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AN ANALYSIS OF THE INCIDENCE OF WELFARE INEQUALITY AMONG HOUSEHOLDS IN NIGERIA: EVIDENCE FROM GENERAL HOUSEHOLD SURVEY PANEL DATASET 2018/2019

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Abstract

This paper investigates the incidence of welfare inequality in Nigeria. It utilizes the General House Holds Survey Panel dataset 2018/2019 conducted by the National Bureau of Statistics (NBS) in collaboration with Federal ministry of Agriculture and Rural Development and World Bank with sample of 5000 households across the country. Four inequality indices namely: Atkinson's inequality measure, Gini Coefficient, Donaldson-Waymark's and Lorenz curve were used to measure the incidence of welfare inequality among six geo-political zones, Gender (Male/Female headed household); Occupation (Farming/Non-farming household) and Sector (Urban/Rural) of household residence. The results indicate that, North-East has the highest degree of inequality, closely followed by South-South, while North-Central has the lowest degree of inequality in Nigeria. On gender of household head, male headed households have high degree of inequality than female headed households; however, non-farming households recorded high degree of inequality than farming households and finally rural households have the highest degree of inequality than their urban counterpart. By and large the incidence of welfare inequality in Nigeria is apparent, the magnitude depends on the geo-political zone, Gender, occupation or sector of household residents. It is therefore, recommended that, government at all level should create an enabling environment for sustainable wealth creation that would lessens the level of poverty and drastically reduce the quantum of welfare inequality gap among different zones and sub-groups in Nigeria.

Keywords: Welfare Inequality; Households; General Household survey

Introduction

One of the most pathetic feature of Nigeria is that majority of her citizens are living in a state of destitution while the remaining relatively insignificant minorities are living in affluence (Osinubi, 2003). These skewed economic relations do not reflect the

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geographic spread of resource endowment; rather it may be a product of classical greed, injustice and selfishness, which is beyond any economic principle. The poverty and inequality situation in Nigeria is quite galloping, despite several attempts by successive governments to ameliorate the scourge. Eze (2009) explains that, the level of poverty and inequality are geometrically increasing (see also, Okpe & Abu, 2009). Poverty in Nigeria as a result of welfare inequality is deep and pervasive, with about 70 percent of the population living in absolute poverty (Soludo, 2003).

Welfare inequality manifested in low, unequal and inefficient provision of public services resulted in very high levels of multidimensional poverty, meaning that multiple deprivations occur in the same households with respect to education, health and living standards. In fact, estimations suggest that Nigeria may be the country with the highest number of multidimensional poor in the world (OXFAM, 2017)

The disparity of income is a global issue, However, according to British Council (2016) the level of inequality in Nigeria is relatively high; the richest Nigerians earned 8,000 from their wealth higher than 10 per cent of what ordinary poor Nigerians spend on their necessary consumption. Nigeria is among the 30 countries of the world with unequal distribution of income. Similarly, World Bank (2009) reported that only 22 per cent of the country's national resources go to poor. Despite the GDP growth recorded in the Nigeria economy, only a negligible (privilege) percentage of the population benefits much from the wealth. At the same time, the majority of people continue to undergo hardship.

The paradox of growth in Nigeria is that as the country gets richer, only a few benefit, and the majority continues to suffer from poverty and deprivation, as former minister of finance Okonjo-Iweala (2013) noted that in Nigeria, it is clear the top 10 per cent of the population access the larger part of the national income, whereas people at the bottom are left miserable, constituting 60 per cent of the total Nigerian population. If we do not put our minds to this problem, the whole economy may be in danger. The disparity is too broad to the extent that the richest Nigerian annual earning is sufficient to remove 2 million Nigerians out of their economic hardship (OXFAM, 2017).

The incidence of rising inequality is occurring at a time when Nigeria is going through uncertainties in its socio-economic life. These uncertainties have both internal and external dimensions. For example, the war on insurgency and the bad state of insecurity are some of the internal dimensions of the uncertainties in the country, coupled with policy uncertainties. Externally, events such as the COVID-19 crisis and the ongoing Russia-Ukraine war have contributed to the level of uncertainty in the country. Under such conditions, higher income earners in the country may seek higher yielding assets (Kasa and Lei, 2018) especially in safe havens, thus increasing their capacity to keep earning higher income, and likely widen the income inequality gap.

Many studies on inequality have been concluded, However, most of the previous studies have focused largely on other developing countries see for instance (Panizza 2002; Ostry et al. 2014; Breunig and Majeed 2020) while country specific studies on Nigeria is at best scanty, the few ones such as Osunde & Kingsley (2014), Nurudeen and Ibrahim (2014); Akanbi (2016); Duada (2017); Nwosa (2019), used OLS regression to examined the relationship between inequality, poverty and economic growth, some of them make a theoretical review of the relationship. The current paper utilized four different indices namely: Atkinson's inequality measure, Gini Coefficient, Donaldson-Waymark's and Lorenz curve to estimate the degree of inequality among different sub-group (Six

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geo-political zones, Rural and Urban, Farming and Non-farming as well as Male and Female Headed households and how it affect the welfare and poverty status of the households in Nigeria

Literature Review on Inequality

There have been numerous studies on poverty in Nigeria, but few on inequality. Among the few studies on inequality in Nigeria include that of Okojie (2002) who utilized Gini coefficient and Theil's entropy index to examine the trends in inequality by gender in Nigeria based on four National Consumer Expenditure Surveys conducted in Nigeria. The results indicate that, although female headed household experience lower poverty, the degree of inequality is higher among female headed household in Nigeria.

Similarly, Osunde & Kingsley (2014) used Generalized Entropy Class of inequality measure to determine welfare inequality in Nigeria. The results reveal that, welfare inequality in Nigeria stems from differences among household with similar measured characteristics rather than between groups. While Canagarajah & Newman (1999) using Gini coefficient reported increased income inequality over the period spanning the 1980's and 1990's in Nigeria.

Moreover, utilizing the Generalized Entropy Measure and Gini coefficient based on merged data from 1996 General Household Survey (GHS), Olaniyan & Awoyemi (2005) examine inequality in the distribution of household expenditure in rural Nigeria. The results indicate that, factors such as age, gender and education level of the household head are important factors in explaining inequality profile in the country. In a similar way, Oyekale, Adeoti & Oyekale (2006) compared rural and urban household inequality in Nigeria using Gini coefficient based on income information. The results indicate that, as at 2004, income inequality is high in rural than urban areas of Nigeria.

Nwosa (2019) Utilized Auto-regressive Distributed lag (ARDL) to examined the impact of economic growth on inequality in Nigeria for the period 1981 to 2017, the study concluded that economic growth had positive but insignificant impact on income inequality in Nigeria. Moreover, Nurudeen and Ibrahim (2014) used Auto-regressive Distributed Lag (ARDL) and the granger causality test to examine the relationship between poverty, inequality and economic growth in Nigeria for the period 2000 to 2012. The ARDL co-integration estimate reveal no evidence of a long run relationship among the variables while the causality estimate disclosed unidirectional causation from economic growth to poverty rate in Nigeria.

From the above reviewed literature, it was evident that most of the studies used only one index of inequality measure which may not necessarily give robust results, while the current study used four different indices which will make it more robust. Similarly, none of the study examines the incident of inequality among different interest groups while this study investigates the incidence among geo-political zones, occupation, gender and sector of household residence.

Methodology

Study Setting

Nigeria lies between $4° 16^1$ and $13° 53^1$ North Latitude and between $2° 40^1$ and $14° 41^1$ East Longitude. It is located in West Africa bordered on the west by the Republic of Benin, on the North by the Republic of Niger and on the East by the Republic of Cameroun. To the South, the country is bordered by approximately 800 kilometres of the Atlantic Ocean, stretching from Badagry in the

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West to the Rio Del Rey in the East. It occupies a land area of 923,768 kilometres and the vegetation ranges from mangrove forest on the coast to desert in the far North (NBS, 2008).

Administratively, Nigeria consists of 36 states and a Federal Capital Territory (FCT). Each state is further divided into Local Government Areas (LGAs). There are presently 774 Local Government Areas in the country. After independence in 1960, Nigeria spent a total of over twenty-nine years under military rule. It was returned to democratic rule in May 1999 under a presidential system of Government with three tiers: Federal, State and Local government. The Federal Government comprises an executive arm, a bicameral legislative arm and the judiciary. Each state has its own executive arm and house of assembly, while each local Government has a chairman and councillors (NBS, 2008).

Sources of Data

The paper generally utilized secondary dataset. Therefore, the main dataset were drawn from the Living Standards Measurement (LSMS) Integrated Surveys on Agriculture General Household Survey Panel 2018/2019 conducted by the National Bureau of Statistics (NBS) of Nigeria, in Collaboration with the Federal Ministry of Agriculture and Rural Development and the World Bank and was released February, 2020 as a component of the revised General Household Survey (GHS) in 2010. This survey is the second round of a long term project to collect panel data on households, their characteristics, welfare and their agricultural activities. The survey was an outcome of partnership that NBS had established with the Federal Ministry of Agriculture and Rural Development (FMA&RD), and the National Food Reserved Agency (NFRA) and was supported by Bill and Melinda Gates Foundation (BMGF) and World Bank (WB). Under this partnership, a method to collect comprehensive household and Agricultural data in such a way to allow the study of agricultural role in household welfare and poverty over time was developed.

Sample Size and Sampling Techniques

The GHS-Panel sample is fully integrated with the 2010 GHS Sample. The GHS sample is comprised of 60 Primary Sampling Units (PSUs) or Enumeration Areas (EAs) chosen from each of the 37 states in Nigeria. This result arrived at a total of 2,220 EAs nationally. Each EA contributes 10 households to the GHS sample, resulting in a sample size of 22,200 households. Out of these 22,000 households, 5,000 households from 500 EAs were selected for the panel component and 4,916 households completed their interviews in the first wave. Given the panel nature of the survey, some households had moved from their location and were not able to be located by the time of the Wave 3 visit, resulting in a slightly smaller sample of 4,581 households for Wave 3. In order to collect detailed and accurate information on agricultural activities, GHS-Panel households are visited twice: first after the planting season (post planting) between August and October and second after the harvest season (post-harvest) between February and April. All households are visited twice regardless of whether they participated in agricultural activities. Some important factors such as labour, food consumption, and expenditures are collected during both visits. Unless otherwise specified, the majority of the report will focus on the most recent information, collected during the post-harvest visit

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Method of Data Analysis

Measure of Household Welfare*:* The approach of using per capita consumption expenditure as proxy for household welfare has been used in many studies in Nigeria (see, World Bank 1996; Yusuf & Oni, 2007 Oluwatayo, 2009; Garba; 2006. Following these studies, the current study also adopted per capita consumption expenditure as a measure of household welfare. Similarly, daily per capita consumption expenditure has been measured in terms of household daily consumption expenditure from all sources food and non-food, whose higher value indicates welfare and lower value poverty.

Measures of Inequality: Several indices have been used in measuring the degree of inequality in many studies, for instance, Gini coefficient and Theil's entropy index were used by Okojie (2002) and Olanrewaju & Awoyemi (2005). In this study therefore, four indices of inequality have been utilized, namely; Atkinson's inequality measure, Gini Coefficint, Donaldson-Weymark's S-Gini and Lorenz curve. A coefficient of inequality measure ranges from 0 to 1. When the value of an inequality measure is 0, then there is perfect equality. But if the coefficient is 1, then there is perfect inequality. Therefore, the closer the coefficient is to 0, the lower the level of inequality. However, the closer the coefficient is to 1, the higher the level of inequality. While the Lorenz curve inequality index indicates that, the closer the curve is to 45° line, the lower the degree of inequality. However, the far away it is to 45° line to the right, the higher the degree of inequality (Garba and Sambo, 2012).

Results and Discussion

The test is conducted in order to see the degree of inequality among the six geo-political zones, farmers and non-farmers, urban and rural areas and among male and female headed households in Nigeria.

Table 1: Degree of inequality among the six geo-political zones of Nigeria

Coefficient of Inequality Measures			
Zones	**Atkinson**	**Gini coefficient**	**Donaldson weymarks**
North Central	0.245	0.397	0.397
North East	0.333	0.449	0.449
North West	0.238	0.392	0.392
South East	0.277	0.427	0.427
South-south	0.297	0.446	0.446
South West	0.271	0.426	0.426

Source: computed by the author from NBS General Household Survey Panel 2018/2019 data set, using STATA version 12.1

Table 1 present the results of inequality test for six geo-political zones using three measures, namely Atkinson, Gini coefficient and Donaldson-weymarks. The results indicate that, using Atkinson, Gini coefficient and Donaldson North-East has the highest degree of inequality, closely followed by South-South, while North-Central has the lowest using Atkinson, and under both Gini coefficient and Donaldson, North- West has the lowest degree of inequality.

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Table 2: Degree of inequality based on Gender of Household Head in Nigeria

Coefficient of Inequality Measures			
Gender	**Atkinson**	**Gini coefficient**	**Donaldson weymarks**
Male Headed Household	0.301	0.444	0.444
Female Headed Household	0.287	0.432	0.432

Source: computed by the author from NBS General Household Survey Panel 2018/2019 data set, using STATA version 12.1

On gender of household head, the inequality results presented in Table 2 indicates that, male headed households recorded high degree of inequality than female headed households, based on all the three indices namely; Atkinson, Gini coefficient and Donaldson weymarks.

Table 3: Degree of Inequality among Farming and Non-Farming Household in Nigeria

Coefficient of Inequality Measures			
Occupation	**Atkinson**	**Gini coefficient**	**Donaldson weymarks**
Non-Farming Household	0.283	0.431	0.431
Farming Household	0.242	0.387	0.387

Source: computed by the author from NBS General Household Survey Panel 2018/2019 data set, using STATA version 12.1

The inequality results on occupation of the household head as presented in Table 3 reveal that, non-farming households recorded high degree of inequality than farming households using all the three indices namely;. The results suggest that, although non-farming households experience lower poverty according to the earlier findings (Okojie, 2002, Ogumike, 2005) the degree of inequality is high among the non-farming households than farming Atkinson, Gini coefficient and Donaldson weymarks households.

Table 4: Degree of Inequality among Rural and Urban Households in Nigeria

Coefficient of Inequality Measures			
Sector	**Atkinson**	**Gini coefficient**	**Donaldson weymarks**
Rural Household	0.277	0.421	0.421
Urban Household	0.266	0.420	0.420

Source: computed by the author from NBS General Household Survey Panel 2018/2019 data set, using STATA version 12.1

Concerning the sector of household residence, the results in table 4 reveals that, using Atkinson, Gini coefficient and Donaldson indices, rural households have the highest degree of inequality than their urban counterpart.

Lorenz Curve Inequality Test

The Lorenz curve inequality index indicates that, the closer the curve is to 45° line, the lower the degree of inequality. However, the far away it is to 45° line to the right, the higher the degree of inequality (Garba and Sambo, 2012).

Figure 1: Lorenz Curve of Inequality among Households in the North-Central Geo-Political Zone

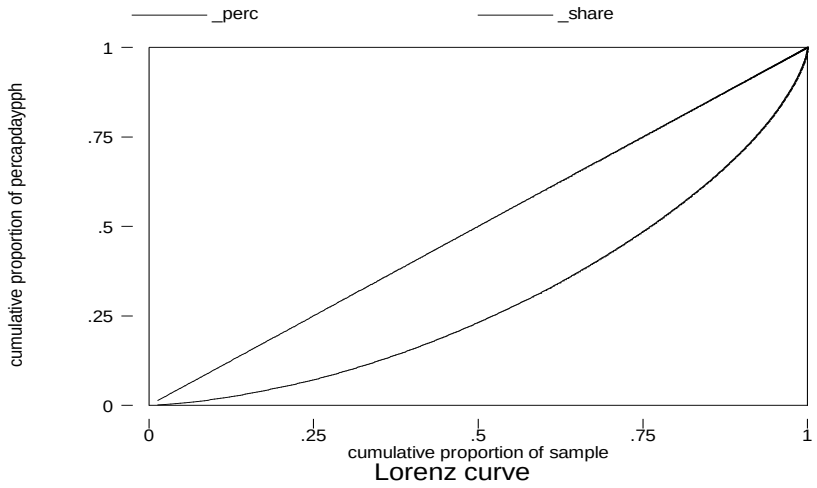

Figure 2: Lorenz Curve of Inequality among Households in the North-East Geo-Political Zone

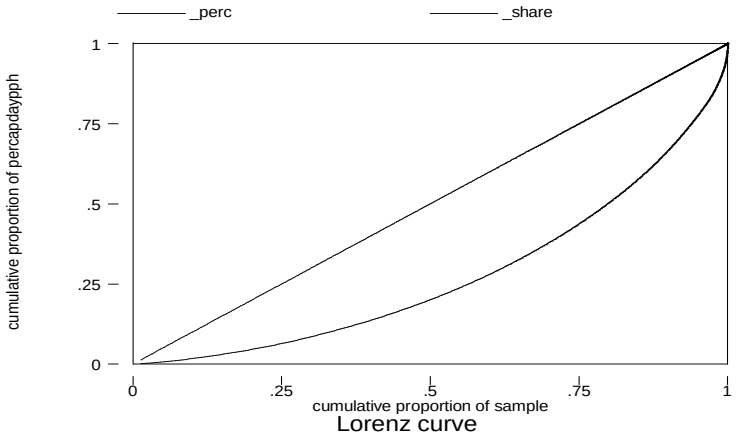

Figure 3: Lorenz Curve of Inequality among Households in the North-West Geo-Political Zone

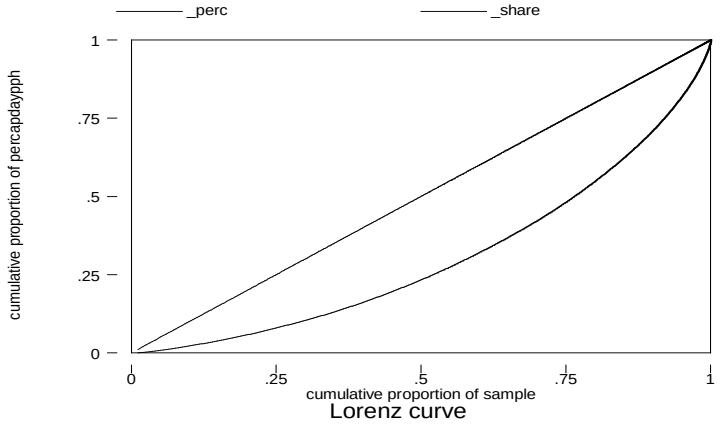

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Figure 4: Lorenz Curve of Inequality among Households in the South-East Geo-Political Zone

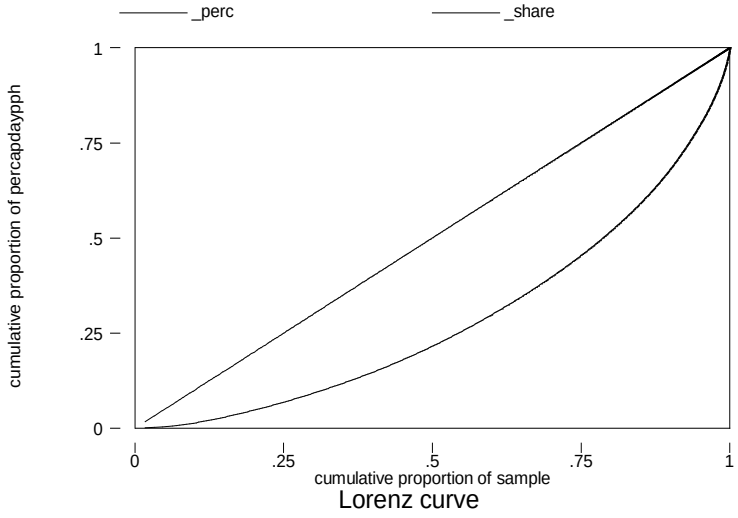

Figure 5: Lorenz Curve of Inequality among Households in the South-South Geo-Political Zone

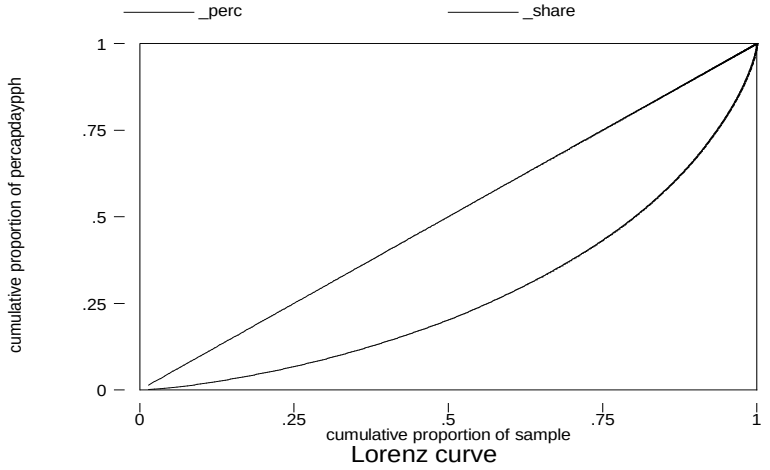

Figure 6: Lorenz Curve of Inequality among Households in the South-West Geo-Political Zone

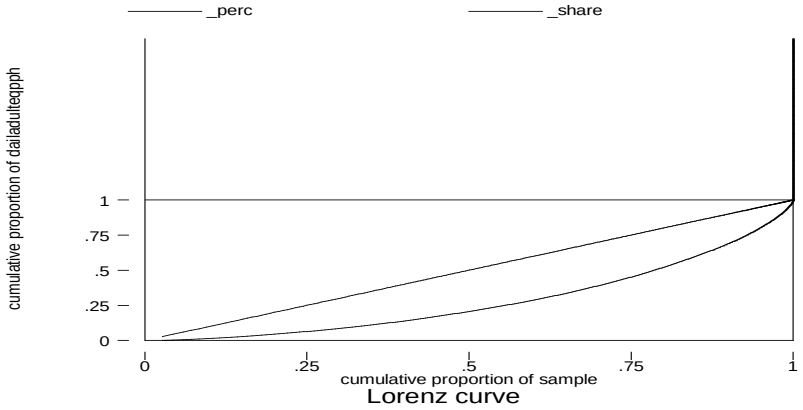

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Figure 7: Lorenz Curve of Inequality among male headed Households in Nigeria

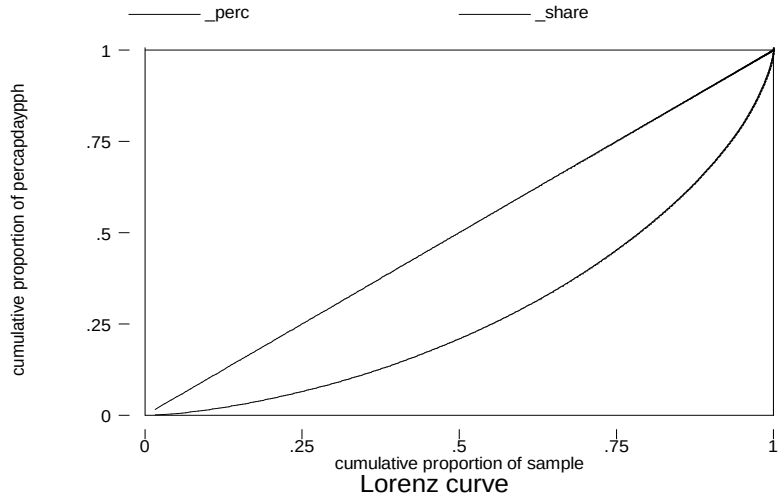

Figure 8: Lorenz Curve of Inequality among female headed Households in Nigeria:

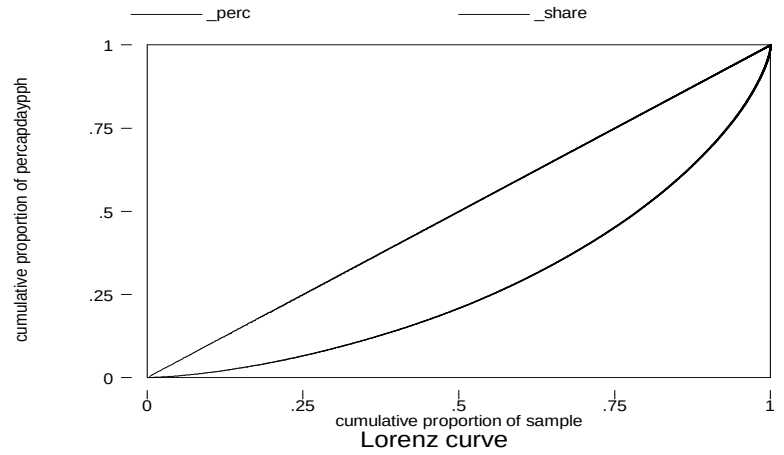

Figure 9: Lorenz Curve of Inequality among Non-farming Households in Nigeria:

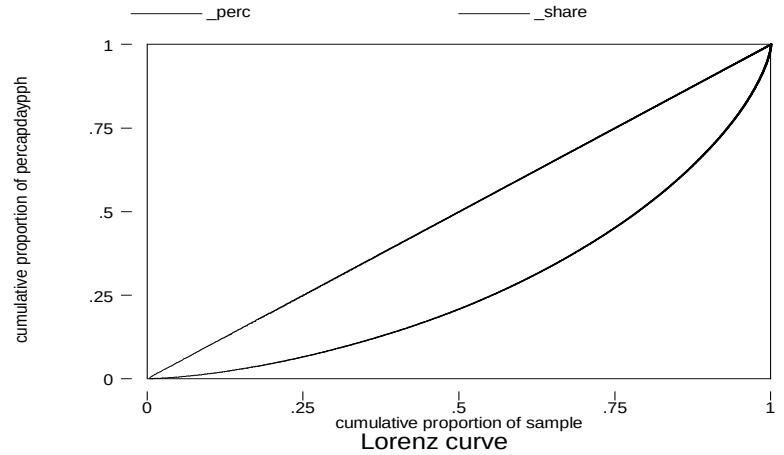

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Figure 10: Lorenz Curve of Inequality among farming Households in Nigeria

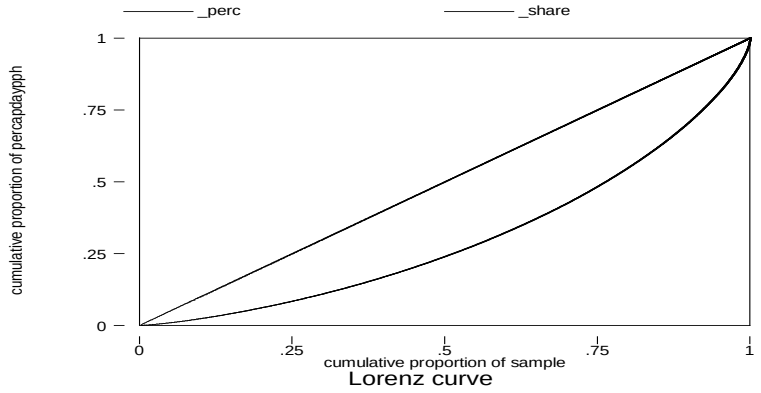


Figure 22: Lorenz Curve of Inequality among Rural Households in Nigeria

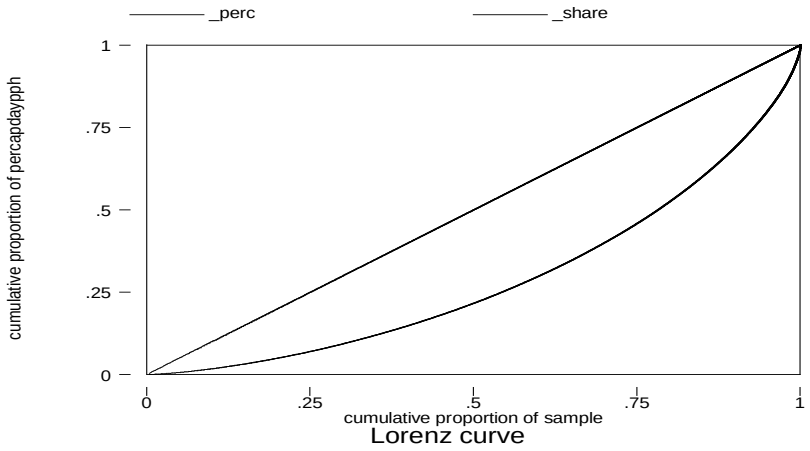
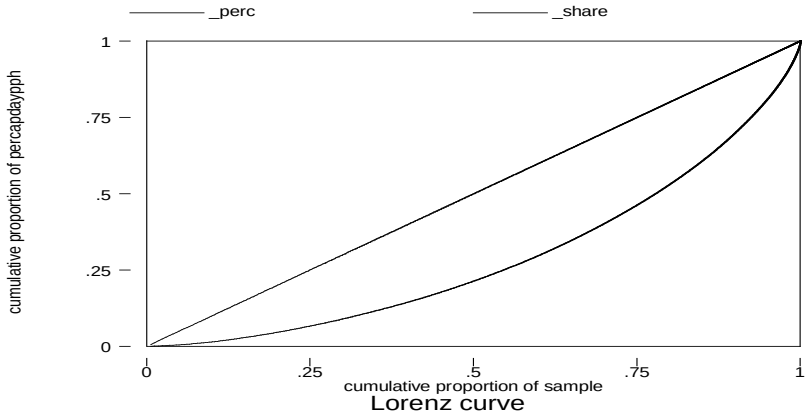


Figure 23: Lorenz Curve of Inequality among Urban Households in Nigeria



From the above figures, the Lorenz curve inequality test results indicate that; North-East has the highest inequality while North-West have the lowest degree of inequality among the six geo-political zones of Nigeria. On gender of household head, the results reveal that, male headed

household recorded high degree of inequality than female headed households. Similarly the results for occupation of household head reveal that, non-farmers have highest degree of inequality than farmers in Nigeria. Finally, concerning the sector of household residence, the results indicate that, the rural household recorded high degree of inequality than urban household in Nigeria.

Conclusion and Recommendation

The study examines the incidence of welfare inequality in Nigeria using four difference indices namely: Atkinson, Gini coefficient, Donaldson weymarks and Lorenz Curve Inequality Test. The results concluded that, North-East has the highest degree of inequality, closely followed by South-South, while North-Central has the lowest degree of inequality in Nigeria. On gender of household head, male headed households have high degree of inequality than female headed households; however, non-farming households recorded high degree of inequality than farming households and finally rural households have the highest degree of inequality than their urban counterpart. By and large the incidence of welfare inequality in Nigeria is apparent, the magnitude depends on the geo-political zone, Gender, occupation or sector of household residents.

As concluded by many studies welfare inequality leads to poverty and vice versa, therefore, it is recommended that, government at all level should create an enabling environment for sustainable wealth creation that would lessens the poverty and inequality gap among different zones and sub-group, similarly urgent steps must be taken to bring down the astronomical cost of governance in Nigeria. It remains indefensible that a large percentage of the budget goes to paying fat remunerations to a small number of the political elite and public office holders, given the existing high levels of unemployment, maternal mortality, out-of-school children and multi-dimensional poverty. These resources could rather improve the living standards of millions of Nigerians by funding healthcare, education as well as the provision of water, sanitation services, and other non-negotiable infrastructure which will certainly reduce the quantum of welfare inequality in the country

Similarly, to reduce the welfare inequality, agricultural sector which holds the most potential to speedily transform the nation's mono-product economy into a varied one and large-scale agricultural industrialisation that will guarantee food security, employment, equality and social inclusion, especially for women and young people must be develop. The ability of the sector to play this role depends on the political will of the government to achieve the following; Increased investments in the sector, in line with Nigeria's commitment to the Maputo Declaration on Agriculture and Food Security in Africa. This will ensure adequate resources are available to small-scale farmers who produce over 80% of the food consumed in Nigeria (Oxfam, 2017); increasing productivity and employment rates, reducing poverty and inequality and ultimately enhancing food security for the continent’s most populous nation

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