount ratio in Nigeria.

Hypothesis Three

Restatement of the Hypothesis in Null and Alternate Forms

H_0: Government agriculture expenditures do not have a significant effect on poverty headcount ratio in Nigeria.

H_1: Government agriculture expenditures have a significant effect on poverty headcount ratio in Nigeria.

Presentation of Test Results

Table 4.2.2 Multiple Regression result is used to test the above-stated hypothesis.

Decision: From the regression analysis result in Table 4.2.2, the coefficient for AGREX is 0.151911, indicating that a one-unit increase in government agriculture expenditures is associated with a 0.151911 unit increase in the poverty headcount ratio. The P-value of 0.0329 is less than 0.05, providing sufficient evidence to reject the null hypothesis. Therefore, government agriculture expenditures have a statistically significant effect on increasing the poverty headcount ratio in Nigeria.

4.3. DISCUSSION OF FINDINGS

4.3.1. Government Education Expenditure and Poverty Headcount Ratio

The finding that government education expenditures have a statistically non-significant negative effect on the poverty headcount ratio in Nigeria agrees with Omodero (2019) who find out that government expenditure on agriculture, building and construction, education and health do not have any significant impact on poverty alleviation in Nigeria. Tubotamuno et al. (2021) on the other hand discovered that Government capital expenditure in education has negative and significant impact on

the rate of poverty in Nigeria. Government recurrent expenditure in education has positive and insignificant impact on the rate of poverty in Nigeria.

The potential reasons in the opinion of the researcher for this non-significant effect may include: The lagged nature of the impact of education on poverty since education is often considered a long-term investment; Disparities in the allocation of resources among regions or demographic groups which might have resulted in uneven benefits, diluting the overall impact on poverty and the quality of education because merely increasing spending on education does not guarantee positive outcomes if the quality of education is compromised

4.3.2. Government Agriculture Expenditure and Poverty Headcount Ratio

The findings shows that government agriculture expenditures have a statistically significant positive effect on increasing the poverty headcount ratio in Nigeria. In the words of Megbowon, et al. (2022), They suggested that while current level and pattern of government agriculture expenditure cannot stimulate the desired economic growth and prosperity in the country, domestic investment appear to be a stimulant of the desired economic prosperity. The possible explanations in the opinion of the researcher for significant positive effect may relate to the uneven distributional of agricultural investments, inefficiencies and ineffectiveness of agricultural programs and policies; Land tenure issues and access to resources and environmental factors, such as climate variability and the susceptibility of agriculture to natural disasters, can also influence the observed relationship. If agricultural investments are not accompanied by strategies to build resilience against climate-related risks or if there is inadequate support for farmers during adverse weather conditions, the positive impact on poverty reduction may be offset by the vulnerability of the agricultural sector.

5.0 CONCLUSION AND RECOMMENDATION

This study examined the effect of government education and agriculture expenditure on poverty level in Nigeria. From the data analysis, the study found that government spending on education have a negative but nonsignificant effect on poverty headcount ratio in Nigeria; while government spending on agriculture has a positive and significant effect on poverty headcount ratio in Nigeria.

The adjusted R-squared (R2) revealed that about 33% of the changes in poverty headcount ratio, is accounted for by government spending on education, health and agriculture. The remaining 67% could be explained by other factors capable of influencing poverty headcount ratio in Nigeria such as insecurity, inefficiencies, exchange rate volatility, and so on. Consequently, the study concludes that government expenditure on education and health reduces poverty levels in Nigeria. While government expenditure on agriculture has not reduced the poverty level in Nigeria. However, government expenditure on agriculture is the only variable among others that exert a significant effect on poverty headcount ratio in Nigeria. From the findings of the study the researcher made the following recommendations:

i. Energy and funds should be channeled to educational infrastructure, teacher training and development, curriculum to alignment with industry needs, technology integration, accessibility and initiating scholarship programs for economically disadvantaged students

ii. Investing in agricultural research and development, technology integration and provision of agricultural support especially to the local farmers

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