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## ASSESSMENT OF INCOME INEQUALITY AND POVERTY AMONG FARMING HOUSEHOLD IN AKINYELE LOCAL GOVERNMENT AREA, OYO STATE

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### ABSTRACT

The Instability in the socioeconomic condition has continued to pester the living conditions of most households especially those living in the rural areas. This could lead to inefficient allocation of resources, reduce productivity and ultimately slow down the rate of economic growth. Thus it is important to analyze the income inequality and poverty among farming households' heads in Akinyele local government with a view to promoting equity and economic growth. Primary data used for the study were collected through structured questionnaire. A total of seventy (70) agro-forest based farmers were randomly selected and administered questionnaires. Data collected was analyzed using descriptive statistic, Foster Greer and Thorbecke approach and Gini-coefficient. Foster Greer and Thorbecke approach was used to measure the poverty incidence while Gini-coefficient was used to measure aggregate income inequality. The result shows the mean per capital household expenditure to be ₦6299.44K with the standard of living shortfall (poverty line) to be ₦4199.63K. The result further revealed the poverty incidence (the proportion of the population whose income fall below the poverty line) to be 34.3%, the poverty depth to be 37% and the severity of poverty to be 97% while the Gini-coefficient ratio was found to be 0.26. This shows that there is a relatively equitable distribution of income among the farming households in the study area.

**Keywords:** Income, Inequality, Poverty, Farming, Household.



## **Introduction**

Perceptions of gender are deeply rooted; vary widely both within and between cultures and changes over time. But in all cultures, gender determines power and resources for both female and male (FAO, 2017). Thus there are other factors determining the standard of living and affecting welfare that cannot be readily reduced to a single monetary measure. Examples of such factors are: access to education, access to basic health services, access to safe portable water and basic housing amenities. These basic needs become particularly suited for measuring poverty in developing countries since poverty is the deprivation from certain commodities and resources (both food and non-food) that are deemed essential. It encompasses those factors that enable the command of individuals over resources such as being healthy and literate (Oluwatayo, 2014). Poverty is one of the most familiar and enduring conditions known to humanity, it is an extremely complicated concept to understand, and is a multifaceted concept, which includes social, economic, and political elements (Ofori-Boateng, 2017). Poverty can be classified into two groups based on how the people got into poverty, where they live and how they experienced the issue. There are absolute and relative poverty. Absolute poverty is measured in terms of access to basic necessities, it is a condition characterized by severe deprivation of basic human needs including food, safe drinking water, sanitation facilities, health shelter, education and information. It depends not only on income but on access to social services (Wikipedia, 2017). Relative poverty takes into consideration individual, social and economic status compared to the rest of the society (UNESCO, 2016). This is the one that has consistently had the greatest effect on the evolving concept of poverty including political, economic, social and cultural forces. Poverty in all its forms is the greatest challenge to the international community. Of special concern are the 1.2 billion people living on less than \$1 a day and the additional 1.6 billion living on less than \$2 a day (Kanayo, 2014). According to the latest poverty report by the National Bureau of Statistics, NBS, about 112 million Nigerians (representing 67.1 per cent) of the country's total population of 167million now live below poverty level as global poor hits one billion mark (Vanguard, 2016). Poverty and inequality are global phenomenon but the rates in Nigeria are higher than most countries in the world. This indicates that there is high level of uneven distribution of income in the country (IMF, 2015). Thus it is detrimental to economic growth and development of a nation. Studies have shown that inequality is more prevalent in the rural area than in the urban community. Since many rural household drives the economy of a nation, it is very pertinent to study poverty level and inequality among rural household so as to reduce the dimension of poverty among households. Therefore there is need to assess the level of poverty and income inequality and also determine the poverty incidence, depth and severity of the respondents.



## METHODOLOGY

### Study Area

The study was carried out in Akinyele local government area in Ibadan, Oyo state, Nigeria. It is one of the eleven local government areas that make up Ibadan metropolis and it shares boundaries with Afijio local government area to the north, Lagelu local government area to the east, Ido local government area to the west and Ibadan north local government area to the south. It occupies a land area of 464.892 square kilometers with a population density of 516 people per square kilometer. Using 3.2% growth rate from 2006 census figures, the 2010 estimated population for the local government is 239,745 (Wikipedia, 2016).

### METHOD OF DATA COLLECTION

The study made use of both primary and secondary data. Primary data was collected with the aid of structured questionnaire administered through oral interview to seventy (70) respondents in Akinyele L.G.A Ibadan, Oyo state. The respondents were randomly selected from five major rural towns. The towns were Olorisa-oko, Ojedeji, Alabata, Ijaye and Akinjide. Secondary data were obtained from journals, bulletins and internet.

### METHOD OF DATA ANALYSIS

The data were analyzed using descriptive statistics such as frequency count and percentages to describe the demographics characteristics of the respondents. Incidence, dept and severity of poverty were assessed using FosterGreer and Thorbecke (1984) method. Gini coefficient was used to assess the level of income inequality of the respondents in the study area which is an aggregate inequality measure and varies from 0 (perfect equality) to 1 (perfect inequality). If income is totally and equally distributed, the Lorenz curve follows the 45° line and the Gini-coefficient is zero. Therefore as inequality increases, the gini-coefficient rises. In the extreme case of total inequality where one person earns the whole national income, the Gini - Coefficient would be 1. In actual fact, the Gini- Coefficient for countries with highly unequal income distributions like Nigeria typically lies between 0.50 and 0.70, while for countries with relatively equitable distributions, it is on the order of 0.20 to 0.35 (Bakare, 2012).

Area of trapezium was used to estimate the area under the Lorenz Curve. The formula is given below:

$$\frac{1}{2} (a + b)h \dots \dots \dots (1)$$

Foster Greer and Thorbecke (FGT) poverty index was used to ascertain the poverty status of the respondents and this was then used to disaggregate them into poor and non-poor categories. The measures relates to different dimensions of the incidence of poverty P<sub>0</sub>, P<sub>1</sub> and P<sub>2</sub> were used for head count (incidence), depth and severity of poverty respectively.



The three measures were based on a single formula but each index puts different weights on the degree to which a household or individual falls below the poverty line. The mathematical formulation of poverty measurement as derived from Foster Greer and Thorbecke (1984) is estimated as

$$P = \frac{1}{N} \sum_{i=1}^q \frac{(z - Y_{ij})^a}{z} \dots\dots\dots (ii)$$

Where

P = the weighted poverty index for the sub-group

a = foster –Greer- thorbecke (FGT) index and takes on the values of 0.1 and for incidences, depth and severity of poverty measures respectively

z = the poverty line for the sub-group

q = the number of individual below the poverty line

N = the total number of individual in the population

Y<sub>ij</sub> = the per capita expenditure of household j in the sub-group i

$$\left( \frac{z - y_i}{z} \right) = \text{The Proportion of the population that falls below the poverty line}$$

Determining the poverty index

When a = 0 in FGT, the expression becomes:

$$P_0 = \left( \frac{1}{n} \right) q = \left( \frac{1}{n} \right) \dots\dots\dots (iii)$$

This is called the Incidence of poverty or headcount index, which measures the proportion of the population that is poor i.e. falls below the poverty line.

When a = 1 in FGT, the expression becomes:

$$P_1 = \frac{1}{2} \sum_{i=1}^q \left( \frac{z - y_i}{z} \right) \dots\dots\dots (iv)$$

This is called Poverty depth or Poverty gap index, which measures the extent to which individuals fall below the poverty line as a proportion of the poverty line.



When  $a = 2$  in FGT, the expression becomes:

$$P_2 = \frac{1}{n} \sum_{i=1}^q \left( \frac{Z - y_i}{Z} \right)^2 \dots \dots \dots (v)$$

This is called Poverty severity index measures the squares of the poverty gaps relative to the poverty line.

## RESULT AND DISCUSSION

Table 1: SOCIO-ECONOMIC CHARACTERISTICS

Variable	Frequency	Percentage
<b>GENDER</b>		
Male	39	55.7
Female	31	44.3
Total	70	100
<b>AGE</b>		
20-30	19	27.1
31-50	47	67.1
51-60	3	4.3
Above 60	1	1.4
Total	70	100
<b>MARITAL STATUS</b>		
Single	13	18.6
Married	51	72.9
Divorced	2	2.9
Widow	2	2.9
Other	2	2.9
Total	70	100
<b>EDUCATION LEVEL</b>		
No formal education	14	20.0
Primary education	18	25.7
Secondary education	26	37.1
NCE/OND	12	17.1
Total	70	100
<b>HOUSEHOLD SIZE</b>		
1-3	8	11.4
4-6	47	67.1
7-10	13	18.6
Other	2	2.9
Total	70	100

Source: Field survey, 2016



Table 1 show that 55.7% of respondent were male and 44.3% were female which implies that most household are headed by male. The table also shows that 67.1% of the respondents' age falls between 31-50. This shows that most of the respondent are in their active age and are expected to contribute immensely to productive enterprise. This finding is in line with empirical results of Akpan (2016). Also the table shows that 72.9% were married. Higher percentage of married population in the study area indicates that they are expected to be responsible because of financial commitment to the family. The table also shows that 37.1% of the respondent had secondary education; this will increase their skill and technical knowledge.

Table 2: Amount spent on food and Non-Food per month (N)

Variable	Frequency	Percentage (%)
Amount spent daily on food		
	17	24.4
250-500	49	70.0
550-1000	1	1.4
4500	2	2.9
7000	1	1.3
Other	70	100.0
Total		
Amount spent on non-food month		
1000-2000	16	22.7
2500-5000	17	24.3
6000-10000	8	11.4
11000-15000	17	24.3
16000-19500	9	12.8
60000	2	2.9
Other	1	1.4
Total	70	100.0

Source: Field survey. 2016.

Table 2 shows that 70% of the respondents spent between ₦550-1000 daily on food which implies that the amount spent on food depend on the number of people in the family and may increase or decrease per time. The table also shows that 22.7% of the respondent spent as much as ₦1000-2000 on non-food material of different kind which also depends on the needs of the family and the head of the family. The findings in table 2 concluded that 42.8% of these farmers have their monthly expenditure between ₦1000-19500 which implies that the higher the income of this farmer the greater the level of their expenditure per month.



Table 3: Poverty indices of respondents in Akinyele LGA

Poverty indices	Measures
P <sub>0</sub> (poverty incidence)	0.343(34.3%)
P <sub>1</sub> (poverty depth)	0.370(37%)
P <sub>2</sub> (severity of poverty)	0.970(97%)
Mean per capita household expenditure	N6299.44
Poverty line	N4199.63

Source: Field Survey, 2016

The mean per capita house expenditure per month is ₦6299.44k. the relative poverty line is ₦4199.63k. the poverty line is an income based on threshold line that divides the poor and the non-poor famers in the study area. P<sub>0</sub> (Poverty prevalence among household determined using the formula FGT) revealed the incidence of poverty (P<sub>0</sub>) in this study was 0.343 indicating that 34.3% of the sampled farming households were actually poor based on the poverty line .P<sub>1</sub> (poverty depth) among the rural farming households was 0.370, implying that an average poor farming households would require 37.0% of the poverty line to get out of poverty. The value P<sub>2</sub> (poverty severity) among the sampled farming households was 0.970, indicating that the poverty severity of poor farming households was 97%.This result means that farmers need about 97% increase in per capita income to push them away from severe poverty. This finding is in line with empirical results of Olawuyi and Adetunji (2013).

Table 4:The representation of the lorenze curve into tabulated form

Quintile	Total income per quintile	Percentage income per quintile	Cummulative percentage income	Line of equality
20	156500	0.063579	0.06	0.2
40	350000	0.14219	0.21	0.4
60	475000	0.192972	0.4	0.6
80	700000	0.284379	0.68	0.8
100	780000	0.31688	1	1
Total	2461500			

Quintile is any of the four values that divides the items of frequency distribution into five classes with each containing one fifth of the value.



Table 5: The cumulative percentage income and the cumulative percentage of household.

Cummulative percentage of household	Cummulative percentage	Line of equality
0	0	0
0.2	0.06	0.2
0.4	0.21	0.4
0.6	0.4	0.6
0.8	0.68	0.8
1.0	1	1.0

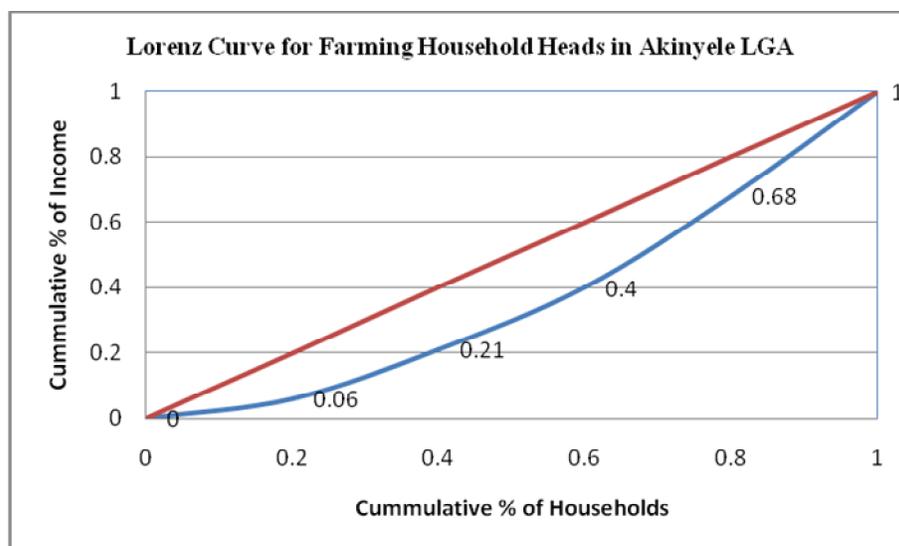


Fig 1: The lorenze curve for farming household in Akinyele L.G.A

From the curve, five smaller trapeziums can be obtained. The area under the Lorenz curve can then be calculated as follows:

$$\frac{1}{2}(0+0.06)0.2 + \frac{1}{2}(0.06+0.21)0.2 + \frac{1}{2}(0.21+0.4)0.2 + \frac{1}{2}(0.4+0.68)0.2 + \frac{1}{2}(0.68+1)0.2 = 0.37$$

The area under the line of perfect equality equals the area of a triangle =  $\frac{1}{2}bh = \frac{1}{2}(1 \times 1) = \frac{1}{2} = 0.5$

Subtract area under the Lorenz curve from area under the line of perfect equality.



That is,  $0.5 - 0.37 = 0.13$

This is the area between the line of perfect equality and the Lorenz curve.

Gini Coefficient is therefore found by taking the ratio of the area between the line of perfect equality and the Lorenz curve to the total area under the line of perfect equality.

That is  $0.13/0.5 = 0.26$

Therefore there is a relatively equitable distribution of income among the farming households in the study area, since the Gini Coefficient is 0.26 and this falls within the range of 0.20 to 0.35.

## **CONCLUSION**

The study had shown that most of the household heads are male with average age of (31-50). 37.1% of the household heads have secondary education. The result had also shown the mean per capital household expenditure to be ₦6299.44K with the standard of living shortfall (poverty line) to be ₦4199.63K. The result further revealed the poverty incidence (the proportion of the population whose income fall below the poverty line) to be 34.3% while the poverty depth to be 37% with 97% severity of poverty while the Gini-coefficient ratio was found to be 0.26 showing that there is a relatively equitable distribution of income among the farming households in the study area. The study clearly has shown that the standard of living shortfall of the survey household is 34.3% and that they are generally poor. The low standard of living could be attributed to low income, poor access to credit and large family size.

## **REFERENCES**

- Akpan S. B, Inimfon V. P. and Amama A (2016): Level of Income Inequality and Determinants of Poverty Incidence among Youth Farmers in Akwa Ibom State, Nigeria. *Journal of Sustainable Development*; Vol. 9, No. 5; pp 162-174
- Bakare A. S. (2012). Measuring the Income Inequality in Nigeria: the Lorenz Curve and Gini Co-efficient Approach. *American Journal of Economics*, 2(1): 47-52
- FAO (2017) Gender: Why gender. <http://www.fao.org/gender/gender-home/gender-why/why-gender/en/> (accessed June 2017)
- Foster, J., Greer, J. and Thorbecke, E. (1984). A Case of Decomposable Poverty Measures. *Econometrica*, 52:761-765



- IMF (2015). Causes and Consequences of Income Inequality: A Global Perspective. <https://www.imf.org/external/pubs/ft/sdn/2015/sdn1513.pdf>. (accessed March 2017)
- Kanayo Ogujiuba (2014). Poverty Incidence and Reduction Strategies in Nigeria: Challenges of Meeting 2015 MDG Targets. *Journal of Economics*, 5(2): 201-217.
- Olawuyi, S., & Adetunji, M. O. (2013). Assessment of Rural Households Poverty in Nigeria: Evidence from Ogbomoso Agricultural Zone of Oyo State, Nigeria. *Journal of Scientific Research & Reports*, 2(1), 35-45.
- Ofori-Boateng K, (2017). Analysis of Severity of Poverty and Social Cohesion among the Urban poor Migrants in Ghana. *Journal of Poverty*. 21(3): 265 – 287
- Oluwatayo I. B. (2014) Gender Dimensions of Poverty and Coping options among Smallholder Farmers in Eastern Nigeria. *Mediterranean Journal of Social Science*. 5(27): 49 – 61.
- UNESCO (2016). Learning to Live Together. <http://www.unesco.org/new/en/social-and-human-sciences/themes/international-migration/glossary/poverty/>. (accessed March 2017)
- Vanguard, (2016). Poverty- 112M Nigerians live below poverty line. <http://www.vanguardngr.com/2016/10/poverty-112m-nigerians-live-poverty-line/> (accessed June 2017)
- Wikipedia (2017). Extreme Poverty. [https://en.wikipedia.org/wiki/Extreme\\_poverty](https://en.wikipedia.org/wiki/Extreme_poverty). (accessed February 2017)
- Wikipedia (2016). Akinyele. <https://en.wikipedia.org/wiki/Akinyele>. (accessed March 2017)