

# Level of Income Inequality and Determinants of Poverty Incidence among Youth Farmers in Akwa Ibom State, Nigeria

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## Abstract

The prevalence of poverty among youths engaged in agricultural production is partly responsible for increase in agricultural diversification and rural-urban migration among other social vices in developing societies. To help generate suitable policies in order to tackle this rampaging issue, the study specifically analyzes poverty and income inequality as well as identified determinants of poverty among youths involved in agricultural production in the rural areas of Akwa Ibom State located in southern Nigeria. Data were collected from 300 youths spread across the rural areas of the State. Combinations of sampling methods were employed to sample cross sectional data from respondents. The study used descriptive tools and regression analysis (Logit regressions) to analyze information collected. The socio-economic analysis reveals that, most youth farmers were educated; social capital formation was poor, while land size averaged at 0.48ha per youth. About 45.1% of male youths and 72% of female youths live below poverty line in the study area. Income inequality index revealed 0.4009 for male youths and 0.3797 for female youths. The Logit model estimates revealed that, youths' years in social organization, level of formal education, age of youths; amount of non-farm income, farm size, agricultural extension activities and commercial purposes of agricultural production reduced the probability of poverty incidence among youth farmers in the State. Household size and dependent ratio were positive drivers of poverty among rural youths. Based on the research findings, it is recommended that poverty and income inequality among youths engaged in agricultural production in the rural area of the State can be successfully handled, if sound family welfare packages are implemented in the rural communities. Also, rural youth's groups should be strengthened to promote social capital formation; while farm enterprise development capacity should be encourage among youths as well as strengthening agricultural extension system in the State. Marginal lands should be developed and distributed to youth farmers in the area.

**Keywords:** Rural youth, poverty, income inequality, agricultural production, Nigeria

## 1. Introduction

Agriculture is the most popular and predominant activity in most rural communities in Nigeria (Oni, 2014 and Akpan and Udoh 2016). The sector employs more than 70% of the rural population and is a major absorber of labour during economic crises. Literature has provided evidence that, more than 60% of the rural population who are mostly farmers in Sub Saharan Africa live below poverty line and do not have sufficient access to social services and infrastructures (Poulton *et al.*, 2005; World Bank, 2007, and Apata *et al.*, 2010). This does not actually connote that farming is synonym to poverty, but as noted by Udoh and Akpan 2007, most rural farmers in Nigeria have poor resource based which culminated into low farm income. Haggblade (2004) also suggested that, significant poverty reduction will not be possible without rapid agricultural growth and development. In Nigeria, issues related to poverty and income inequality are mostly reported as a rural phenomenon and more prevalent among the farming households (Omonona, 2001; NBS, 2006; Okunmadewa *et al.*, 2010).

Globally, poverty and income inequality have been identified as major limitations to economic development and growth. Despite the fact that Nigerian economy is paradoxically growing, the proportion of Nigerians living in poverty is increasing every year (NBS, 2010). For instance, in 2004 the relative poverty stood at 54.4% representing 68.7 million Nigerians; whereas in 2010, poverty incidence rose to 69.00% representing 112.47

million Nigerians; while in 2011 it was 71.50% (NBS, 2010). The report also revealed that, 73.2% of the rural population was poor while 61.8% of urban population lives below poverty line in 2010. Income inequality has also showed irregular pattern in Nigeria as revealed by NBS in 2010. The Gini index was 0.434 in the South-South region and 0.444 in the South East region and averaged at 0.447 for the country. This revealed that, income is unevenly distributed among urban and rural households in the country. This implies that income inequality and poverty incidence existed at various levels among categories of individuals in the society. Persistence disparity in income and continuous increase in societal poverty could lead to inefficient allocation of resources and stunted growth in economic activities.

The agricultural sector in most developing countries has fundamental problems. One of these problems is labour constrain. Continuous increase in rural -urban migration among youths has created a gap that has further worsened the performance of the agricultural sector in many developing countries. Premised on this, many analysts have postulated the influence of rural poverty and income inequality as one of the major reasons for outward movement of youths from the rural areas (Akpan, 2010 and Aworemi *et al.*, 2011). In response to this, governments at various tiers have enunciated several programmes to improve on the income level of rural youths and stimulate youths' interest in agricultural production. For instance, in 2008, the Akwa Ibom State Government initiated integrated farming scheme for agricultural graduates and set up a micro credit scheme to assist youths engaged in agricultural production. In 2011, a gender specific skill development scheme was enunciated to help improved the wellbeing of enterprise female youths in the state, through the provision of soft loans to beneficiaries. Despite these incentives and the expanding markets for the primary and secondary agricultural commodities in the state; the employment of youths in agricultural production has steadily declined in recent years and the off-farm income activities among rural youths has risen instead (Akpan *et al.*, 2015 and Akpan *et al.*, 2016). The over- all impact of the scenario is the disguised unemployment generated among youths in the urban centers, agricultural diversification and underutilization of farm resources. One way to address this issue is to assess the poverty and income inequality among youths already involved in agricultural activities.

The need to search for appropriate policy in this direction is further justify by the aging farming population, the latent energy embedded in youthful labour and the general perception of youths on agricultural activities (Akpan, 2010, Akpabio, 2012, Akpan *et al.*, 2015). The issue of increasing agricultural diversification among rural youths could be an indication of the level of rural poverty among youths engaged in agriculture. To hasten the agricultural development process will required motivating rural youths to become active participants in the ongoing re-engineering of the agricultural sector in the country. Thus investigating issues concerning rural youth farmers' poverty and income inequality is a necessity in this era of increasing crude oil price volatility and corresponding economic uncertainty in Nigeria. Hence, based on this premised, the study specifically identified factors that determine rural poverty among youths engaged in agricultural production and analyzes the degree of income inequality and poverty among them in the study area.

## 2. Literature Review

Several empirical studies have been carried out on poverty and income inequality among rural households in Nigeria. For instance, Ogbonna (2012) conducted an empirical study to determine factors that influence rural poverty among yam farm households in south eastern Nigeria. The result identified level of education, social group membership, farming experience and participation in agricultural workshop as negative driver of rural poverty. However, household dependency ratio had a positive relationship with rural poverty. In the like manner, Asogwa *et al.*, (2012) estimated the determinants of poverty depth among the peri-urban farmers in Benue State, Nigeria. Result showed that, farm total economic efficiency, household income, farm size, household size, age, education, farming experience, access to credit, gainful employment for household members, membership of farmer association, extension contact and valuable farm asset significantly influenced poverty among respondents. In the South west region of Nigeria, Olawuyi and Adetunji (2013) analyzed the incidence, severity and the determinants of household poverty in Ogbomoso Agricultural Zone of Oyo State. Gender, household size, years spent in school, farm size and non-farm jobs were found to be important and significant factors determining poverty in the study area. Still in the same region, Igbalajobi *et al.*, (2013) analyzed the determinants of poverty among rural farmers in Ondo State. The result of the Logit model indicated that age, gender, marital status, household size, access to credit, farm income and educational level of respondents were the major determinants of poverty among rural farm households.

Akinbode (2013) also assessed the poverty situation and its determinants among urban households in the south-west region of Nigeria. The FGT decomposition poverty in the area showed that 34 percent of the households were poor with a poverty gap and severity indices of 0.11 and 0.06 respectively. The study further revealed that educational level of heads, household size, gender of heads, dependency ratio and access to credit

exerted significant effect on household poverty in the region. Another study in the region conducted by Adetayo (2014) examined the poverty status of farm households in Ogun State. Poverty incidence was found to be higher among male headed (60%) and farming (63.9%) households and those having over five members (66.1%). The Logit regression further indicates that the likelihood of being poor were more with large households, non-educated farm households head and households without access to credit and other non-farm income.

In the South-South region of Nigeria, Edoumiekumo *et al.*, (2014) examined the incidence, depth and severity of poverty in Bayelsa state. Results from the logit regression showed that agriculture and household size increases the probability that a household will be poor while dwelling in the urban area; being headed by male, a naira increase in households per capita expenditure on education and per capita expenditure on health and a year's increase in the number of years spent in school by household head reduces the probability that a household will be poor. Recently, in the South West, Awotide, *et al.*, (2015) assessed income inequality and poverty among rural households in Akinyele local government area, of Oyo State. The study revealed that income was more evenly distributed among the female headed households than the male counterparts in the study area. Empirical result revealed that, number of dependent ratio and households' size significantly increases the probability of falling below the poverty line among the respondents. The result further showed that, access to credit and contact with extension agents had significant poverty reducing effects. In the Northern region of Nigeria, Duniya and Rekwot (2015) investigated the determinants of poverty among groundnut farming households in Jigawa State. Result showed that, age of household head, marital status of household head, education, and membership of cooperative had negative relationship with poverty incidence while farming experience and extension contact had positive significant relationship.

### *2.1 Research Gap Found in Literature*

From the literature so reviewed, it is observed that most empirical researches on poverty in Nigeria are conducted in the South western region of Nigeria. The South –south region has scanty information on prevalence of poverty in the region. This means that, the need to intensify research effort in the zone is necessary, and this is one of the aspects this research has intervened. Also, most of these works focused on poverty determination only without giving due consideration to income inequality among respondents. Hence, this study focused on both income inequality and poverty status of respondents. Again, youth farmers have not been given due consideration in poverty studies in Nigeria. This is against the economy diversification policy of the federal government which is hinged on youth involvement in agricultural activities. A study like will help to provide useful information on youth's poverty and income inequality status that will form the bed rock for sound policy needed to increase agricultural production through increase youths' participation.

## **3. Research Methodology**

### *3.1 The Study Area*

The study was conducted in Akwa Ibom State, located in the Southern region of Nigeria. It is located between latitudes  $4^{\circ}32'$  and  $5^{\circ}33'$  North and longitudes  $7^{\circ}25'$  and  $8^{\circ}25'$  east. It has a total land area of areas of 7,246km<sup>2</sup>. The mean annual temperature of the state lies between 26°C and 29°C and average sunshine of about 1,450 hours per year. The mean annual rainfall ranges from 2,000mm to 3,000mm, depending on the area. Naturally, maximum humidity is recorded in July while the minimum occurs in January. The state is bordered on the East by Cross River State, on the West by Rivers State and Abia State, and on the South by the Atlantic Ocean. Akwa Ibom State has a population of about 3,902,051 and a population density of 634 persons per square kilometers (National Population Commission, 2006). The state is basically an agrarian society where crops like maize, okra, waterleaf, cassava, yam and rice are cultivated in large quantities. Fishery including aquaculture; livestock and poultry businesses thrives well in the State. The state was picked among other states in the region because of its rich agricultural potentials. In addition, the state has well demarcated rural and urban areas. Furthermore, the geography of the state supports diverse agricultural activities, in addition to has been one of the most peaceful States in region and Nigeria.

### *3.2 Data Source and Sampling Procedures*

“Note, in this study, the definition of a youth is in line with the content of the National Youth Development Policy document. A youth in the document is perceived as a young person whose age range from 18 to 35 years” Primary data were used and respondents were youths. Combination of sampling methods was used to select respondents. Firstly, two local government areas with clearly distinct rural areas were purposively selected from each of the Senatorial district in the State. A total of six (6) local government areas were selected and used for data collection. In the second stage, five rural villages were randomly sampled from each of the six local government areas selected. A total of thirty rural villages were randomly sampled from the six local government areas and

used for data collection. In the third stage, ten (10) rural youths were randomly picked from each of the sampled village. Hence, a total of three hundred (300) rural youths were randomly sampled and used for data collection.

### 3.3 Empirical Model

The Foster-Greer-Thorbecke (FGT) model was used to analyze poverty status of the rural farming households. FGT poverty index was used to measure poverty status among the rural farming households. The FGT poverty index is generally expressed as thus:

$$P_{\alpha} = \frac{1}{n} \sum_{i=1}^q \left( \frac{Z - Y_i}{Z} \right)^{\alpha} \dots \dots \dots (1)$$

Where:

$n$  = total number of households in population

$q$  = the number of poor households

$Z$  = the poverty line for the household

$Y_i$  = Per capita household income for  $i^{\text{th}}$  farmer

$\alpha$  = poverty aversion parameter and takes on value 0, 1, 2

$\left( \frac{Z - Y_i}{Z} \right)$  = proportion shortfall in income below the poverty line.

Decomposition of poverty index:

Following Foster-Greer-Thorbecke (FGT) model, household poverty can be decomposed into the following sub-units:

a) When  $\alpha = 0$ , then FGT index is expressed as:

$$P_0 = \frac{1}{n} \sum_{i=1}^q \left( \frac{Z - Y_i}{Z} \right)^{\alpha} = \frac{1}{n} \sum_{i=1}^q \left( \frac{Z - Y_i}{Z} \right)^0 = \frac{q}{n} \dots \dots \dots (2)$$

This is called the Incidence of poverty or headcount index, which measures the proportion of youth farmers that is poor or falls below the poverty line. This gives the head count ratio or the incidence of poverty which is the percentage of respondents that are poor or whose per capita household income is below the poverty line.

b) When  $\alpha = 1$ , then FGT index is expressed as:

$$P_1 = \frac{1}{n} \sum_{i=1}^q \left( \frac{Z - Y_i}{Z} \right)^{\alpha} = \frac{1}{n} \sum_{i=1}^q \left( \frac{Z - Y_i}{Z} \right)^1 \dots \dots \dots (3)$$

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. It reflects both incidence and depth of poverty or the proportion of the poverty line that the average poor will require to attain to the poverty line.

c) When  $\alpha = 2$ , then FGT index is expressed as:

$$P_2 = \frac{1}{n} \sum_{i=1}^q \left( \frac{Z - Y_i}{Z} \right)^{\alpha} = \frac{1}{n} \sum_{i=1}^q \left( \frac{Z - Y_i}{Z} \right)^2 \dots \dots \dots (4)$$

This is called Poverty severity index which measures the squares of the poverty gaps relative to the poverty line. The index measures the severity of poverty which is the mean of square proportion of the poverty gap. When multiplied by 100, it gives the percentage by which a poor household's per capita income should increase to push them out of poverty.

**Measurement of Poverty Line:** This was done to separate youth farmers into poor and non-poor groups. As a benchmark, two-third of the mean per-capita income was used as a threshold. Households whose mean per-capita income fall below the poverty line are regarded as being poor while those with their per-capita income is on or above the benchmark are non-poor.

*Household Per Capita Income (HPCI) = Household income/Household Size (HHS)*

*Total Household per capita Income (THPCI) = Summation of HPCI*

*Mean Total per capita income (MTHPCI) = THPCI/n*

$$\text{Then Poverty Line (PL)} = \left(\frac{2}{3}\right) (MTHPCI)$$

### 3.4 Determinants of Poverty among Youth Farmers in Akwa Ibom State

A binary Logit model was used to identify significant factors that influence poverty incidence among youths in the rural areas of the state. Implicitly, the specified model is shown in equation 1. The Logit Model which captures youths' poverty incidence is given below;

$$POV = \left(\frac{P_i}{1-P_i}\right) = Z_i = \beta_0 + \beta_1 AGE + \beta_2 GEN + \beta_3 EDU + \beta_4 MAR + \beta_5 SOC + \beta_6 ICT + \beta_7 LAO + \beta_8 NSO + \beta_9 PPF + \beta_{10} AAP + U_i \quad (5)$$

The marginal effect of the Logit model measures instantaneous effect that a change in a particular explanatory variable has on the predicted probability (i.e. the likelihood of poverty incidence among youths); when the other covariates are kept fixed. They are obtained by computing the derivative of the conditional mean function with respect to explanatory variables.

$$\frac{\delta POV_i}{\delta X_i} = \frac{E\{Y|X\}}{\delta X_i} = f(Z_i)\beta_i = f(X\beta_i)\beta_i \dots \dots \dots (6)$$

Variables used in equation (1) are defined as follows:

POV = Poverty incidence among youth farmers (dummy; 1 for poor i.e. below poverty line and 0 for non-poor i.e. above the poverty line)

GEN = Gender of Youth (1=Female, and 0 for male farmers)

HHS = Household size (number)

EDU = Formal education of Youth (years)

SOC = Membership of a social group (number of years)

FAS = Farm size of farmers (ha)

NFB = Non-farm income (Naira)

EXT = Number of times in contact with an extension agent in the last farming season

PUR = Purpose of farming (1 for commercial and 0 for family used)

EXC = Access to credit facilities (dummy 1 for access and 0 otherwise)

DEP = Dependent ratio (number of Children less than 15 years plus adult greater than 65 year divided by the household size)

U = stochastic error term

P<sub>i</sub> = Probability to engage in agricultural activity

Ln = Natural logarithm function

### 3.5 Measurement of Income Inequality among Youth Farmers

The study used Gini coefficient to measure income inequality among youth farmers in the study area. It is defined as a ratio with values range from 0 to 1. The numerator is the area between the Lorenz curve of the distribution and the uniform distribution line; the denominator is the area under the uniform distribution line. The Gini index is the Gini coefficient expressed as a percentage. Gini coefficient of 0 corresponds to perfect income equality (i.e. everyone has the same income) and 1 corresponds to perfect income inequality (i.e. one person has all the income, while everyone else has zero income). As proposed by Brown, the coefficient is expressed as thus:

$$G = \left| 1 - \sum_{k=1}^n (X_k - X_{k-1})(Y_k + Y_{k-1}) \right| \dots \dots \dots (7)$$

Where:

G = Gini coefficient

$X_k$  = Cumulated proportion of population variable

$Y_k$  = Cumulated proportion of income variable

### 3.6 Verification of Multicollinearity among Explanatory Variables Used in the Analysis

Multicollinearity is among the commonest econometric problems of the cross sectional data analysis. This property of econometric was verified among explanatory variables to ensure the econometric stability and reliability of the regression estimates. The Variance Inflating Factor (VIF) was estimated and used to verify the presence of the multicollinearity among the explanatory variables. For VIF, the minimum possible value is 1.0; while value greater than 10 indicates a probably collinearity between the specified explanatory variable in question and the rest of the predictors in the model. According to Gujarati and Dawn, (2009), VIF is estimated using the formula stated below:

$$VIF_j = \{1/1 - R_j^2\} \dots \dots \dots (8)$$

Where  $R_j^2$  represents the multiple correlation coefficient between one of the explanatory variable (designated as dependent variable) and the other specified explanatory variables in the study. The explicit model explaining the above mechanism is shown in equation 6.

$$X_j = \varphi_0 + \varphi_1 X_1 + \varphi_2 X_2 + \dots + \varphi_n X_n + \varepsilon_n \dots \dots \dots (9)$$

## 4. Result and Discussion

The descriptive statistics of youth farmers is shown in Table 1. The result revealed an average age of about 30 years for youths in the study area. This means that, most youths in the rural areas are in their active age. An average period of formal education stood at 12.4 years. This connotes that, most youths in the study area are educated, and there is high possibility of agricultural innovation adoption and diversification. About 58.33% of the total respondents were male youths.

Table 1. Descriptive statistics and socio-economic of youth in the rural area of Southern Nigeria

Variable	Mean	Minimum	Maximum	Std. Dev.	C.V.
POV	0.563	0.00	1.00	0.497	0.882
GEN	0.583	0.00	1.00	0.494	0.846
AGE	30.00	19.00	35.00	6.273	0.182
HHS	5.113	0.00	14.00	2.399	0.469
EDU	12.433	0.00	16.00	4.223	0.339
SOC	2.097	0.00	15.00	3.699	1.764
FAS	0.487	0.00	3.00	0.300	0.616
EXT	4.937	0.00	40.00	8.127	1.646
PUR	0.687	0.00	1.00	0.465	0.677
EXC	0.320	0.00	1.00	0.467	1.460
NFB	23047	0.00	0.00	42488	1.844
DEP	0.455	0.00	2.00	0.326	0.716

**Source:** Computed by authors, 2015. Note monetary value is expressed in Naira. Variables are as defined previously.

Social capital formation among youths was low in the study area, as shown by an average of 2 years in social organizations. Only 40.30% of the rural youths owned farm land, the rest acquired farm lands through lease and borrowed arrangement among others methods. In addition, about 68.70% of youth engaged in agricultural activities for commercial purpose. Credit accessibility was very poor among youth in the area as only 32% of respondent have accessed to credit facilities. The extension agent visit average at 5 times per season. Also, the result revealed that, about 56.30% of youth farmers were poor in the study area, while non-farm income averaged at ₦23, 047.00.

#### 4.1 Test Result to Verify Collinearity among Specified Explanatory Variables Used

Table 2 presents the Variance Inflating Factor (VIF) test and tolerance factor test results used to verify the status of multicollinearity of explanatory variables used in the Logit regression model. The result reveals that there was no serious or significant collinearity among explanatory variables in the specified Logit model.

Table 2. The Variance Inflation factors (VIF) test result

Variables	VIF estimates	Tolerance Factor
GEN	1.192	0.838926
AGE	1.431	0.698812
HHS	1.347	0.74239
EDU	1.084	0.922509
SOC	1.175	0.851064
NFB	1.140	0.877193
EXC	1.085	0.921659
FAS	1.092	0.915751
EXT	1.270	0.787402
PUR	1.150	0.869565
DEP	1.102	0.907441

**Source:** Computed by authors using gretl software.

For instance, the estimated VIF with respect to each variable was greater than unity, but less than the threshold value of 10. The tolerance factor was also less than unity validating the VIF results. The result suggests that, the explanatory variables specified do not cluster together or exhibited multi-collinearity tendencies. This implies that the estimates of the Logit model to an appreciable extent are consistent, best, and unbiased. In other words, the estimates of the Logit model are stable over time.

#### 4.2 Poverty Status and Income Inequality among Youth Farmers in Akwa Ibom State

Poverty levels among youth farmers in the State were analyzed using the three indicators of poverty as highlighted in the Foster, Greer and Thorbecke (FGT) model. The indicators were: the incidence of poverty, poverty depth and severity of poverty. Result in Table 3 revealed that, the index of prevalence or incidence of poverty in male and female population was 0.267 and 0.300 respectively. This means that about 27% of male youth farmers and 30% of the female counterparts in the region are deep in poverty or have their per capita income less than the poverty line income. The result shows that, female youths are more vulnerable to poverty than their male counterparts in the State. The overall index of poverty index was 0.5633, this shows that about 56.33% of the youth farmers' population in the study area is poor or have per capita income below the poverty line income. This means that majority of youth farmers in the State are poor. This scenario is a threat to future farming in the region. An urgent policy aim at increasing farm income of youths in the State is strongly advocated. This will help to curtail rural – urban migration and agricultural diversification.

The result also revealed the poverty depths of 0.1573 for male youths and 0.1847 for female youth farmers in the study area. The result implies that, about 15.73% and 18.47% of per capita income is needed to bring poor male and female youth farmers respectively from below poverty line up to the poverty line income in the study area. This means that, poverty incidence is more among female youth farmers compared to the male counterparts in Akwa Ibom State. The overall population poverty depth index stood at 0.3419, implying that, about 34.19% of per capita income is required to push poor youth farmers from below poverty up to the threshold poverty line income.

The severity of poverty index was 0.1148 for male youths and 0.1332 for female youths in the study area. This result means that, male youth farmers need about 11.48% increase in per capita income to push them away from severe poverty. Likewise, the female youth farmers need about 13.32% increment in per capita income to escape from severe poverty. An average severe poverty index of 0.2479 was discovered for the population. This means that, about 24.79% of per capita income is required to push youth population trap by severe poverty to the

poverty line.

Table 3. Poverty and income inequality parameters of youth farmers in Akwa Ibom State

	Male	Female	Total
Incidence of poverty	0.26667	0.30000	0.5633
Poverty depth	0.15725	0.18465	0.3419
Poverty severity index	0.11475	0.13319	0.2479
Poverty line income	20,408.77	20,408.77	20,408.77
Population Mean per capita income	30613.155	30,613.155	30613.155
Total respondents	175 (100%)	125 (100%)	300 (100%)
Youth under poverty line	79 (45.1%)	90 (72%)	169 (56.3%)
Youth above poverty line	96 (54.9%)	35 (28%)	131 (43.7%)
Gini Coefficient	0.4009	0.3797	0.6034
Gini Coefficient index (100%)	40.09	37.97	60.34
Mean per capita income of poor	8,220.90	7,847.09	8,021.84

**Source:** Computed by authors, 2016. Note monetary value is expressed in Naira.

#### 4.3 Gini Coefficient of Youth Farmers

The estimated Gini coefficient showed that income inequality is obvious among youth farmers in the region. The result showed that income inequality is more conspicuous among male farmers than female farmers. A Gini coefficient index of 40% for male youth farmers is higher than 38% for the female farmers in the region. This implies income is more evenly distributed among the female respondents than the male counterparts. This showed that the male respondents contribute more to overall income inequality in the sampled population than the females.

#### 4.4 Determinants of Poverty among Youth Farmers in Akwa Ibom State

The Logit model estimates used to identify determinants of poverty among youth farmers in Akwa Ibom State is shown in Table 3. The diagnostic statistics of the estimated model revealed that, the log likelihood ratio of 103.878 is significant at 1% probability level. This indicates that the specified Logit model has a strong explanatory power, hence goodness of fit. It also confirmed that the estimated McFadden  $R^2$  is statistically significant. The McFadden  $R^2$  of 0.25271 indicates that about 25.27% of variability in occurrence of poverty among youth farmers is associated with the specified independent variables. This means that, important variables that influenced occurrence of poverty among youth farmers were included in the specified Logit model.



Table 3. Estimates of the logit model (Determinants of poverty among youth farmers in Akwa Ibom State)

Variable	Coefficient	Log odd coefficient	Marginal Effect	Z-values
<b>Constant</b>	4.4545	-	-	4.1066***
GEN	-0.3949	0.6737	-0.0969	-1.3130
AGE	-0.0839	0.9195	-0.0208	-3.1362***
HHS	0.2146	1.2393	0.0531	3.0920***
EDU	-0.0316	0.9689	-0.0078	-3.8946***
SOC	-0.0413	0.9595	-0.0102	-3.0008***
NFB	-3.50e-05	0.9999	-8.66e-06	-5.7711***
EXC	0.3518	1.4216	0.0861	1.0949
FAS	-1.0453	0.3516	-0.2584	-2.1829**
EXT	-0.0597	0.9420	-0.0148	-2.6546***
PUR	-0.9776	0.3762	-0.2311	-2.8329***
DEP	0.9630	2.6195	0.2381	2.1628**
Log Likelihood	-153.5922		Log ratio test (11)	103.878***
McFadden R <sup>2</sup>	0.25271		Correct prediction	278 (92.7%)
Akaike Criterion	331.1843		Schwarz Criterion	375.6297

**Source:** Computed by authors using gretl software, data from field survey 2014/2015. Asterisks \*, \*\* and \*\*\* represent significant levels at 10%, 5% and 1% respectively. Variables are as defined in equation 5.

The empirical result revealed that, the log odd coefficients of youth age (AGE at 1%), years of formal education (EDU at 1%), membership in a social organization (SOC at 1%), non-farm income (NFB at 1%), farm size (FAS at 5%), extension agent visit (at 1%) and youth engaged in commercial agricultural (PUR at 1%) are statistically significant with respect to poverty distribution among youth farmers in the study area. The odd interpretation implies that for every unit increase in aforementioned variables there is a corresponding decrease in the odd in favour of prevalence of poverty among youth farmers in the State. Similarly, the log odd coefficient of youth's household size (HHS at 1%) and dependent ratio (DEP at 5%) implies that, there is a corresponding increase in poverty incidence among respondents for every unit increases in these variables.

The result for age implies that, a unit increase in youth's age reduces the probability of being poor among youth farmers in the State. For instance, a unit increase in youth farmer's age reduces the probability of being poor by 2.08% or reduces the odd log of poverty prevalence among youth population by 8.0%. This result suggests that, as youth farmers advance in age, there are possibilities of acquiring assets and wealths as well farm income through their farming activities, thereby pushing them above the poverty line. Also, increase in age might have positive correlation with experience and hence better opportunities such as government incentives, access to loan and even plough back profit which tend to increase farm income and reduce poverty incidence. This result corroborates with the findings of Asogwa *et al.*, (2012); Igbalajobi *et al.*, (2013) and Duniya and Rekwot (2015).

The marginal effect years of formal education has negative relationship with incidence of poverty among youth farmers in the study area. A unit increase in formal education reduces poverty incidence by 0.78% or reduces the odd log of poverty prevalence among youth population by 3.11%. The result indicates that, increase in years of education reduces the incidence of poverty among youth farmers in the State. The result satisfies the priori expectation as increase in formal education will likely increase the exposure, interaction and economic opportunities of youth farmers. With increase in education, youth farmers can access loanable fund and explore various routes for accessing other farm incentives. Increase in education is often linked to increase in capital formation and adoption of risky farm exercise. The finding is in line with empirical results of Ogbonna (2012); Asogwa *et al.*, (2012); Olawuyi and Adetunji (2013); Akinbode (2013); Adetayo (2014); Edoumiekumo *et al.*, (2014) and Duniya and Rekwot (2015).

The coefficient of youth farmers' membership in social organization also exhibited a strong negative correlation with prevalence of poverty among youth farmers in Akwa Ibom State. This means that, increase in years of membership in social societies reduces incidence of poverty by 0.78% or reduces the log odd by 4.05%. This

result suggests that, social interaction or networking helped in poverty reduction among youth farmers in the region. Social capital formation is one way of sharing ideas, information and technology in a broad based forum. Social networking among farmers is capable of stimulating market and can also act as a marketing agent for agricultural goods thereby enhancing farm income. Members bonded by a common goal and sharing a common occupation are likely to share technology and experiences which help to sustain their occupation and enhanced improved income. The finding is in consonance with empirical results reported by Ogbonna (2012); Asogwa *et al.*, (2012); Duniya and Rekwot (2015).

Similarly, increase in youth farmers' non-farm income increases the chance of reducing poverty among them. The result shows that, a unit increase in non-farm income significantly reduces the incidence of poverty among youth farmers in the state. A unit increase in non-farm income reduces the odd log of poverty prevalence among youth population by 99.9%. The finding shows that, this variable should be considered as the most important variables in tackling poverty among youth farmers in the State. This result suggests increasing urge for agricultural diversification among youths in the State. Increase non-farm sources of income among youths imply that, farm income is not sufficient to sustain their expenditure or is declining. This finding is a clear indication that, agricultural sector in the region has issues that need urgent attention. Olawuyi and Adetunji (2013) has reported similar finding in western Nigeria.

The slope coefficient of youth farm size exhibited a negative relationship with incidence of poverty among youth farmers in the study area. A unit increase in farm size reduces poverty incidence by 25.84% or reduces the odd log of poverty prevalence among youth population by 64.84%. The result revealed that, farm size is the most important factor that reduces poverty among youth farmers in the region. Youth farmers have difficulty in acquiring land due to increasing land fragmentation, tenure system, urbanization and high population density in the zone. This result should call for an urgent need to revisit most of the land ownership policies in Akwa Ibom State. There is also need to develop marginal lands and encourage cooperative farming in the region. Asogwa *et al.*, (2012) and Olawuyi and Adetunji (2013) have similar result.

In addition, the marginal effect of extension agent visit is significant and has a negative association with prevalence of poverty among youth in Akwa Ibom State. Hence, a unit increase in extension agent visit reduces poverty incidence among youth farmers by 1.48% or reduces log odd of poverty incidence by 5.80%. This result suggests that, a strong extension system is among important factors that can reduce poverty and encourage youth participation in agricultural activities in the rural area. The finding is in agreement with empirical results reported by Asogwa *et al.*, (2012); Duniya and Rekwot (2015) and Awotide, *et al.*, (2015).

The result further showed that, youths who are involved in commercial agriculture have lower incidence of poverty compared to those who do not. The result indicates that, a unit increase in the commercial purpose of farming among youths, will result in about 23.11% reduction in poverty prevalence or 62.38 % reduction in log odd in favour youth poverty in the region. This connotes that, youth involved in commercial agriculture have high tendency to live above poverty line compared to those engaged in subsistence cultivation in the region. This result suggests that, agricultural activities are likely profitable ventures and are sustainable in the region. It could also be inferred from the result, that market or demand for agricultural commodities is readily available in the State.

On the contrary, the coefficient of household size exhibited positive relationship with poverty incidence among youth farmers in Akwa Ibom State. The result means that, a unit increase in household size will lead to about 5.31% increase in poverty incidence. Alternatively, the log odd in favour of poverty incidence increases by 23.93% for every unit increase in poverty prevalence among youth framers in the State. This implies that, increase in youth household size increases the incidence of poverty among youths in the region. The result satisfies the priori expectation; because increase in household size is directly related to increase in household expenditure. Increase in household size also portrays increase in non-farm budgetary allocation and perhaps reduction in farm investment. An increase in household size is also associated with increase in family responsibility and reduction in per capita household income. This invariably means that youths' with high household size will likely have income below the poverty line income. Researchers such as Asogwa *et al.*, (2012); Akinbode (2013); Olawuyi and Adetunji (2013); Igbalajobi *et al.*, (2013); Adetayo (2014) and Awotide, *et al.*, (2015) had similar results.

Similarly, the coefficient of dependent ratio is positively related to poverty incidence among youth farmers in the study area. A unit increase in dependent ratio increases poverty incidence by 23.81% or increases the odd log of poverty prevalence among youth population by 161.95%. This means that, poverty incidence increases with increase in dependent ratio of youth farmers. Again, increase in dependent ratio is associated with increase in household expenditure. This implies that, increase in dependent ratio will likely stiffen household investment and

tend to lower per capita household income especially for rural poor dwellers. Also, increase in dependent ratio of youth farmers will likely reduces the productive time of youths (where most times will be spent caring for the children or the elderly), thereby reducing farm household income. Ogbonna (2012) has submitted similar result in a study conducted in Eastern Nigeria.

### 5. Conclusion, Summary and Recommendations

The study analyzed the poverty status, determinants of poverty and income inequality among youth farmers in Akwa Ibom State, Nigeria. The need for the study was stem from the fact that, the current farming population is fast aging out, and the perception of agricultural activities by the present youths is discouraging: hence the need to encourage them in agricultural activities became overwhelming necessary. Assessment on youths already practicing agricultural activities is one way of searching for policy variables that will fast track youth involvement in agricultural production in the region. Youth involvement in agricultural activities must be seen as one reliable way of managing food insecurity, social unrest, militancy and combating severe poverty in Nigeria. Though majority of our youths viewed agricultural sector has been unattractive enough and lacking the necessary economic incentives to enhance well-being; however this perception is false owing to the fact that Nigeria is truly an agrarian society. The emergence of the oil sector relegated agricultural sector to the trough. From history, the country well-being was better before oil exploitation when compared to the available statistics now. Therefore any attempt to revitalize agricultural sector through involvement of youths is a direct effort to improve the well-being of the majority of population. Hence, youths' involvement in agricultural activities should be seen as one of the most reliable tools to rejuvenate agricultural sector in the country and as a sure way to achieve the needed diversification of the economy. This is due to their high resilience, latent energy and adaptability in addition to the current structure of the sector. To stimulate youths' involvement in agricultural activities will require tested variables derived from empirical study like this.

The study showed that, there is significant prevalence of poverty and income inequality among male and female youth farmers in Akwa Ibom State. The empirical result revealed that, youth's years in social organization, level of formal education, age of youths; amount of non-farm income, farm size, agricultural extension activities and commercial purposes of agricultural production reduces the probability of poverty incidence among youth farmers in the State. In the other hand, household size and dependent ratio were positive drivers of poverty among rural youths in Akwa Ibom State.

Based on findings of the research, the following recommendations were proposed:

- A sound family welfare package should be design and implemented in the rural communities to check excessive family expenditure by youth farmers.
- Empowering and strengthening of youths' groups/social capital formation in the rural communities will help to reduce poverty and income inequality among them.
- Enterprise development training particularly for rural youths especially in value added activities such as food processing and packaging will help to reduce poverty.
- The agricultural extension system in the State should be strengthened to continue to impact positively on rural youth famers.
- Marginal farm land should be developed and farm lands re-distributed to both male and female farmers in the State.

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