Non-Inclusive Growth among Rural Households in Nigeria: A Micro Level Analysis of Income Growth and Equitable Distribution of Resources

[1]Ajijola, S., [2]Omonona, B. T. and [2]Awoyemi, T. T.

[1]Institute of Agricultural Research and Training (IAR&T), Moor Plantation, Ibadan
[2]Department of Agricultural Economics, University of Ibadan, Nigeria
Corresponding author's email: ajsik1967@yahoo.ca

Abstract
This study assessed Non-Inclusive Growth (NIG) among rural households in Nigeria. Secondary data from the General Household Survey (GHS) of 2010/2011, 2012/2013 and 2015/2016 were used. The GHS is a panel data consisting of 5,000 Households (HHs) of which 3,347 rural HHs were used. Data were obtained on socio-economic characteristics, welfare characteristics and geopolitical zones. Poverty gaps were estimated and matched to the economic growth rate to categorize households into NIG. Data were analysed using descriptive statistics, Foster-Greer-Thorbecke (FGT) and Probit model. The mean age of the rural HHs were 41.8±9.4, 43.7±9.4, and 46.9±9.4 years, while the mean household sizes were 8.0±2.0, 7.3±3.1 and 7.5±1.8 for 2010/2011, 2012/2013 and 2015/2016 respectively. The majority were male, 65.0%, 65.4% and 65.5%, while 64.3%, 63.1% and 63.4% were married in 2010/2011, 2012/2013 and 2015/2016, respectively. HHs without access to credit (72.9%) were higher in 2012/2013 than in 2010/2011 (63.2%) and 2015/2016 (53.5%). HHs with no formal education (45.3%) were higher in 2012/2013 than in 2010/2011 (43.3%) and 2015/2016 (40.2%). The NIG was higher without access to health facilities, access to energy, access to potable water and employment in periods 2010–2013, 2013–2016 and 2010–2016. The Probit results show that the age of HHs, household size, education, access to health facilities, access to energy, access to potable water, access to credit, North East zone, North West zone, South-South zone and South West zone influenced NIG among rural HHs. Therefore, access to facilities and an equitable share of resources should be paramount in rural areas to reduce the non-inclusiveness of growth.
Keywords: Non–inclusive growth, Rural households, Economic growth, Poverty, and Equitable resources

Introduction
The growth in the economy and equitable distribution of income are prerequisites for reducing poverty. The actual income of the poor can be enhanced by improving the quantity and quality of produce through the establishment of poverty reduction strategies and implementation of the strategies which would be targeted at factor and commodity markets (Amoo, 2018). However, for poverty reduction strategies and initiatives to be successful, favourable inclusive proposals for inclusive growth in terms of adequate infrastructure and improvement in essential amenities, such as access to energy, provision of basic education for the rural poor, availability of health facilities and adequate provision of financial assistant for the rural people should be encouraged (Akinlade *et al*., 2011). The significance of equal opportunities for individuals lies in its inherent worth which depends on the fundamental right of every individual that equal opportunity should be circulated to all Adepoju and Adejare, 2013). It is impossible to overemphasize the importance of equitable access to services, creating

employment and properties as such access is critical in simulating the economy to long-term development (Omonona, 2009).

The promotion of inclusive growth needs a policy that is intentionally developed to help the poor thereby allowing the engagement and contribution of members to have equal advantage proportionally to the growth (Aderounmu *et al*., 2021). Therefore, The importance of poverty is reflected in the fact that it is the first sustainable development goal (SDG) that seeks to end poverty in all forms and the goal has been to set the rural poor as the focal point of development to improve their living standards (Amoo *et al*., 2019). Kakwani and Pernia (2000) stated that the living standard of the rural people could be increased through a poverty reduction and this would invariably improve human livelihood and well-being. Inclusive growth is growth that is comprehensive in achieving sustainable growth that will produce expanded economic opportunities to have involvement of members of the society to contribute and benefit from the economic growth (Fosu, 2017).

The definition of inclusive growth is still coupled with the equitable distribution of opportunities which consists of economic, societal and institutional dimensions in achieving the growth process. Inclusive growth is economic growth that results in broader access to sustainable economic and social opportunities for several people or regions as a way of protecting the marginalized in society if the targeted audiences are given the opportunity of equal justice and without being sentimental in the distribution of goods (Ramos *et al*., 2013). Growth is non-inclusive when individual members of a society are not contributing and participating in the growth process on an equitable basis irrespective of their conditions (Omotola and Okoruwa, 2016). Growth inclusiveness therefore emphasized making opportunities and focusing on how the opportunities would be available to all and also ensuring equitable access to them. Equity in terms of having access to opportunities will centre on bigger savings in expanding human capabilities (including the poor rural households) and having the opportunity for beneficial utilization of resources. Inclusive growth centres consideration around the degree to which the marginalized, the youth, poor men and women are engaged in and add value to economic growth; as assessed through improvements in household living standards and the available resources they require in enhancing higher incomes in the future (OECD, 2014).

Many developing countries have failed in terms of equal distribution of resources and non-inclusive despite achieving rapid economic growth (Omobowale, 2014). Rising income and income inequalities have been experienced in Nigeria for the past two decades. These led to the concern that the country's economic growth was not pro-poor and inclusive in terms of access to resources and facilities (Ogujiuba and Alehile, 2011). More so, the high level of inequality resulting from unequal access to income opportunities, education, health facilities and basic infrastructure has led to high poverty rates in Nigeria (Omonona, 2009). There is still a significant disparity between rural and urban households, (both rich and poor) when considering households' access to employment, social amenities and necessities of life. This is because economic growth has not been equitably shared among the groups in the society (Adeoti 2014). This study, therefore, assessed the non-inclusiveness of growth by estimating the proportions of rural households that experienced non–inclusive growth in rural Nigeria and determining the factors that influenced households experiencing non–inclusive growth in rural Nigeria.

Materials and Methods
Area of the Study and Source of Data
This research was conducted in Nigeria. Nigeria is a West African nation with a population of approximately 200 million people and a 3.8 percent average growth rate (NBS, 2017). The data used for this study were sourced from the National Bureau of Statistics (NBS). The secondary data from NBS is a panel survey that is, the General Household Survey (GHS) carried out periodically throughout the country in periods 2010/2011, 2012/2013 and 2015/2016. The first GHS survey conducted in 2010 is referred to as Wave 1 while the second survey in 2013 and the third survey in 2016 are referred to as Wave 2 and Wave 3 respectively. The GHS-Panel is a modern and important method for researching income-generating behaviours and socio-economic outcomes in Nigeria because of its ability to track the same households over time.

Sampling Procedure
Secondary data (General Household Survey (GHS)) was used for this study. The GHS survey is a panel survey of 5,000 households carried out periodically throughout the country by the National Bureau of Statistics (NBS) of which 3,347 rural households were used. The data was stratified into two sectors (urban and rural sectors). The first GHS survey was carried out in 2010 referred to as wave 1. The second survey in 2013 and the third survey in 2016 were referred to as Wave 2 and Wave 3 respectively. The ability to follow the same households over time makes the GHS-Panel a new and powerful tool for studying and understanding trends in income-generating activities and socioeconomic outcomes in Nigeria.

Method of Data Analysis
The socio-economic characteristics of the rural households showing the proportions of households that experienced non-inclusive growth between periods 2010 and 2013; 2013 and 2016 and; 2010 and 2016 were examined with the use of descriptive statistics such as frequency distribution, percentages, ratios, mean and standard deviation. Consumer Price Index (CPI): The use of CPI was to measure the growth inclusiveness and determine the rural households that belong to a non-inclusive group. Following Ayantoye *et al*. (2011), poverty gaps were calculated for various periods and their differences were estimated to categorize households into inclusive and non-inclusive growth. The CPI was also used to remove the influence of inflation.

$$Pi = \frac{P\alpha}{Ci} \quad \text{........ 1}$$

Where;
Pi = poverty line in ith year,
Pα = 2009 CBN (2010) estimated poverty line,
C_i = Consumer Price Index

$$Ci = \frac{Cx}{Cy} \quad \text{......2}$$

Where:
Ci = Consumer Price index
C_x = Mean CPI In reference year,
C_y = Mean 2009 CPI,
I   = 2009, 2010, 2013 and 2016

$$Pj = \frac{Ej \quad Pi}{Pi} \quad \text{....... 3}$$

Where:
P_j = Poverty gap,
E_j = Household *per capita* expenditure,

Pi   = Poverty line in ith year,
J   = jth household,
$S_j = Px_t - Px_{t-1}$ ……..4
Where:
S_j = Inclusiveness measure,
Px_t = Poverty gap in the current year
Px_{t-1} = Poverty gap in the previous year
 J   = j_{th} household,
$S_j > 0$ = Non-inclusive growth,
$S_j < 0$ = Inclusive growth

Consumer Price Index (CPI) – Based Poverty Profile for Rural Nigeria for periods 2010/2011, 2012/2013 and 2015/2016 were estimated to determine the proportions of rural households that are non-inclusive and estimate factors that are responsible for non-inclusive growth in rural Nigeria. Consumer Price Indexes (CPI) and the poverty line of the year 2009 were used to upscale the poverty lines of years 2010, 2012 and 2015. The poverty line was scaled up by dividing the consumer price indexes in the years 2010, 2012 and 2015 by the estimated consumer price index of 2009. The results were used to multiply the poverty line of 2009 to estimate the poverty lines for the 3 periods 2010/2011, 2012/2013, and 2015/2016. Poverty lines were estimated for the three periods following the poverty lines produced in 2009 by CBN (2010) while poverty gaps between the periods were also estimated to know the differences in the poverty gaps and how far away the households to the poverty line in each period. Therefore, households that were below the poverty line between the periods were categorized as having non–inclusive growth (the dependent variable) which takes a value of 1 while households that were above the poverty line were inclusive and took a value of 0.   Therefore, to know that growth between the two periods was non-inclusive, if the difference in poverty gap between the two periods is positive, this shows that, as expenditure increases, the poverty level is also increasing relative to the growth rate in GDP in Nigeria indicating that households in the growth process are non-inclusive; and if the difference in poverty gap is negative, it shows that there is a poverty reduction and therefore there is growth inclusiveness. The Probit regression model was used to determine the factors that are responsible for non-inclusive growth in rural Nigeria. The dependent variable was growth inclusiveness, which has a value of 1 for non-inclusive growth and 0 for inclusive growth. The model is written as follows:

$$Y_{ij} = \beta o + \beta_1 \chi_i + \beta_2 \chi_2 + \varepsilon_i \dots\dots 5$$

Where;
 i = ith household
j = jth period
Y = growth inclusiveness (Y = 1 for non-inclusive growth, 0 otherwise)bi = coefficients estimate,bo = constant
Xi = vector of explanatory variables
e_i = Random error

The explanatory variables are;
X_1 = sex of household head (1 if male, 0 if female),
X_2 = age of household head (years),
X_3 = marital status of household (1 if married, 0 otherwise),
X_4 = household size (number of persons),
X_5 = education of household (years),
X_6 = occupational status of the household (1 if farming, 0 otherwise),
X_7 = access to credit by household (1 if yes, 0 otherwise),
X_8 = access to health facilities by household (1 if yes, 0 otherwise),
X_9, = land ownership by household for farming (1 if yes, 0 otherwise),
X_{10} = access to potable water (1 if yes, 0 otherwise),
X_{11} = access to energy (1 if yes, 0 otherwise),
X_{12} = Northeast regional dummy (1 if yes, 0 otherwise),
X_{13} = Northwest regional dummy (1 if yes, 0 otherwise),
X_{14} = North Central regional dummy (1 if yes, 0 otherwise),
X_{15} = Southeast regional dummy (1 if yes, 0 otherwise),
X_{16} = South-south regional dummy (1 if yes, 0 otherwise),
X_{17} = Southwest regional dummy (1 if yes, 0 otherwise), and
ε_i = random error.

Results and Discussion
Socio-Economic Characteristics of Households in Rural Nigeria
The distribution of socio-economic characteristics of rural households in Nigeria in the years 2010, 2013 and 2016 is shown in Table 1. The results show that (17.7%), (44.0%) and 37.8% of the household were below 40 years of age while (77%), (49.6%) and (53.8%) of the households were between the ages of 41 – 60 years in 2010, 2013 and 2016 respectively, with a mean value of 41.8 ± 9.4, 43.7 ± 9.46, and 46.93 ± 9.39 years in years 2010, 2013 and 2016, which implies that a significant proportion of the respondents were middle-aged and may be physically capable, indicating that they should be healthy and agile to engage in economic activities. Not less than 1.3% of the household had a household size of less than 5 members in the years 2010 and 2013 while there was no household with less than 5 persons as members in the year 2016. The mean household size was 8 ± 2.03, 7.3 ± 3.12 and 7.6 ± 1.6 in the years 2010, 2013 and 2016 respectively. The sex of the rural households shows that 65.0% and 35.0% were male and female household heads respectively across the years. This indicates that more males were involved in various activities than females especially farming in rural Nigeria while the females might be involved in small farming and engaged more in the processing of agricultural produce. Most (64.3%) were married in 2010 while about 63.1% were married in 2013 and 63.4% were married in 2016. However, 30.1%, 31.3% and 21.3% of the household were never married in 2010, 2013 and 2016 respectively. For human capital assets, the result shows that 43.4%, 45.3% and 40.2% of rural households had no formal education in the years 2010, 2013 and 2016 respectively. The results revealed that educational status in 2013 worsened as higher proportions of rural households were recorded with no education. However, the primary educational

attainment improves in the year 2013 (18.9%) and year 2016 (20.1%) than year 2010 (15.2%). Also, there was an improvement in the educational attainment in 2016. Considering the importance of education as a human capital asset, inadequate access is a disincentive to the ability of the population to explore growth opportunities, especially in rural communities.

Result terms of the employment status of the household, 81.5% in (2010), 82% in (2013) and 79.2% in 2016 were self-employed. Also, 15.7%, 15.3% and 17.7% were in paid employment in 2010, 2013 and 2016 respectively. The higher proportions that were self–employed among the rural households might not be unconnected to the fact that the majority (96.4%, 94.1% and 88.9% in 2010, 2013 and 2016 respectively) in the rural areas were involved in agricultural activities as the major occupation. However, it could be noted that there is no white-collar job in the rural areas which makes employment or creation of jobs difficult except they are fully engaged in agriculture. This is in line with Adeoti (2014) who portrayed a large proportion of the rural sector as primarily an agrarian society. This implies that a larger number of people living in the rural areas were mostly farming households that engaged in various agricultural activities. The results revealed that more rural households were unemployed and retired in 2016 which might be due to an increase in ages which corroborates the findings of Okunmadewa (2002) who opined that increasing ages or aged individual in society depend on another as their capacities to work effectively deteriorate.

The results in Fig. 1 revealed that 52.24% of the population 60.96% and 54.34% had no access to credit in the years 2010, 2013 and 2016 respectively, while 47.73%, 39.01% and 45.65% had access to credit. However, the situation in accessing credit facilities worsened in the year 2013 which might be due to government policies on lending and the inability to provide credit institutions in the rural areas. A greater proportion (99.19%, 93.36% and 99.19%) of rural households had no access to health facilities in the years 2010, 2013 and 2016 respectively. The proportion of rural households without access to energy was higher (58.11%) in 2010, (61.79%) in 2013 and (54.97%) in 2016 than those that had access to energy. This result corroborates the findings of Oyekale *et al.* (2012). A substantial proportion (57.6%, 67.79% and 66.24%) of the population had no access to potable water in the years 2010, 2013 and 2016 respectively. This might not be unconnected to the effect of a rural developmental programme implemented by the government by providing good drinking water in rural areas. The results across the three periods indicate that access to infrastructural facilities in the rural areas worsened more in the period 2012/2013.

Rural Household Groups of Non-inclusive Growth Between 2010 – 2013; 2013 – 2016; and 2010 – 2016
The proportion of the rural households that had non–inclusive growth is shown in Table 2. The results show that the mean of the households across the six geo-

political zones that had non–inclusive growth between 2010 - 2013 was 51.2% while 49% and 47% had–inclusive growth between periods 2013 – 2016 and 2010 – 2016 respectively. This indicates that poverty worsened between the period 2010 and 2013 among the household in rural Nigeria than the period 2013 and 2016 which might be due to inequitable access to opportunities. This agreed with the study of Ogundipe *et al.* (2019) that poverty in rural areas had become a persistent issue. However, there was little improvement in terms of having an equitable share of opportunities between periods 2013 and 2016. Among the male households, an average of 51.0% was non–inclusive while 52.0% was non–inclusive among the female households between 2010 and 2013. While, in 2013 – 2016, the proportion of rural households that have non-inclusive growth reduced to 46% male and 49% female. The proportion of non-inclusive growth (51.4%) of rural households that were in the category of age above 60 years was higher in 2010 – 2013 while 44.2% had non-inclusive growth in 2013 – 2016 which indicates an improvement in terms of access to opportunities. Household size shows that household size less than (<3) had a high percentage (41.1%) in 2010 – 2013 and (56.4%) in 2013 – 2016 among the rural households that experienced non-inclusive growth in the rural areas. The results indicate that as the household increases the proportion of the non-inclusiveness of growth increases. The result is in tandem with the findings of Adeoti (2014). The results also show that the proportion (48.5%) of rural households that had no formal educational attainments were non–inclusive in periods 2010 – 2013 while it worsened more in periods 2013 – 2016 as 56.2% were non–inclusive. In terms of households that attended the primary level, 51.8% and 46.55 were non–inclusive in periods 2010 – 2013 and 2013 – 2016 respectively. Also, 52.5%, 48.7% and 49.0% were non–inclusive in 2010 – 2013 and 2013 – 2016 respectively in terms of rural households that attained secondary education. The same trend was recorded in terms of attaining tertiary education. It could be observed that there was an appreciable decrease in non-inclusiveness of growth as the rural households had education, especially in periods 2013 – 2016. More than half 53.6% of the rural households had non-inclusive growth in terms of engaging in agriculture as their major occupation in periods 2010 and 2013 while 47.8% had non-inclusive growth between periods 2013 and 2016. The proportion of the rural households that were not engaging in farming activities (non-agricultural activities) showed that 64.7% were in the category of non–inclusive growth in periods 2010 and 2013 while 51.8% had non–inclusive growth in periods 2013 to 2016. The results indicate that more than average of rural households that were engaged in agricultural and non–non-agricultural activities were not equitable concerning economic resources which is associated with non–non-inclusiveness of growth. This study also agreed with Oluseye and Gabriel (2017) who posited that poor educational attainment and inadequate agricultural financing were prerequisites for non–inclusive growth in rural areas. The results for

access to opportunities in Table 2 also revealed that 50% of the rural households had non-inclusive growth to access to health facilities in 2010 - 2013 while it worsened more in 2013 – 2016 where about 58% of the rural households that had access to health facilities were non-inclusive. A larger proportion (63.2% and 72.9%) among the rural household heads without access to credit had non-inclusive growth in periods 2010 – 2013 and 2013 – 2016 respectively. The result also indicates that inequitable access to credit worsened more in 2013 – 2016 than in the period 2010 - 2013. More than a quarter (32.9%) of the rural households that have access to credit were non–inclusive between 2010 and 2013 while 50.1% had non-inclusive growth in 2013 and 2016. Also, 87.3% in 2010 - 2013 and 70.4% in the period 2013 – 2016 among rural households with no access to energy such as electricity had non-inclusive growth while about 35.9% and 41.6% with access to energy had non–inclusive growth. Furthermore, 74% of the rural households in Nigeria were non-inclusive in the period 2010 – 2013 in access to potable water while 71% were non-inclusive in the period 2013 – 2016. This might be because rural developmental projects or programmes purposely implemented for the rural areas did not have a positive effect on their welfare and its benefits were not equitably shared. This corroborates the findings of Oyekale *et al.* (2012) who found that rural households were not equitably distributed in the use of energy such as electricity and also lacked easy access to a good water source that is suitable for drinking (potable water), especially through an improved source like pipe borne water and boreholes.

Factors Influencing Households Belonging Non-inclusive Growth Group in Periods 2010 – 2013 and 2013 - 2016

The result of the Probit Regression Model on factors influencing non-inclusive growth in rural Nigeria is shown in Table 3. The result shows that in the period 2010 – 2013, R^2 was 0.5625 and significant at 1% while in the period 2013 – 2016, R^2 is 0.6732 and also significant at 1%. Out of the 16 explanatory variables in the model, 11 were found to have a substantial impact on the likelihood of a rural household experiencing non–inclusive growth between periods 2010 and 2013. These are sex, household size, education, employment status, access to credit, access to health facilities and access to energy. Also, four geographical zones (North East (NE), North West (NW), South East (SE) and South West (SW)) while 10 explanatory variables significantly influenced the probability of rural households experiencing non–inclusive growth between periods 2013 and 2016. These include age of household heads, household size, education, access to credit, access to health facilities, access to potable water, access to energy and three geographical zones (North West, South-South and South West). The results show that being a member of a male household tended to reduce the probability of experiencing non–inclusive growth by 0.98% in the 2010 – 2013 period. This is traceable to the greater access of male to productive resources. But between the period 2013 and 2016, the coefficient of the

male-headed household was not significant. This might be attributed to the fact that female households were also contributing to the growth in the rural sector. The results of the marginal effect in periods 2013 – 2016 show that an increase in age would lead to an increase in non-inclusive growth. This implies that as rural households get older, the capability to work might be reduced and the sets of rural households would increase the level of dependents on other households. The result of the household size revealed that the higher the number of people among rural households, the higher the probability of being non-inclusive. The results show that as the household size grows the probability of being non-inclusive increases by 3.4% in the period 2010 – 2013 while in the period 2013 – 2016, the probability of increasing in non–non-inclusiveness of growth worsened by 6.5%. This result agreed with the work of Omonona (2010) and Adeoti (2014) who posited that an increase in household size is associated with poverty which indicates that household size has a positive correlation with probabilities of being non-inclusive with increasing in sizes. An increase in the years of education of the rural household decreased the non-inclusiveness of growth by 2% in the 2010 – 2013 periods while there was an increase in the probability of reducing non – non-inclusiveness of growth by 13% in the 2013 – 2016 periods. This shows that there was appreciable development in the level of educational status among the rural people in the periods 2010 – 2013 to periods 2013 – 2016. This implies that education enhances the capabilities of households to access incentives that stimulate the involvement of households in the growth process. The results of the employment status of the rural households showed that being employed among the rural households reduced non-inclusiveness of growth by 13.0% in the period 2010 - 2013. The implication is that individuals being employed would have the opportunity to increase *per capita* expenditure and have the probability of being growth-inclusive. The results indicated that access to credit will reduce individual probabilities of being non-inclusive by 0.84% in the period 2010 – 2013 while in the period 2013 -2016, it reduced the household probability of being non–inclusive by 10.97% which indicates that there was an improvement in terms of access to credit by rural households in this period. Since access to credit is negatively related indicating that it would enhance production incentives for improvement in agricultural productivity *vis a vis* increase in income of the rural households. The result of access to health facilities shows the probability of reducing the non–non-inclusiveness of growth by 1.6% in the period 2010 – 2013, while in the period 2013 – 2016, there was an appreciable improvement in access to health facilities which had the probability of reducing the non-inclusiveness of growth by 8.2%. This might be due to the government intervention in terms of improving rural health facilities as agreed with the findings of Verdier-Chouchane and Karagueuzian (2016). Also, an increase in the supply of energy such as electricity and access to gas in the rural areas resulted in a reduction in the non - inclusiveness of growth by 1.8% in the period 2010 –

2013, while energy supply resulted in a reduction in the non - inclusiveness of growth in the period 2013 – 2016 by 3.99%. This agreed with Oyekale *et al.* (2012) in their findings that improvement in energy supply in the rural area will improve the welfare of the people. This is an indication that energy supply in terms of electricity and access to kerosene or gas would improve the standard of living of rural households.

The results also show the significant influence of residency in the geopolitical zones on household *per capita* expenditure. In 2010 – 2013, the coefficients were negatively correlated with the household *per capita* expenditure and significant at 1 percent except for the SW geopolitical zones which were significant at 5 percent. The results indicate that residing in NE and NW would reduce non-inclusive growth by 5.5% and 2.2% respectively. However, in the SE and SW, an increase in *per capita* expenditure would reduce the non-inclusiveness of growth by 3.6% and 0.1% respectively. The results indicate that there is a tendency to improve the welfare of the living standard of living of the rural with the improvement in rural *per capita* expenditure at the regional levels. However, in the period 2013 -2016, the results of geopolitical zones show that NW, SS and SW have a negative relationship and significantly influenced the rural *per capita* expenditure of the rural household heads. Residency in the geopolitical zones had a significant influence in reducing the probability of being non–inclusive in the rural areas. The results revealed that in the Northeast region, increasing rural *per capita* expenditure had the probability of reducing the level of being non-inclusive by 4.2% which indicates an improvement in the standard of living of the rural people in the region. Similarly, residing and increasing *per capita* expenditure in the rural areas of Northwest, Southeast and Southwest have the probability of reducing the non-inclusiveness of growth by 2.2%, 3.6% and 0.1% respectively. However, Southeast significantly influenced the probability of being non–inclusive in the period 2010 – 2013 but the situation worsened in the period 2013 – 2016 as the result shows a negative relationship but not significant for residing in the region as well as increasing the rural *per capita* expenditure.

Conclusion
The study concludes that there is still a significant disparity in terms of access to facilities, social amenities and the necessities of life. In Nigeria's rural households, there is a lack of inclusion; unemployment and poverty remain high, and the vast majority of the population is denied access to health care, electricity, credit, and educational opportunities. For development to be equitable, concerted efforts should be made to develop rural areas not only in terms of economic opportunities but also in terms of fair access to those opportunities. Rural households in Nigeria have shown non-inclusiveness, poor job creation and poverty remain high and most of the people were excluded from infrastructural facilities such as health services, energy, credit and educational attainment. The study found that rural households were non–inclusive despite the growth in the economy. Therefore, there should be policies on economic growth and distributional strategies that can bring about poverty reduction among rural households such as improvement in the local infrastructure. Rural households should be provided with financial assistance or means of having access to credit facilities and health facilities in the rural areas to improve the rural people's welfare.

References
Adeoti, A. I. (2014). Trend and Determinants of Multidimensional Poverty in Rural Nigeria. *Journal of Development and Agricultural Economics.* 6 (5): 220 – 231.

Adepoju, A. O. and Adejare K.A. (2013). Food Insecurity Status of rural households during the post-planting season in Nigeria. Paper presented at the 4th International Conference of the African Association of Agricultural Economists. September 22 – 25, Hammamet, Tunisia.

Aderounmu, B., D. Azuh, O. Onanuga, Ogundipe O., B. Ebenezer and Azuh, A. (2021). Poverty drivers and Nigeria's development: Implications for policy intervention, *Cogent Arts & Humanities*, 8:1, DOI: 10.1080/23311983.2021.1927495

Akinlade, R.J., Yusuf, A., Omonona, B.T. and Oyekale, A.S. (2011): Poverty Alleviation Programme and Pro -poor Growth in Rural Nigeria: Case of Fadama II Project. *World Rural Observations,* 3 (1): 27 – 33.

Amoo, E. O. (2018). Introduction to special edition on Covenant University's perspectives on Nigeria's demography and achievement of SDGs-2030. *African Population Studies*, 32(1): 3993-3396. https://aps.journals.ac.za/pub/article/view/1170

Amoo, E. O., Adekola, P. O. and Oladosun, M. (2019). Science, technology and poverty eradication: any connection with demography? *International Journal of Civil Engineering and Technology (IJCIET)*, 10(2): 231–243.

Ayantoye K., Yusuf, S.A., Omonona, B.T. and Amao, J.O. (2011). Food security dynamics and its correlates among rural households in Southwestern Nigeria. *International Journal of Agricultural Economics and Rural Development,* 4 (1): 43 – 55.

CBN (2010). Central Bank of Nigeria. Central Bank Development Report 2010, Nigeria.

Fosu A. K. (2017). Growth, inequality, and poverty reduction in developing countries: Recent global evidence. *Research in Economics*, 71(2), 306–336. https://doi.org/10.1016/j.rie.2016.05.005.

Kakwani, N. and Pernia, E.M. (2000). what is Pro-Poor Growth? *Asian Development Review*, 16 (1):1- 22.

NBS (2017). Nigerian Poverty Profile National Bureau of Statistics. 2017.

OECD (2014). All on Board Making Inclusive Growth Happen. *OECD Secretariat, and Ford Foundation, the OECD Inclusive Growth Initiative*. Paris.

Ogujiuba, K. and Alehile, S.K.(2011). Inclusive Growth in Nigeria: Policy Issues and Options for Poverty Reduction. *International Journal of Social and Economic Research*, 1(1): 71 – 82.

Ogundipe, A. A., Ogunniyi, A., Olagunju, K. and Asaleye, A. J. (2019). Poverty and income inequality in the rural agrarian household of southwestern Nigeria: The gender perspective. *The Open Agriculture Journal*, 13(1): 51–57.

Okunmadewa, F .Y. (2002). *Poverty and Agricultural Sector in Nigeria.* Elshaddai (Ed) Global Ventures Limited, Ibadan.

Oluseye, I. C. and Gabriel, A.A. (2017). Determinants of Inclusive Growth in Nigeria: An ARDL Approach. *American Journal of Economics*, 7 (3): 97 - 109. DOI: 10.5923/j.economics.20170703.01

Omobowale, A. O. (2014): Livelihood, Agro-ecological Zones and Poverty in Rural Nigeria. *Journal of Agricultural Sciences.* 6 (2): 103 – 113. doi.org/10.5539.jas.v6n2p103

Omonona, B. T. (2009). Quantitative Analysis of Rural Poverty in Nigeria. *International Food Policy Research Institute (IFPRI).* Pp. 1 – 9.

Omonona, B. T. (2010): Quantitative Analysis of Rural Poverty in Nigeria. The Nigeria Poverty Support Programme (NSSP). *International Food Policy Research Institute (IFPRI). Brief* Pp. 17.

Omotola, A. M, Okoruwa V. (2016): Inclusive Growth pattern in Rural Southwestern Nigeria: Opportunities and Challenges. 5th International Conference of the African Association of Agricultural Economists, September 23-26, 2016, Addis Ababa, Ethiopia.

Oyekale A. S., Dare, A.M. and Olugbire, O.O (2012). Assessment of rural households cooking energy choice during kerosene subsidy in Nigeria: A case study of Oluyole Local Government Area of Oyo State. *African Journal of Agricultural Research*, 7 (39):5405-5411.

Ramos A., Ranieri, R. and Lammes, J. (2013). Mapping Inclusive Growth. *International Policy Centre on Inclusive Growth Working Paper* No. 105, March.

Verdier-Chouchane, A. and Karagueuzian, C. (2016). Concept and measure of inclusive health across countries, *Working Paper Series* N° 239, African Development Bank, Abidjan, Côte d'Ivoire.

Table 1: **Socio-economic Characteristics of Rural Households in Nigeria**

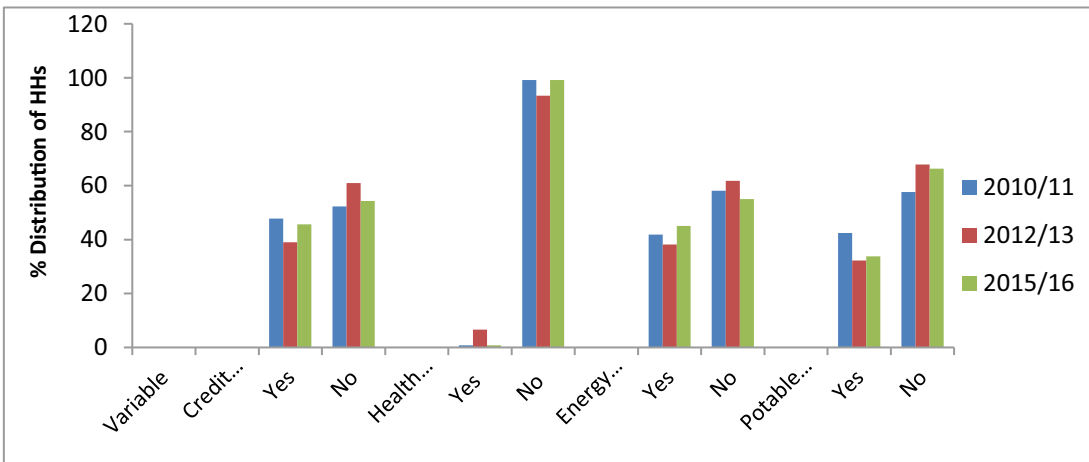| Variable	2010/2011		2012/2013		2015/2016	
	Frequency	%	Frequency	%	Frequency	%
Age (yr.)						
<40	592	17.7	1475	44.06	1267	37.84
41 – 60	2,582	77.15	1660	49.60	1801	53.82
>60	173	5.15	212	6.34	279	8.34
Mean	41.77		43.69		46.93	
SD	9.38		9.46		9.39	
Household size						
<5	43	1.28	43	1.30	0	0.00
6 – 10	3,026	90.42	2844	84.97	2726	81.45
>10	278	8.3	460	13.73	621	18.55
Mean	7.95		7.3		7.56	
SD	2.03		3.12		1.76	
Sex						
Male	2176	65.01	2189	65.40	2192	65.49
Female	1171	34.99	1158	34.60	1155	34.51
Occupation						
Agric.	3226	96.38	3148	94.05	2978	88.96
Non-Agric.	121	3.62	199	5.95	369	11.02
Marital status						
Never married	1009	30.13	1046	31.25	714	21.34
Married	2151	64.25	2111	63.08	2123	63.42
Divorced	107	3.21	139	4.15	332	9.92
Widowed	80	2.4	41	1.23	178	5.32
Education						
No education	1,451	43.35	1515	45.26	1344	40.15
Primary	509	15.21	632	18.88	673	20.12
Secondary	760	22.71	595	17.77	642	19.17
Post-secondary	627	18.72	606	18.09	688	20.56
Employment						
Self-employed	2,728	81.51	2756	82.36	2650	79.18
Paid employment	526	15.72	512	15.28	591	17.67
Unemployed	68	2.04	62	1.85	70	2.10
Retired	24	0.73	17	0.51	35	1.05

Fig. 1: Distribution of Rural Households by Access to Facilities in Periods 2010/2011, 2012/2013 and 2015/2016

Table 2: Characteristics of the rural households of Non - inclusive growth: 2010 - 2013; 2013 - 2016; and 2010 - 2016

Variables Geo - Zones	HHs Total HH	2010 -- 2013		2013 -- 2016		2010 -- 2016	
		Freq	%	Freq	%	Freq	%
NC	577	302	52.34	328	56.85	308	53.38
NE	659	316	47.95	339	51.44	319	48.41
NW	728	357	49.04	286	39.29	306	42.03
SE	590	302	51.19	253	42.88	253	42.88
SS	540	290	53.70	264	48.89	269	49.81
SW	253	134	52.96	139	54.94	114	45.06
Sex							
male	2616	1321	50.50	1207	46.14	1237	47.29
female	731	380	51.98	362	49.52	332	45.42
Age							
< 40	1206	604	50.08	526	43.62	566	46.93
41 - 60	1439	736	51.15	729	50.66	689	47.88
> 61	702	361	51.42	310	44.16	314	44.73
Marital status							
married	2578	1302	50.50	1357	52.64	1221	47.36
never married	627	321	51.20	315	50.24	282	44.98
widowed	117	66	56.41	65	55.56	54	46.15
Educ. level							
No Education	1267	614	48.46	712	56.20	611	48.22
Pry education	1295	671	51.81	602	46.49	581	44.86
Sec. education	281	301	52.53	279	48.69	281	49.04
Tert. education	212	115	54.25	92	43.40	96	45.28
Access to Health Facilities							
no	3321	1688	50.83	1458	43.90	1558	46.91
yes	26	13	50.00	15	57.69	11	42.31
Access to Credit							
no	1749	875	50.03	915	52.32	835	47.74
yes	1598	826	51.69	801	50.13	734	45.93
Access to Energy							
no	1785	1560	87.39	1256	70.36	1509	84.54
yes	1562	560	35.85	650	41.61	458	29.32

HHs = Households, NIG = Non-inclusive growth

Table 3: **Determinants of Households being in Non-inclusive Growth Group in (2010 – 2013 and 2013 – 2016)**

Variable	Periods 2010 – 2013 Coefficient	Standard error	Marginal effect	Periods 2013 – 2016 Coefficient	Standard error	Marginal effect
Sex	-.01020***	.00185	-.00983	.012513	.01502	.00068
Age	.02009	.00404	.00072	.01859***	.00367	.00059
Marital Status	.00442	.01991	.00763	.02251	.01656	.01329
HHsize	.08954***	.48296	.03355	.91135***	.00427	.06468
Education	-.09745***	.00363	.02019	-.11102***	.00291	-.13044
Employment status	-.62313***	.02748	-.13044	-.58930	.02461	-.11961
Access to credit	-.11658***	.02563	-.00841	.33104***	.01897	-.10971
Access to health facilities	-.05684**	.02262	-.01618	-.20558***	.01632	-.08174
Land ownership	-.03882	.02434	-.00223	-.16052	.01572	-.07158
Access to potable water	.11019	.03364	.02499	-.32022***	.05102	-.01519
Access to energy	-.67402***	.25171	-.01840	-.25687***	.02108	-.03988
Northeast	-1.13498***	.04286	-.05516	-.28003	.02798	-.03644
Northwest	-.16810***	.05265	-.02162	-.16248***	.03165	-.04089
Southeast	-.15860***	.04562	-.03591	-.05873	.03303	-.00064
South-south	-.13741	.08463	-.02109	-.65820***	.03040	-.02555
Southwest	-.41296**	.03809	-.00101	-.88848***	.05991	-.00443
constant	12.0910***	.66027		-4.5609***	.64691	
No of observation = 3,347				No of observation = 3,347		
Log – likelihood = -2308.67				Log – likelihood = -2296.65		
Pseudo R² = 0.5625				Pseudo R² = 0.6732		
Prob > Chi² = 0.0006				Prob > Chi² = 0.0062		

*, **, *** denote statistical significant 10%, 5% and 1% respectively