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## **Income Inequality and Social protection, and Labor Programs in Nigeria: Empirical Investigation**

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**Abstract:** This research explored the interconnection between social protection and labor programs to poorest quintile and income inequality in Nigeria between 2010 and 2015. The study embraces multiple linear regression model and its estimation using ordinary least squares (OLS). The estimated coefficient of 0.005099 signifies that Gini coefficient (GIN) diminishes by about 0.005% for every 1% expansion in BSPL (benefit incidence of social protection and labor programs to poorest quintile) and it is statistically significant at 5% level. This outcome aligns with the view that social protection is an instrument for handling disproportion for poor households, oftentimes by balancing the amount of household earnings or giving finances that allow access to various services. As such, more resources need to be mobilized if the government of Nigeria is to expand coverage of social protection to tackle the high rates of poverty and vulnerability in the country.

**Keywords:** poorest quintile, social safety net programs, inequality, poverty, Nigeria

## 1. Introduction

Nigeria accounts for about 47% of West Africa's population, and has one of the largest populations of youth in the world (World Bank, 2019). Between 2006 and 2016, Nigeria's gross domestic product (GDP) grew at an average rate of 5.7% per year, as volatile oil prices drove growth to a high of 8% in 2006 and to a low of -1.5% in 2016 (World Bank, 2019). While Nigeria's economy has performed much better in recent years than it did during previous boom-bust oil-price cycles, such as in the late 1970s or mid-1980s, oil prices continue to dominate the country's growth pattern.

A report in June, 2018 by The World Poverty Clock showed that Nigeria has overtaken India as the country with the most extreme poor people in the world. India has a population seven times larger than Nigeria's (Kazeem, 2018). The 86.9 million Nigerians as at June, 2018 living in extreme poverty represents nearly 50% of its estimated 180 million population (Kazeem, 2018). As of December, 2018, the 90.8 million Nigerians living in extreme poverty constituted a staggering 46.4% of its estimated 195.6 million total population (Toromade, 2018). This rose from the 44.2% of the total population that was recorded in June. Despite the rise, Nigeria's escape rate has improved from -5.8 people per minute in June to -4.5 people per minute in December. However, this falls terribly short of the escape rate target of 14.4 people per minute in Nigeria.

As Nigeria faces a major population boom —it will become the world's third largest country by 2050 —it's a problem will likely worsen (Kazeem, 2018). But having large swathes of people still living in extreme poverty is an Africa-wide problem.

Given its success in a number of emerging markets and some African countries, social protection is viewed as a tool to improve the lives of those at the lower end of the income distribution (Bhorat et al., 2019). According to Development Initiatives (2015), social protection may be defined as “public actions – carried out by the state or privately – that: a) enable people to deal more effectively with risk and their vulnerability to crises and changes in circumstances (such as unemployment or old age); and b) help tackle extreme and chronic poverty”. It is an umbrella term for various types of approaches, policies, programmes and actions that address deprivation, poverty (for example through providing income security payments, or basic health coverage), or vulnerability to financial (and other) shocks as well as to different types of risk.

In recent years, the government of Nigeria and its development partners have sought to develop social

protection instruments as a mechanism to tackle such high rates of poverty and vulnerability in the country and to support progress in both the economic and the social spheres. As such, social protection is now emerging as a policy objective. Recent efforts to study social protection in Nigeria have focused largely on the technical design of various aspects of social protection programmes, extent of their coverage, fiscal space and potentials, and their implementation challenges. They have also adopted the governance, gender and life cycle approach, transformative social protection framework, or the international labour framework of analysing social protection (Aiyede et al., 2015). Also, some quantitative studies have examined determinants of poverty in Nigeria (Anyanwu, 2010; Ijaiya et al., 2011; Hassan, 2012). However, less attention is given to the effect of social protection programmes on inequality in Nigeria.

This study contributes to knowledge by investigating the effect of social protection programmes on inequality in Nigeria. In particular, how the social protection and labor programs to poorest quintile has effected income inequality. Inequality in income and asset distribution, unequal access to basic infrastructure and services and social-cultural norms are key drivers of poverty, vulnerability and inequality in the country (UNDP, 2009). The average value for Nigeria's Gini income inequality index from 1985 to 2018 was 42.3 index points with a minimum of 35.1 index points in 2018 and a maximum of 51.9 index points in 1996 (Theglobaleconomy, 2021). The 2018 value was 35.1 index points (Theglobaleconomy, 2021).

The rest of the paper is designed as follow: Section 2 reviews literature, Section 3 gives a synoptic overview of social protection schemes in Nigeria. Section 4 hosts the research methodology. Section 5 presents results and discussions. Section 6 is summary, conclusion and suggestions

## 2. Literature Review

Hickey (2009) in the paper titled ‘What forms of politics lie behind social protection interventions that have successfully reduced poverty in developing countries?’ shows that liberal tenets are not as important as deeper political processes in securing poverty reduction. Case-study analysis in eight countries demonstrates that the most important political factors in pro-poor politics and poverty reduction are political society rather

Slater and Farrington (2009) assessed the costs, effectiveness and efficiency of social transfers. The conclusion was that means testing or proxy testing may be beyond the capacity and finances of LICs, and that social categorical targeting is likely to remain a popular

policy option, partly because of ease and partly because of political acceptability. Social protection interventions are invariably a patchwork of different programmes, and it remains important to track who is and is not reached and to design new interventions for the excluded.

Lowder et al. (2017) focused on poverty, social protection and agriculture in low income countries. The findings of the study showed that social assistance is by far the most common form of social protection in developing countries and the poor are more likely to receive social assistance than higher income groups which tend to benefit more from social insurance and labour programmes. The study came to this conclusion by carrying out an analysis of data from international fund for agricultural development and the world bank of 141 countries under social protection by weighting each poverty headcount estimate for each population size of countries considered.

Roelen et al. (2017) in their article presented findings from cross – country qualitative research regarding the impact of social protection on loss of parental care, support to foster or kinship care and well-being in Sub-Saharan Africa, specifically social protection programmes in Ghana, Rwanda and South Africa. The study discovered that social protection has the potential to support the prevention of loss of parental care and much needed support through direct and indirect income effects. The study employed the use of primary data collection through in-depth interviews. Data was analysed with a multi-stage inductive process. The use of a direct collection of data gave the study an inside look into how the cash transfers of social protection has impacted on individual lives in local communities for better livelihood.

A global cross country study undertaken by Zaman and Tiwari (2011) analysed social protection spending from 100 countries during the period 1980-2008 and found that social protection spending raised economic growth to a certain threshold after which it began to reduce growth (Alderman and Yemtsov, 2012). The implication of the cross country study showed that similar results were derived given varying country statistics. The study after further reinvestigations where discovered to be authentic solidifying the role of social protection in an economy evident in the positive increase in the GDP of the case study countries

Gentilini et al., (2014) provides information on the state of social safety nets in developing and emerging countries. Using data from 146 countries the report provides new estimates on the coverage of social safety net programmes, their features, level of government spending, and recent empirical evidence. It also reviews important policy and practical developments and highlights emerging innovations

IATT (2018) paper reviews established national social protection programmes in eight countries to examine experiences of scaling up. It examines institutional dynamics by looking at the location of programmes within ministries, leadership and drivers of change, and promotes a holistic, integrated approach. It finds that relations between ministries are an important factor

determining effectiveness. It notes that cash transfers often dominate the dialogue, which detracts from comprehensive programming and is less effective than a broader focus on integrating social transfers and social services.

Other works on social protection conducted around the world include: Zucco, 2010; Haider, 2010; Rao, 2011; and McCord, 2012. (Alamgir, 1996; Mallick, 2000; Alderman and Yemtsov, 2012; McCord and Van Seventer (2004); Tirivayi et al. (2016); Daidone et al. (2017)

In Nigeria, Zanker and Holmes (2012) carried out a study on social protection, HIV and AIDS and child protection. It drew on both primary and secondary research carried out between January and June 2011 with case studies of four Nigerian states –Adamawa, Benue, Edo and Lagos. Their investigations revealed that Social protection represented about 1.4% of government expenditure, compared with Kenya's spending of 6.2% of government expenditure. Moreover, two-third of this is allocated to civil servant pension and benefit schemes. Political commitment to social protection is currently very low. It is not seen as a key priority for the federal government, as reflected by the limited fund allocated to it

Aiyede et al.(2015) used qualitative and quantitative strategies within a political economy framework to explore the emergence and trajectory of these policies in Nigeria. Primary data were derived from field interviews and a survey of beneficiaries in six states selected from the six geopolitical zones in the country. The summary of the outcome was that there is no overarching policy on social protection in Nigeria currently. There are pilot programmes led by the federal government and other programmes implemented in an ad hoc manner at state level. Political differences and competition between the state and federal governments have partly accounted for the slow pace in adoption of social assistance programmes. An uptake in social protection may occur only if the political leadership is convinced that it is sustainable and would enhance their political fortune.

Osuagwu and Osabohien (2018) investigated the relationship between social protection policies and agricultural output in Nigeria using data from Living Standard Measurement Study-Integrated Survey on Agriculture (LSMS-ISA) conducted in August-October 2012 and February-April 2013 for post planting interview and post-harvest interview respectively, for a sample of 4,210 farming community level households. The method of analysis employed was the Propensity Score Matching (PSM) index. The results from the PSM show that households who benefit from social protection programs in the form of agricultural credits experience three times yield more than their counterparts who do not. In the aftermath of a shock, those farmers without social protection suffer deprivation, which results to lowering consumption that deepens their poverty.

From the scanty literature review, it is obvious that the social protection and poverty nexus has not been adequately explored in Nigeria. The purpose of this study is to contribute to this knowledge gap by establishing

causal relationship between social protection and poverty and to prescribe policy options.

### 3. Social Protection Schemes in Nigeria: A Synoptic Overview

A number of different actors are involved in funding and implementing poverty programmes, including government, donors, international NGOs and civil society. Past social protection interventions in Nigeria include: Family Economic Advancement Programme; Better Life for Rural Women; Directorate for Food, Roads and Rural Infrastructure; National Directorate of Employment; Family Support Programme; and Family Economic Advancement Programme (Awojobi, 2017).

In recent time, majority of social protection programmes in Nigeria fall under social assistance-type social protection programmes, with few social insurance and social equity programmes. According to Hagen-Zanker and Holmes (2012), federal government-led social protection includes three main programmes; i) In Care of the People (COPE) (funded initially through the MDGs-DRG fund18) targeted at extremely poor households (those headed by a female, and those including elderly, physically challenged, and fistula or HIV/AIDS patients) with children of school-going age; ii) the health fee waiver for pregnant women and under-fives (funded by the MDGs-DRG and provided on a universal basis); and iii) the Community-based Health Insurance Scheme (CBHIS) (re-launched in 2011 after previous design challenges).

Other social assistance programmes are implemented in an ad hoc manner by a range of government ministries, departments and agencies (MDAs) at state level and/or funded by international donors. These include conditional cash transfer (CCTs) for girls' education (in Bauchi, Katsina and Kano, through the UK Department for International Development (DFID), the UN Children's Fund (UNICEF) and the World Bank), a child savings account in Bayelsa and a disability grant in Jigawa, plus various health waivers, education support (e.g. free uniforms) and nutrition support. HIV and AIDS programmes at state level also include social protection subcomponents, including nutrition, health and education support. Labour market programmes include federal- and state-level public works programmes, agricultural subsidies/inputs and youth skills and employment programmes – but these are not necessarily targeted at the poor.

### 4. Research Methodology

To examine the effect of social protection programmes on inequality in Nigeria, this study employed secondary annual data spanning the period 2010-2015 from Index Mundi and other relevant sources. The choice of this period is based on availability of data. The paper adopts multiple linear regression model and its estimation using ordinary least squares (OLS) which is doubtless the most widely used tool in econometrics

This study focus on income equality as such Gini coefficient is employed as proxy for income inequality as well as dependent variable. Also, the study adopted a

regression procedure where both the dependent and independent variables are modeled. The independent variable is social protection and labor programs. Other variables that also influence income inequality were controlled for.

#### 4.1. Model Specification

The Ordinary Least Squares regression (OLS) adopted in this paper is more commonly named linear regression (simple or multiple linear regression model depending on the number of explanatory variables).

In the case of a model with p explanatory variables, the OLS regression model writes:

$$Y = \beta_0 + \sum_{j=1..p} \beta_j X_j + \varepsilon \dots\dots\dots(1)$$

where Y is the dependent variable,  $\beta_0$ , is the intercept of the model,  $X_j$  corresponds to the jth explanatory variable of the model ( $j= 1$  to  $p$ ), and  $\varepsilon$  is the random error with expectation 0 and variance  $\sigma^2$ .

In the case where there are n observations, the estimation of the predicted value of the dependent variable Y for the ith observation is given by:

$$y_i = \beta_0 + \sum_{j=1..p} \beta_j X_{ij} \dots\dots\dots(2)$$

The OLS method corresponds to minimizing the sum of square differences between the observed and predicted values. This minimization leads to the following estimators of the parameters of the model:

$$[\beta = (X'DX)^{-1} X' Dy \quad \sigma^2 = 1/(W - p^*) \sum_{i=1..n} w_i (y_i - \hat{y}_i)] \dots\dots\dots(3)$$

where  $\beta$  is the vector of the estimators of the  $\beta_i$  parameters, X is the matrix of the explanatory variables preceded by a vector of 1s, y is the vector of the n observed values of the dependent variable,  $p^*$  is the number of explanatory variables to which we add 1 if the intercept is not fixed,  $w_i$  is the weight of the ith observation, and W is the sum of the  $w_i$  weights, and D is a matrix with the  $w_i$  weights on its diagonal.

The vector of the predicted values can be written as follows:

$$y = X (X' DX)^{-1} X' Dy \dots\dots\dots(4)$$

Following equation (1), the empirical model used in the study is specified below:

$$\log GIN_t = \eta_0 + \eta_1 \log SPL_t + \eta_2 \log \hat{K}_t + \phi_t \dots\dots\dots(5)$$

where,  $\log GIN_t$  is inequality represented by Gini-coefficient - a proxy for income inequality in Nigeria at year t;  $\log SPL$  is a vector of social protection and labor programs components (i. CSPL = Coverage of social protection and labor programs (% of population. i.e., addition of the five parts that make up the population: poorest quintile, 2nd quintile, 3rd quintile, 4th quintile; and richest quintile. Each quintile is a representative of 20% of the given population) which shows the percentage of population participating in social insurance, social safety net, and unemployment benefits and active labor market programs. Estimates include both direct and indirect beneficiaries. ii. BSPL = Benefit incidence of social protection and labor programs to poorest quintile (% of total SPL benefits) shows the percentage of total social protection and labor programs



benefits received by the poorest 20% of the population);  $\log \tilde{X}$  represents vectors of controlled variables which according to economic theory also determine income inequality and they include: democracy index (DEM)-The index is based on the electoral process and pluralism, government functions, political participation, and culture as well as civil liberties; GDP per capita (constant LCU) (GDPC) is gross domestic product divided by midyear population. GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant local currency;  $\eta$ s are parameters to be estimated;  $\epsilon$ t is the error term.

## 5. Results and Discussions

Table 1 displays descriptive statistics for the log of the series in tabular form. The table shows that the variables contained 6 observations each. The average value of the variables are 0.746816, 1.373208, 3.815257, 12.81089, 1.349331 for BSPL, CSPL, GIN, GDPC, and DEM respectively as indicated by the mean. GDPC has the highest mean value (12.81089). Its maximum value is 12.86190 while its minimum is 12.74999. When the middle value of the series are ordered from the smallest to the largest, the median for BSPL, CSPL, GIN, GDPC, and DEM are 0.684027, 1.586269, 3.815490, 12.80846, and 1.327075 respectively.

In Table 1, the standard deviation shows a measure of spread in the series or how tightly the data value are clustered around the mean. The standard deviation values of 0.941043, 0.566350, 0.024733, 0.046697, and 0.095393 are for BSPL, CSPL, GIN, GDPC, and DEM respectively. For instance, the standard deviation values for BSPL is 0.941043. It means that about 68% of the data values fall between plus or minus 0.941043 of the mean of 0.746816, which is within one standard deviation. Likewise, 95% of the data values fall between two standard deviations of the mean, or between plus or minus 1.882086 of the mean, and this pattern continues when we assume that the data follows the normal

distribution which is a bell-shaped curve. The analyses applies for the rest of the variables.

Next there is the skewness which is a measure of asymmetry of the distribution of the series around its mean. In a perfect normal distribution, the skewness is zero. Positive skewness means that the distribution has a long right tail and negative skewness implies that the distribution has a long left tail. The negative skewness of -0.024772 for GIN variable in Table 1 indicates that the left tail of its distribution is larger than the right. On the contrary, positive skewness of 1.195015 for DEM variable indicates that the distribution has a long right tail.

Kurtosis, like skewness, also involves the tails of the distribution. Kurtosis is a measure of whether the data points are heavy-tailed or light-tailed relative to a normal distribution. Datasets with higher kurtosis have heavier tails than datasets with lower kurtosis. The kurtosis of the normal distribution is 3. If the kurtosis exceeds 3, the distribution is peaked (leptokurtic) relative to the normal; if the kurtosis is less than 3, the distribution is flat (platykurtic) relative to the normal. According to Engle and Patton (2001), kurtosis values ranging from 4 to 50 were considered to be very extreme deviation from normality. The descriptive statistics in Table 1 shows a kurtosis of 1.468540, indicating that GDPC dataset is light-tailed relative to a normal distribution while kurtosis value of 3.472312 for DEM dataset shows heavy-tailed relative to normal distribution but does not extremely deviate from normality.

The Jarque-Bera test in Table 1 is a test statistic for testing whether the series is normally distributed. The test statistic measures the difference of the skewness and kurtosis of the series with those from the normal distribution. The reported probability is the probability that a Jarque-Bera statistic exceeds (in absolute value) the observed value under the null hypothesis—a small probability value leads to the rejection of the null hypothesis of a normal distribution. For the BSPL, CSPL, GIN, GDPC and DEM in Table 1, the null hypothesis of normal distribution is accepted because the probability values are high (i.e., not significant at any of the conventional level of 1%, 5% and 10% levels).

Table 1: Descriptive Statistics

	BSPL	CSPL	GIN	GDPC	DEM
Mean	0.746816	1.373208	3.815257	12.81089	1.349331
Median	0.684027	1.586269	3.815490	12.80846	1.327075
Maximum	1.930071	1.857859	3.848018	12.86190	1.530395
Minimum	-0.579818	0.350657	3.781914	12.74999	1.244155
Std. Dev.	0.941043	0.566350	0.024733	0.046697	0.095393
Skewness	-0.049908	-1.078283	-0.024772	-0.031076	1.195015
Kurtosis	1.811322	2.759012	1.732144	1.468540	3.472312
Jarque-Bera	0.355730	1.177213	0.402479	0.587308	1.483831
Probability	0.837056	0.555100	0.817717	0.745534	0.476201
Sum	4.480895	8.239248	22.89154	76.86537	8.095983
Sum Sq. Dev.	4.427811	1.603759	0.003059	0.010903	0.045499
Observations	6	6	6	6	6

Source: Author's computation using Eviews 10 software

Hereafter, a correlation matrix was used to summarize the data, as a diagnostic for advanced analyses. The correlation coefficient can range in value from -1 to +1. The larger the absolute value of the coefficient, the stronger the relationship between the variables. Table 2 presents the correlation matrix between the dependent variable and independent variables in equation 5. Each cell in the table shows the correlation between two specific variables. It can be observed that the correlation coefficients between the variables are below the threshold value of 0.98. This means that multicollinearity is absent between the explanatory variables and explained variable in the equation. Specifically, the correlation between CSPL and GIN is 0.91, which indicates that they are strongly positively correlated. Also, the correlation between GDPC and GIN

is 0.98, which indicates that there is a strong linear relationship between the variables. In the same vein, there is a strong linear relationship between GDPC and CSPL, DEM and CSPL, DEM and GIN, and GDPC and DEM as shown by the correlation coefficients of 0.89, 0.66, 0.77, and 0.66 respectively.

As revealed in Table 2, the correlation between GDPC and BSPL is -0.43, which shows that they are weakly negatively correlated. Similarly, a weakly negatively correlation is shown between GIN and BSPL as indicated by the correlation coefficient of -0.48. Furthermore, the correlation between CSPL and BSPL is -0.71, and it indicates a strong negative relationship between the variables. Additionally, the correlation between DEM and BSPL is -0.17. This indicates that they are weakly negatively correlated.

Table 2: Correlation Matrix

	BSPL	CSPL	GIN	GDPC	DEM
BSPL	1				
CSPL	-0.71	1			
GIN	-0.48	0.91	1		
GDPC	-0.43	0.89	0.98	1	
DEM	-0.17	0.66	0.77	0.66	1

Source: Author's computation using Eviews 10 software

Table 3 depicts OLS estimates of the relationship between social protection and labor programs and income inequality while controlling for other factors. The R-squared for the estimations shows that the model is able to explain 99.999% of the variation in GIN with an adjusted value of 99.994%. However, the F-statistic is significant at 1% level and this therefore portends that a linear and systematic relationship which is significant exist between the explained variable and the explanatory variables, even though the Durbin-Watson statistics (3.284) indicates the presence of negative autocorrelation in the residual.

However, as observed in Table 3, CSPL and BSPL variables both have negative coefficients while GDPC

Table 3: OLS Estimates

and DEM variables both have positive coefficients. All the coefficients are statistically significant. With regard to elasticity, it was observed that a one per cent increase in CSPL leads to 0.009234 per cent reduction in GIN (Gini coefficient) and it is statistically significant at 5% level. Similarly, an inverse relationship is observed between GIN and BSPL. The estimated coefficient of 0.005099 indicates that Gini coefficient (GIN) decreases by about 0.005% for every 1% increase in BSPL and it is statistically significant at 5% level. This result is in line with the view that social protection is a tool to improve the lives of those at the lower end of the income distribution

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.392293	0.067333	-35.52943	0.0179
BSPL	-0.005099	0.000198	-25.81717	0.0246
CSPL	-0.009234	0.000660	-13.99569	0.0454
GDPC	0.478204	0.005290	90.39587	0.0070
DEM	0.072496	0.001452	49.93337	0.0127
R-squared	0.999988	Mean dependent var		3.815257
Adjusted R-squared	0.999941	S.D. dependent var		0.024733
S.E. of regression	0.000190	Akaike info criterion		-14.42283
Sum squared resid	3.61E-08	Schwarz criterion		-14.59636
Log likelihood	48.26849	Hannan-Quinn criter.		-15.11750
F-statistic	21152.55	Durbin-Watson stat		3.284297
Prob(F-statistic)	0.005157			

Source: Author's computation using Eviews 10 software

Note: \* Indicates statistical significance at the 1% level, \*\* Indicates statistical significance at 5% level, and \*\*\* Indicates statistical significance at 10% level.

Looking at Table 3 again, democracy index (DEM) seems to have a positive and significant impact on income

equality (GIN). Specifically, a one per cent increase in DEM is associated with 0.072496 per cent increase in GIN (Gini coefficient). Standard political economy theories suggest that democratization has a moderating effect on income inequality. But the empirical result in this paper has failed to uncover any such robust

relationship. Despite the implementation of western liberal democracy and the good governance reforms driven by donors, Nigeria continues to face massive developmental and institutional challenges. The challenges include human capital deficits and extreme poverty. This is due to under-investment in health, education and infrastructure. For example, Nigeria's human development index value for 2020 was 0.539, placing the country in the low human development category (Adedokun, 2021).

According to Adedokun (2021), of all African countries, Nigeria faces the most significant challenges for reducing poverty and inequality due to rapid population growth. More than 40% of Nigerians (83 million people) live below the poverty line of \$1.90 a day. Another 25% (53 million) are vulnerable. Yet, the combined wealth of Nigeria's five richest men is \$29.9 billion. According to a recent report by Oxfam International, the combined wealth of the Nigeria's five richest men could end national poverty (Adedokun, 2021). The implication here is that democracy has led to massive increases in poverty and economic inequality in Nigeria.

Two of the most visible metrics to measure economic output, and the wealth created by this output, are GDP and GDP per capita, and a measurement of the difference in income distribution amongst a country's residents is the Gini coefficient. Conventional wisdom suggests that the higher the aggregate level of wealth (measured as GDP per capita) in a country, the higher proportion of the population have access to that wealth and thus the lower the Gini coefficient. A closer examination of Table 3 reveals that GDPC also has a positive and significant impact on Gini coefficient (GIN). An increase of about one per cent in GDPC is associated with 0.478204 per cent increase in GIN (income equality) and it is statistically significant at 1 % level. The bottom-line is that economic growth contributed positively in increasing income inequality in Nigeria.

A potential explanation of this result is that though Nigeria is Africa's largest economy, inequality has reached an extreme level. Nigeria's has grown without creating adequate opportunities for the broader population. Resources are unevenly distributed, resulting in persistent inequities across generations and regions (Stearsng, 2017). The poor are poor because the rich are rich; such an exclusion of the common man in the growth process hinders long-term economic growth and weakens national solidarity, evident in recent terrorist activities and calls for restructuring. The result in this paper is contrary to Dollar et al (2013) but aligns with Niyimbanira (2017).

## 6. Summary, Conclusion and Suggestions

Poverty remains pervasive throughout the African continent. As countries grow, a Kuznets-type analysis would suggest that they become more unequal. It has been suggested that high levels of inequality present challenges to poverty reduction when countries are growing (Cook and Pincus, 2014). Inequality manifests

itself in a number of ways, including access to social services, access to infrastructure, quality of education and earnings.

This paper investigated the relationship between the social protection and labor programs to poorest quintile and income inequality in Nigeria between 2010 and 2015. The paper adopts multiple linear regression model and its estimation using ordinary least squares (OLS). It was observed that a one per cent increase in CSPL leads to 0.009234 per cent reduction in GIN (Gini coefficient) and it is statistically significant at 5% level. Similarly, an inverse relationship is observed between GIN and BSPL. The estimated coefficient of 0.005099 indicates that Gini coefficient (GIN) decreases by about 0.005% for every 1% increase in BSPL and it is statistically significant at 5% level. This result is in line with the view that social protection is a tool to manage imbalances for poor households, often by stabilizing the level of household income or providing funds that allow access to various services. As such, more resources need to be mobilized if the government of Nigeria is to expand coverage of social protection to tackle the high rates of poverty and vulnerability in the country. Specifically, this can be achieved by increasing mobilization of domestic resources, increasing development aid specially targeted at social protection, and improving public financial management.

To ensure equitable distribution of economic gains among the poor citizens, government should ensure that budgetary preparation and allocation is be pro-poor based and tailored at improving the welfare of the larger population and not at further enriching the rich.

For democratic rule to reduce inequality, the contributing factors to the persistence of inequality in Nigeria have not been addressed. These factors include lack of political will and the administrative incompetence demonstrated by the federal government, application of the federal character principle, and inadequate social protection arrangements.

## Limitations

One of the drawbacks to this study is that data available for Nigeria covered a period of time ranging from 2010 to 2015, which is insufficient for robust analysis. Therefore, this study cannot provide a discussion of the dynamic effects of social protection and labor programs on income inequality. Furthermore, due to data unavailability, benefit incidence of social protection and labor programs to poorest quintile (% of total SPL benefits) was used instead of coverage of social protection and labor programs to poorest quintile as a measure of scale of social protection.

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