

An Analysis of Poverty among Households in Yola Metropolis of Adamawa State, Nigeria

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ABSTRACT The study analysed poverty among households living in Yola metropolis. A structured questionnaire was used in collecting data from 120 systematically selected respondents. The analytical tools was the *P-alpha* measure of poverty (poverty head count index, P_0 ; poverty gap index, P_1 ; and poverty squared gap index, P_2). The P_0 revealed that 47.5 % of the respondents were below the poverty line while the P_1 and P_2 with values of 0.20 and 0.1 respectively, revealed that the issue of poverty in the study area demands attention. Furthermore, the incidence of poverty was high (100%) among the illiterate household heads while poverty incidence, depth and severity were very high among older farmers of age 60 years and above. The study concluded that there is high poverty incidence in the study area. The study recommends that more effort and resources should be devoted to poverty reduction programmes.

INTRODUCTION

Poverty is a problem affecting every nation of the world. Glewwe and Gaag (1988); Ahmed (1993); World Bank (1995); Ravallion and Chen (1997); Salman and Sayyid (1999); Okunmadewa (1999); Chen and Ravallion (2004); Coudouel et al. (2001); and Deaton (2001) have provided definition, measurement and analysis of poverty. According to Baker and Schuler (2004) much of these literature focuses on analyzing poverty at the national level, or spatial disaggregation by general categories of urban or rural areas with adjustment made for regional price differentials. UNDP (2006) provides statistics on the poverty situation in Nigeria as follows: about 70.8% of the population was below the poverty line in 2003 and this dropped to 60% in 2006 while infant mortality rate was 101 in 2005. The core welfare indicator questionnaire (CWIQ) survey for Adamawa State reveals that the dependency ratio in the state was 0.8 with the ratio being 0.9 and 0.7 for the rural and urban areas respectively. The CWIQ 2006 survey also revealed that 71.8% of all the households sampled classified themselves as poor, while 70.9% of male-headed households and

82.6% of female headed households were poor. Yet for an individual city like Yola attempting to tackle the problems of urban poverty, this level of aggregation may not be sufficient for answering specific questions such as where the poor are located in the city, whether there are differences between poor areas, and how to design poverty reduction programmes and policies.

Harold and McKay (1996), Baker and Schuler (2004) have defined urban poverty analysis (UPA) as the process of gathering, analyzing and presenting information on the extent, location, and conditions of poverty in a given city. As indicated by Musgrove and Ferber (1976), Hentschel and Lanjouw (1996) this study will be very useful when the poverty profile of the city is to be generated for use by policy makers in answering questions about poverty and to identify appropriate responses. It will also provide a baseline from which changes in policies, investments and activities may be measured.

The government and civil societies in Nigeria have been involved in the effort to reduce poverty through a number of development programmes. As noted by Sen (1983), Blackwood and Lynch (1994) if the intended end of a development program is to alleviate poverty then periodic assessment of the level of poverty may help to determine the degree of success or failure of development programmes. Reducing poverty in Nigeria has been the most persistent challenge facing the government today. As indicated in

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World Bank (1996) studies across the country have revealed that poverty in Nigeria is overwhelmingly a rural problem. It is therefore of interest to analyse the poverty situation among households residing in the metropolis against the backdrop of the current effort by the Nigerian government at poverty alleviation. Specifically, the study described the demographic characteristics of household heads in Yola and also determined the incidence, depth and severity of household poverty among the respondents.

MATERIAL AND METHOD

The Study Area

The study was carried out in Yola (latitude 9°14' and longitude 12°28' E), the capital of Adamawa state of Nigeria. The city comprises of Jimeta which is the administrative and commercial centre, and the ancient Yola town; where the Emir has his palace. Yola has a tropical climate marked by rainy and dry seasons. Maximum temperature can reach 40°C particularly in April, while minimum temperature can be as low as 18°C between December and January. The mean annual rainfall is less than 1,000mm Adebayo (1999).

Data Source and Method of Data Collection

Primary data was utilised for the study. Cross-sectional data was collected from household heads in Yola with the aid of a structured questionnaire. The questionnaire was completed by trained enumerators during an interview session. Data collected covered the background of the household head, demographic characteristics, occupational characteristics, input profile, and household expenditure.

Sampling Frame and Sampling Procedure

Purposive and systematic sampling techniques were used in sampling. Yola metropolis comprises Yola North and South Local Government areas. The neighborhoods are patterned in such a manner that you find distinctiveness in the socioeconomic characteristics of the inhabitants. The neighbourhoods sampled were the Shagari Federal Low cost Housing estate in Yola South LG where you find farmers, traders private sector operators and civil servants; Karewa ward is, partly in both Yola North and

South LGs, where the Karewa quarters which provides housing to civil servants and bureaucrats as well private operators. The third neighbourhood, Sangere, is a fairly new community on the fringe of Yola metropolis in Yola North LG and there you find a large concentration of low income people, farmers, traders, artisans, casual labourers with and some civil servants who are becoming land owners lately. The purposive sampling of these neighbourhoods/communities was to give the study a broad representation of the highly diverse nature of the population.

Purposive sampling technique was used in selecting the communities or neighborhoods from which respondents were sampled, while the systematic sampling technique was used in selecting household heads. Altogether, 120 respondents were selected which included 60 from Yola North and 60 from Yola south local government areas of Adamawa State.

Analytical Techniques

Both descriptive statistics and econometric tools were employed for data analysis. These are stated as follows:

P-alpha poverty Measures

P-alpha measures proposed by Foster et al. 1984 were used in analysing poverty. They include the head count index P_0 , poverty gap index P_1 , and poverty severity index P_2 . The general formula for this class of poverty measures depends on a parameter α which takes a value of zero for the head count, one for the poverty gap and two for poverty squared gap in the following expression:

$$P_\alpha = \frac{1}{n} \sum_{i=1}^q \left[\frac{z - y_i}{z} \right]^\alpha$$

i. Poverty Head Count Index (P_0): This measures the proportion of the population defined as being poor, that is, the proportion whose income or consumption fell below the poverty line. The poverty head count index is specified as follows: $H = \frac{q}{n}$ where q is number of the poor (those whose income or consumption fell below poverty line) and n is the population size.

ii. Poverty Gap Index (P_1): The poverty gap represents the depth of poverty. It is the mean distance that separates the population from the poverty line, with the non-poor being given a

distance of zero. It is a measure of the poverty deficit of the entire population. It is specified as

follows:
$$P(1) = \frac{1}{n} \sum_{i=1}^n \left[\frac{z - y_i}{z} \right]$$
 where y_i = income

of individual (the sum is taken only on the poor) and z = poverty line; n = population size.

iii. **Squared Poverty Gap index (P2):** This is a measure of the severity of poverty. Although poverty gap takes into consideration distance separating the poor from the poverty line, the squared poverty gap takes the squared of the distance. It takes into account the inequality among the poor. It is as follows:

$$P(2) = \frac{1}{n} \sum_{i=1}^n \left[\frac{z - y_i}{z} \right]^2$$

All three measures (like almost all measures found in practice) are functions of both the mean consumption (μ) of each subgroup normalized by the poverty line (z), and the Lorenz curve for the distribution of consumption.

RESULT AND DISCUSSION

Demographic characteristics of the respondents

The demographic characteristics of the respondents listed in Table 1 reveal that the households were mainly male-headed households (above 93%) whose age range from less than 30 years to over 60 years and they are mainly civil servants (government employees). The age distribution shows that 39% of the respondents were about 40-49 years while only about 21.9% were in the fairly elderly age of 50 years and above. The level of education of the respondents shows that above 5% received no formal education while about 58% of the household heads received tertiary education (27.5% sub-degree; 30% degree). Membership of social/cooperative societies is not very popular among the respondents as majority of them (76.7%) do not belong to social/cooperative societies. Onu and Okunmadewa (2006) observed that these societies provided social capital which can help to improve the well-being of the household.

The Poverty Situation in Yola Metropolis

The poverty head-count index (H) given by the percentage of the population living in households with a consumption per capita that

is less than the poverty line was 47.5 percent. This is much lower than the 70.2% as at 1999 reported by the WDR 2003. This means that nearly half of the respondents are living in poverty. The poverty-gap index (PG), defined by the mean distance below the poverty line as a proportion of that line, is usually interpreted as a measure of poverty depth. The poverty gap of the sample was 0.20. This means that the cash transfer needed to lift the poor out of poverty for each poor person represents 20 percent of the poverty line. If the mean income in the country is equal to twice the poverty line, the cash transfer would represent 10 percent of the mean income of the non-poor which is equal to twice the poverty line and if half the population is poor, it can be shown that the tax rate that would have to be imposed on the non-poor to lift the poor out of poverty with perfectly targeted transfer would again be 20 percent. The squared poverty gap (poverty

Table 1: Socioeconomic characteristics of the respondents

Characteristics	No. of respondents	% of respondents
<i>Gender of Household Heads</i>		
Female	9	7.5
Males	111	92.5
<i>Age Distribution of Respondents</i>		
<30	16	13.0
30-39	38	31.7
40-49	47	39.2
50-59	17	14.2
>60	2	1.7
Total	120	100.0
<i>Membership of Social/Cooperative Societies</i>		
Yes	28	23.3
No	98	76.7
<i>Ownership of Farm Land</i>		
Inheritance	25	20.8
Tenancy	56	46.7
Leasehold	32	26.7
Purchase	4	3.3
Gift	3	2.5
<i>Level of Education</i>		
None	3	2.5
Non formal	3	2.5
Primary school	22	18.5
Secondary school	23	19.2
Tertiary (sub degree)	33	27.5
Tertiary (degree)	36	30.0
<i>Primary Occupation of Respondents</i>		
Civil service	89	74.2
Farming	9	7.5
Private employment	8	6.7
Trading	7	5.8
Artisan	6	5.0
Others	1	0.8

Source: Computed from field survey data, 2005

severity) of the distribution was 0.1. It implies that the poor in the population are not far-off from the poverty line. It also implies that there is more equality among the poor in the population. The study also considered poverty incidence among various household groups taking cognisance of their neighbourhoods, gender, age and level of education.

The WDR 2003 global trend on chronic poverty for Nigeria indicated that the percentage of people living on less than US\$1/day was 70.2 while the average depth of poverty was 49.7. The results obtained from this study have shown a remarkable improvement in the poverty situation in Yola vis-à-vis the global trend on chronic poverty in Nigeria in the recent past.

Decomposition of Poverty Incidence among Respondents by Their Neighbourhoods

Table 2 shows poverty incidence among various household groups. It reveals that poverty incidence is least (17.6%) among households from Shagari estate followed by those from Karewa (21.1%) and highest among respondents from Sangere (66.7%). This implies that respondents from Shagari estate are by far the least likely to be considered poor, followed by those in Karewa quarters. While talking about the neighbourhoods it is important to present the infrastructure situation in the study area, about 865 of the households had source of water less than 30 minutes away with 85.6% in the rural and 88.8% in urban areas. In the area of safe water source only 27% of households used treated piped water, borehole, hand pump or protected well in the state, with 23.6% rural and 34.9% in the urban areas. The sanitation situation in the state shows that only 38.8% of the households

Table 2: Simulated poverty measures for selected household in the various neighbourhoods.

<i>Community of households</i>	<i>Poverty Incidence Index (%)</i>	<i>Poverty depth index</i>	<i>Poverty severity index</i>
Shagari	17.6	0.603	0.369
Wuro Modibo	56.3	0.540	0.299
Wuro Hausa	50.0	0.499	0.246
Mbamba	65.0	0.280	0.103
Gerio	59.4	0.520	0.307
Sangere	66.7	0.380	0.175
Bachure	55.5	0.289	0.111
Karewa	21.1	0.365	0.178

Source: Computed from field survey data, 2005

used flush toilet or covered pit latrine or ventilated improved pit latrine, with 30.9% rural and 59.2% urban areas.

Decomposition of Poverty Incidence among Respondents by Gender of Household Heads

Table 3 shows the simulated poverty measures according to gender of household heads. It reveals that poverty incidence, depth and severity are higher among male headed households than their female headed counterparts. The table shows that poverty incidence among male headed households was 44.4% while it was 47.7% among the female headed households. This result shows a remarkable departure from the situation with the entire state going by the CWIQ 2006 which showed that about 73% of male headed households in the rural areas and 66.1% male-headed households in urban areas were classified as poor, while 88.3% of female-headed households in rural and 74.2% of female-headed households in urban areas were also poor.

Table 3: Simulated Poverty Measures according to gender of household heads.

<i>Gender of Household heads</i>	<i>Poverty Incidence Index (%)</i>	<i>Poverty depth index</i>	<i>Poverty severity index</i>
Female	47.7	0.422	0.217
Male	44.4	0.261	0.079

Source: Computed from field survey data, 2005

Decomposition of Poverty Incidence among Respondents by Age Group of Household Heads

Table 4 reveals the poverty situation among different age groups in the metropolis. The poverty incidence, depth and severity were lowest among respondents within the 20–29 years age group, and highest among those within the 60–

Table 4: Simulated poverty measures according to age groups

<i>Age group (yrs)</i>	<i>Poverty Incidence Index (%)</i>	<i>Poverty depth index</i>	<i>Poverty severity index</i>
20 –29	18.8	0.326	0.121
30 – 39	48.4	0.388	0.190
40 – 49	55.3	0.437	0.240
50 – 59	47.1	0.454	0.248
60 – 69	100	0.489	0.252

Source: Computed from field survey data, 2005

69 years age group. This implies that poverty increased and well being decreased with age.

Decomposition of Poverty Incidence among Households by Levels of Education

The poverty situation among respondents with different levels of education is shown in Table 5. The poverty incidence, depth and severity of poverty are least among respondents with either HND or university degree. The situation with respondents without any level of formal education is also interesting. Whereas the poverty incidence is highest among this category of household heads the poverty depth and poverty severity indices did not show much difference from the others. The results show that the incidence of poverty and its depth and severity decreases with level of education.

Table 5: Poverty incidence among various household groups according to levels of education

Level of education	Poverty Incidence Index (%)	Poverty depth index	Poverty severity index
No formal education	100.0	0.501	0.261
Arabic	66.7	0.567	0.334
Primary	68.2	0.430	0.241
Secondary	60.9	0.397	0.190
NCE/ Diploma	48.5	0.388	0.195
HND/ Degree	19.4	0.352	0.179

Source: Computed from field survey data, 2005

CONCLUSION

In spite of the current effort by government to eradicate poverty in the country poverty is still a serious problem in the study area given that about 47.5 percent of the respondents were still below the poverty line. The poverty depth which was 0.20 implies that the cash transfer needed to lift the poor out of poverty for each poor person represents 20 percent of the poverty line. The poverty situation is more endemic among the older respondents.

RECOMMENDATIONS

Based on the findings of the study the following recommendations are made:

- i. There is the need for more effort and commitment to poverty reduction programmes by

both government and non-governmental agencies especially in the area of provision of education to members of the female folk. This will reduce the level of poverty among female-headed households.

- ii. There should be improvement in infrastructure the area of access to clean drinking water, sanitation and housing.

REFERENCES

- Adebayo A 1999. Sunshine, temperature, evaporation and relative humidity. In: Adebayo Abel, AL Tukur (Eds): *Adamawa State in Maps*. Yola: Paraclete Publishers, pp. 20-26.
- Ahmed M 1993. *Choice of a Norm of Poverty Threshold and Extent of Poverty in Pakistan*. Islamabad: Ministry of Finance Publishing.
- Baker J, Schuler N 2004. Analysing urban poverty: a summary of methods and approaches. *World Bank Policy Research Working Paper Series No. 3399*, Washington DC: World Bank.
- Blackwood DL, Lynch S 1994. The measurement of inequality and poverty: a policy maker's guide to the literature. *World Development*, 2: 567-578.
- Chen S, Ravallion M 2004. How have the world's poorest fared since the early 1980s? *The World Bank Research Observer*, 19: 141-170.
- Coudouel A, Hentschel J, Wodon O 2001. Wellbeing measurement and analysis. *Draft Report for Comments*. Washington DC: The World Bank.
- CWIQ 2006. Core Welfare Indicator Questionnaire survey: Adamawa State summary. *CWIQ Survey Report of 2006*. Abuja: National Bureau of Statistics.
- Deaton A 2001. Counting the world's poor: problems and possible solutions. *The World Bank Research Observer*, 16: 125-148.
- Foster JE, Greer J, Thorbecke E 1984. A class of decomposable poverty indices. *Econometrica* 5: 761-766.
- Glewwe P, Gaag JV 1988. Confronting poverty in developing countries: definitions, information and policies. *World Bank Living Standard Measurement Study Report Series No. 48*, Washington DC: The World Bank.
- Harold C, McKay A 1996. Modeling determinants of poverty in Mauritania *World Development*, 24: 1015-1031.
- Hentschel J, Lanjouw P 1996. Constructing an indicator of consumption for the analysis of poverty, *World Bank Living Standard Measurement Study Report Series No. 124*, Washington, DC: The World Bank.
- Musgrove P, Ferber R 1976. *Finding the Poor: On the Identification of Poverty Households in Latin America*. Washington, DC: Brookings Institution.
- Onu JI, Okunmadewa FY 2006. A survey of local level institutions in Yobe state, Nigeria. *Journal of Sustainable Development in Agriculture and Environment*, 1: 1-8.
- Okunmadewa F 1999. Overview of poverty and inequality measurement. *Paper Presented at the Graduate Studies capacity building training workshop of Center for Econometric and Applied Research in University of Ibadan, Nigeria*. July 4 to 16, 1999.

- Ravallion M, Chen S 1997. What can new survey data tell us about recent changes in income distribution and poverty? *World Bank Economics Review*, 11: 357-382.
- Salman SA, Sayyid T 1999. Dynamics of Growth, Poverty and Inequality in Pakistan. *The Pakistan Development Review*, 38: 837-858.
- Sen AK 1983. Development: which way now? *The Economic Journal*, 93: 754 -757.
- UNDP 2006. Niger Delta Human Development Report. *United Nations Development Programme Annual Report*, Abuja: Perfect Printers Ltd.
- World Bank 1995. Pakistan poverty assessment. *Report No.14397-PAK*, Washington, DC: The World Bank.
- World Bank 1996. Nigeria: poverty in the midst of plenty: the challenge of growth with inclusion. *Report No.14733-UNI*, Washington, DC: The World Bank.
- WDR 2003. World Development 2003. *World Development Report Series 2003*, Washington DC: The World Bank.