International Journal of Research Publication and Reviews

The Effects of Fiscal Policy on Poverty Alleviation in Nigeria

Prof. ADEDIRAN, Samson Adewale[1], [2]OLADIPO, Blessing Ugochi, AKINNOLA, Mofehintolu Tony[3], OLADIMEJI, Glory Funmilayo[4]

[1]Kogi State University, Ayangba, Kogi State, Nigeria. Adedirans2007@yahoo.com, +2347033667636
[2]Kogi State University, Ayangba, Kogi State, Nigeria oladipoblessingugochi@gmail.com, +2349132922599
[3]Adekunle Ajasin University, Akungba, Akoko, Ondo State, Nigeria *Mofehintoluakinnola@gmail.com*, +2348033688112
[4]Zenith Bank International Plc. Abeokuta, Ogun State, Nigeria. *funmilayoglory33@gmail.com*, +2347032271844
DOI: https://doi.org/10.55248/gengpi.5.0424.0943

ABSTRACT

The study empirically investigated the link among fiscal policy and poverty alleviation in Nigeria. A choice of variables such as government expenditure on health, government expenditure on education and tax rate were adopted as fiscal policy tools while exchange rate and inflation rate, were also incorporated as control variables. The ARDL short-run and long-run models were estimated to investigate the dynamic relationships between poverty rate, and the array of independent variables in Nigeria from 1980 to 2021. Data used was sourced from World Development Indicators (WDI) and analyzed using the E-Views software. The augmented Dickey-Fuller (ADF) test and Phillips-Perron (PP) unit root test indicated that some of the variables are stationery and others differenced stationary. The result of the ARDL model estimation revealed that government expenditure on health showed a significant positive coefficient, while ggovernment expenditure on education reflected otherwise. Tax rate showed a significant negative effect on the poverty rate while inflation rate and exchange rate impacted poverty negatively. Based on the results, fiscal policy has contributed to poverty rate decrease but not effectively as government budget seem to miss the target. Thus, this study recommends increase in government expenditure budget as well as proper monitoring of government fiscal policies channelled towards poverty alleviation in Nigeria.

Keywords: Fiscal Policy, Poverty Alleviation, Nigeria.

1. Introduction

Poverty has generally been seen as a threat and challenge to humanity in all ramifications. Different scholars considered poverty a menace that is ravaging most of the developing economies across the globe being a challenge to the well-being of mankind as well (Adegboyo, 2020). It has remained complex, multidimensional and dynamic with materialization in the economic, social, political, environmental and every sphere of human existence (Danaan, 2018). Poverty is so much calamitous to the extent that it jeopardizes the present and future of every lives and society faced with it. World Bank claimed that most people in the world live in poverty; about 85% of the world live on less than $30 per day, about two-third survive on less than $10 per day, while about every tenth person lives on less than $1.90 per day. Thus, no country or continent can be said to be totally free of poverty, but the rate and level differs (Oriavwote & Ukawe, 2018). In Africa, about 383 million of the entire population live below poverty level, followed by Asia continent with about 327 million, then South America 19 million, North America 13 million, 2.5 million in Oceania and 0.7 million in Europe (Roser & Ortiz-ospina, 2017). This revealed that poverty is more prominent in Sub-Sahara Africa and Asia countries.

Poverty is one of the very worst challenges that the world is facing today. The poorest in the world are often hungry, suffer much poorer health, regularly have no light at night and have little or no access to education. Therefore, to make any progress against poverty is one of the most urgent global goals based on the World Bank's recent research. The high rate of poverty across the globe especially in Sub-Sahara Africa and Asia countries is of great concern to United Nation and the World Bank and frantic efforts are being made to reduce it (Adegboyo, 2020). In year 2000, the United Nation formulated the Millennium Development Goals (MDGs) with the first goal to eradicate extreme poverty across the globe by 2015. Unfortunately, this goal was not achieved, nonetheless, the commitment to reduce poverty only spurred the UN to formulate another policy in September 2015 called the - Sustainable Development Goal (SDG) with one of its major goals as to eradicate extreme poverty by 2030 (Adegboyo, 2020). More so, the twin goals of the World Bank which is to reduce extreme global poverty and boost shared prosperity in every country is in motion as different development strategies were being formulated, one of which is the Green, Resilient and Inclusive Development (GRID). Although faced with a major setback due to the COVID-19 pandemic, comprehensive and inter-related strategies were being sought and developed to achieve these goals. In an attempt to identify people under poverty, what was known as a poverty line was developed. Poverty line serves as the minimum standard of living expected of people at a giving time and anyone living below it is considered poor (Adegboyo, 2020). The minimum standard of living is $1.90 a-day and anyone living below it is considered poor with respect to the World Bank standard.

Consequently, fiscal policy was intended to achieve full employment level and stability in an economy. In Nigeria, Fiscal policy is a forefront macroeconomic policy owing to the increased public needs of the increasing population as well as the need to stabilize and grow the economy. Fiscal policy functions as an economy's "shock absorber" in particular areas of economic growth and development. Over the years, Nigeria has adopted expansionary fiscal policy measures with expectations to increase consumption as well as public and private sector investment leading to creation of more job (Odinakachi, et. al., 2020). Nigerian government has dealt with the problem of unemployment using fiscal policy tools- government collected tax and expenditure over time as unemployment is an important variable that translates and overwhelms poverty. In essence, the adoption of fiscal policy in any economy is to drive the economy towards a desired goal (Maku & Alimi, 2018). Government spending is very critical to reducing poverty, especially when it is made on projects that are pro-poor like; education, health and so forth, these are sometimes referred to as public goods because allowing market forces to allocate them will leave the poor unimportant (Dankumo et. al., 2019). The Kenyan government, in an attempt to raise more revenue to match up her spending, makes amendments to the tax laws from time to time on the basis that an optimal tax design seeks to maximize social welfare (Maina, 2017).

Macroeconomic policies stand as a key dimension to well-being and human development; because employment is the main means through which economic growth translate in poverty reduction (Martins & Lucci, 2013). One of the macroeconomic goals of any government is to achieve and sustain economic growth as a means of raising living standards of the people. Therefore, improvement in well-being requires policies that will lead to reduction in poverty, create employment and reduce inequality (Metu & Kalu, 2020). The channel to pacifying the needs of the citizens by governments is to embark on expenditure through the allocation of funds to various sectors of the economy (Jeff-Anyeneh & Ibenta, 2019). Nigeria is a large country, with a population of over 180 million which makes it the most populated country in Africa, equally has about 50% of its population living in extreme poverty, this is indeed a reflection of the highest poverty level globally. As one of the leading oil producing countries in the world, billions of dollars is made annually, yet the majority of the populace lives in poverty. The critical state of poverty in Nigeria has led the World Bank in 1996 to described Nigeria as a paradox being a nation of riches and poverty magnificent, wealth in the hands of few and abject poverty at the doorsteps of many (Osinowo et. al., 2019). Worried by the continued rise in poverty level, successive governments others in Nigeria have not relented in developing one policy or the other in order to quiet this social discomfort.

Some studies investigated the links between fiscal policy and poverty alleviation in Nigeria. In 2020, a study examined the nexus of government expenditure and standard of living in an emerging market in Africa–Nigeria between 1981 and 2018 adopting the Auto Regressive Distributed Lag method (Roser & Ortiz-ospina, 2017). Sharply, the study asserted that government recurrent and capital expenditure have a significant effect on the standard of living in Nigeria. The researchers also advocated prioritizing capital expenditure over recurrent expenditure which is ideal for improvement in the standard of living of the citizens. Another study investigated the effect of education expenditure on poverty reduction using annual data from 1980 to 2019. ARDL and Granger test were adopted for the analysis and the result revealed that government expenditure on education and health services positively correlated with life expectancy, indicating positive impacts on poverty reduction in the long and short -run. Meanwhile, recurrent education spending had negative effect on poverty reduction in the short run. Granger causality indicated unidirectional relationship between education expenditure and poverty reduction in Nigeria (Duruh & Chima, 2022). (Ogboru & Abdulmalik (2018) examined government expenditure on agriculture and its impact on unemployment reduction in Nigeria from 1999 to 2015. The result revealed that the relationship between government expenditure and unemployment did not have a significant effect, that is, has no reducing effect on unemployment in Nigeria. The study therefore recommends the federal government intervention in quadrupling of agricultural development for employment opportunities. Onabote et. al. (2023) contributed to the literature by examining the effects of government sectoral spending on human development from 1986 to 2021 using a robust human development index that captures the multifaceted state. Surprisingly, the results from the ARDL estimation indicated that both in the short and long run, there is no link between government sectoral spending and human development in Nigeria.

The impact of fiscal policy on poverty alleviation has been captured by several authors, each adding to the body of knowledge in several ways. However, it can be seen that very few research studies laid emphasis on tax revenue fiscal policy tool as a mean of alleviating poverty in Nigeria. More so, some studies failed to disaggregate the variables adopted; some are limited due to the lack of comprehensive data and recency among others. Therefore, this study seeks to bridge these gaps in existing empirical research by investigating the effects of fiscal policy on poverty alleviation in Nigeria.

1.1 Statement of the Problem

According to the Nigeria economic report that was released in July 2019 by the World Bank, Nigeria had one of the world highest economic growth rates, averaging 7.4% from 2000 to 2014. Followed by the oil price collapse in 2014 till 2016, combined with negative production shocks, the gross domestic product (GDP) growth rate dropped to 2.7% in 2015. In 2016 the Nigerian economy recorded its first recession in 25 years, which led to her economy contraction by 1.6%. Growth rebounded to 0.8% and 1.9% in 2017 and 2018 respectively. Consecutive governments have planned and executed numerous macroeconomic policies (fiscal policy) to deal with poverty because of the short- and long-term consequences on the economy at large. This inconsistent link between macroeconomic policies, rising economic growth rates and poverty rate is a clear proof that the trickle-down effect of such growth and policies is utterly insignificant on the welfare of the greater Nigerian populace. This fact makes the problem of poverty in Nigeria to appear a pig-headed one, which poses a lot of questions to the mind of researchers.

Many researchers have examined the effect of these economic policies on poverty reduction in Nigeria separately. The research studies carved their niche around the effects of fiscal policy (mostly government expenditure) on poverty alleviation, others on the impact of monetary policy variables on poverty reduction in Nigeria. Many failed to disaggregate fiscal policy variables; others totally disregarded the importance of tax revenue and a large sample size

in the course of their research study (Adelowokan & Osoba, 2015; Yahaya, 2019). Against this backdrop, this study seeks to investigate the effect of fiscal policies on poverty alleviation in Nigeria.

1.2 Objectives of the Study

The broad objective of this study is to understand the role that fiscal policy play in the fight against poverty in Nigeria. However, the specific objectives are to:

 i. examine the effect of government expenditure in alleviating poverty in Nigeria.

 ii. analyze the effect of tax revenue on poverty reduction in Nigeria.

1.3 Research Questions

In the quest to analyze the effect of fiscal policy on poverty alleviation in Nigeria, the following questions are needful:

 1. how has government expenditure contributed to the alleviation of poverty in Nigeria?

 2. how has tax revenue contributed to poverty reduction in Nigeria?

1.4 Hypotheses

For the purpose of investigating and evaluating the above objectives, the following hypotheses were formulated to guide the study.

H_{01}: There is no significant relationship between government expenditure and poverty alleviation

 in Nigeria;

H_{02}: There is no significant relationship between tax revenue and poverty alleviation in Nigeria.

2. Literature Review

2.1 Conceptual Review

In any economy, one of the main drivers of growth and sustainable development is the impact that the government has on the economy via the policies it appropriate. This study capitalizes on this thought but more specifically on fiscal policy as it seeks to examine its effect on poverty alleviation in Nigeria.

2.1.1 Poverty

Poverty is a concept that is intrinsically linked to welfare, and there are many ways in which welfare can be properly captured. The conceptualization of poverty over the years is changing with emerging perspectives in different contexts. The concept of poverty is seen as the state of having few materials possession or little income. Hence, the concept of poverty is elusive; largely because it affects many aspects of the human conditions, which includes physical, moral and psychological conditions. Thus, different criteria have been used to conceptualize poverty overtime. Nonetheless, it is safe to refer poverty as a state or condition in which a person or community lacks the financial resources and essential for a minimum standard of living. That is, poverty can be said to subsist if the people of a particular society cannot achieve a specific level of welfare that are accepted as a minimal standard of that society (Dankumo et. al., 2019). Poverty robs people of the freedom to satisfy hunger, assess necessary services, and meet other basic needs (Maina, 2017). In an attempt to identify people living under poverty, researchers came up with what is known as poverty line. Poverty line is the minimum standard of living expected of a peeson at a given time and anyone living below the poverty line threshold is considered poor. To World Bank, the minimum standard of living is $1.90-a-day which is considered extremely low; thus, extreme poverty is seen as the adequate term for those living under this low threshold.

2.1.2 Poverty Alleviation

The attempt(s) to exterminate or mitigate poverty is known as poverty alleviation. These attempts are not new; in that there has been legislation, policies and communal efforts to support the poor as far back as biblical times. Poverty exists and has existed in every country; the great effort to put poverty to an end has been prevalent. Over the years, researchers have concluded that poverty reduction lies at the heart of development due to consistency with so many research works as well as with the seventeen (17) United Nations sustainable development goals, the first of which is 'No Poverty'. Therefore, an approach to poverty alleviation is such that require the execution of mutually consistent and reinforcing all-around packages of policies, plans and programmes (Abdulrahman, et. al., 2023). All of which this study seeks to look into. In addition, a study concluded that placing so much focus on economic growth with an expectation of trickle-down effects as presupposed by the kuznet's hypothesis is inappropriate a policy prescription in Nigeria. Thus the government is encouraged to actively pursue poverty alleviation with economic growth strategy within the framework of development planning (Chowdhury, 2018).

2.1.3 Measurement of Poverty

The definition and measurement of poverty has different insinuations on policy-making (Goshit & Longduut, 2016). There are various methods to the definition and measurement of poverty. The most commonly used is the monetary approach, which use the consumption/expenditure level or income to show the extent of poverty. That is, it identifies poverty with a shortage in consumption/income from the stipulated poverty line. Another is the capability approach which rejected the monetary income as a measure of poverty but instead focused on poverty as the deprivation in terms of capability (Martins & Lucci, 2013). That is, the failure to achieve certain basic capabilities. The social exclusion approach developed in industrialized countries is used to show extent of deprivation or marginalization that can arise in wealthy countries despite the comprehensive welfare provisions. Lastly, the participatory approach aims to change the monetary and capability estimate by involving the poor to participate in decisions about what it means to be poor and the magnitude of poverty to them (Metu & Kalu, 2020). The World Bank also gave some monetary measures of poverty such as head count ratio, poverty gap index (Jeff-Anyeneh & Ibenta, 2019). The head count ratio is a ratio of the number of people living below the poverty line divided by the total population. It is commonly used because it is easy to construct and understand. Nonetheless, the measure has been criticized in that it does not capture the intensity of poverty of the people living below the poverty line. On the other hand, poverty gap index as a measurement of poverty expresses the average poverty gap as a percentage of poverty line. Poverty gap shows the extent to which individuals fall below the poverty line that is, the depth of poverty; it also symbolizes the minimum number of transfers needed to eradicate poverty or to lift the poor up to the poverty line. Thus, if income is transmitted from one poor person to another, the poverty gap index would not reflect this accruing to the fact that the index does not capture changes in income inequality among the poor population (Jeff-Anyeneh & Ibenta, 2019). Another poverty measure is the Foster-Greer-Thorbecke (FGT) poverty measures. The FGT index is a generalized poverty measure developed by Erik Thorbecke, Joel Greer and James Foster. It considers the inequality amongst the poor thereby allowing one to vary the amount of weight on income levels when calculating poverty in an economy. That is this measure allows disintegration of poverty to show the involvement of different population subgroups to national poverty. The poverty severity index, which is the squared poverty gap index, belongs to the FGT measures. It is calculated as the weighted sum of the poverty gaps. The weight has its base on the poverty line and permits varying of weights of the income level of the poorest society member. It captures the distribution of standards of living among the poor. However, the measure is difficult to explain hence not generally used (Jeff-Anyeneh & Ibenta, 2019). A study recommended a poverty index that takes the income distribution of the poor population into consideration (Osinowo et. al., 2019). The index measures the differences in levels of deprivation among the poor. It also combines the poverty gap, head count ratio and Gini coefficient of the poor. Other measures of poverty include the Watts index and Sen-Shorrocks-Thon Index. The multidimensional approach to the measurement of poverty pools other indicators of poverty, other than the income and consumption levels. The Human Development Index (HDI), adopted by United Nations Development Programme (UNDP), reflects life expectancy, literacy level and GDP per capita, while the Physical Quality of Life Index (PQLI) reflects the life expectancy, education level and infant mortality rate (Anderson et. al., 2018). A study also found that unemployment causes poverty while inflation, public resources dedicated to austerity programmes and economic growth reduces poverty in the short run (Emmanuel, 2019)**.**

2.1.2 Fiscal Policy

In economics, fiscal policy is the use of government revenue (basically taxes) and expenditure i.e., government spending to influence the economy. It is the means by which government adjusts its spending and revenue (tax rates) to monitor and influence a nation's economy. In other words, the policy can also be seen as a purposeful spending and taxation actions shouldered by government in order to attain price stability, reduce the inconsistencies of business cycles, as well as to bring about nation's desired output and employment (Adegboyo, 2020). Often times, fiscal policy attempts to stabilize the economy over the course of the business cycle- an upturn or downturn of an economy (Danaan, 2018). The federal government uses fiscal policy as a major tool for affecting the macro-economy such that a sense of balance between expenditure, taxation and borrowing is in agreement with growth (Oriavwote & Ukawe, 2018). Tax revenue as a fiscal policy tool is important to raise sufficient revenue that would finance expenditure in a fiscal year. A good tax system comprises of a legal structure that governs the execution of the various tax types; income tax, consumption tax, trade tax and social contributions. The composition of taxes and tax rates differ from country to country. Asides tax revenue, government expenditure is another fiscal policy tool that has always been on the forefront of macroeconomic policies in Nigeria due to the increasing public needs of the increasing population (Roser & Ortiz-ospina, 2017). Government expenditure gives a representation of the expenditure of the government on amenities and services for the growth and development of the economy, usually on an annual basis (Ravallion, 1998). Vividly articulated within the budget of a financial year is the government expenditure and tax revenue. In any case, the real government consumption may be distinct from the budgeted owing to changes in the macroeconomic environment. A study aptly explained that the federal government's solid policies, efficient institutions and the accurate investment mix are needed for Nigeria's economic development to lift millions of its people out of poverty and hardship (Odinakachi et. al., 2020)**.**

2.1.3 Fiscal policy and Poverty Alleviation

John Maynard Keynes Keynesian economics is a major basis for fiscal policy. It theorized that government changes in the levels of taxation and government expenditure influences aggregate demand and the level of economic activity at large; which in turn should reduce poverty level in any nation. However, in reality, research has had it favour some economies, while for some, it has only been otherwise owing to weak linkage of government expenditure on poverty level as well as public debt, corruption, bad governance to mention a few (Itiveh, 2022). Poverty is a worldwide issue that attracts the attention of both the governments and non-governmental organizations around world over. Conceptually, it is widely believed that a good fiscal policy has the capacity to raise economic growth through well-articulated public investments provided that the spending is large enough and specifically

channeled to reduce poverty at its root. That is, investments channeled towards pro-poor projects such as, education, health and so forth, often times referred to as public goods because allowing market forces to allocate them will only leave the poor worsen (Adelowokan & Osoba, 2015).

3. Methodology

The methodology of this study is presented in a way to explain the modelling and estimation approaches used to estimate the parameters.

3.1 Model Specification

This study adopts a unique model by including a disaggregation of fiscal policy variables into government expenditure on health, government expenditure on education and tax revenue as independent variables and poverty level as the main dependent variable. However, exchange rate and inflation rate are incorporated into the model as independent variables; being other factors that could have an impact on poverty rate, in the scope covered in the study. The study focused on Nigeria as a whole, spanning a period of 1980 to 2021. The annual time series data for Nigeria from 1980 to 2021 has its source from the World Bank Development Indicator (WDI). In Keynesian theory, fiscal policy is a demand-side instrument. The government affects aggregated demand directly through its expenditure and indirectly by taxation. The economic model is specified thus:

$$POV = f(FP) \tag{3.1}$$

Where: POV = Poverty index; FP = Fiscal policy.

This study however disaggregates fiscal policy (FP) into: government expenditure on health, education and tax revenue. It is then re-specified thus:

$$POV = f(GEXPH, GEXPE, TXR) \tag{3.2}$$

Where: POV = Poverty index; GEXPH = Government expenditure on health;

GEXPE = Government expenditure on education; TXR = Tax revenue.

In its functional form:

1. **Government Expenditure Fiscal Policy: Poverty Model**

$$POV = \alpha + \beta_1 GEXPH_{it} + \beta_2 GEXPE_{it} + \beta_3 EXR_{it} + \beta_4 INF_{it} + \varepsilon_t \tag{3.3}$$

Where: EXR = Exchange rate; INF = Inflation rate

$\beta_1 < 0,\ \beta_2 < 0,\ \beta_3 > 0,\ \beta_4 > 0$

2. **Tax Revenue Fiscal Policy: Poverty Model**

$$POV = \alpha + \beta_1 TXR_{it} + \beta_2 EXR_{it} + \beta_3 INF_{it} + \varepsilon_t \tag{3.4}$$

$\beta_1 >$ or $< 0,\ \beta_2 > 0,\ \beta_3 > 0$

To investigate the effect of fiscal policy on poverty alleviation in Nigeria, this study adopts a three-phases method of analysis. The first is the preliminary analysis/tests; the second phase, which is the model estimation proper adopted the ARDL estimation techniques. The third phase reveals various diagnostic tests of the model estimated to enhance its interpretation. The ARDL equation model of poverty as the dependent variable with fiscal policy variables and other independent variables is given below:

$$POV_t = \alpha_0 + \beta_1 POV_{t-1} + \beta_2 GEXPH_{t-1} + \beta_3 GEXPE_{t-1} + \beta_4 TXR_{t-1} + \beta_7 EXR_{t-1} + \beta_8 INF_{t-1} + \sum_{i=1}^{p}\alpha_{1i}POV_{t-i} + \sum_{i=1}^{q}\alpha_{2i}GEXPH_{t-i} + \sum_{i=1}^{r}\alpha_{3i}GEXPE_{t-i} + \sum_{i=1}^{s}\alpha_{4i}TXR_{t-1} + \sum_{i=1}^{u}\alpha_{6i}EXR_{t-i} + \sum_{i=1}^{v}\alpha_{7i}INF_{t-i} + \varepsilon_t \tag{3.5}$$

In this equation, $\alpha_{1i} - \alpha_{11i}$ are the coefficient of the model's short run-dynamics merging to equilibrium, α denotes the speed of adjustment while ε is the usual random disturbance term. ARDL models and its related ECM were estimated using OLS method. This has provided the basis for measuring the behaviour of the variables at the short-run and the speed of adjustment back to the long run steady position after a shock.

4. Results and Discussion of Findings

The presentation and analysis of the empirical analysis results is given in the array of results below:

Descriptive Statistics

Table 4.1: Descriptive Statistics

	POV	GEXPH	GEXPE	TXR	EXR	INF
Mean	53.89	96.83	159.90	1467.17	131.30	19.08
Median	54.60	33.73	70.64	762.41	100.26	12.72
Maximum	66.9	423.33	646.75	3905.38	536.89	72.84
Minimum	40.1	0.04	0.20	4.40	49.75	5.39
Std. Dev.	6.75	126.04	196.73	1527.47	104.70	17.21
Skewness	-0.08	1.23	1.14	0.42	2.71	1.81
Kurtosis	2.46	3.35	3.08	1.46	10.03	4.99
Jarque-Bera	0.51	9.83	8.18	4.89	124.49	26.90
Probability	0.774	0.007	0.017	0.087	0	0.000
Sum	2047.79	3679.40	6076.99	55752.6	4989.26	725.19
Sum Sq. Dev.	1684.71	587804.4	1432003	86327344	405554.9	10952. 43
Obs.	38	38	38	38	38	38

Source: Author's Computation (2024) using E-Views 10

Table 4.1 presents the descriptive statistics, facilitating a comprehensive grasp of the dataset. The descriptive analysis of the dataset yields significant insights into both the dependent variable, namely the poverty rate (POV), and the array of independent variables, including Government expenditure on health (GEXPH), Government expenditure on education (GEXPE), Tax rate (TXR), Inflation rate (INF) and Exchange rate (EXR). The mean poverty rate is computed at approximately 53.89%, with a median value of 54.60%, indicating a relatively symmetrical distribution. The observed poverty rates vary substantially, ranging from a minimum of 40.1% to a maximum of 66.9%, thereby highlighting notable disparities in poverty levels among the data points. The standard deviation of 6.75 reflects the degree of dispersion around the mean poverty rate. Notably, the skewness value of -0.08 indicates a slight deviation from a perfectly symmetrical distribution, and the kurtosis value of 2.46 suggests a moderate peakedness in the distribution. However, the results of the Jarque-Bera test reveal a departure from normality in the poverty rate distribution. Shifting focus to the independent variables, Government expenditure on health (GEXPH) exhibits the highest standard deviation of 126.04, underscoring significant variability in health expenditure across the dataset.

Correlation Analysis

Table 4.2: Correlation Matrix

	Pov	Gexph	Gexpe	txr	exr	inf
Pov	1					
Gexph	-0.37524	1				
Gexpe	-0.34748	0.991423	1			
Txr	-0.24653	0.885991	0.906808	1		
Exr	-0.24398	-0.16412	-0.17576	-0.23003	1	
Inf	0.034594	-0.29791	-0.31361	-0.38939	-0.137	1

Source: Author's Computation (2024) using E-Views 10

The correlation analysis reveals the relationships between the dependent variable and the independent variables. The poverty rate (POV) exhibits negative correlations with Government expenditure on health (GEXPH) and Government expenditure on education (GEXPE), indicating that higher spending on these sectors is associated with lower poverty rates. Additionally, the poverty rate (POV) shows negative correlations with the Tax rate (TXR), suggesting that higher tax rates are linked to lower poverty levels[2]. Moreover, the Exchange rate (EXR) demonstrates a negative correlation with the poverty rate (POV), suggesting that a stronger exchange rate may be associated with reduced poverty levels. However, the Inflation rate (INF) show relatively weak correlations with the poverty rate (POV). In summary, these correlation coefficients offer valuable insights into the potential relationships between the variables, providing a basis for further examination and interpretation in the context of the research objectives.

Unit Root Test

Table 4.3: Unit Root Test Results

Variables	At Levels		First difference		Order of Integration
	ADF	PP	ADF	PP	
Pov	-2.16	-2.09	-7.07***	-7.21***	I (1)
Gexph	-1.36	-1.77	-9.99***	-15.06***	I (1)
Gexpe	-2.83*	-2.11	-7.67***	-9.34***	I (1)
Txr	-2.68*	-2.44	-2.68**	-4.56***	I (1)
Exr	-4.68***	-3.52**	-	-	I (0)
Inf	-3.13**	-2.97**	-	-	I (0)

Source: Author's Computation (2024) using E-Views 10

Note: ***, **& * denotes 1%, 5%, and 10% level of significance respectively.

The table above presents the results of the unit root for ADF and PP. The Unit Root analysis investigates the order of integration for the variables, distinguishing between those integrated of order one I(1) and those integrated of order zero (I(0)). The result indicates that the poverty rate (POV), Government expenditure on health (GEXPH), Government expenditure on education (GEXPE) and Tax rate (TXR) are integrated of order one (I(1)), implying that these variables are non-stationary in their levels but stationary in their first differences. Additionally, the Exchange rate (EXR) and Inflation rate (INF) also exhibit integration of order zero I(0), indicating stationarity in their levels. These unit root analysis results hold significance for further econometric modelling, as they inform the selection of appropriate time-series models and help ensure the robustness of the statistical analyses conducted in the subsequent stages of the research.

Co-integration analysis

Table 4.4 Model 1: Fiscal Policy Co-integration Analysis

Null hypothesis: no long-run relationship		
T-statistics	Value	K
F-statistics	3.82	5

Critical Value Bound

Significance	I (0)	I(1)
10%	2.08	3
5%	2.39	3.38
2.50%	2.7	3.73
1%	3.06	4.15

Source: Authors Computation (2024) using E-Views 10

In the context of the study exploring the impact of fiscal policy on poverty in Nigeria, the co-integration analysis aims to ascertain whether there exists a long-run relationship among the variables under investigation. The null hypothesis tested is that there is no long-run relationship between the variables (Ravallion,1998) . The obtained T-statistics value of 3.82 and the corresponding F-statistics value of 5 play a crucial role in assessing the significance of the co-integration relationship. The results reveal that the F-statistics value of 3.82 exceeds the critical values for both I(0) and I(1) at all considered significance levels. Additionally, the degrees of freedom (K) of 5 also support the presence of a co-integration relationship among the variables. As a result, the null hypothesis of no long-run relationship between the variables is rejected. The analysis provides robust evidence of a significant co-integration relationship, suggesting that the variables are interconnected in the long run.

Short run and Long Parameter Estimation

This subsection presents the result obtained from estimating the ARDL model of the previous section. In order to ensure a proper insight into the impact of fiscal policy on poverty alleviation in Nigeria, all three models are estimated. The results are presented below:

Table 4.5 ARDL Estimation of Government Expenditure Fiscal Policy and Poverty

PANEL A: Short-run Estimates		
Variable	Coefficient	Std. Error
D (LPOV (-1))	-0.4**	0.11
D (LPOV (-2))	-0.88**	0.16
D (LPOV (-3))	-1.22***	0.18
D(LGEXPH)	-0.51*	0.11
D (LGEXPH (-1))	1.12***	0.15
D (LGEXPH (-2))	1.11***	0.14
D(LGEXPH(-3))	0.30**	0.06
D(LGEXPE)	0.59**	0.11
D(LGEXPE(-1))	-0.89**	0.13
D(LGEXPE(-2))	-1.01***	0.13
D(LGEXPE(-3))	-0.24***	0.05
D(LINF)	0.19***	0.04
D(LINF(-1))	0.36***	0.05
D(LINF(-2))	0.07	0.04
D(LINF(-3))	0.25***	0.04
D(LEXR)	0.16**	0.05
D(LEXR(-1))	0.35***	0.07
D(LEXR(-2))	0.28***	0.06
CointEq(-1)*	-0.21***	0.03
Adjusted R-squared: 0.75		
PANEL B: Long-Run Estimates		
Variable	Coefficient	Std. Error
LGEXPH	-10.95796	13.81738
LGEXPE	9.451023	11.82589
LINF	-1.101934	1.670122
LEXR	0.345357	0.775543

Note: *, **,** &* indicates the statistical level of significance at 1%, 5% and 10% level of significance respectively

Source: Author's Computation (2024) using E-Views 10

The coefficients estimated for the lagged differences of the variables provide valuable insights into the short-term interactions among the variables. The results indicate that the lagged differences of the poverty rate (D(LPOV)) have significant negative coefficients, with -0.4**, -0.88**, and -1.22*** for lag 1, lag 2, and lag 3, respectively. This implies that the poverty rate exhibits a significant response to its own past values, indicating persistence in poverty levels over time. Additionally, the lagged differences of Government expenditure on health (D(LGEXPH)) and Government expenditure on education (D(LGEXPE)) exhibit noteworthy effects on the poverty rate (POV). D(LGEXPH) has a significant negative coefficient of -0.51*, while D(LGEXPH (-1)) and D(LGEXPH (-2)) have significant positive coefficients of 1.12*** and 1.11***, respectively. Similarly, D(LGEXPE) has a significant positive coefficient of 0.59**, and D(LGEXPE (-1)) and D(LGEXPE(-2)) have significant negative coefficients of -0.89** and -1.01***, respectively. These results suggest that changes in government expenditures on health and education have both short-term positive and negative impacts on poverty rates. D(LINF) and D(LINF(-1)) have significant positive coefficients of 0.19*** and 0.36***, respectively, suggesting that recent changes in inflation also affect poverty rates. Moreover, the lagged differences of the Exchange rate (D(LEXR)) exhibit a significant positive coefficient of 0.16**, indicating that changes in the exchange rate have a short-term impact on poverty levels.

In summary, the ARDL short-run model yields an adjusted R-squared value of 0.75, indicating that approximately 75% of the variation in the poverty rate (POV) can be explained by the short-term dynamics of the independent variables considered in the analysis. These findings provide valuable insights into the short-term relationships between poverty and the selected independent variables, contributing to a comprehensive understanding of poverty dynamics in the studied context.

Table 4.6 ARDL Estimation of Tax Fiscal Policy and Poverty

PANEL A: Short-run Estimates		
Variable	Coefficient	Std. Error
D (LPOV (-1))	-0.4**	0.11
D (LPOV (-2))	-0.88**	0.16
D (LPOV (-3))	-1.22***	0.18
D(LTXR)	-0.01	0.07
D(LTXR(-1))	-0.33**	0.08
D(LTXR(-2))	-0.08	0.1
D(LTXR(-3))	-0.80***	0.13
D(LINF)	0.19***	0.04
D(LINF(-1))	0.36***	0.05
D(LINF(-2))	0.07	0.04
D(LINF(-3))	0.25***	0.04
D(LEXR)	0.16**	0.05
D(LEXR(-1))	0.35***	0.07
D(LEXR(-2))	0.28***	0.06
CointEq(-1)*	-0.21***	0.03
Adjusted R-squared: 0.75		
PANEL B: Long-Run Estimates		
Variable	Coefficient	Std. Error
LTXR	2.527301	3.245877
LINF	-1.101934	1.670122
LEXR	0.345357	0.775543

Note: *, **, &*** indicates the statistical level of significance at 1%, 5% and 10% level of significance respectively

Source: Author's Computation (2024) using E-Views 10

The ARDL short-run analysis investigates the dynamic relationships between the dependent variable, the poverty rate (POV), and the array of independent variables: Tax rate (TXR), Inflation rate (INF) and Exchange rate (EXR). The results indicate that the lagged differences of the poverty rate (D(LPOV)) have significant negative coefficients, with -0.4**, -0.88**, and -1.22*** for lag 1, lag 2, and lag 3, respectively. This implies that the poverty rate exhibits a significant response to its own past values, indicating persistence in poverty levels over time. Furthermore, the lagged differences of the Tax rate (D(LTXR)) and Inflation rate (D(LINF)) have significant effects on the poverty rate (POV). D(LTXR(-1)) has a significant negative coefficient of -0.33**, indicating that changes in tax rates in the previous period influence poverty levels. D(LINF) and D(LINF(-1)) have significant positive coefficients of 0.19*** and 0.36***, respectively, suggesting that recent changes in inflation also affect poverty rates. Moreover, the lagged differences of the Exchange rate (D(LEXR)) exhibit a significant positive coefficient of 0.16**, indicating that changes in the exchange rate have a short-term impact on poverty levels.

Result of Post-estimation Tests

Table 4.7 Fiscal Policy Post-Estimation Tests

Test	F-statistics	Probability	Remarks
Ramsey Test (Specification Test)	1.86	0.14	No misspecification
Heteroskedasticity (BPG Test)	0.99	0.57	No Heteroskedasticity
Serial Correlation (LM Test)	0.64	0.59	No serial correlation
Normality Test (Jarque-Bera)	1.52	0.49	Normality distributed

Source: Author's Computation (2024) using E-Views 10

The Ramsey Test, which evaluates the overall model specification, yielded an F-statistics value of 1.86 with a corresponding probability of 0.14. The findings suggest that the model specification is not significantly mis-specified, implying that the selected independent variables effectively capture their relationship with the dependent variable, the poverty rate. Subsequently, the Heteroskedasticity (BPG Test) yielded an F-statistics value of 0.99 with a probability of 0.57, indicating the absence of significant heteroskedasticity in the residuals. The Serial Correlation (LM Test) investigated the presence of autocorrelation in the model's residuals. The obtained F-statistics value of 0.64 with a probability of 0.59 suggests that there is no substantial serial correlation in the residuals. This outcome ensures that the errors are not systematically correlated over time, further affirming the accuracy of the model's estimations. Finally, the Normality Test (Jarque-Bera) indicated an F-statistics value of 1.52 with a probability of 0.49, showing that the residuals conform to a normal distribution.

5.1 Summary of Findings

This study examined the effect of fiscal policies on poverty alleviation in Nigeria, while employing the annual time series data for Nigeria from the World Bank Development Indicator (WDI), published by the World Bank and the International Financial Statistics (IFS) from 1980 to 2021. The study adopted the fiscal policy (from the government point of view). A choice of variables such as a disaggregate of government expenditure: government expenditure on health and government expenditure on education, as well as tax rate was adopted during the course of the study as fiscal policy tools. Also, exchange rate, inflation rate GDP growth rate and GDP per capita were also incorporated for the robustness of the study.

Specifically, two models were estimated, each representing the objectives of the study. The empirical results of these models were reported and discussed in details in the previous section. In line with the theoretical base of the: Keynesian theory of poverty postulated by John Maynard Keynes, the impact of the fiscal policy on poverty alleviation was assessed in Nigeria. However, before the models were estimated, the statistical properties of each of these variables were highlighted using descriptive statistics. Also, the stability of the series of variables examined were tested using the augmented Dickey-Fuller (ADF) test as well as the Phillips-Perron (PP) test. The results indicated that some of the variables are stationary, some trend stationary and others differenced stationary. That is, some of the series are not stationary at levels I (0) but they were stationary at first difference I (1). Shortly after this was done, the co-integration test was done to ascertain whether there exists a long-run relationship among the variables under investigation. The ARDL short-run and long-run models were estimated to investigate the dynamic relationships between the dependent variable, the poverty rate (POV), and the array of independent variables in line with all three objectives.

5.2 Conclusion

- **The results for model 1** indicated that fiscal policy through government expenditure on health and government expenditure on education exhibit a noteworthy effect on poverty rate as they have both short-term positive and negative effects respectively.

- **The result for model 2** showed that fiscal policy through tax exhibit a significant negative effects on the poverty rate (POV) in the studied context.

- Based on the results, it is safe to say that fiscal policy does contribute to poverty rate decrease but not effectively even as government expenditure budget seem to miss the target.

5.3 Recommendations

Poverty is wholesome; thus, an all-encompassing actions must be taken in other to effectively tackle the problems of poverty in Nigeria. Based on the findings from the empirical analysis, economic policies seem tackle poverty on a surface level thereby missing the target. Thus, the study recommends that:

1   The government should increase government expenditure budget on education and health as well as reduce tax rates such that would improve the poor's livelihood.

2   A going-concern attribute should be reflected by the government of Nigeria and not personal initiatives that can be jettisoned at any time.

Reference

Abdulrahman, I. A., Akanbi, S. B., & Oniyide, G. D. (2023). Impact of Monetary Policy on Poverty Reduction in Nigeria. *African Journal of Economic Review, 11*(1), 101–119.

Adegboyo, O. S. (2020). Does Government Spending Reduce Poverty in Nigeria ? Evidence from Auto- Regressive Distributed Lag Specification. *Ekonomi Bisnis, 25*(1), 14–25.

Adelowokan, O. A., & Osoba, A. M. (2015). Oil Revenue, Government Expenditure and Poverty Rate in Nigeria. *Global Journal of Management and Business Research*, *15*(10), 11-20.

Anderson, E., D'Orey, M. A. J., Duvendack, M., & Esposito, L. (2018).Does Government Spending Affect Income Poverty? A Meta-regression Analysis. *World Development, 103*, 60–71.

Chowdhury, A. A. (2018). Monetary Policy for Inclusive and Sustainable Development. https://researchdirect.westernsydney.edu.au/islandora/object/uws:55053/.1-42 .

Danaan, V. V. (2018). Analyzing Poverty in Nigeria through Theoretical Lenses. *Journal of Sustainable Development. 11*(1), 20–31.

Dankumo, A. M., Ishak, S., Bani, Y., & Hamza, H. Z.(2019). The Relationship between Public Expenditure, Corruption and Poverty in Nigeria. *Journal Ekonomi dan Studi Pembangunan, 11*(1), 2019, 76–89.

Duruh, B., & Chima, C. I. (2022). Impact of Education Budget on Poverty Reduction in Nigeria. *Journal of Economics and Allied Research, 7*(4), 150–163.

Emmanuel, U. (2019). Development Plans and Policies in Nigeria : Observed Impediments and Practical Best Alternative. *International Journal of Research and Scientific Innovation, 6*(7), 27-36.

Goshit, G. G., & Longduut, T. D. (2016). Indirect Monetary Policy Instruments and Poverty Reduction in Nigeria : An Empirical Evidence from Time Series Data. *International Journal of Academic Research in Business and Social Sciences, 6*(4), 86-101.

Itiveh, R. A. (2022). Poverty Alleviation Policies : Catalyst for Economic Development of Nigeria. *Journal of Public Administration, Finance and Law, 23,* 168–175

Jeff-Anyeneh, S. E., & Ibenta, S.N. (2019). Government Expenditure and Economic Growth:

Evidence from the Nigeria Economy (1981-2016). *Advances in Research, 19*(4), 1-14.

Maku, E., & Alimi, O. Y. (2018). Fiscal Policy Tools, Employment Generation and Sustainable Development in Nigeria. *ACTA Universitatis Danubius, 14*(3), 186–199.

Maina, A. W. (2017). The Effect of Consumption Taxes on Poverty and Income Inequality in Kenya. *International Journal of Accounting and Taxation. 5*(2), 56–82.

Martins, P., & Lucci, P. (2013). Recasting MDG 8 : Global Policies for Inclusive Growth.   www.odi.org.uk. 1-33.

Metu, A. G., & Kalu, C. U. (2020). Problems of Poverty and Inequality in Nigeria. *Structure and Problems of the Nigerian Economy, Forthcoming,* 226–251.

Odinakachi, N. C., Gloria, C., Anayo, B., & Eze, A. L. (2020). Fiscal Policy and Unemployment Reduction in Sub Saharan Africa ; Emphasis on Nigeria and Ghana. *IOSR Journal of Economics and Finance, 11*(1), 8–18.

Ogboru, I., & Abdulmalik, F. A. (2018). Government Expenditure on Agriculture and Its Impact on Unemployment Reduction in Nigeria: 1999 – 2015. *International Journal of Economics Commerce and Management, 6*(3), 2018, 1-25.

Onabote, A. A., Ohwofasa, B. O., & Ogunjumo, R. A. (2023). Government Sectoral Spending and Human Development in Nigeria: Is There a Link? *Heliyon, 9*(7), 1-11.https://doi.org/10.1016/j.heliyon.2023.e17545.

Oriavwote, V. E. & Ukawe, A. (2018). Government Expenditure and Poverty Reduction in Nigeria. *Journal of Economics and Public Finance, 4* (2), 156-163.

Osinowo, O. H., Sanusi, R. A., & Tolorunju, E. T. (2019). Poverty in Nigeria: The Role of Economic Growth, Governance and Agriculture. *Invited paper presented at the 6th African Conference of Agricultural Economists,* 1-16.

Ravallion, M. (1998). Poverty Lines in Theory and Practice. The Living Standards Measurement Study**.** ISSN:0253-4517, 133, 1-35.

Roser, M. & Ortiz-ospina, E. (2017). World Population Growth. *2*, 1–21.

Yahaya, N. (2019). Relationship between Government Expenditure and Poverty : A Study of Nigeria (1965-2014). *IOSR Journal of Economics and Finance, 10*(6), 39–52.