Does Education Reduce Poverty In Rural Households?

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Abstract
Qualitative education equips people from poor families with literacy, numeracy and problem solving skills, and lifts them out of poverty. This study presents empirical link between non-formal, primary, secondary, tertiary education and poverty using quantitative poverty assessment measure. Through the multi-stage sampling technique, 150 rural households were selected and primary data were obtained with the aid of questionnaire. Foster, Greer, Thorbecke quantitative poverty measure was employed to decompose and analyse the data. Result of analysis showed that the incidence of poverty was highest (61 percent) among household heads with no formal education and lowest (35 percent) among household heads with tertiary education. Findings also revealed that poverty gap and squared-poverty gap decreased with higher educational attainment. A test of difference in the poverty incidence of households heads without formal education versus secondary and tertiary education; and primary education versus secondary and tertiary education were significant (p<0.01).Result showed that the incidence of poverty is largest among the illiterate households and declines consistently by increasing level of education. Results suggest that the incidence of poverty among households is strongly influenced by educational levels. Enhancing educational and training opportunities as a pathway out of poverty is a sensible policy option.

Keywords: Education, poverty, households, Nigeria.

INTRODUCTION
Poverty experienced by Nigerian is pervasive, multifaceted and chronic, affecting the lives of a large proportion of the populace (Omonona 2001). In Nigeria, poverty is essentially a rural phenomenon as the majority of those in poverty are disproportionately located in the rural areas, where they are primarily engaged in agricultural production and allied activities. IFAD (1993) documented that rural poverty is a dominant feature of life in all the regions of the world, affecting the lives of nearly 1 billion people and despite the high rate of urbanization, the majority of the poor will continue to live in the rural areas.

It is hard to overemphasize the importance of education for improving the welfare of individuals (Ahmed *et al.,* 2007). But, throughout the world it has been found that the probability of finding employment rises with higher levels of education, and that earnings are higher for people with higher levels of education. FERT (2001) reported that education is generally considered as the easiest means of breaking the vicious circle of poverty. The level of education or literacy status of household head is very important in the reduction of poverty. According to Schubert (1994), people with low levels of human capital that is people among whom the rate of illiteracy is high, school education is low and the capacity for work is low, resulting from under-

nourishment or illness, are particularly prone to be poor. Thus, the relationship between human capital and poverty shows characteristics of vicious circle, which cannot be broken down generously.

It is widely agreed that the relationship between poverty and education operates in two directions. According to Tilak (2005), poor people are often unable to obtain access to an adequate education and without an adequate education; people are often constrained to a life of poverty. Education is rightly regarded as an important component of anti poverty programmes in many developing countries Nigeria inclusive. Studies by Coombs & Ahmed (1974); Noor, (1980); World Bank, (1993), seemed to have concentrated on analyzing the positive effects of literacy and only primary education on poverty. Inconsistency and unsustainable policies, programmes and macro-economic imbalance are part of the causes of the present "hemorrhage in education". Any keen watcher of the political activities in Nigeria knows that every leader that comes on stage often discards previous programmes and policies. Education is an important factor in economic growth and sustainable development. It helps to broaden the base of understanding among the people and therefore helps to strengthen the democratic process which paves way to the promotion of sustainable development through better understanding of the intimate relationship

between environment ,ecology and sustainable development. Education in Nigeria is overseen by the Ministry of Education and the educational system is divided into kindergarten, primary education, secondary education and tertiary education. Despite huge government investment in the educational sector and the increasing number of graduates from schools each year, the quality of life tends to move at a snail pace without significant improvement. It therefore becomes imperative to investigate the role of education in improving the living standard and promoting sustainable development of the rural populace. This study however focuses on the effect of non-formal, primary, secondary and tertiary education on poverty among rural households in Akwa Ibom State, Nigeria.

METHODOLOGY
Study Area, Sampling and Data Collection Procedure
This study was conducted in Akwa Ibom State, Niger Delta, Nigeria. The state is located at latitude 4°33' and 5°53' and longitude 7°25' and 8°25' East and occupies a total land areas of 7,246km^2. With an estimated population of about 3.9million (NPC, 2006), the state is bounded to the North by Abia State, to the East by Cross River State, to the West by Rivers State and to the South by the Atlantic Ocean. Administratively, the state is divided into 31 Local Government Areas and has 6 Agricultural Development Project (ADP) Zones viz: Oron, Abak, Ikot Ekpene, Etinan, Eket and Uyo.

The study area is in the rainforest zone and has two distinct seasons viz: the rainy and the short dry season. The annual precipitation ranges from 2000 – 3000mm per annum. Most of the inhabitants of rural communities in the study area are farmers and the crops commonly cultivated include cassava, oil palm, yam, cocoyam, fluted pumpkin, okra, waterleaf, bitter-leaf, etc. In addition, some micro livestock are usually raised at backyards of most homesteads.

Primary data were used for this study. Farm-level intensive itinerary survey provided the basic cross-sectional data from 150 rural farming households in the study area. Data were collected from farm households using well structured questionnaire. Primary data included data on household income and expenditure, socio-economic characteristics of households and their heads, farm, specific variables.

Multistage sampling technique was used for selecting the representative farm households that were used for this study. The first stage was the random selection of 3 out of the 6 Agricultural Development Project Zones in Akwa Ibom State. The second stage sampling was the

random selection of 5 villages per ADP zone to make a total of 15 villages. Furthermore, a total of 10 households were randomly selected to make a total of 150 farming households.
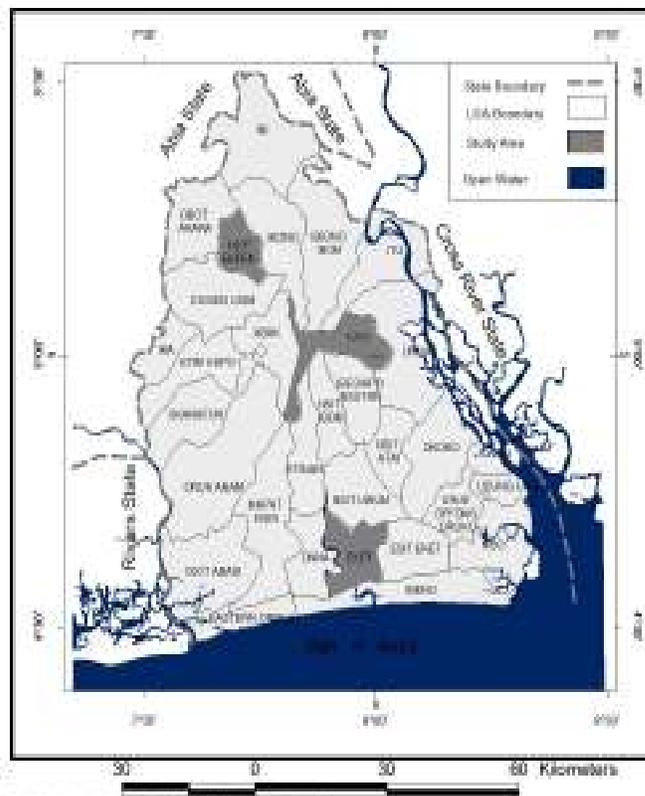

FIGURE 1: AKWA IBOM STATE SHOWING
AGRIC. DEV'T. PROJECT SAMPLED LOCAL GOV'T. AREAS

Analytical Techniques
There are many poverty measures. The head count ratio or index is otherwise called poverty incidence. This type of application would be useful in testing the effectiveness, overtime, space or sub-group of policies intended to alleviate the relative number of poor people. If the percentage of the population in poverty decreases, then poverty is said to decline and vice versa. A major problem with the head count ratio is that it does not indicate the extent of poverty intensity. Another short coming of the head count index is that it implies that the distribution of income/expenditure is homogenous.

The poverty gap measure otherwise called poverty depth has a useful interpretation as the average fraction of the poverty-line income that would be required to be distributed in order to eradicate poverty under the assumption of perfect targeting. It shows the degree of immiseration. The short fall of the poverty depth as a measure is that it does not indicate the severity of the poverty problem in terms of the number of people who

suffer. It also does not show income distribution among the poor.

The sen index has a major draw back: it is more responsive to improvements in the headcount than it is to reductions in the income gap or to improvements in the distribution of income among the poor. That is, the index indicates that the efficient way to reduce poverty is to help the least needy first and the most needy last. This is antithetical to egalitarianism.

The Foster, Greer and Thorbecke (FGT) weighted poverty index was used for the quantitative poverty assessment (Foster $et\ al,$ 1984). The reason for this choice is due to its decomposability of the overall population into mutually exclusive sub-populations. This allows for comparison of poverty over the various mutually exclusive sub-groups. United Nations UN (2001) noted that the most important purpose of a poverty measure is to enable poverty comparisons.

The FGT measure for the subgroup $_i$th $P\alpha_i$ is given as:

$$P\alpha_i = n^{-i} \sum_{j=1}^{qi} \left(\frac{z - Yji}{z, O\max} \right)^{\alpha} \qquad 1$$

Where $P\alpha_i$ is the weighted poverty index for the $_i$th subgroup; n_i is the total number of households in the $_i$th subgroup households in poverty; Y_{ji} is the per adult equivalent expenditure of household j in sub group $_{ij}$, z is the poverty line and α is the degree of concern.

When α is equal to zero, it implies no concern and the equation gives the head count ratio for the incidence of poverty (the proportion of the farming households that are poor).
That is

$$P\alpha_i = ni^{-1} \sum_{j=1}^{qi} \left(\frac{z - Yji}{z, O\max} \right) = {qi}/{ni} \qquad 2$$

When α is equal to 1, it shows uniform concern and equation becomes

$$P_{1i} = ni^{-i} \sum_{j=1}^{qi} \left(\frac{z - Yji}{z, O\max} \right)^{1} \qquad 3$$

This measures the depth of poverty (the proportion of expenditure shortfall from the poverty line) according to Hall and Patrinos (2005), it is otherwise called the poverty gap the average difference between the income of the poor and the poverty line.

When is equal to 2, distinction is made between the poor and the poorest (Foster $et\ al,$ 1984; Assadzadeh and Paul, 2003). The equation become

$$P_{2i} = ni^{-1} \sum_{j=1}^{qi} \left(\frac{z - Yji}{z, O\max} \right)^{2} \qquad 4$$

The equation gives a distribution sensitive FGT index called the severity of poverty. It tells us the extent of the distribution of expenditure among the poor.

The FGT measure for the whole group or population was obtained using:

$$P_{\alpha} = \sum_{i=1}^{m} \frac{P\alpha_i n_i}{n} \qquad .5$$

Where $P\alpha$ is the weighted poverty index for the whole group, m is the number of subgroups while n and n_i are the total number of households in the whole group and the $_i$th subgroup respectively.

The contribution (C_i) of each subgroups weighted poverty measure to the whole groups weighted poverty measure was determined using;

$$C_i = \frac{n_i P\alpha_i}{nP\alpha} \qquad 6$$

The test of significance of $P\alpha_i$ (subgroup poverty measure) relative to the $P\alpha$ (whole group poverty measure) was given according to Kakwani (1993) by:

$$t = \frac{P_{\alpha}i - P_{\alpha}}{SE(P_{\alpha}i)} \qquad 7$$

The above was used to test if significant difference exist between the $P\alpha$ measure of a subgroup i with another j.
The weighted poverty measures ($P\alpha$) and their corresponding standard errors were calculated using the Microsoft Excel Package.

RESULTS AND DISCUSSION
Figure 1 reveals that 23.33 percent of farm household heads had no formal education, 40 percent had primary education, 26 percent had secondary education while only 10.67 percent attended tertiary institutions. This finding suggests that the literacy level of the respondents was high as most of the household heads had post primary qualifications. The high literacy level by respondents could be attributed to high pupils and students enrolment and the presence or availability of greater number of schools in the area and the willingness of the household members to take advantage of the free and compulsory education policy of government.
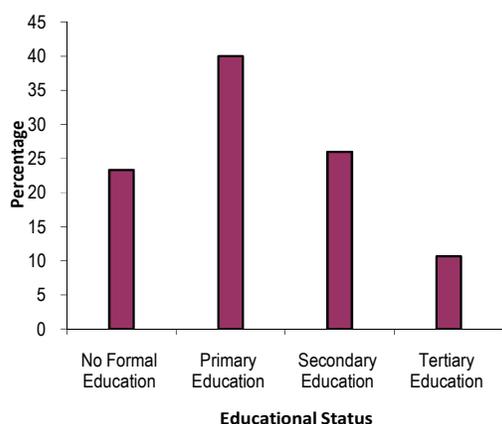
Fig. 1: Educational Status of Household Head

Result on table 1 reveals that the incidence of poverty are highest (61 percent) among farm household heads without formal education and lowest (34 percent) among family heads with tertiary educational attainment. Similar findings were obtained by Schubert (1994) and FOS (1999) that people with low levels of human capital tend have higher incidence of poverty. The incidence of poverty is 55 and 43 percent among household heads with primary and secondary education respectively.

Table 1: Comparison of poverty by educational status of the household head

| | P_0 | P_1 | P_2 | Contribution to | | |
				P_0	P_1	P_2
No Formal Education	0.61 (1.84)*	0.55 (2.61)**	0.61 (2.15)**	0.49	0.53	0.55
Primary Education	0.55 (1.33)	0.39 (-0.07)	0.40 (-0.09)	0.27	0.27	0.25
Secondary Education	0.43 (-0.57)	0.34 (1.00)	0.40 (-0.62)	0.11	0.06	0.05
Tertiary Education	0.35 (-3.33)***	0.33 (-2.00)**	0.27 (-1.91)*	0.13	0.14	0.15
All	0.57	0.48	0.44	1.00	1.00	1.00

Figures in parentheses are t-values of $P\alpha$*** significant at 1%, ** at 5%, * at 10%

Whereas the poverty incidence among the farm households whose heads have no formal education and those having tertiary education is significant (P<0. 1), there is no significance in the poverty incidence experienced by farm households whose heads have either primary or secondary education (P>0.10). A test of difference in the poverty incidence of households whose heads have no formal education and household heads with formal education are significant (P<0.01) as shown in table 2.

Table 2: Poverty by educational status of household head

Educational Status of Household Head	P_0	P_1	P_2
No Formal Education vs. Primary	0.75	3.20***	5.25***
No Formal Education vs. Secondary	2.57***	0.36	0.28
No Formal Education vs. Tertiary	5.20***	0.38	0.28
Primary School vs. Secondary	-12.00***	0.08	0.00
Primary School vs. Tertiary	-6.67***	0.10	0.17
Secondary School vs. Tertiary	-4.00***	-1.00	6.50***

*** significant at 1%

There are significant differences (P<0.01) in the poverty incidence between households whose heads have primary and secondary education on one hand and those heads who have tertiary education on the other hand. The only exception in the poverty incidence where there is no significant difference is between those households whose heads have primary education and no formal education. Result implies that poverty incidence is influenced by the educational qualification of the household heads. Findings further show that 49 percent of the whole groups poverty incidence is contributed by households headed by persons without formal education. This is followed by heads having primary education (27 percent), tertiary education (13 percent), and secondary education (11 percent) as seen in table 1. In summary, the extent of poverty increases with decrease in the educational qualification of the heads of farming households. This may not be unconnected with the fact that rate of adoption of improved farming inputs increases with higher educational status which raises farm income with subsequent reduction of poverty (Etim, 2007).

CONCLUSION
This study empirically assessed the relationship between education and poverty. Results of the study confirm the importance of educational advancement in the improvement of welfare of rural households. The incidence, depth and severity of poverty seemed to decrease with increase with educational opportunities. Findings suggest that education should be of priority to government and it agencies. Increased budgetary allocation to the educational sector should be encouraged.

REFERENCES

Ahmed, A. U., Hill, R. V., Smith, L. C., Wiesmann, D. M. & Frankenberger, T. (2007). "The World's Most Deprived Characteristics and Causes of Extreme Poverty and Hunger". 2020 Discussion Paper 43. International Food Policy Research Institute, Washington, DC.

Assadzadeh, A. & Paul, S. (2003). Poverty Growth and Redistribution. A Case Study of Iran. In Vander Hoeven, R. & Shorrocks, A. (Eds.), Perspective on Growth and Poverty. UNU/NIDER Helsuiki, Finland.

Coombs, P. H. & Ahmed, M. (1974). Attacking Rural Poverty: How Non-Formal Education Can Help? London: John's Hopkins.

Etim, N. A. (2007). Analysis of Poverty Status of Rural Farm Households In Akwa Ibom State, Nigeria. Unpublished Ph.D Dissertation, Department of Agric. Economics, Michael Okpara University of Agriculture, Umudike, Abia State.

FERT (Foundation for Economic Research and Training) 2001. "Poverty Profile of Akwa Ibom State". Akwa Ibom State Government.

FOS (Federal Office of Statistics) 1999. Poverty and the Agricultural Sector in Nigeria. Federal Office of Statistics, Abuja, Nigeria.

Foster, J., Greer, J. & Thorbecke, E. (1984). A Class of Decomopsable Poverty Measures. Econometrica, 52:761-5.

Hall, G. & Patrinos, H. A. (2005). "Latin America's Indigenous People. Latin America. A Time of Transition". Finance and Development. International Monetary Fund, 42(2):24.

IFAD (International Fund for Agricultural Development) 1993. The state of World Rural Poverty. A Profile of Latin America and the Caribbean.

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

Noor, A. (1980). Education and Basic Needs. Staff Working Paper No. 450. Washington, DC.

NPC (National Population Commission) 2006. Population Census of the Federal Republic of Nigeria. Report at the National Level, National Population Commission, Abuja.

Omonona, B. T. (2001). Poverty and its correlates among rural farming households in Kogi State, Nigeria. Unpublished Ph.D Dissertation. Department of Agricultural Economics, University of Ibadan, Nigeria.

Schubert, R. (1994). Poverty in Developing Countries. It Definition, Extent and Implications. Economics, 49/50:17-40.

Tilak, J. B. G. (2005). Post-elementary Education, Poverty and Development in India Post-Basic Education and Training. Working Paper Series No. 6 (Revised). Centre of African Studies, University of Edinburgh.

UN (United Nations) 2001. Indicators of Sustainable Development Guidelines and Methodologies. New York.

World Bank (1993). The East Asian Miracle: Economic Growth and Public Policy. A World Bank Policy Research Report. New York: Oxford.