

POVERTY AND WELFARE STATUS OF URBAN FARMING HOUSEHOLDS IN KADUNA METROPOLIS KADUNA STATE, NIGERIA

***BALOGUN, O.S.,¹ BALOGUN, O.L.,² OLORUKOGBA, M.M.,¹ EMEGHARA, U.U.,¹
ABAYOMI, E.Z.,³ ALABI, O.F.¹ AND TOR, L.G.¹**

¹Department of Agricultural Extension and Management, Federal College of Forestry
Mechanization Afaka Mando Kaduna. P.M.B 2273, Kaduna State, Nigeria

²Department of Agriculture and Industrial Technology, School of Science and Technology,
Babcock University, Ilishan-Remo, Ogun State

³Department of Agricultural Economics, University of Ibadan, Oyo State, Nigeria

*Corresponding author: baaseg2006@yahoo.com

Abstract

This study examined poverty and welfare status of urban farming households in Kaduna state. Multistage sampling procedure was used to collect data from 272 randomly selected urban households using structured questionnaire. The data was analyzed using descriptive statistics, Foster, Greer and Thorbecke poverty (FGT) index, Gini Coefficients and Tobit regression model. The results show a total per capita expenditure per year of ₦56,993,133.76 and a mean per capital expenditure ₦209533.58 per year. The poverty incidence (P_0), Poverty Gap (P_1) and Severity of Poverty (P_2) obtained for the area was 0.7348, 0.3667 and 0.2218 respectively. Also, an inequality index of 0.5397 recorded shows there is a wide divergence in spending among the urban households. Growth elasticities, and changes in inequality revealed that the poverty measures are more sensitive to inequality than to changes in mean income. Furthermore, poverty decomposition revealed that households with farming as primary occupation were poorer with an index of 0.8080 compared to 0.6995 incidence among those with other jobs. Age, household size, association membership, farming experience, income, expenditure on food and non-food items significantly determined poverty status. Pro-poor policies targeted at income redistribution in the state was recommended as this will have great impact on poverty. There is also the need to encourage more education among the farming families as welfare statuses of educated families were better off.

Key Words: Urban poverty, Per capital, Welfare, Inequality index, Tobit regression

Introduction

Despite its substantial oil wealth, Nigeria remains one of the poorest nations in the world (Ojeme, 2017; Olorunsanya, 2019). There is generally a dismal

performance of her economy for quite some decades now. Although the country is endowed with varied vegetation zone capable of producing essential food commodities, vast mineral and human

resources capable of propelling economic growth and development, agriculture continues to be the most important sector of the economy and remains the largest contributor to the growth and development of country's economy accounting for over 38% of the non-oil foreign exchange earnings and employing about 70% of the active labour force of the population (Agbolahan *et al.*, 2010; Izuchukwu, 2011; Balogun, 2016; Olorunsanya, 2019).

The economy, until recently, has been characterized by the paradox of growth without poverty reduction. Although the country is one of the most rapidly growing economies in the sub-Saharan African region, the reduction in the poverty rate is not commensurate with the rapid growth in the gross domestic product (GDP) of the country.. An attempt made in the past to compare Nigeria with some selected countries in the world and the rest in the region based on many factors bordering on size of population, geographical location, cultural and religious bias indicated that Nigeria is not faring well (Olorunsanya, 2019). Estimates of the growth elasticity of poverty (GEP) indicate that, for every 1.0 percent growth in GDP per capita, poverty declined by only 0.6 percent. Nigeria's GEP is half that of the regional average and only a fourth of that of lower-middle-income countries. (NBS, 2005).

Globally poverty has been a phenomenon of concern, developing countries are also not left out, as poverty has been adjudged to be on increasing trend (Akingbile and Ndaghu, 2015). Poverty hold sway, amidst of plenty, a scenario described in Nigeria's political vocabulary as a; mystifying' paradox (i.e. rich country, poor people). Various parameters of measurements of poverty described Nigeria as a poor country even

among the committee of nations, going into the memory lane, economic crisis and structural adjustment in Nigeria fostered the development of multiple modes of social livelihood, and many public servants becoming part-time urban cultivators.

According to Yusuf *et al.* (2015), urban agriculture complements food supply of cities, he pointed that increasing urban poverty, agricultural policies, economic transition, disasters, and policy initiatives were some of the factors affecting the rise in urban agriculture. Urban agriculture has economic benefits including helping the poor to save by consuming food produced at home; earn extra income by selling produce. For the poorest of the poor, urban agriculture provides access to food and helps stamp out malnutrition. For the middle income families, it provides the possibility of saving and improves return on investment in urban property. It is evident that escalation in part-time farming in urban Nigeria represents a survival strategy for many urban wage earners to supplement declining real wages in the wake of economic down turn (Lasisi *et al.*, 2017). Poverty is increasingly a northern phenomenon, in 2013, 77% of the poor lived either in the North East or the North West. If the poor living in the North Central were included, 72% of poor Nigerians were living in northern zones compared with 62% in 2004.

Poverty is multidimensional, beyond low income; there could be low human, social and financial capital. The most common approach to measuring poverty is quantitative, monomeric measures which use income or consumption to assess whether households can afford a basic basket of goods at a given point in time. Most of the time the basket reflects local

taste, and adjust for spatial price differentials across regions and urban areas in a given country. Monomeric methods are widely used because they are objective Nurul *et al.* (2012). It can be used as a basis for a range of socio-economic variables, and it is possible to adjust for differences between households and intra-household inequalities. Understanding urban poverty presents a set of issues distinct from general poverty analysis and sometimes requires special attention for adequate policy development. Yusuf *et al.* (2008) noted that to reduce poverty, policy makers first need to know the incidence, depth, and severity of poverty. The use of depth and severity measures of poverty is important as these two additional measures provides information on the depth and severity of poverty and hence compliment the poverty spread pictures painted by headcount ratio. Furthermore, seeing statistics and the trends in poverty (as commonly presented in most studies) helps us to observe that what happened to poverty in different periods and also the decomposition of poverty in different years gives us a more appropriate picture of the incidence of poverty. This knowledge is useful because it informs us whether poverty is increasing or decreasing overtime. However, this information does not provide us enough details of the causes of poverty. For instance, is poverty high due to low

education attainment or large family size or due to any other reason? For these reasons, research about the determinants of poverty that are positively or negatively linked with the poverty status becomes very important. Therefore, this study addressed these research objectives; describe the poverty profile of the urban farmers in Kaduna metropolis; describe the welfare and inequality among the farmers; identify the determining factors responsible for the level of poverty among urban farmers in the state.

The operational hypothesis is that some selected socio-economic variables will significantly influence the status of poverty among the urban farmers.

Materials and Methods

Study Area

Kaduna metropolis is located between latitudes 10°25'15" N and 10°36'08" N and longitudes 7°23'31" E and 7°29'33" E. The metropolis is the State capital. Kaduna metropolis, comprises of Kaduna north, Kaduna south, parts of Chikun and Igabi L.G.A. Igabi and Chikun has a projected population of about 1,242,524 at a growth rate of 3% per annum as at 2020 (KDDBS, 2018). It covers an area of about 118km², the distance between the Eastern and Western limits of the metropolis is approximately 13.7 km and between the North and South is approximately 20 km (Dodo, 2008), Figure 1.

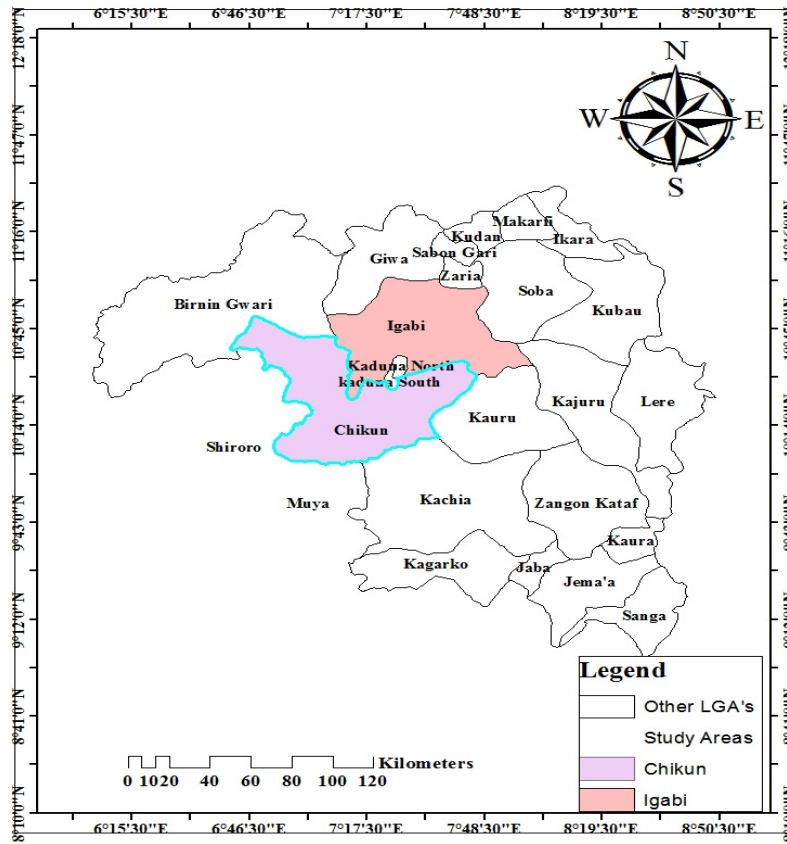


Fig. 1: Map of Kaduna State Showing the study Area

Sampling Techniques

A multi-stage sampling technique was used to select (272) farmers for the study. Well-structured questionnaire were used to collect primary data from the farmers to achieve the objectives. The first stage of the sampling involves the random selection of two Local Government Areas namely, Igabi and Chikun from the four that makes up the metropolis. These was followed by purposive selection of four districts from each of the Local Governments, area with high features of urban location and also notable for high concentration of farmers.

Analytical Technique

Descriptive statistics, Foster, Greer, and Thorbecke (FGT, 1984) measures of poverty, Tobit regression model were

employed for the analysis. Per capital consumption expenditure was used as proxy for income. This is because consumption is generally considered to be better measure than income as it overcomes problems of underreporting. (Nurul *et al.*, 2012; Akinlade *et al.*, 2015).

Model Specification

$$PCE = \frac{TCE}{HHS} \quad (1)$$

$$MPCHE = \frac{THHE}{TNR} \quad (2)$$

$$Z = (2/3)MPCHE \quad (3)$$

Where,

PCE = Per Capita Expenditure

TCE = Total Consumption Expenditure

HHS = Household Size

MPCHE = Mean per Capita Expenditure

TNR = Total Number of Respondents
THHE = Total Household Expenditure
Z = Poverty Line

The method of Foster, Greer and Thorbecke (FGT) measure were used to evaluate the poverty statuses among the urban farmers. This is generally specified as;

$$P_{\alpha} = \frac{1}{n} \sum_{i=1}^q \left(\frac{Z_i - Y_i}{Z_i} \right)^{\alpha} = \frac{q}{n} \quad (4)$$

Where:

n = number of households in group, q = the number of poor household

Z_i = poverty line defined as 2/3 of mean annual per capita expenditure

Y_i = the per capita expenditure (PCE) of the i^{th} household, (Poverty indicator/welfare index per capita), α = degree of poverty aversion (0, 1 and 2),

$Z_i - Y_i$ = poverty gap of household i^{th} ,
 $\frac{Z_i - Y_i}{Z_i}$ = Poverty gap ratio.

Poverty headcount index ($\alpha = 0$ measures poverty incidence), $\alpha = 1$ and $\alpha = 2$ for poverty gap index and squared poverty gap measuring severity of poverty among the women farmers i.e the depth of poverty and inequality among the poor.

Measurement of Inequality

Inequality of households was achieved by using Gini Coefficient. The method of Mordduch and Sicular (2002) adopted by Akinlade *et al.* (2015), noted that where incomes are considered so that $Y_1 \leq Y_2 \leq Y_3, \dots \leq Y_4$ The Gini coefficient is given by;

$$I_{Gini}(Y) = \sum_{i=1}^n \alpha_i(Y) Y_i \text{ and } \alpha_i(Y) = \frac{2}{n^2 \mu} \left\{ i = \frac{n+1}{2} \right\}$$

$$I_{Gini}(Y) = \frac{2}{n^2 \mu} \left\{ i = \frac{n+1}{2} \right\} \quad (5)$$

Where, n = number of observations

μ = the mean of the distribution. Y_i = the income of the i^{th} household

$\alpha_i(Y)_i$ = the weight, i = corresponding rank of the total income

Determinants of level of Poverty Tobit Regression Analysis

The Tobit model was used to estimate the factors influencing poverty among the urban farmers, The Tobit model originally developed by Tobin may be expressed as seen below;

$$Y^* = X\beta = e_0 \quad (5)$$

Where β is a vector of unknown coefficients, X is a vector of independent variables and e_0 is the error term that is assumed to be independently distributed with mean zero and a variance of σ^2 , Y^* is a latent variable that is unobservable. If the value of dependent variable is above a limiting factor, in this case Y is observed as a continuous variable. If Y is at a limiting factor, it is held at zero. A mathematical expression of this relationship is as shown below;

$$Y = Y^* \text{ if } Y^* > Y_0; Y = 0 \text{ IF } Y^* < P_0 \quad (6)$$

Where P_0 is the limiting factor, the two expressions represent a censored distribution of the data. Where Y_i is the dependent variable, it is said to be discrete when the households are not poor and continuous when they are poor. P_i is the poverty depth/intensity defined as $Z - Y_i/Z$, where Z is the poverty line and Y_i is the per capital expenditure of households measured in Naira (₦) Akinlade *et al.* (2015).

The explanatory variables are;

X_1 = Age (years), X_2 = Sex (Male 1, otherwise 0), X_3 = Marital Status (Married 1, 0 = Otherwise), X_4 = Household size (Number of People per Household), X_5 = Farm size (ha), X_6 = Membership of association (1 yes, 0 otherwise), X_7 = Education (Number of years spent in school), X_8 = Primary Occupation (Farming 1, otherwise 0), X_9 = Farming Experience (Number of years in Farming), X_{10} = Estimated Monthly

income (₦), X_{11} = Expenditure on food (₦), X_{12} = Expenditure on Non-food items (₦).

Result and Discussion

Poverty Status of the Urban Farmers

Table 1 and figure 2 presents the FGT Index analysis of poverty status among the respondents and the Gini concentration curve for the study area. The per capita expenditure was used to determine the percentage of the farmers living below the poverty line. The total per capita expenditure per year was ₦56,993,133.76 while the mean per capital expenditure per year was ₦209533.58. The poverty line (z) used was ₦139,696 defined as the two-thirds (2/3) of the mean value of per capita expenditure for the study area. The farmers were therefore categorized into poor if he or she spends below ₦139696 in a year, otherwise, not-poor.

The result further shows a Poverty incidence (P_0), Poverty Gap (P_1) and Severity of Poverty (P_2) of (0.7348), (0.3667) and (0.2218) respectively. The (incidence) i.e the prevalence of poverty or head count indicates the percentage of the households that falls below the poverty line in the area. This implies that about 73.4 percent of the farmers live below the poverty line. In 2013, 57 percent of the poor lived either in the North East or the North West. If the poor living in the North Central were included, 72 percent of poor Nigerians were living in northern zones compared with 62 percent in 2004. Factors attributed to these include a combination of less favourable climate, distance from the sea, and lack of infrastructure.

However, these disadvantages appear to have grown over the last decade to the

extent that, whereas both the poverty rate and the absolute numbers of the poor have declined in the populous coastal and central regions, the number of the poor has risen in the North (especially West and the North East) since 2004.

The poverty gap (poverty depth) of 0.3667 obtained in this study shows the amount by which the poor fall short of the poverty line; severity of poverty is the sum of the square of poverty depth divided by the number of sampled respondents (Ayinde *et al.*, 2018). This gap represents the percentage of expenditure required to bring poor urban farmers in the area below the poverty line up to the poverty line. The severity of poverty index obtained was 0.2218 which represents the poorest among the poor respondents.

Furthermore, an inequality index of 0.5397 obtained for the study area further suggest there is a wide divergence in spending among the urban farmers, According to Yusuf *et al.* (2008), urban poverty in Ibadan in south western Nigeria showed relatively low level of poverty with an incidence index of (0.2903) and an inequality index of (0.3444) among urban farmers in Ibadan metropolis. This further confirms the relatively high level of poverty and inequality among northern urban farming households. Empirical findings from literature (World Bank, 2003; Oyekale *et al.*, 2006, and Akinlade *et al.*, 2015) confirmed that increasing income inequality increase in Nigeria was heightened by the rapid economic growth that occurred between 1965 and 1974. Other reported causes that aggravated inequalities were technology changes, corruption, lack of good governance and weak demographic institutions.

Table 1: Poverty Measures and related Statistics of the Urban Farmers

Poverty Indices	Estimated value	Elasticity with respect to mean consumption	Elasticity with respect to inequality
Poverty Incidence (P0)	0.7348	-0.474900	0.053089
Poverty Gap (P1)	0.3667	-1.003498	1.223971
Poverty Severity (p2)	0.2218	-1.306090	2.369588
Mean Per capita income per year	₦ 17461.13		
Poverty Line	₦ 11640.75		
Gini index	0.5397		

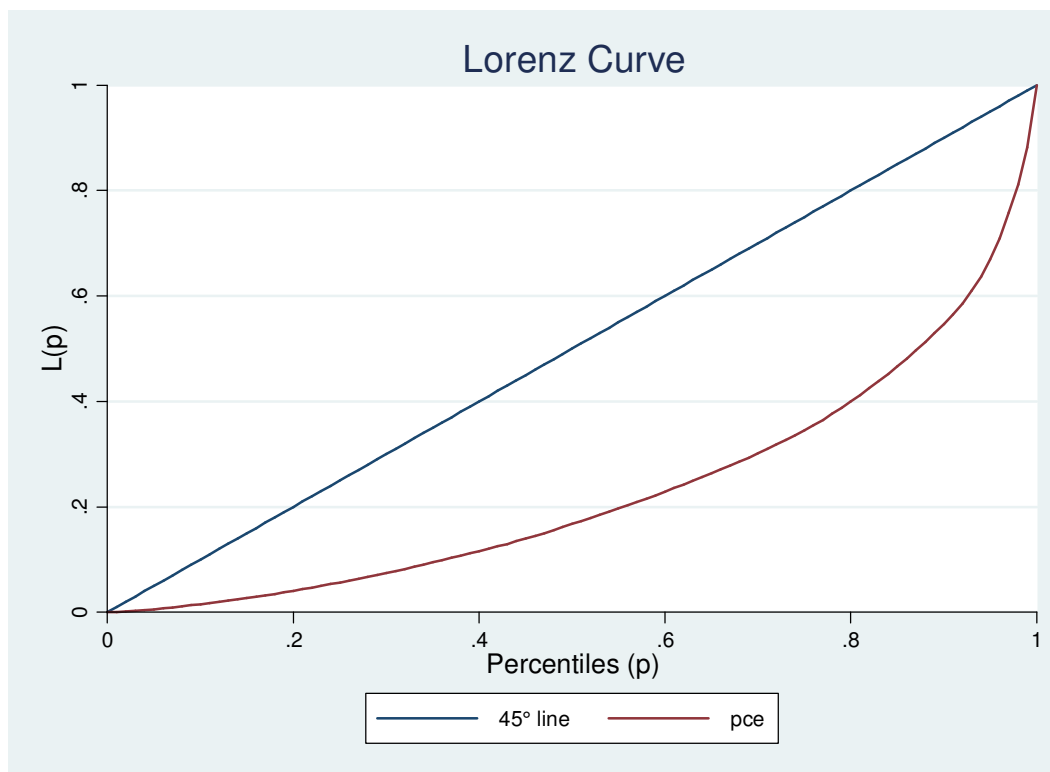


Fig. 2: Gini concentration Curves for the urban farmers in Kaduna State

Results in Table 1 also show the measured elasticities of poverty incidence with respect to mean income and the Gini elasticity for the area. The elasticities revealed that the poverty measures are more sensitive to inequality than to changes in mean income. (Indicating that

pro-poor policies targeted at income redistribution will have great impact on poverty than growth). This is agrees with the findings of (Thorbecke, 2000; Yusuf *et al.*, 2008). It is important to note that this assertion was made with the assumption that the impact of growth is independent

of the nature of income. Knowing that low income individuals in any country, region or state are prone to poverty hence Yusuf *et al.* (2008) advocated under this scenario that in order to reduce poverty, policies targeted at redistribution of income reduces inequality and place individuals around the poverty line.

Furthermore, Table 2 shows some selected socio economic variables and their respective elasticities, absolute and relative contribution to total poverty. Generally, sex, marital status membership of association was more sensitive to changes in equality than to changes in average incomes. In the case of education only farmers with tertiary education have high sensitivity to changes in inequality. Also, the results revealed that income inequality was lower among the unmarried (41.16%) than the married with an index of about (56.43%). Furthermore, there were no much differences in the inequality distribution between the males with an index of (0.5484) and females (0.5172). Although the males are more

poverty stricken with an index of (0.7601) compared to their female counterparts with an index of 0.6779). This sounds erroneous given the fact that women have less privileges in northern Nigeria when it comes to issues like land holdings, access to education, access to extension services etc. however, this scenario can be explained by the fact that male are likely to have more home responsibilities (high dependency ratio) than the females. The urban farmers with farming as primary occupations were poorer with poverty incidence index of (0.8080) and a lower inequality than those who makes farming secondary occupation. Moreover, farmers who belong to associations had a higher poverty incidence (0.7424) but lower inequality index (0.4654) compared to those without associations. The status of education presents a scenario of increasing inequality index as the level of education increases and poverty status that decreased, resulting in better welfare among the highly educated farmers.

Table 2: Poverty indices by socio-economic characteristics, Inequality and the associated Elasticities

Characteristics	Gini index	Elasticity of total poverty with respect to inequality	Poverty	Population share	Absolute contribution	Relative contribution	Elasticity with respect to consumption
Sex							
Male	0.5484	0.0379	0.7601	0.6920	0.5260	0.7159	-1.0265
Female	0.5172	0.0192	0.6779	0.3079	0.2087	0.2840	-0.9516
Population	0.5397	0.0531	0.7348	1.0000	0.7348	1.0000	-1.8011
Marital Status							
Married	0.5643	0.0527	0.7236	0.8006	0.5793	0.7884	-0.4230
Unmarried	0.4116	0.0221	0.7801	0.1993	0.1555	0.2117	-0.5584
Population	0.5398	0.0531	0.7349	1.0000	0.7349	1.0000	-0.4749
Primary Occupation							
Farming	0.4036	0.0804	0.8080	0.6461	0.4519	0.6150	0.0804
Others	0.5845	-0.1815	0.6995	0.3371	0.2724	0.3707	-0.1815
Population		0.0530	0.7348	1.0000	0.7348	1.0000	0.0531
Association Membership	0.4654	-0.0394	0.7424	0.7943	0.5897	0.8025	-0.5118
Non-members	0.6681	0.1595	0.6979	0.2004	0.1398	0.1903	-0.8316
Population	0.5398	0.0530	0.7348	1.0000	0.7348	1.0000	-0.4749
Level of Education							
No-Formal Edu.	0.2469	-0.4734	0.9411	0.0177	0.0167	0.0227	-0.0031
Islamic Edu.	0.2919	-0.0460	0.6666	0.0250	0.0167	0.0227	-0.4268
Primary sch.Edu	0.3885	-0.4803	0.8058	0.0835	0.0657	0.0894	-0.5107
Secondary Sch.	0.5340	-0.0128	0.7875	0.4300	0.3465	0.4715	-0.3540
Tertiary Edu.	0.5439	0.1704	0.6506	0.4331	0.4331	0.3835	-0.5809
Population	0.5398	0.053089	0.7348	1.0000	0.7348	1.0000	-0.4749

Effect of Selected Socio-economic Determinants Poverty among Urban Farmers in Kaduna State

The Tobit model was used to identify the factors affecting the level of poverty among the urban farmers. Table 3 indicates the correlates of level of poverty among the urban farmers, the results shows that the model has a prob > χ^2 value (0.000) and a Log likelihood of -182.9167 indicating a good fit and that most of the covariates coefficients were statistically significantly different from zero. Seven variables that significantly influence the Log likelihood of poverty status among the farmers includes; age, household size, membership of association/cooperative society, farming experience, income, expenditure on food and non-food items.

The marginal analysis reveals that as the farmers' age increases, the likelihood of poverty of the household decreases, this is consistent with life-cycle hypothesis, which postulates that demographic variables like significantly affects consumption or welfare (Ukoha *et al.*, 2007; Ademiluyi, 2014). This implies that elderly ones know how to manage their income and resources more efficiently than the young ones. Also, household dependency ratio decreases over time as children graduate and settle down on their own reducing pressure on consumption expenditure. Keyereme and Thorbeeke (1991), found that age composition of households and their employment status affect their welfare. Also, farming experience was negatively related to the level of poverty and statistically

significant at 1% level implying that as the urban farmers gain years of experience in farming, poverty reduces. The marginal effects show that a unit increase in years of experience reduces poverty by 4.79%. Experience means a lot to farmer's know-how and capacity to manipulate their way through adverse conditions. Adeyemi *et al.* (2018) noted that the propensity to understand more production practices that comes with experience overtime has the capacity to increase farmers' productivity which in the long run improves consumption expenditure and reduce poverty.

Furthermore, the result revealed that household size play significant role in influencing the poverty status of the urban farmers. The variable is significant at one (1%) percent level. A unit increase in household size aggravates the probability of being poor by 28%. A large household size means higher number of dependants on available incomes. This subsequently impact negatively on income per capita and mean consumption expenditure hence deep poverty. This findings is in agreement with Akinlade *et al.* (2015), that per capita expenditure of the farmers is reduced by heightened household size which leads to reduction in welfare., Also according to Yusuf *et al.* (2008) the log-likelihood of being poor is very sensitive (elastic) to changes in the values of the significant variables. The result revealed that income, expenditure on food and non-food items significantly influenced poverty status, in this case any policy that increases the income reduces the likelihood of been poor and improve the welfare of the urban farmers.

Table 3: Tobit Results of Socio-economic Determinants Poverty

Variables	Marginal effects	Standard error	t-value
Age	-0.01954*	0.01025	-1.90
Sex	0.2387	0.1997	1.20
Marital Status	0.06261	0.1296	0.48
Household size	-0.3032***	0.03501	8.66
Farm size	0.0482	0.0428	1.13
Membership of association	-0.6081**	0.2511	-2.42
Educational attainment	-0.1101	0.1244	0.89
Primary occupation	0.2523	1.17	0.17
Farming experience	-0.0481***	0.0108	4.42
Income	-1.99e-07***	6.49e-08	3.06
Expenditure on food	1.45e-06***	9.50e-08	15.23
Expenditure on non-food	-5.82e-07**	2.82e-07	2.07
Constant	0.6745	0.96887	0.70
Mean dependent var	-0.502	SD dependent var	2.352
Pseudo r-squared	0.3678	Number of obs	272
Chi-square	212.847	Prob > chi2	0.000
Loglikelihood	-182.9168	Bayesian crit. (BIC)	433.652
Akaike crit. (AIC)	393.834		

Field data analysis. *** p<.01, ** p<.05, * p<.1

Conclusion and Policy Recommendation

The poverty incidence (0.7348) and inequality index (0.5398) obtained for this study were high implying that high poverty prevails among the urban farmers. Also, there is a wide divergence of spending among the farming families indicating poor income distribution. The urban farmers are advised to avoid large families, join associations such as cooperatives, and also acquire good experience/knowledge in farming as these variables significantly reduced the likelihood of being poor. Government and other stakeholders should target a policy that has direct contribution to agricultural (sector) growth through generating higher incomes for farmers.e.g implantation of agricultural projects. Agriculturally driven growth generates larger welfare effect than non-agriculturally driven growth, especially for the poorest 20% of the population (World Bank, 2007) therefore; policy programs directed at

agricultural growth are likely to impact the welfare of the urban farmers in the state.

References

- Ademiluyi, I.O. (2014). Determinants of Smallholder Farmers' Welfare in Plateau State, Nigeria. *International Journal of Innovative Agriculture and Biology Research*, 2(4): 11-16.
- Adeyemi, A.O., Adebayo, O., Kehinde, O. and Abiola, J.A. (2018). Poverty and Rural Inequality in Rural Agrarian Households of Southwestern Nigeria. The Gender Perspective. *Open Agricultural Journal*, 13: 51-63.
- Agbolahan, E.O., Onyekwere, N.C., Agbonkpolor, B.N. and Umar, H.Y. (2010). Determinants of Agricultural Exports. *Journal of Human Ecology*, 29(3): 181-184.
- Ayinde, A.F.O., Ambali, O.I., Ogunbiyi, O.E. and Ayinde, I.A. (2018).

- Fadama III Programme and Assessment of Poverty Status Among Vegetable Farmers in Abeokuta, Ogun State Nigeria. Proceedings of 19th the Annual National Conference of Nigerian Association of Agricultural Economics held on the 15th-18th October, 2018 in Kaduna (KADA 2018). Pg 128-136
- Akingbile, L.A. and Ndaghu, A.A.T. (2005). Poverty level and poverty alleviating strategies of farm families in Michika L.G.A of Adamawa State, Nigeria. *Journal of Economics and Rural Development*, 14(2): 101.
- Akinlade, R.J., Adeyonu, A.G. and Carim-Sanni, A. (2015). Income Inequality and Poverty among Farming Households in Southwest, Nigeria *International Journal of Agricultural Economics and Rural Development*. IJAERD 7(1):
- Balogun, O.S., Usman, M.B., Ayodele, J.T., Aasa, O.S. and Anamayi, R. (2020). Fuelwood Consumption and Clean Cooking fuel Poverty in Kaduna State, Nigeria: Implication for Sustainable Forest Management. *Journal of Forestry Research and Management*, 17(2): 148-158.
- Balogun O.S. (2016). Impact of Agricultural Transformation on the Productivity and Poverty Status of Rice Farmers in Kano Nigeria. A dissertation submitted to the Department of Agricultural Economics and Rural Sociology, Ahmadu Bello University Zaria. Nigeria. Doctor of Philosophy. (Ph.D) degree in Agric. Economics
- Balogun, O.L. (2011). Influence of social capital and microcredit on rural household poverty in southwestern Nigeria. Unpublished Ph.D thesis in the Department of Agricultural Economics, University of Ibadan, Ibadan. 170pp.
- Canagarajan, S., Ngwafon, J. and Thomas, S. (1997). The evolution of poverty and welfare in Nigeria, 1985-92. Policy, Research working paper; no. WPS 1715. Washington, DC: World Bank. 100pp. URL <http://documents.worldbank.org/curated/en/1997/01/695029/evolution-poverty-welfare-nigeria-1985-92>
- Foster, J., Greer, J. and Thorbecke, E.A. (1984). Class of decomposable poverty measures. *Econometrica*, 52(3): 761-766.
- Hawkes, C and Ruel, M.T. (2008). From Agriculture to Nutrition: Pathways, Synergies and Outcomes. Agricultural and Rural Development Notes; No. 40. World Bank, Washington, DC
- Izuchukwu, O. (2011). Analysis of the Contribution of Agricultural Sector on the Nigerian Economic Development. *World Review of Business Research*, 1(1): 191-200.
- Kaduna State Bureau of Statistics (2018). Kaduna State statistical year book.
- Keyereme, S. and Thorbeeke, E. (1991). Factors Affecting Food Poverty in Ghana. *Journal Development Studies*, 28: 39-52.
- Lasisi, M., Popoola, A., Adediji, A., Adedeji, O. and Babalola, K. (2017). City Expansion and Agricultural Land Loss within the Peri-Urban Area of Osun State, Nigeria *Ghana Journal of Geography*, 9(3):132-163.
- Morduch, .J. and Sicular, T. (2002). Rethinking Inequality Decomposition, with Evidence from

- Rural China. *The Economic Journal*, 112(476): 93-106.
- National Bureau of Statistics (NBS) (2005). Poverty profile for Nigeria. Abuja
- Nurul, H.C., Hafazah, A.K. and Hazlina, H. (2012). Conceptual Framework of Urban Poverty Reduction: A Review of Literature; *Procedia - Elsevier Social and Behavioural Sciences*, 68(2012): 804 – 814.
- Ojeme, J.O. (2017). A Critical Appraisal of African Largest Economy Ravaged in Poverty and Destitution (A Case Study of Nigeria in the Light of the Recent Rebasng Nigerian GDP) *IIARD International Journal of Banking and Finance Research*, 3(2): 29-52.
- Olorunsanya, E.O. (2019). Poverty in the Midst of Plenty: The Challenges of Farming Households in Nigeria, Inaugural Lecture Series 12, Ibrahim Badamasi Babangida University, Lapai, Niger State, Nigeria
- Oyekale, A., Adeoti, A.I. and Oyekale, T.O. (2006). Measurement and Sources of Income Inequality Among Rural and Urban Households in Nigeria University of Ibadan. *PMMA Working Paper No.2006-20*.
- Ukoha, O.O., Mejeha, R.O. and Nte, I.N. (2007). Determinants of Farmers Welfare in Ebonyi State, Nigeria. *Pakistan Journal of Social Science*, 4(3): 351-354.
- Yusuf, S.A., Adesanoye, A.O. and Awotide. D.O. (2008). Assessment of poverty among Urban Farmers in Ibadan Metropolis, Nigeria. *Journal of Human Ecology*, 24(3): 201-207.
- Yusuf, S.A., Balogun, O.L. and Falegbe, O.E. (2015). Effect of Urban Household Farming on Food Security Status in Ibadan Metropolis, Oyo State, Nigeria. *Journal of Agricultural Sciences*, 60(1): 61-75.