

# Relative Contributions of Disaggregated Government Social Expenditure to Income Poverty Reduction in Nigeria

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**Abstract:** Poverty has been viewed severally as a phenomenon that constitutes a major menace threatening the whole fabric of the development process in developing economies worldwide. However, attempts made to reduce this menace have not produced any significant positive results in Nigeria. It is for this purpose that this study investigates the relative contributions of disaggregated government social expenditure to income poverty reduction in Nigeria. The study adopted an ex post facto research design using the Autoregressive Distributed Lag (ARDL) model technique to analyse time-series data for a period from 1981 to 2020. The results established a long-run relationship between government social recurrent expenditure capital transfer and social transfer. CT and GSEX were found to be inversely related to poverty reduction (dPOVR). On the other hand, however, ST was found to be positively related to dPOVR. The study, therefore, concluded that while CT and ST have potentials for poverty reduction in Nigeria, increased government on GESX will further increase poverty. The study, therefore, recommended that government should prioritise the investment in social infrastructure in the rural areas where most of the poor in Nigeria reside, and this should be complemented with sustainable improvement in the government's social recurrent expenditures on education, health and sanitation. To also make ST more effective, we further recommended that government should put in place reliable programs of social transfer and revisit government policies on pension and gratuities.

**Keywords:** Poverty reduction, capital transfer, social transfer, government expenditure and developing countries.

## I. INTRODUCTION

Poverty has been viewed severally as a phenomenon that constitutes a major menace threatening the whole fabric of the development process in developing economies worldwide. It has greatly impacted negatively on the ability of most developing economies to achieve their sustainable development goal (SDG). The ability to reduce poverty incidence relative to other nations and among a country's citizenry has distinguished between the developed and developing economies. This exertion explains why the governments of various nations constituting the less developed countries have adopted various measures aimed at achieving a drastically significant reduction in the incidence of poverty among their nationals, while at the same time striving to improve their comparative standing within the global economy. Having observed that there had been a

reversal to the reduction in extreme poverty experienced globally in the past twenty-five (25) years, the World Bank (2020a) posited that reversing the setback to global poverty reduction is not about the individual nations, but it requires cooperation among nations, irrespective of their level of development. The establishment of the World Bank in July 1944 with its five institutions lays more credence to the importance of poverty reduction both globally and within specific economies. This view is unambiguously stated in the motto of the institution which is "working for a world free of poverty". While setting out its mission statement from the very beginning, reduction in the share of the global population living in extreme poverty to a meagre 3% tops the array of the mission statement (World Bank, 2020b). The other two parts of the mission statement, which include the provision of shared prosperity and sustainable development, might not be feasible in the face of ravaging abject poverty.

Much as there is a consensus among stakeholders within and across nations on the importance of reduction in the incidence of poverty globally and locally, and that this has turned out to be one of the macroeconomic goals of all modern economic planners, the trajectory towards achieving this has become a major area of substantial disagreement and continuous debate among Development Economists in the literature. At the earlier stages of drive for poverty reduction, researchers believed that this can result from the pursuit of consistent growth in a nation's economy (Vijayakumar, 2013; Dahlquist, 2013 and Perez de la Fuente, 2016). However, empirical pieces of evidence from most developing economies, especially in Sub-Saharan Africa, have in the past decades revealed that while most economies experienced tremendous growth in their economy over some time, there was no significant impact on the reduction in the level of poverty. In some cases, however, there were substantial increases in the level of poverty incidence even in the face of economic growth. This implies that economic growth does not necessarily mean the achievement of pro-poor growth. This exertion necessitated some further researches which have shown that the pattern or sources of growth in an economy, rather than the growth itself, matters in achieving pro-poor growth (Fashanu & Kasali, 2020a; Loayza and Raddatz, 2010; Montalvo and Ravallion, 2009; Ferreira et al 2007;

Christiansen, Demery and Kuhi, 2010; Christiansen and Kamiviski, 2015). Igor (2016) added another dimension to this debate by concluding from his research that apart from the source of growth, other issues like socio-economic variables and the aggregate government social expenditures do affect the ability of a nation to achieve sustainable pro-poor growth. Given this, therefore, this study seeks to investigate the nexus between government social expenditure and income poverty reduction in Nigeria, and further determine which of the disaggregated government social expenditure has the highest potential for poverty reduction in Nigeria.

Within the period of this study, several measures have been embarked upon by successive administrations in Nigeria to achieve some levels of reduction in income poverty. Notable among these is the Poverty Alleviation Programme (PAP) which was launched within the framework of Budget 2000. The programme was designed to employ 200,000 people and the sum of N10 billion was set aside for it. The programme was implemented in every state of the Federation and it provided jobs for 214,367 people who were paid stipends of N3, 500 per month. In January 2001, the Poverty Alleviation Programme was phased out and replaced with the National Poverty Eradication Program (NAPEP), which was responsible for coordinating and monitoring the activities of the core Poverty Eradication Ministries and Agencies (Kasali, Ahmad & Lim, 2016)

The National Poverty Eradication Program (NAPEP) was intended to eradicate absolute poverty in Nigeria by the year 2010. This was based on the premise that about 70 per cent of Nigerians live below the poverty line. NAPEP has provided strategies for the eradication of absolute poverty by streamlining and rationalizing the existing poverty alleviation institutions; and coordinated implementation and monitoring of relevant schemes. As the government's response to the worsening condition of the poor continued through expending heavily towards the eradication of poverty, the situation remains as poverty conditions continue to escalate (Kasali et al, 2016).

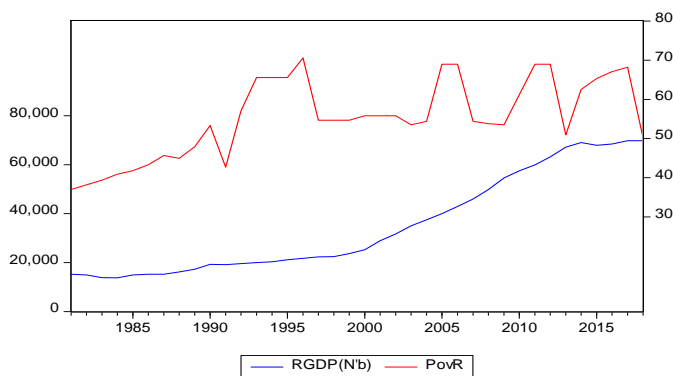


Figure1: The trend in RGDP and poverty rate in Nigeria (1981-2018)

Source: Fashanu & Kasali, 2000a

Evidence from the trend in economic growth and incidence of poverty in Nigeria, as shown in figure 1 reveals that there has not been any significant reduction in income poverty that corresponds to substantial growth in the economy over time.

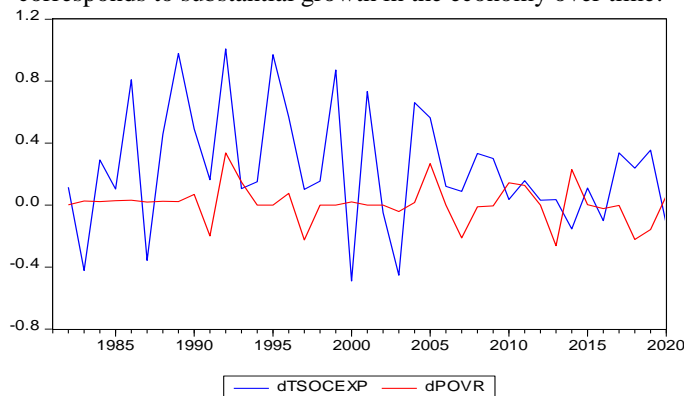


Figure 2: The trend in growth in Total Government Social Expenditure and growth in Poverty Rate in Nigeria (1981-2018).

Source: Authors' Computation using eView 10.

From figure 2, for instance, the trend in economic growth shows that the economy witnessed some consistent growth till 2015 when there was a slight drop in the growth rate. This, however, did not last long before it started experiencing further growth from 2016 to date. Poverty, on the other hand, has not exhibited any consistent pattern. The period from 1985 to 1995 witnessed a consistent rise in the poverty rate despite a perceived increase in the RGDP within the period. It was only from 2016 that the economy began to experience some major reduction in the incidence of poverty. Even this could not be ascribed to growth in RGDP because the period between 2016 and 2018 did not record any substantial growth in the RGDP. Since the above analysis confirms the claim that economic growth has not significantly impacted poverty reduction in Nigeria, the need arises for further investigation on other sources of income poverty reduction in Nigeria. Several studies have been carried out to show the impact of each of economic growth, pattern of growth and disaggregated socio-economic variables on poverty respectively (Adekoya, 2018; Adelakun J. O, 2018; Ayeni & Omobude, 2018; Becker, 1995; Chikolu, 2016; Ebong & Ogunnike, 2013; Ewubare Okpani, 2018; Fashanu & Kasali, 2020a; Fashanu & Kasali, 2020b Ijaiya, Ijaiya, Bello, & Ajayi, 2011; Obayori, Udeorah & Aborh, 2018; Ogbeide & Agu, 2015; Ogunleye, Owolabi, Sanyaolu & Lawal, 2018; Olopade, Okodua, Oladosun & Asaleye, 2019; Sylvester & Obayori, 2018; Ugwu, 2012). Because of the revealed significant positive impact of each of these variables on achieving sustainable income poverty reduction in Nigeria, does government social expenditure play any significant role in this regard? Which of the sub-divisions of the government social expenditure has the highest potential of serving as a growth pole in achieving pro-poor growth in Nigeria? Several studies have also been carried out on Nigeria to investigate how overall government expenditure has impacted income poverty reduction in Nigeria. However, and to the best of our knowledge, there seems to be no study on

how government social expenditure and its other components have impacted poverty reduction in Nigeria. Not much study, if any, has been done on a comparative analysis of the relative impact of each of the disaggregated social government expenditures on income poverty reduction in Nigeria. It is for this purpose that this study investigates the relative contributions of disaggregated government social expenditure to income poverty reduction in Nigeria. While the study focuses on the Nigerian economy, the scope shall be for a period from 1990 to 2020. The choice of this period is to enable the study to capture the effects of the various poverty-reducing measures from the post-SAP (Structural Adjustment Measures) that characterized the Military Regime from 1985-1999, up to the present democratic governance characterized by the rebasing of the economy in 2013. Data availability is another factor that advised the study's choice of scope. This study is expected to expand the frontier of knowledge by providing empirical support to the assertion that other factors, apart from economic growth and sources of growth matter in achieving poverty reduction in Nigeria. It is also expected to provide policy tools for policymakers and policy implementers within and outside Nigeria. Researchers and other stakeholders are also expected to benefit from the findings of this study. Structurally, section one of this study considers the introduction. Sections two and three shall be dedicated to literature review and methodology respectively. While findings and discussion shall be presented in section four, section five is reserved for summary, conclusion and recommendations.

## II. REVIEW OF LITERATURE

Generally, government expenditure refers to all government expenses, federal, state and/or local, on consumption, investment and transfers. Government social expenditure, on the other hand, comprises those expenses that are aimed at providing social services to redistribute resources across households. It includes expenses on education and health services, capital transfers and social transfers. (Igor, 2016). Poverty, on the other hand, has been a difficult concept to define because of its nature and its multi-dimensional effects on individuals and economies. Poverty means a lack of necessities. It widens the gap between individuals and creates economic and social inequality. When people are deprived of some basic needs, they are categorized as being poor. The concept of the poverty line is based on what an individual would need to make a moderate (not lavish) living. In the literature, poverty has been described as a complex and multidimensional problem.

Moreover, poverty can also be described as a state of deprivation or lack of resources to meet basic needs. It shows the lack of essential facilities caused by inadequate income. In 2002, the World Bank Group described poverty as a fluid concept that has many definitions. It has social, cultural, economic, political and more recently environmental dimensions. It can be seen as hunger, lack of shelter or being sick and not being able to afford to see a doctor (World Bank,

2014). Poverty is, not being able to afford to go to school and not knowing how to read, not having a job; fear for the future; living one day at a time, losing a child to illness brought about by unclean water; powerlessness; lack of representation and freedom. Poverty means a lack of income and productive resources sufficient to ensure a sustainable livelihood. It manifests in hunger and malnutrition; ill health; limited or lack of access to education and basic services; increased morbidity and mortality from illness; homelessness and inadequate housing; social discrimination and social exclusion; it is also characterized by lack of participation in decision making and civil, social and cultural life (World Bank, 2014).

Given this multi-dimensional nature, this study considers economic poverty which shall be defined as the economic conditions which prevent people from enjoying certain minimal levels of health, education, food, shelter and other basic needs because of the paucity of financial opportunities (World Bank, 2014). Hartwell (1972) attempted to draw out the central roles of poverty in the study of economics when he wrote that economics is essentially the study of poverty. To further lend credence to this assertion, Schultz (1981) opined that "most people in the world are poor. If we knew the economy of being poor, we would know much of the economics that matters". This income poverty has been measured severally in the literature using any headcount (number of people living below the poverty line), poverty gap or squared poverty gap (Chuhamn-Pole, 2014).

The theoretical underpinning for the nexus between government social expenditure and poverty reduction has been located within the purview of pro-poor and structural change growth theories (Anand, Miahra and Peiris, 2013).

While some empirical supports were found in the literature for this theoretical relationship is developed and some emerging economies, studies from developing economies have revealed conflicting results (Shenggen, 2007; Ravallion, 2010; Dursun and Ogunleye, 2016 & Gangas, 2017). Findings from other empirical studies have also revealed that poverty reduction does not depend on the pace of growth alone, but much more also on the pattern of growth (Loayza and Raddatz, 2010; Montalvo and Ravallion, 2009; Ferreira et al 2007; Christiansen, Demery and Kuhl, 2010; Christiansen and Kamiviski, 2015). On the nexus between government social expenditure and poverty reduction, empirical studies have revealed different results. Government expenditure has been found to have impacted poverty reduction in Nigeria through spending in rural agriculture productivity growth, health and education expenditure through its impact on per capita income and other factors like expenses on building and construction, power generation and rural roads (Shenggen, 2007; Odunmi and Omobintan, 2014; Oriavwole and Ukawe, 2018; Omodero, 2019; Chude, David and Anah, 2019; Fashanu and Kasali, 2020a)

Extending this study further, Igor (2016) was of the view that while the structure of growth impacts significantly on poverty

reduction in most economies studied, this is not a sufficient condition for poverty reduction. He opined that other factors like government social expenditure and other auxiliary covariates like inequality, unemployment, inflation and human capital also impact significantly on poverty reduction. To investigate this from Brazil, Igor (2016) adapted the model by Ravallion and Chen (2007) by incorporating government social expenditure and auxiliary covariates to analyse panel data for a period between 2002 and 2009. His findings revealed that inequality reduction and increase in human capital attainment were the most important factors in achieving poverty reduction in Brazil. Government social expenditures were also found to have played a marginal role through education and health. However, federal cash transfers were found not to have provided any significant effect.

Given the study's review of literature, we found that while several studies have been carried out from the Nigeria economy on the relationship between economic growth, public expenditure and poverty reduction and respectively (Shenggen, 2007; Odubunmi and Omobintan, 2014; Oriavwole and Ukawe, 2018; Omodero, 2019; Chude, David and Anah, 2019; Fashanu and Kasali, 2020a), the study by Samuel (2020) presents something close to this study. Samuel (2020) attempted to investigate the relationship between a disaggregated government expenditure and poverty reduction in Nigeria using the ARDL techniques. Our previous studies, however, have revealed that the lagged values of both the dependent variable (poverty reduction) and the corresponding independent variables (government social expenditures) are statistically significant in achieving poverty reduction at the current period (Fashanu and Kasali, 2020a, 2020b). This study, therefore found it necessary to include the lagged values of the variables of study by allowing the ARDL to auto-select the model using the Akaike Info Criterion (AIC). Also while the study finds it necessary to consider only government social expenditure as against the entire government expenditure by Samuel (2020), more recent data were also employed in this study (1981-2020). It is for this purpose that this study investigates the relative contributions of disaggregated government social expenditure to income poverty reduction in Nigeria using data from 1981 to 2020.

### III. METHODOLOGY

Empirical researches on the relationship between government social expenditure income poverty reduction have been conducted by several researchers for the developed, emerging and developing economies. Analysis of an extension of these studies to include the impact of disaggregated government social expenditure on poverty reduction is as recent a phenomenon as the study on sustainable development growth (SDG). This explains why there is a paucity of well-developed modelling frameworks in this area of study. The most recent research in this area was carried out by Igor (2018) who adapted the Ferreira model as applied by Ferreira, Leite and Ravallion, (2007), Montavo and Ravallion (2019) and Chuham-Pole (2014). His adapted model is expressed as:

$$P_{it} = \beta_{it}^A S_{it-1}^A \Delta Y_{it}^A + \beta_{it}^I S_{it-1}^I \Delta Y_{it}^I + \beta_{it}^S S_{it-1}^S \Delta Y_{it}^S + \sigma_{it}^J X_{it}^J + \varphi_{it}^k Z_{it}^k + \pi_i^J + U_{it}$$

$P_{it}$  poverty rate in State or Municipal  $i$  at time  $t$ .

A, I and S denote the various sectors (Agriculture, Industry and Service).

$Y_{it}^j$  represents the real GDP per capita of sector  $j$  in State/Municipal  $i$  at time  $t$ .

The error term includes a state fixed effect ( $\pi_i$ ) and a time-varying effect ( $U_{it}$ ), both of which might be autocorrelated.

$S_{it-1}^j$  represents the share of sector  $j$  in the total real GDP per capita for State/Municipal  $i$  in time  $t$ .

$X$  is a covariate that represents government expenditures disaggregated with  $J$  representing capital transfers and federal transfers.

$Z$  represents the socioeconomic variables, as 'k' stands for each of inequality, inflation, unemployment rate and human capital.

Since the interest of this study is to investigate the impact of the disaggregated government expenditure ( $XJ$ ) on poverty reduction, equation 1 above is, therefore modified as follows:

$$PR_t = \sum \varphi_t^k Z_t^k + U_t \quad \text{eq 2}$$

To reduce the variability or skewness of the data employed, and make them conform more closely to the normal distribution, the study takes the log transformation of the data. Also since the study is considering the growth effects of our variables of the study, we, therefore, take the first differences of all the data employed. Taking all these into consideration, the study expands equation 2 to reflect each of the four socioeconomic variables of study to obtain the study's model specification in equation 3.

$$\Delta \ln PR_t = \beta_1 \Delta GSEX_t + \beta_2 \Delta CT_t + \beta_3 \Delta ST_t + \varepsilon_t \quad \text{eq. 3}$$

Where,

$\Delta \ln PR_t$  stands for poverty reduction;  $GSEX$  represents government social recurrent expenditure;  $CT$  represents government expenditure on capital transfer;  $ST$  is the government expenditure on social transfer. The error term is given as  $\varepsilon_t$ . The a priori expectations of the study regarding the behavior of the independent variables' estimated parameters are:

$$\beta_1, \beta_2 \text{ and } \beta_3 > 0$$

This implies that all the variables are expected to show a positive relationship with poverty reduction ( $\Delta \ln PR_t$ ), which implies an inverse relationship with growth in the poverty rate ( $P_t$ ). Measurement of the incidence of income poverty has been done severally in the literature with the applications of three different consumption-based methods. These are headcount index, poverty gap and squared poverty gap

(Ravallion, 2010; Ferreira et al, 2007; Loayza et al, 2010 and Chuhum-Pole, 2014). This study, therefore, measures poverty incidence by using the headcount gap for the reason of data availability and accessibility. The poverty gap is measured as the proportion of the population living under \$1.50 per day. The government social recurrent expenditure (GSEX) is measured as the sum of recurrent expenditures on health and sanitation, education, culture and social security. Capital transfer (CT) expenditure is measured as the sum of investment in social infrastructures and social community services. Finally, social transfer (ST) is made up of expenses on pensions, gratuities, subventions and contingencies.

To establish the long-run relationship between poverty and the disaggregated government social expenditure, equation 3 shall be estimated using Augmented Distributive Lag (ARDL) technique to analyse time-series data sourced from the Central Bank of Nigeria (CBN, 2020) and World Development Index (World Bank, 2019)

For our pre-estimation test, the study carries out the unit root test to determine the stationarity of the variables of the study. The study shall also conduct a bond test to establish the presence of a long-run relationship between the dependent and independent variables.

For the empirical analysis, the study employs the ARDL techniques to estimate the variables of the study. The application of ARDL technique in this study is hinged on its advantage over the Ordinary Least Square method (OLS). The ARDL offers in-built model selection methods along with its post-estimation view. Also, the ARDL technique does not require variables to be 1(0), but is also applicable even to variables that are mixtures of levels 1(0) and first difference 1(1). This explains the reason for the unit root test. The ability of the ARDL model technique to perform the estimation of both the short-run and long-run relationship between the variables simultaneously also advised the study's preference for its application as against the ordinary Least Square method (OLS) adopted by Igor (2016).

IV. RESULTS AND DISCUSSION

As a form of pre-estimation test, a unit root test was carried out using the Augmented Dickey Fuller to test for the stationarity level of the variables used for this study. The result is shown in the table below.

Table 1. Summary of stationarity test

Variables	Levels		First Difference		Decision
	ADF	CRI. VALUE	ADF	CRI. VALUE	
PR	-3.615588	(-2.744728)***	-		1(0)
GSEX	-2.607932	(2.549915)	-3.615588	(-4.525529)*	1(1)
CT	-2.621007	(-1.644873)	-3.639407	(-4.921324)*	1(1)
ST	-2.621007	(-0.345534)	-3.615588	(-7.574910)*	1(1)

Note: \* significant at 1%; \*\* significant at 5%; \*\*\* significant at 10%

Source: Authors' computation using eView 10

The stationarity test shows that results revealed that only the dependent variable (PR) was found stationary at levels. Other variables like GSEX, CT and ST, all independent variables, were found to be stationary at the first levels. This further justifies the application of ARDL for the study's analysis. Thereafter, the study examined the long-run relationship testing between the dependent and independent variables using ARDL bound test before the short-run and long-run estimates. This is necessitated by the desire to ensure convergence in the model, to prove there is a long run relationship among the series. Thus, the derivation of the long-run relationship between poverty rate and all variables constituting the government social expenditures is presented in Table 2.

Table 2. Long-Run Relationship Using ARDL Bound Test (4, 4, 4, 3)

Test Statistic	Value	K
F-statistics (PR   GSEX CT ST)	3.702753	3
<b>Critical Value Bounds (PR\ GSEX CT ST)</b>		
Significance	I0 Bound	I1 Bound
10%	2.37	3.2
5%	2.79	3.67
1%	3.65	4.66

Source: Authors' Computation using E-view 10.

The F-statistics of the estimated normalized equations ( $F_{arb} = 3.702753$ ) is greater than the lower and upper critical bound at a 5% significance level. It implies that the null hypothesis of no long-run relationship is rejected at a 5% significance level and that there exists a long-run relationship between poverty reduction, government social expenditure, capital transfer and social transfer in Nigeria. Having established the existence of a long-run relationship between the dependent and independent variables, the study proceeded to estimate the nature of this relationship using ARDL technique.

The ARDL approach automatically chooses the lag length on all variables as the model was set at four to ensure a sufficient degree of freedom based on the automatic selection of the Akaike Information Criterion. The results of both the long-run and the short-run estimates are presented in Table 3.

Table 3. Results of Estimated ARDL Model

<b>Dependent Variable: PR</b>
<b>Selected Model: ARDL(4, 4, 4, 3)</b>

Sample: 1990 2020			
Variable	Coefficient	Std. Error	t-Statistic
<b>Long-Run Estimates</b>			
DLNPR(-1)	-0.577654	0.326245	(-1.770615)
DLNPR(-2)	-0.908564	0.399690	(-2.273169)***
DLNPR(-3)	-0.345212	0.301091	(-1.146538)
DLNPR(-4)	-0.412324	0.289785	(-1.422863)
DLNGSEX	-7.019626	3.824959	(-1.835216)***
DLNGSEX(-1)	-7.691219	4.686887	(-1.641008)
DLNGSEX(-2)	-0.195302	0.115466	(-1.691423)
DLNGSEX(-3)	-0.134943	0.079542	(-1.696496)
DLNGSEX(-4)	0.191850	0.110432	(1.737264)
DLNCT	1.183320	1.236911	(0.956673)**
DLNCT(-1)	0.982560	1.294949	(0.758764)
DLNCT(-2)	2.724692	1.777209	(1.533130)
DLNCT(-3)	1.289270	1.362965	(0.945930)
DLNCT(-4)	1.205964	0.879581	(1.371067)**
DLNST	0.455304	0.283557	(1.605690)**
DLNST(-1)	0.636769	0.393166	(1.619593)
DLNST(-2)	0.060955	0.064600	(0.943581)
ECT(-1)	-3.243754	0.601386	(-5.393798)*
<b>R-Square</b>	0.722031	<b>F-stat</b>	(1.010147)**
<b>Adj. R-Square</b>	0.172531	<b>D-Watson</b>	1.539523

Note: \*significant at 1%; \*\* significant at 5%; \*\*\* significant at 10%

Source: Computed by the Authors' using E-view 10

From table 3, the long-run estimates revealed that the independent variables capital transfer (CT), social transfer (ST) and their lagged values were found to have exhibited a significantly positive correlation with the dependent variable, poverty reduction (dlnPR) at 5% levels of significance respectively. This implies that an increase in any or all of CT and ST leads to a decrease in the incidence of poverty. That is the results confirmed that poverty reduction in Nigeria during the study period had resulted from increased social and capital transfers. This result conforms to economic theory and a priori expectations of the study. It also conforms to the results from a similar study by Igor (2016). This result is, however, contrary to the findings of Samuel (2020) that capital transfer is inimical to poverty reduction in Nigeria. The result for government social recurrent expenditures (GSEX), the exception of its fourth lagged value, revealed a significantly negative relationship with poverty reduction. This further implies that GSEX has been poverty enhancing in Nigeria. Though this result is significant at the 10% level, it neither conforms to our a priori expectations, nor economic theory. However, the result for GSExt-4 (0.192) shows that it takes about four years before the effects of the increase in

government social recurrent expenditure are noticed on poverty reduction in Nigeria. In a more specific sense, CT seems to have a higher impact on poverty reduction than any of ST and GSEX. An increase of 1% in capital transfer causes about a 1.18% reduction in the poverty rate. Conversely, a reduction in the economy's capital transfer by 1% will aggravate poverty by 1.18%. The result for GSEX also revealed that a 1% increase in government social expenditure (GSEX) leads to a reduction in the poverty rate by 4.5%. Also for government expenditure on social transfer (ST), the study found that a 1% increase will reduce poverty by about 0.44%. Another major issue thrown up by the results of this study is the fact that poverty reduction in Nigeria is not only resulting from the current government spending on government social expenditure and capital transfer but also the government's past expenditures on these variables and the previous level of poverty in the economy. This is shown in the non-zero values of some of the lagged values, especially for all variables dlnPR, CT, ST and GSEX. However, from the study's long-run result, only dlnPR(-2) was found to be significant at the 10% level. The result for the variable GSEX only confirms the understanding that effects of government expenditures in the previous four years ago on GSEX, comprising of social expenditures on both education and health, will not be felt on poverty reduction until the current year. That is four years after. The coefficient of the ECT is found to be negative and statistically significant at the conventional level. The ECT value (-3.24) implied that in order to return to the long run equilibrium, it is of the opinion that the model corrects its short-run disequilibrium by about 324% speed of adjustment. The coefficient of determination ( $R^2$ ) is high (0.722031) indicating that about 72.2% of the total variations in poverty reduction were explained by the variables in the model. This implies that apart from the disaggregated government social expenditure, other variables not captured in the model also matter in poverty reduction in Nigeria. The overall test using the F-statistic (1.736774) is statistically significant at a 5% level of significance showing that the model is well specified and statistically significant. The Durbin Watson statistic (1.539523) shows that there is an absence of serial autocorrelation in the model.

## V. SUMMARY, CONCLUSION AND RECOMMENDATIONS.

This study sought to investigate the nexus between government social expenditure and income poverty reduction and to further determine which of the disaggregated government social expenditure has the highest potential for poverty reduction in Nigeria. To achieve this, the study employed econometric techniques using the ARDL model and other analytical tools to analyse time-series data from Nigeria over a period from 1990 to 2020. As a pre-estimation test, the study tested for the stationarity of the data series using ADF. Having confirmed the suitability of the ARDL model from the results of the unit root test, the study proceeded to achieve our earlier stated objective of establishing a long-run relationship between the variables of the study.

The long-run estimates revealed that capital transfer (CT), social transfer (ST) and their lagged values were found to have exhibited a significantly positive correlation with the dependent variable, poverty reduction (dlnPR) at 5% levels of significance respectively. This implies that an increase in any or all of CT and ST leads to a decrease in the incidence of poverty. That is the results confirmed that poverty reduction in Nigeria during the study period had resulted from increased social and capital transfers. This result conforms to economic theory and a priori expectations of the study. It also conforms to the results from a similar study by Igor (2016). This result is, however, contrary to the findings of Samuel (2020) that capital transfer is inimical to poverty reduction in Nigeria. The result for government social recurrent expenditures (GSEX), the exception of its fourth lagged value, revealed a significantly negative relationship with poverty reduction.

Our adjusted R<sup>2</sup> is given as 0.17257, implying that our estimated coefficients account for about 17% of the total variations in poverty reductions in Nigeria. This result suggests that although empirical pieces of evidence from the literature show that other factors like economic growth, structure or sources of growth and government social expenditures matter in achieving the SDGs goal of poverty reduction, total government social expenditures still account for about 17% of poverty reduction in Nigeria. This result is statistically significant at a 5% level of significance.

Poverty reduction has continued to be of grave concern to successive governments in Nigeria since the introduction of SAP in 1985 to date. This is attested to by the prime position it occupies in the recently adopted SDGs by the Nigerian government. Empirical evidence has, however, shown that growing the economy is necessary but not sufficient as a condition to achieve this. Towards investigating the relevance of other factors as identified from studies carried out on other economies, this study investigated the impact of government social expenditure on poverty reduction in Nigeria. From the findings of this study, we concluded that capital transfer (CT) and social transfer (ST) are poverty-reducing in Nigeria for the period of the study. On the other hand, however, government social recurrent expenditure (GSEX) was found to have been inimical to poverty reduction in Nigeria. The findings of the study have some important implications for the achievement of the SDGs as it relates to poverty reduction in Nigeria. Since one of the significances of this study is to provide policymakers with tools to achieve the goals of sustainable development, we present hereafter the policy recommendations from the findings of this study:

- i. The ARDL results from the study revealed that CT has the highest coefficient, and hence the highest potential for poverty reduction. That is a deliberate increase in government capital transfer expenditure has the highest significant impact in achieving poverty reduction. Since the main components of CT are investments in social infrastructure and social services, we recommend that the government should

prioritise the investment in social infrastructures like good, functional and accessible schools, good road networks, cheap and affordable electricity and good means of transportation in the rural areas where most of the poor in Nigeria reside. This should be complemented with sustainable improvement in the government's social recurrent expenditures on education, health and sanitation (GSEX) because of its ability to enhance poverty reduction in the long run as revealed by the coefficient of GSEXt-4.

- ii. Also, the study revealed that the positive relationship between government expenditure on social transfer (ST) and poverty reduction is statistically significant. To further enhance the poverty-reducing potentials of ST, the study recommends, therefore, that government should put in place reliable programs of social transfer like unemployment benefits and direct payment of certain allowances to the aged or so-called "senior citizens" in the country. Also, government policies on pension and gratuities should be revisited to allow for prompt remittance to beneficiaries as and when due, as this may have spiral effects on reducing the number of people in the medium income group living below the poverty line.

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