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An Analysis of the Poverty Situation In Delta State, Nigeria

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Abstract

Poverty measures provide estimates of the poor in the population and are useful for formulating and appropriating measures to alleviate and reduce poverty. Based on a recent government sponsored survey, we present analysis of the poverty situation in Delta State. The collected data were analyzed using IBM SPSS Ver. 22. Further calculations and analyses were implemented on Microsoft Excel Spreadsheet.

Keywords: Data Analysis, Sampling, Poverty, Poverty Incidence.

1.0 Introduction

Poverty is a multifaceted phenomenon, so are the methods for quantifying and analyzing it. As an ex post measure, poverty incidence measures the proportion of the population of a particular area living below a specified poverty line. In measuring poverty both qualitative and quantitative methods are available. While quantitative measures are easily tractable, qualitative methods are not so tractable, but present in many cases more insight into the level and causes of poverty.

Statistics on incidence of poverty in a particular location, where available, is a good tool for planners, especially so for Government and its development partners. Poverty incidence figures can be used in formulating and appropriating measures to alleviate and reduce poverty. Absolute poverty refers to the subsistence below minimum socially acceptable living conditions, while relative poverty compares the lowest segments of a population in terms of income. The National Bureau of Statistics (NBS) uses the relative poverty measure as the official poverty measure in Nigeria[1]. In line with the NBS policy, this work uses the relative poverty measure in the analysis presented.

The incidence of poverty in Nigeria is put at 69.0%, with an estimated population of about 163millionthis means we have about 112.47 million in poverty[1]. According to [1] the incidence of poverty in Delta State is 70.1, while that of the South-South region of Nigeria is 63.8%. In this work we compute and analyze poverty incidence in Delta State based on a recent survey [2].

2.0 Literature Review

There is a reoccurring debate as to whether current poverty measures can easily address issues of adequacy and resource together [3]. Adequacy issues have to do with thresholds set for income levels, while resource issues bothers on failure of certain poverty studies to take into account non cash incomes and benefits. Certain thresholds like the Supplemental Poverty Measure (SPM) thresholds are based on out-of-pocket spending on food, clothing, shelter and utility [4]. It is the opinion of [5] that money income (or consumption) on its own is an imperfect measure, hence the need to account for variability of income over time. It is noted further by [5] that different poverty models imply different indicators. By assuming multidimensional variables consisting of data in matrix form, n persons and $d \geq 2$ dimensions, a multidimensional methodology for poverty measure is provided in [6]. The multidimensional nature of poverty is acquiesced to in [7], where the author opines that the argument against conventional measures of poverty using household per capita income or expenditure is that it confuses measure of poverty with measures of well-being, and counting problems with concept problems.

What poverty means depends on the context, who asks the questions, how it is understood and who responds [8]. Over the years three poverty concepts have evolved namely; those based on ideas of subsistence, basic needs and deprivation [9]. Many of the poverty studies are contextual and customized since not all aspects of poverty are reflected in statistical analysis [10]. The assertion of [11] is that poverty studies must go beyond who is currently poor to include vulnerability to future poverty. Vulnerability to poverty can cause poverty or hinder people from escaping it [10]. Thus as a multidimensional measure human poverty is a complex set of deprivations in many dimensions and it has to be measured and analyzed with its complex and multidimensional nature in mind.

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3.0 Population, Sample and Sampling Technique

Delta State is made up of 25 local government areas (LGAs) and divided into three (3) senatorial districts. The 2006 National Population Census (NPC) puts the population of Delta State at 4,098,291. Based on this figure and an annual growth rate of 3.3% it is estimated that the population of Delta State is 5,315,816 as at 2014. The population for this study was disaggregated into urban and rural localities.

A sample of 1500 respondents was selected consisting of 60 persons per LGA. For each LGA, forty(40) of the respondents were from the urban areas while the remaining twenty (20) were from the rural areas. The stratified random sampling technique was used for this work. The population was subdivided into strata (i.e. LGAs disaggregated into urban and rural areas) each member of the population having an equal chance of being selected. Two towns were selected in each LGA representing the urban and rural areas of the population. The local government headquarters were adopted as the urban areas, while a rural community was selected at random to complement the LGA.

4.0 Methodology

The data for this work was collected both from primary and secondary sources. The secondary sources consisted mainly from indices from the National Bureau of Statistics (NBC) and the National Population Commission (NPC). The main instrument for the collection of primary data was a semi-structured questionnaire which was administered in each of the 25 LGAs of Delta State. Five methodical steps were involved in the work namely; (i) preparation (ii) planning of fieldwork, (iii) conducting of fieldwork, (iv) data collection and analysis, and (v) report writing [12].

The primary data collected by means of the semi-structured questionnaire were coded and captured on Microsoft Excel spreadsheet. The collected data were analyzed using IBM SPSS ver. 22 [13]. Further calculations and analysis were implemented on Microsoft Excel spreadsheet, which was used to produce the tables and figure presented. The validity test for the data was 90% in the Crocbach scale confirming that the data can be relied upon and suitable for scientific analysis.

Since relative poverty measures are usually based on income, a means was devised for estimating the income of households in the survey. This was done by allowing the respondents who were household heads to choose an appropriate income bracket. The monthly income brackets were N1,000 – N10,000, N11,000 – N20,000, N21,000 – N30,000, N31,000 – N40,000, N41,000 – N50,000, N51,000 – N60,000 and N61,000 and above. The median of the monthly income brackets were used to estimate the average monthly income of the households in the survey. For each household the average per capita income was estimated using the household size. The average per capita income of a particular household *(h)* whose estimated income is I_E and size k is given by:

$$I_h = \frac{I_E}{K} \quad (1)$$

The Foster-Greere-Thorbecke (FGT) family of measures was adopted in calculating the relative poverty values for each household and aggregated by local government area and locality. The FGT model is given by [11].

$$p_{\alpha,ht} = \left(m \quad \left\{0, \frac{z-c_{ht}}{z}\right\}\right)^{\alpha} \quad (2)$$

Equation (2) measures the poverty level of a household based on a pre-specified poverty line (the random variable z). The poverty level of a particular household at time t is given by $p_{\alpha,ht}$. The value of α determine the form of $p_{\alpha,ht}$. When α=0, $p_{0,ht}$ is an indicator function since it simply tells use whether a household is poor or not, α=1 gives the poverty gap index, while α=2 gives the square poverty gap ratio, which is sometimes used for normalization.

Based on the FGT model the poor and non-poor were categorized based on the computed average per capita income. The poor in this categorization were those households whose per capita income is less than two-third (2/3) of the average per capita income for the entire State. The non-poor on the other hand had average per capita income greater than two-third of the average per capital income. Further categorization is made by separating the core-poor (extremely poor) from the moderately poor by considering as core poor those whose per capita income is one-third (1/3) of the aggregated average monthly income for the State. Those with average income greater than one-third but less than two-third of the average monthly incomes are considered moderately poor.

Equation (1) was implemented on a spreadsheet for each of the 1500 households. The sum of the per capita incomes for all households was divided by the sample size to yield an average monthly per capital income of N23,438.72. This average monthly per capital income (N23,438.72) is the poverty line [1]. To compute the relative poverty incidence estimates we used the poverty gap measure i.e. when α=1 in the FGT model, since this provides a basis for comparing individual household's per capita income with the poverty line [14]. For each category of poor (i.e. core poor, moderately poor and non poor), we estimated the poverty incidence by considering in each LGA the percentage of households that fall short (or above for non poor) of the poverty line.

5.0 Poverty Incidence Estimates for Delta North

Delta North is made up of nine(9) LGAs. The poverty incidence estimates for the LGAs in the Delta North are presented in *Table 1*.

Table 1: Poverty incidence estimates (%) in Delta North

S/N	LGA	LOCALITY	POOR		NON POOR
			CORE POOR	MODERATELY POOR	
1	Aniocha North	Rural	0	35.0	65.0
		Urban	0	25.0	75.0
2	Aniocha South	Rural	5	65.0	30.0
		Urban	0	20.0	80.0
3	Ika North-East	Rural	50	35.0	15.0
		Urban	32.5	50.0	17.5
4	Ika South	Rural	70	20.0	10.0
		Urban	30	55.0	15.0
5	Ndokwa East	Rural	35	50.0	15.0
		Urban	15	27.5	57.5
6	Ndokwa West	Rural	10	25.0	65.0
		Urban	37.5	22.5	40.0
7	Oshimili North	Rural	35	45.0	20.0
		Urban	20	50.0	30.0
8	Oshimili South	Rural	0	30.0	70.0
		Urban	5	40.0	55.0
9	Ukwani	Rural	45	20.0	35.0
		Urban	22.5	32.5	45.0

Delta North has an average core poor poverty incidence of 22.9%, with respective poor and non poor average of 36.0% and 41.1%. The average poverty incidence in Delta North is 58.9%. In Delta North Senatorial District minimum non poor incidence of 0% are found in Aniocha North (urban and rural), Aniocha South (urban) and Oshimilli South (rural). The maximum core poor incidence in Delta North of 70% is found in Ika South (rural), which equally have the highest poverty incidence of 90%, while the lowest poverty incidence of 20% is found in Aniocha South (rural).

6.0 Poverty Incidence Estimates for Delta Central

Delta Central Senatorial District with 8 LGAs has an average core poor population of 37.3% with respective moderately poor and non poor estimates of 37.2% and 25.5%. *Table 2* shows the poverty incidence estimates for Delta Central Senatorial District.

Table 2: Poverty incidence estimates (%) in Delta Central

S/N	LGA	LOCALITY	POOR		NON POOR
			CORE POOR	MODERATELY POOR	
1	Ethiope East	Rural	35	55.0	10.0
		Urban	30	55.0	15.0
2	Ethiope West	Rural	50	15.0	35.0
		Urban	25	17.5	57.5
3	Okpe	Rural	45	30.0	25.0
		Urban	35	55.0	10.0
4	Sapele	Rural	25	60.0	15.0
		Urban	35	42.5	22.5
5	Udu	Rural	40	30.0	30.0
		Urban	50	20.0	30.0
6	Ughelli North	Rural	45	40.0	15.0
		Urban	30	40.0	30.0
7	Ughelli South	Rural	50	35.0	15.0
		Urban	27.5	40.0	32.5
8	Uvwie	Rural	45	30.0	25.0
		Urban	30	30.0	40.0

In Delta Central, the minimum core poor estimate of 25% is found in Ethiope West (urban) and Sapele (rural), while the maximum core poor estimate of 50% is in Ethiope West (rural), Udu (urban) and Ughelli South (rural). The estimated average poverty incidence for Delta Central is 74.5% with a corresponding non poor average estimate of 25.5%.

7.0 Poverty Incidence Estimates for Delta South

Delta South consists of 8 LGAs and has an average core poor incidence of 33.8% and a moderately poor incidence of 35.0%. This puts the average incidence of poverty in Delta South at 68.8% and a non poor average incidence of 31.2%. The computed values for the poverty incidence in Delta South are shown in *Table 3.*

Table 3: Poverty incidence estimates (%) in Delta South

S/N	LGA	LOCALITY	POOR		NON POOR
			CORE POOR	MODERATELY POOR	
1	Bomadi	Rural	35	50.0	15.0
		Urban	12.5	30.0	57.5
2	Burutu	Rural	45	45.0	10.0
		Urban	40	55.0	5.0
3	Isoko North	Rural	40	20.0	40.0
		Urban	50	35.0	15.0
4	Isoko South	Rural	35	35.0	30.0
		Urban	17.5	47.5	35.0
5	Patani	Rural	30	25.0	45.0
		Urban	25	42.5	32.5
6	Warri North	Rural	40	25.0	35.0
		Urban	37.5	40.0	22.5
7	Warri South	Rural	40	20.0	40.0
		Urban	22.5	30.0	47.5
8	Warri South-West	Rural	30	40.0	30.0
		Urban	40	20.0	40.0

The maximum core poor incidence of 50% in Delta South is found in Isoko North (urban), while the maximum moderately poor incidence of 55% is found in Burutu (urban), which also has the maximum poverty incidence of 95% (the highest in Delta State). The minimum core poor estimate in Delta South is 12.5% in Bomadi (urban), while the minimum moderately poor incidence of 20% is in Isoko North (rural), Warri South-West (urban) and Warri South (rural). The minimum non poor incidence in Delta South of 5% is found in Burutu(urban).

8.0 Summary of Poverty incidence estimates in Delta State

Table 4 presents a summary of the poverty incidence estimates in Delta State, which is depicted in *Figure 1.* The average incidence of core poor in Delta State is 31.0%, while that of the moderately poor is 36.1%. This puts the average incidence of poverty across the state at 67.1%, with a maximum core poor incidence 70% and respective moderately poor and non poor maximums of 65.0% and 80.0%. The minimum core poor estimate in Delta State is 0.0%, the minimum value for the moderately poor is15.0%, while the minimum value for the non poor is 5%.

Table 4: Summary of Poverty incidence estimates (%) in Delta State

Incidence	Core Poor	Moderately Poor	Non Poor
Average	31.0	36.0	33.0
Maximum	70.0	65.0	80.0
Minimum	0.0	15.0	5.0

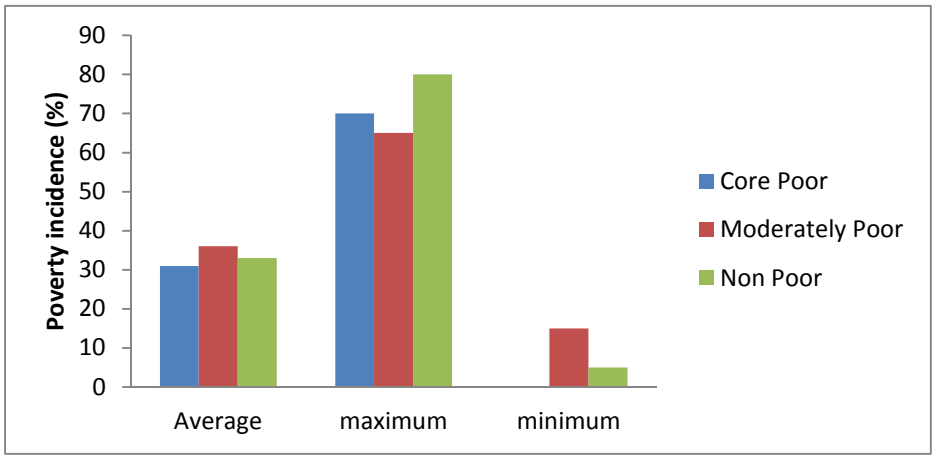

Figure 1: Summary of Poverty Incidence Estimates(%) in Delta State

9.0 Conclusion

In this work we analyzed the poverty incidence in Delta State based on a recent Government sponsored survey [2]. Poverty incidence only shows the estimates of the proportion of the population that are poor and not the reasons why they are poor. Poverty is a complex and multidimensional phenomenon and as such not all aspects of poverty can be treated in a single study like this. Further work is still being done on the future vulnerability to poverty of the population for this study.

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10.0 References

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