JOURNAL OF AGRICULTURE & SOCIAL SCIENCES
ISSN Print: 1813–2235; ISSN Online: 1814–960X
09–025/MFA/2010/6–2–29–33
http://www.fspublishers.org

Full Length Article

Correlates of Poverty among Urban Farming Households in Uyo, Nigeria

NSIKAK-ABASI A. ETIM[1], OBASI O. UKOHA† AND AGNES U. AKPAN‡
Department of Agricultural Economics and Extension, University of Uyo, PMB 1017, Uyo, Nigeria
†Department of Agricultural Economics, Michael Okpara University of Agriculture, Umudike, PMB 7267, Umuahia, Nigeria
‡Department of Economics, College of Art and Science, Ikono, Akwa Ibom State, Nigeria
[1]Corresponding author's e-mail: etimbobo@yahoo.com

ABSTRACT

As poverty systematically deepens and people's meager incomes do not cover their basic food and dietary needs, interest in urban farming has increased, even in areas, where the practice was un-common. Urban farming is now being promoted by different families, as a food security strategy for vulnerable urban families. But these farms have had limited success in providing food security and increasing incomes. Understanding the characteristics of the poor and hungry and the factors underlying their persistent deprivation is important, when designing policies to meet their needs and improve their welfare. Determinants of poverty were estimated by Tobit regression model to survey data collected from 120 urban farmers in Uyo, Nigeria with the aid of structured questionnaire. Using the maximum likelihood estimation technique, asymptotic parameter estimates were evaluated to describe poverty correlates. Except for age, farm size, distance to water source and tenancy status, all other explanatory variables specified were significant correlates of urban poverty.

Key Words: Poverty; Urban; Farmers; Household; Nigeria

INTRODUCTION

Nigeria is facing twin challenges of reforming economy and reducing poverty. The problem of poverty in Nigeria is prevalent both in rural and urban areas with proportionate increase in the former is higher (Etim, 2007). Nigeria is one of the most resource-endowed nations in the world (Etim *et al.,* 2009). But socio-economically, Nigerians are also among the most poor in the world (Etim & Edet, 2007). Despite Nigeria's physical and human resources, there had been progressively worsening welfare conditions of it nationals (Okunmadewa, 2001). The Human Development Report by HDR (2005) reveals that Nigeria is one of the poorest among the poor countries of the world. With Human Poverty Index HPI-I value of 38.8%, Nigerian is ranked 75th among 103 developing countries. The bitter reality of the Nigerian situation is not only that poverty is getting worse by the day, but that more than 4 out of every 10 Nigerians live in conditions of extreme poverty of less than US $1 per day. This amount of money will barely provide for a quarter of the nutritional requirements for healthy living. The above revelations are shocking, when one considers the quantum of natural and human resources that abound in the country. This is a paradoxical situation, which was tagged 'poverty in the midst of plenty' World Bank (1996). As one looks towards the global poverty figures, the deprived masses of the poor are living in acute misery in the rural areas (Abbas *et al.*, 2005). Out of total 1.2 billion poor more than 900 million live in rural areas around the globe (IFAD, 2002). Majority of the world's poor live in rural areas and depend on agriculture for their livelihoods (Khan, 2001, Etim, 2007; Fan *et al.*, 2007). The developing world's poor still live in rural areas, although there are some marked regional differences (Ravallion, 2007). But the share of poor living in urban areas is rising and more rapidly than for the population as a whole. Rapid urban growth complicated by poor urban planning and control of land use, lack of financial resources and inadequate investment in environmental management has led to the proliferation of urban slums in Nigeria. Mahbubani (2007) reported that Urbanization is un-stoppable and the developing world is becoming more urban. Growing food in and around cities has become a major industry, vital to the well being of millions of poor and some not-so-poor urban residents. Some 800 million people are estimated to be involved in urban farming world wide (UNEP, 2002). It is not un-common to see urban poor households engage in farming and other income-generating activities around their homesteads. But despite the involvement of these households in various farming and income generating activities, the generality of their incomes have remained low. Understanding the characteristics of the poor and hungry and the factors underlying their persistent deprivation is important, when designing policies to meet

To cite this paper: Etim, N.A., O.O. Ukoha and A.U. Akpan, 2010. Correlates of poverty among urban farming households in Uyo, Nigeria. *J. Agric. Soc. Sci.*, 6: 29–33

their needs and improve their welfare. This study was therefore conducted to identify the factors that influence poverty among urban farmers and specifically estimating its determinants.

Table I shows the human development index (HDI). The HDI focuses on three measurable dimensions of human development; living a long and healthy life, being educated and having a decent standard of living. The table reveals that Nigeria is ranked 158th in the human development report with HDI value of 0.453. Seychelles ranks first in the rejoin, with a value of 0.821.

Table II shows the human poverty in Nigeria. The worst performer in the world is Niger with HPI-1 value of 64.4%, whereas the best performer in the world is Uruguay with HPI-I value of 3.6%. Nigeria has HPI-1 value of 38.8%, which is ranked 75th out of 103 countries.

Table III shows the percentage of people that are poor by states in Nigeria. In Akwa Ibom State, the incidence of poverty rose from 10.2% in 1980 to 66.9% in 1996.

The concept of poverty dates back to 1899, when one of the earliest and most famous studies of poverty was conducted by Seebohm Rowntree in York. He used a concept of subsistence poverty and drew a poverty line in terms of a minimum weekly sum of money, which was necessary to enable families to secure the necessaries of a healthy life. Poverty is more easily recognized than defined. Hence, a universally acceptable definition of the term has remained elusive. However, World Bank (2000) defines poverty as an un-acceptable deprivation in human well-being that can comprise both physiological and social deprivation. Physiological deprivation includes the non-fulfillment of basic material or biological needs, including inadequate nutrition, health, education and shelter. The concept of physiological deprivation is thus closely related to, but can extend beyond low monetary income and consumption levels. Social deprivation widens the concept of deprivation to include risk, vulnerability, lack of autonomy, powerlessness and lack of self-respect.

Poverty is defined as total poverty (Pi) as the expectation overtime of the poverty measured at each point in time Pit.

$$Pi = E(Pit)$$

$$\text{Where, } Pit = \begin{cases} \left(\frac{z-yit}{z}\right)^{\alpha} & \text{If } yit < z \\ O & \text{If } yit > z \end{cases}$$

Where z is the poverty line and α represent the poverty aversion parameter in the FGT measure. Poverty can be chronic (structural) or transitory, depending on how long poverty is expressed by an individual or a community. Chronic poverty is long term, persistent, the causes of which are largely structural and endemic, while transitory poverty is temporary, transient and short term in nature. Chronic poverty is defined as Ci = P[E9 yit)], which for the FGT class of measures can be written as:

$$Ci = \begin{cases} \left(\frac{z-yit}{z}\right)^{\alpha} & \text{If } E(yit) \leq z \\ o & \text{If } E(yit) \geq z \end{cases}$$

Transitory Poverty (Ti) is defined as total poverty (Pi) minus chronic poverty (Ci). Since the nineteenth century, when rigorous studies on poverty began, researchers have tries to establish fixed yardsticks against, which to measure poverty. Ideally, such a yardstick would be applicable to all societies and should establish a fixed level, usually known as the poverty line, below, which poverty begins and above, which it ends. This concept of poverty is known as absolute poverty. Absolute poverty is a situation of lack of access to resources required to obtain the minimum necessities required to maintain physical efficiency. Relative poverty, on the other hand is the inability to attain a given minimum contemporary standard of living. Poverty can also be subjective. This refers to whether or not individuals or groups feel they are poor. Subjective poverty is closely related to relative poverty since those who are defined as poor in terms of standard of the day will probably see and feel themselves to be poor. The concept of subjective poverty is important since to some degree, people act in terms of the way they perceive and define themselves.

Poverty line is the threshold income below, which one is considered to be poor (Kakwani, 1993). It is the value of income or consumption expenditure necessary for a minimum standard of nutrition and other necessities. Thorbecke (2004) reported that there are currently two main methods of setting the poverty line i.e., the cost of Basic Needs (CBN) and the Food-Energy-Intake (FEI) methods. The CBN approach has the advantage of ensuring consistency (treating individuals with the same living standards), while FEI approach has the advantage of specificity reflecting better the actual food consumption behaviour of individuals around the caloric threshold given their tastes, preferences and relative prices.

The Tobit model originates from the work of Tobin (1958) and has been extensively used by economist to measure the effect of changes in the explanatory variables (xi) on the probability of being poor and the depth or intensity of poverty (Mc Donald & Moffit, 1980). The Tobit model can be used to determine the impact of the explanatory variables on the probability of being poor using a function.

$$qi = P_i = X_i \beta + e_i \text{ if } P_i > P_i^*$$
$$= 0 = X_i \beta + e_i \text{ if } P_i \leq P_i^*$$
$$i = 1, 2 \ldots\ldots\ldots n$$

Where qi is the dependent variable, it is discrete, when the households are not poor and continuous, when they are poor. Pi is the probability of being poor (& the intensity of poverty) and is defined as (Z - Yi)/Z and Pi* is the poverty depth, when the poverty line (Z) equals the expenditure per adult equivalent. Xi is a vector of explanatory variable. β is a vector of un-known co-efficient and it is an independently distributed error term.

The model measures not only probability that a farmer is poor, but also the intensity of poverty (Tobin, 1958).

MATERIALS AND METHODS

Study area, sampling and data collection: The study was conducted in Uyo Local Government Akwa, the capital city of Akwa Ibom State, Nigeria. Uyo is situated 55 km inward from the coastal plains of South East Nigeria. The area is located $5^o17'$ and $5^o27'$ North and Longitude $7^o27'$ and $7^o58'$ East. The area lies within the humid tropical rain forest zone. Uyo covers an area approximately 35 km^2 with an annual precipitation ranging from 2000 to 3000 mm per annum. According to Etim and Ofem (2005) and Etim *et al*. (2008), this rainfall regime received in most part of the state encourages farming throughout the year. Uyo has an estimated population of 309, 537 (NPC, 2006). The settlement pattern in Uyo is nucleated and being and administrative headquarters, majority of civil and public servants and political office holders reside there. Etim *et al*. (2006 & 2008) also noted that these people engage in part-time farming activities and other commercial ventures within and around their homes as a way of augmenting family income and food supplies.

Simple random sampling technique was employed to select the representative urban farming households for the study. Data used for this study were mainly primary and were obtained from 120 farming households.

Analytical technique: The Tobit regression model, a hybrid of the discrete and continuous dependent variable was used to estimate the determinants of poverty among urban farming households in Uyo, Nigeria. The model is expressed based on Tobin (1958).

$$qi = Pi = Xi\beta + ei \text{ if } Pi > Pi^*$$
$$O = Xi\beta + ei \text{ if } Pi \leq Pi^*$$
$$i = 1, 2 \ldots\ldots\ldots\ldots 120$$

Where qi is the dependent variable, it is discrete, when the households are not poor and continuous, when they are poor. Pi is the poverty depth/intensity defined as (Z-Yi)/Z and Pi* is the poverty depth, when poverty line (Z) equals the expenditure per adult equivalent. Xi is a vector of explanatory variable, β is a vector of un-known co-efficient and ei is an independently distributed error term.

The explanatory variables specified as determinants of poverty are:

X_1 = Sex of the household head (D =1 if female, 0 if male).

X_2 = Age of the household head in years.

X_3 = Marital status of the household head (D = 1 If married, 0 if other wise).

X_4 = Type of marriage (D = I if monogamous, 0 if otherwise).

X_5 = Years of formal education.

X_6 = Dependency Ratio measured as ratio of the number of dependent household members younger than 15 years or older than 60 years old divided by the number between 15 and 60 years.

X_7 = Value of Assets in Nigeria.

X_8 = Farm size in hectares.

X_9 = Labour employed in man days.

X_{10} = Access to "improved" water source (D = 1 if yes, 0 if other wise).

X_{11} = Distance to "improved" water source in km.

X_{12} = Access to skilled health care (D = 1 if yes, 0 if otherwise).

X_{13} = Distance to source of health care in km.

X_{14} = Access to information (D=1 if yes, 0 if otherwise).

X_{15} = Tenancy status (D = 1 if owned, o if otherwise).

RESULTS AND DISCUSSION

From the maximum likelihood estimates of the Tobit regression, the results show that sigma 0.3977 with a z-value of 4.3088 and are significant ($P < 0.01$). This means that the model has a good fit to the data and that the model as specified explained significant non-zero variations in factors influencing poverty. The co-efficient of sex of the household head is 0.0846. This implies that relative to the female-headed households, the level of poverty will be reduced by 0.0846 for male - headed households, hence, with a poverty depth of 0.2897 as against 0.3743 for female-headed households. This could be attributed to the involvement of male-headed household in different forms of off-farming activities. Findings however contrast with Schaffer (1998). The co-efficient of marital status of household head is 0.157, this implies that the poverty status of household headed by married people will be increased by 15.73% to become 53.15%, while that of households headed by un-married people will remain as 37.43%. The reason for this is married households tend to have larger household size, which raises the dependency ratio. The type of marriage, whether polygamous or monogamous, affects the poverty status in the study area. The co-efficient of the marriage type is -0.2637 meaning that the poverty depth of an individual in monogamous households is reduced by 0.2637 to 0.1106 as against 0.3743 for polygamous households. This is so because polygamous families have larger household size than monogamous ones hence raising the dependency ratio, which eventually causes a rise poverty level among such polygamous households.

The dependency ratio has co-efficient of 0.0234, implying that a unit increase in the dependency ratio will raise poverty by 2.34%. This is obvious because most dependents particularly children contribute less to family labour and income. The family on the other hand, spends money in educating and training them in school and craft, respectively. Similar results had been reported by Musgrave (1980), Lipton (1983), World Bank (1991), Schubert (1994) and Etim *et al.* (2009) that a larger sized household is associated with greater poverty incidence.

Table I: Human development index (HDI) in Nigeria

	HDI Rank 2003 (177 countries)	GDP per capita 2003 (177 countries	GDP per capita (ppp US $ rank minus HDI rank (higher means better on HDI	GDP per capita value (PPP US $ 2003)	HDI value 2003
Nigeria	158	160	2	1,050	0.453
Sub-Saharan Africa countries	-	-	-	1,856	0.515
Best Performer in Sub-Saharan Africa (Seychelles)	51	56	5	10,232	0.821
Worst Performer in Sub-Saharan Africa	177	169	-8	835	0.281

Source: Human Development Report, 2005

Table II: Human poverty in Nigeria

	*HPI[1]-rank 103 countries	*HPI[1]-value %
Nigeria	75	38.8
Best performer in sub-Saharan Africa (Mauritius)	24	11.4
Worst performer in sub-Saharan Africa (Niger)	103	64.4
Best performer in the world (Uruguay)	1	3.6
Worst performer in the world (Niger)	103	64.4

*HPI – Human Poverty Index

Source: Human Development Report, 2005

TABLE III: Poverty incidence in selected states in Nigeria, 1990 - 1996 (%)

State	1980	1985	1992	1996 (%)
Bauchi	46.0	68.9	68.8	83.5
Edo/Delta	19.8	52.4	33.9.	56.1
Akwa Ibom/Cross River	10. 2	41.9	45.5	66.9
Kaduna/Katsina	44.7	58.5	32.0	67.7
Lagos	26.4	42.6	48.1	53.0
Oyo/Osun	7.8	28.3	40.7	58.7
Rivers	7.2	44.4	43.4	44.3
All Nigeria	28.1	46.3	42.7	65.6

Source: FOS, 1996 for Nigeria

The value of certain assets like houses, bicycles, motorcycles by farm households also significantly affect the poverty status. The co-efficient of value of asset is -0.1849, implying that the depth of poverty for asset owning households is 0.1894, whereas it is 0.3743 for non-asset owning households. This means that poverty status will be reduced with possession of one or more of these assets. The co-efficient of years of formal education is -0.3104. This means that the poverty depth is decreased by 0.3104 for individuals in families, whose heads have formal education to become 0.0639. Households without formal education have a poverty depth of 0.3743. This may be attributed to the fact that highly educated household heads have the ability to adopt improved farming technique faster than the non-educated ones. This however increases the productivity and incomes of the educated heads with subsequent improvement of welfare amongst them. Similar findings were reported by Schubert (1994) and FOS (1999).

The regression co-efficient for labour employed in farm operations is 0.0053. The implication is that a manday rise in labour employed in farm operations will raise the poverty depth by 0.0053. This confirms the assertion by Etim (2007) that increase in family labour is as a result of more household members and highly dependency ratio tends to raise the poverty status of households. Finding is synonymous with Etim (2007).

Table IV: Maximum likelihood estimates of correlates of urban poverty

Variable	Coefficient	Standard Error	Z – value
Sex of Household Head (X_1)	0.0846	0.0035	23.879***
Age of Household (X_2)	-0.0004	0.0037	-0.120
Marital status of household head (X_3)	0.1573	0.0902	1.740*
Type of marriage (X4)	-0.2637	0.1287	2.049**
Dependency Ratio (X_5)	0.0234	0.0026	9.210***
Value of Asset (X_6)	-0.1849	0.0974	1.898*
Education (X_7)	0.3104	0.0928	3.345***
Farm size (X_8)	0.0159	0.0662	0.240
Labour Employed (X_9)	0.0053	0.0025	2.110**
Access to Safe water (X_{10})	-0.1874	0.0234	-8.009***
Distance to water source (X_{11})	0.0258	0.0663	0.3891
Access to skilled health care (X_{12})	-0.1331	0.0163	-8.160***
Distance to skilled health care (X_{13})	-0.0454	0.0551	-0.824***
Tenancy status (X_{14})	-0.0244	0.0364	-0.670
Constant	0.3743	0.0736	5.086***
Sigma σ	0.3977	0.0932	4.3088***

Source: Computed from Tobit Regression Result, 2007

***, **, * denote significance @ 1%, 5% and 10% respectively

The co-efficient of access to water -0.1874 implied that poverty depth will be reduced by 0.1874 to give 0.1869 for households having access to improved water as against 0.3743 for households with access to improved water.

CONCLUSION

The research focused on the farm level determination of poverty through the application of tobit estimation technique. ML estimates and coefficients were derived from a specified tobit regression model estimated by maximum likelihood estimation procedure. The estimated parameters were un-biased, efficient and consistent.

The estimation of the correlates of poverty among urban farming households reveal that except for age, farm size, distance to water source, distance to skilled health care and tenancy status, all other regressants greatly and aptly contribute to poverty among urban farming households in Akwa Ibom State, Nigeria.

REFERENCES

Abbas, F.A., Saboor, N. Sarwar and A. Maqbool, 2005. Socio-Economic Dimensions of Rural Poverty: An Experience of Barani Areas in Punjab-Pakistan. *J. Agric. Soc. Sci.,* 1: 138–143

Etim, N.A., 2007. Analysis of Poverty Status of Rural Farm Households in Akwa Ibom State, Nigeria. *Un-Published Ph.D Dissertation*. Department of Agric. Economics, Michael Okpara University of Agriculture, Nigeria

Etim, N.A. and G.E. Edet, 2007. Determinants of Rural Poverty Among Broiler Farmers in Akwa Ibom State. *In*: Agiang, E.A., L.N. Agwunobi and O.O. Olawoyin (eds.), *Proc. 32nd Annual Conf. Nigerian Society for Animal Production*, pp: 410–411. Held at the university of Calabar, March 18-21, 2007

Etim, N.A. and B. Ofem, 2005. Urban Farming and Household Waste Management in Uyo Urban. Implications for Environmental Harmony. *Nigerian J. Agric. Food Environ.*, 2: 74–80

Etim, N.A., G.E. Edet and B.B. Esu, 2009. Determinants of Poverty among peri-urban Telferia occidentalis farmers in Uyo, Nigeria. *J. Agric. Soc. Sci.*,5: 49–51

Etim, N.A., G.E. Edet and S. Okon, 2008. Determinants of Welfare of urban Livestock Farmers in Uyo, Nigeria. *In*: Adeyemi, A.O., A.M. Ogungbesan, A.O. Dada, O.O. Eniolorunda, H.A. Awojobi, D.B. Oke and J.A. Agunbiade (eds.), *Proc. 33rd Annual Conf. Nigerian Society for Animal Production*, pp: 258–260. Held at Olabisi Onabanyo University, Ogun State March 17-21, 2008

Etim, N.A., S. Okon, U.S. Udofia, C.A. Uwem, N.U. Okorie and I.F. Umoh, 2006. Household Waste Management Strategy by Women: The case of urban farmers in Akwa Ibom State, Nigeria. *Nigerian J. Agric. Food Environ.*, 3: 39–45

Fan, S., A. Saurkar and G. Shields, 2007. *How to Mobilize Public Resources to Support Poverty Reduction*. 2020 Focus Brief on the World's Poor and Hungry People, International Food Policy Research Institute

FOS Federal Office of Statistics, 1999. *Poverty and Agricultural Sector in Nigeria*. Federal Office of Statistics, Abuja, Nigeria

HDR Human Development Report, 2005. *Human Development Indicators*

IFAD International Fund for Agricultural Development, 2002. *Enabling the Rural Poor to Overcome Poverty, Annual Report*. International Fund for Agricultural Development, Rome, Italy

Kakwani, N., 1993. Measuring Poverty: Definition and Significance Test with Application to Cote d'Ivoire. *In*: Lipton, M. and J. Van der Gaag (eds.), *Including the Poor*. The World Bank Washington D.C

Khan, M.H., 2001. *Rural Poverty in Developing Countries*, p: 1. Implications for Public Policy

Lipton, M., 1983. "*Labour and Poverty*". World Bank Staff Working paper No. 616 Washington, DC, The World Bank

Mahbubani, K., 2007. "*What is the Biggest Challenge in Managing Large Cities?*" March of the Cities, Finance and Development, International Monetary Fund

Mc Donald, J.D. and R.A. Moffit, 1980. "The Uses of Tobit Analysis". Rev. Econ. *Statistics*, 62: 318–321

Musgrave, P., 1980. *Household Size and Composition, Employment and Poverty in Urban Latin America*, Vol. 28, p: 2. Economic Development and Cultural Change

NPC National Population Commission, 2006. Population Census of the Federal Republic of Nigeria: Analytical Report at the National Population Commission, Abuja

Okunmadewa, F.Y., 2001. *Poverty Reduction in Nigeria, A Four-Point Demand*. An Annual Guest Lecture of the House, University of Ibadan

Ravallion, M., 2007. *"Urban Poverty" March of the Cities, Finance and Development*. International Monetary Fund

Schubert, R., 1994. *Poverty in Developing Countries, its Definition, Extent and Implications*, pp: 17–40. Economic 49/50

Tobin, J., I958. "Estimation of the Relationship for Limited Dependent variables". *Econometrica*, 22: 26–36

UNEP United Nations Environmental Programme, 2002. Global Environment Outlook (GEO) 3 Earthscan Publication

World Bank, 1991. *Indonesia, Strategy for a Sustained Reduction in Poverty*. Washington DC

World Bank, 1996. "*Nigeria: Poverty in the midst of Plenty" The Challenge of Growth with Inclusion Report*. A World Bank Poverty Assessment, Population and Human Resources Division, West Africa Department, African Region, Report No. 8 14733

World Bank, 2000. *World Development Report, 2000-2001: Attacking Poverty*. Oxford University Press, New York

(Received 29 May 2009; Accepted 14 June 2009)