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A. Englama
Central Bank of Nigeria

A. Bamidele
Central Bank of Nigeria

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MEASUREMENT ISSUES IN POVERTY

Englama, A. and Bamidele, A.

The paper defines poverty as certain disabilities such as the inability to participate with dignity in society. It also demonstrates that in measuring poverty, emphasis should not be mainly on income or consumption, but that cognizance should be taken of social, economic and basic infrastructures as well as environmental factors. The paper further mentions some inherent problems in measuring poverty such as conceptual and data problems. Once these problems are overcome, a simple head count could provide an insight into poverty measurement. The depth and severity of poverty can be determined by the P-Index which captures the number of the poor, the poverty gap and income distribution below the poverty line. The paper concludes with recommendations on how to overcome the problems and improve the measurement of poverty in Nigeria.

I. INTRODUCTION

One of the central issues of development economics that governments and policy makers are focusing attention on is how to improve the socio-economic well being of the people and thereby reduce deprivation and misery. The concept of poverty, and its measurement, is never viewed in the same light by any two individuals because everybody addresses poverty from his/her position. The conception of poverty and its measurement is varied due to the relative nature of the subject. For this reason, attempts at poverty alleviation and eradication have been misplaced right from the conception stage as a result of the lack of a precise definition.

As social scientists, even though our subject is not as rigid as in the physical sciences, for any social problem to be satisfactorily resolved, there must be a proper understanding of the issue to ensure a correct diagnosis of the subject matter and a precise measure of its size and severity that is devoid of all ambiguities. In the formulation of policies that will ensure economic growth and reduce poverty, it is necessary to have a proper definition of poverty by identifying its associated or related issues. This would aid policy formulation and ensure effectiveness. This paper discusses the various issues raised in the measurement of poverty in order to come up with a clear definition that could aid the measurement of poverty in Nigeria. The rest of the paper is divided into five sections. Section II defines poverty,

* Dr. A. Englama is a Principal Economist, while Mr. A. Bamidele is a Senior Economist, in the Research Department of the Central Bank of Nigeria. The views expressed are those of the authors and not necessarily shared by the Bank.

while Section III identifies the various measures of poverty. In section IV the various problems associated with poverty measurement are highlighted, while Section V presents poverty measurement in Nigeria. Finally, section VI, includes the conclusions and recommendations.

II. Definition of Poverty

In purely economic terms, poverty can be defined as the number of people living below a specified minimum level of 'income' - an imaginary international poverty line which recognizes neither national boundaries nor levels of national per capita income (Todaro, 1985). The poverty line is an income/consumption data-based tool for measuring poverty. People are counted poor when their measured standard of living (usually estimated on income or expenditure) is below a minimum acceptable level. This may be relative or absolute. The former compares an individual's or household's position with the average income in the country, e.g., one-half of the mean income or the 40th percentile of the distribution while the latter is the comparison of an individual's/household's position with a poverty line whose real value is fixed over time. The poverty line is, therefore, the value of income or consumption necessary for a minimum standard of nutrition and other 'necessities'. However, estimating necessities has a strong judgmental element arising from cultural differences, 'ruralness' or 'urbanness' and relative food prices. The standard of living is composed of two important aspects, viz: income and social indices. In practice, consumption data are a better proxy for living standards than income data because income tends to reflect the current living standards more, particularly when income varies over time in ways that households can predict and accommodate through their consumption-smoothing behaviour. This should include the imputed value of consumption from own-production, normalized for differences in household size and composition and adjusted for differences in local prices. In order to capture an individual's (household's) total well-being, supplementary information on social outcomes and access to social services are employed. This information includes access to safe drinking water and health services; level of nutrition and literacy, rate of infant mortality and life expectancy (World Bank, 1992). It was on these lines that Sen (1984) defined poverty as the lack of certain capabilities, such as being able to participate with dignity in society. This implies that poverty is a state of deprivation and is, therefore, multi-dimensional and not limited to income. In essence, we can have different types of poverty, that is, income poverty and basic needs (food, education, health care, etc.) poverty. While poverty in the developed countries is basically income determined, in the developing countries it is, in addition, the result of deprivation and lack of

access to basic services (e.g., safe drinking water, health care, education and housing). There are cultural, climatic, ecological and historical dimensions of poverty in addition to the international perspective.

One of the most valid generalizations about the poor is that they are disproportionately located in the rural areas and that they are primarily engaged in agricultural and associated activities. The majority of the poor scratch out their livelihood from subsistence agriculture; some provide services, such as blacksmithing or tailoring in the rural areas, while others are located on the fringes and marginal areas of urban centres where they engage in various forms of self-employment such as street-hawking, trading, and small-scale commerce. Another valid generalization is that poverty affects a disproportionate number of women due to their dual roles in the economy, working both inside and outside the home and child bearing. Women are usually less educated, and hence have fewer employment opportunities, lower wages, less access to land, credit and other factors of production than their male counterparts.

It should be recognized that higher levels of per capita income do not guarantee lower levels of poverty, hence an understanding of the nature and distribution of income is pertinent to any analysis of poverty in any particular community. The incidence of poverty and unequal income distribution are not just the result of national economic growth processes but are dependent on the characteristics of that economic growth, and the political and institutional arrangements for distributing rising national incomes among the broad segments of a population. Thus, when dealing with alternative policies to combat poverty, it is not sufficient to focus on raising growth rates of the GNP or GDP in the expectation or hope that this national income growth will 'trickle down' to improve the standard of living for the poor. It is direct attacks on poverty by means of poverty-focused policies and plans, based on detailed knowledge of its location, extent and characteristics that would be more effective.

In summary, poverty can therefore be defined, in both absolute and relative terms, as a state where an individual is not able to cater adequately for his/her basic needs of food, clothing and shelter; is unable to meet social and economic obligations, lacks gainful employment, skills, assets and self-esteem; and has limited access to social and economic infrastructure such as education, health, potable water and sanitation, and as a result has limited chance of advancing his/her welfare to the limit of his/her capabilities.

III. Measurement of Poverty

The measurement of poverty can be divided into two distinct operations, viz: the identification of the poor, and the aggregation of their poverty characteristics

into an overall measure. The poor are identified as those who are unable to meet the specified minimum needs or the poverty line considered necessary for living in a community (Sen, 1984). After identifying the poor and having specified that the concept of poverty is concerned with the conditions of the poor, much remains to be done. There is the problem of aggregation - often important over the group of the poor, and this involves moving from the description of the poor to some overall measure of 'poverty'. One simple measure is by counting the number of the poor, and then expressing poverty as the ratio of the number of the poor to the total number of people in the community in question. This is generally referred to as the 'head count measure' or the *H*-index.

Mathematically, the *H*-index can be expressed as follows:

$$H = q/n \tag{1}$$

subject to $G = 0 < 1$, therefore: $q < n$

where:

- H* = the number of all the poor people expressed as a ratio of the total population of the society in question.
- q* = the total number of the poor people
- n* = the overall population of the community of interest
- G* = the Gini coefficient, i.e., the aggregate inequality measure

This is a useful measure, but as Sen (1984) observed, it is often criticized because it does not take into account the extent of the shortfall of incomes of the poor from the 'poverty line'. For example, a reduction in the income of all the poor which does not affect the incomes of the rich will leave this head count measure completely unchanged. Secondly, this measure is insensitive to the distribution of income among the poor, in particular, any transfer of income from a poor person to one who is richer can not increase this head count measure.

Another measure which tries to avoid these drawbacks of the head count is the income shortfall or poverty gap measure. This measures the transfer that would bring the income of every poor person exactly up to the poverty line thereby eliminating poverty.

The *I*-measure is expressed mathematically as follows:

Given the poverty line, income Π , y_i is person's i income among the set of poor people *S*, thus g_i is the poverty gap of person i ,

$$g_i = \Pi - y_i \tag{2}$$

Total poverty gap is represented by

$$g = \sum_{i \in S} g_i \quad (3)$$

Denote the mean income of the poor as y^* and their mean poverty gap as g^*

$$y^* = \sum_{i \in S} y_i/q \quad (4)$$

$$g^* = \Pi - y^* = g/q$$

The income-gap ratio can be expressed as

$$I = g^*/\Pi \quad (5)$$

The 'headcount' and 'poverty gap' measures are both income-based measures of poverty. However, the most common way of identification, as noted in the last section, is through specifying a set of 'basic' or 'minimum' needs (food and non-food components) and regarding the inability to fulfil these needs as the test of poverty. If we accept this approach, then the question we need to answer is: Are the basic needs involved in identifying poverty better specified in terms of commodities, or in terms of 'characteristics'? While things like corn, rice, beans, etc., are commodities; calories, protein, vitamins, etc., are characteristics of these commodities that the consumer needs. For example, the Food and Agricultural Organisation (FAO) identifies poverty as the inability to have a diet that meets 2,100 calories per day. This notwithstanding, the 'basic' or 'minimum' needs are often specified in terms of a hybrid vector - amounts of calories, proteins, housing, schools, hospital beds, etc. - some of the components being pure characteristics, while others are distinct commodities (Sen, 1984).

What are the key issues we should consider in poverty measurement? The World Bank (1992) highlighted three key issues in poverty measurement. First, is the yardstick to be used in assessing living standards and determining who is poor and who is not. Second, drawing the poverty line, i.e. the cut-off living standard level below which a person is classified as poor - and counting the people whose income is below the line. The third goes beyond counting the poor to measuring the depth and severity of poverty.

Poverty lines are usually based on income or consumption data. Poverty lines, therefore, capture only the income or the consumption dimension of poverty. For greater policy relevance, data are also required on how the poor live, and on the economic environment in which they operate. Thus, the profile places poverty in the country's economic, institutional and social context. There is a need to add to the consumption-based measure, other variables such as access to safe water, life expectancy, under-five mortality and school enrolment rates. This calls for indirect

measures as direct measures would be difficult to apply to all of them. We also need some indicators of poverty which quantify the consequences of poverty (as defined by low income or lack of access to adequate public services) such as high child mortality rates.

The indicators, therefore, include income and social indices. The income indicators track the income earning opportunities of the poor, i.e., their ability to reach consumption levels necessary for decent living, while the social indices track the provision and outcome of social services.

Possible income indicators include the income-earning opportunities of the poor as producers or employees (including relevant output prices and wages), and the availability and prices of pertinent consumption goods. Others are (a) rural terms of trade; (b) unskilled wage rates (urban and rural); and (c) lower income consumer price index (where not available, CPI for food only). While many social indicators are estimated as country averages, they do provide information about the poor. This is because the non-poor usually have access to social services before the poor do. If the percentage of non-poor in the population is less than the percentage of the population provided with social services, some of the poor are probably being reached. At this point, most of the movement in the indicators will reflect changes in the living standards of the poor. The social indicators include: (a) social sector public expenditures share of GDP; (b) net primary school enrolment; (c) under five mortality; (d) immunization; (e) child malnutrition; (g) total fertility rate and (h) maternal mortality (World Bank, 1993).

Poverty could be perceived to be prevalent at individual, household, or community level. At the individual level, poverty can be seen in terms of inability to eat or clothe oneself adequately, the inability to afford other basic necessities such as decent shelter, the inability to meet social and economic obligations or lack of gainful employment. Physical insecurity, lack of skills and inadequate assets are also regarded as indicators of poverty. Similarly, ignorance, powerlessness to improve one's situation in decision-making and lack of self-esteem are all key indicators of poverty.

According to the World Bank (1992), poverty at the community level, is seen as general deprivation, which is manifested in the following forms:

- a. inadequacy of socio-economic infrastructure and basic social amenities such as roads, health centres, education, sanitation facilities, water supply, electricity, markets, etc. In urban areas the lack of security is seen as another poverty dimension.
- b. inadequate employment and income-earning opportunities, due to the lack

of appropriate education and training, the absence of commercial and industrial facilities or the lack of resources to set them up. In the rural areas, inadequate access to agricultural inputs (especially land, fertilizer, credit facilities and extension services) is also regarded as an important indicator of poverty.

- c. environmental and natural degradation such as desertification, loss of soil fertility, sea incursion, fuel wood scarcity, environmental pollution and overpopulation.

Therefore, in measuring poverty we should be concerned not only with income or consumption based measures, but also with social, economic and basic infrastructure as well as environmental factors. The measurement must be seen as an exercise which describes both relative and absolute deprivation, assessing the predicament of people in terms of the prevailing standards of necessities.

IV. Problems Associated with Poverty Measurement

The many problems of poverty arise from the fact that the subject of enquiry is multi-dimensional, which not only considers the absolute but also the relative positions of its subjects vis-a-vis societal norms, and in relation to other people's levels. There are, therefore, conceptual issues of who is poor and by what standard, which present relativity problems; identification issues and what tools to use in measuring poverty in both relative and absolute terms; and aggregation problems, i.e., the size and extent of poverty. Here the problem arises on whether one should consider the number of the poor or the income shortfall, i.e., the poverty gap or the distribution of income among the poor. Lastly, there are data constraints.

IV.1. Conceptual Issues

The starting point in determining poverty is the specification of the poverty-line or a consumption pattern or norms regarded as basic or minimum for which anybody who falls below the line is considered poor, while those above the line are regarded as non-poor. It must be accepted right from the onset, that it is very difficult to construct a poverty line or specify a minimum consumption requirement. This is because the translation of minimum nutritional needs into minimum food requirements borders on the choice of commodities while the non-food minimum requirements are not easy to specify. The assumption that a specified proportion of total income is spent on food, which is usually employed in poverty measurement, is not viable since this proportion varies with

a number of factors such as taste, culture, relative prices and the availability of commodities. The only justification for this assumption may be found in the idea that the proximity of actual habits and behaviour makes it possible to derive income levels at which the nutritional norms could be typically met within a particular society. Regarding non-food requirements, malnutrition is an important aspect for many developing countries and should not be ignored. To enable the inclusion of the non-food problem in the specification of basic needs, researchers have had to include such items as housing, literacy, health care and life expectancy.

The conception of poverty as one of inequality in the distribution of income is problematic in that even the poverty line to be employed in the identification of the poor has to take into account contemporary standards in the community in question. This has the tendency of stratifying poverty so that poverty may look like inequality between the poorest group and the rest of the society (Sen, 1984). However, a critical examination of the two concepts reveals that inequality is fundamentally different from poverty issues since the transfer of income from a person in the top income group to one in the middle income group could ultimately reduce inequality, though it may leave the depth of poverty unaffected. In the same vein, a general decline in income that keeps a chosen measure of inequality or income distribution unchanged may in fact lead to a sharp increase in starvation, malnutrition and other forms of hardship, and highlight the difference between inequality and poverty. What is certain is that inequality and poverty are associated with each other and a different distribution system may or may not cure poverty even without any expansion in a country's production possibility frontier. Thus, the role of inequality in the prevalence of poverty only figures in the analysis of poverty. This explains why the elimination of widespread poverty and income inequalities is at the core of all development problems and constitutes, for many, the principal objectives of development policy.

Sociologically, the issue of 'relative deprivation' has been used in the analysis of poverty. Being poor has clearly much to do with being 'deprived' and it is natural that for a social animal, the concept of deprivation is relative to the feelings or conditions of deprivation and also because relative deprivation compares with a chosen 'reference group'. The horizon of comparison is, however, not independent of political, social and institutional arrangements and activities in the community concerned, since one's perception of deprivation is closely related to one's expectations and views of what is fair and attainable; and who has the right to enjoy what. These different issues of relative deprivation have considerable bearing on the social analysis of poverty. In real life situations, there is indeed an irreducible core of absolute deprivation in the concept of poverty which translates evidence of starvation, malnutrition, visible hardship and the like into a diagnosis of poverty

without having to first ascertain the relative picture.

The social treatment of poverty, as well as the normative issues involved in economic analysis, have viewed poverty in terms of value judgement. One of the dimensions is to feel that it is natural to think of poverty as something that is disapproved of, the elimination of which is regarded as morally good.

The concept of poverty could also be viewed from the public policy perspective in which case certain given standards would be used to measure poverty. This is where governments and policy makers are concerned with the harmful effects of poverty and especially where the means to eradicate it are available. Rein (1971) stated that 'people must not be allowed to become so poor that they offend or are hurtful to society. We have a problem of poverty to the extent that low income creates problems for those who are not poor'. In this view of poverty it is not so much the misery and plight of the poor which is important, but the discomfort and cost to the community. It must be recognized, however, that at any given time a policy definition reflects a balancing of community capabilities and desires. The problem with the policy approach to poverty is that policy is a function of political organization which depends on many factors such as the nature of government, its source of power and the forces exerted by other groups. In addition, whether 'policy' represents actual public policy or policy recommendations widely held in a society, (because policy recommendations depend on an assessment of feasibilities) it tends to be silent on deprivations which cannot be immediately eliminated and this does not reduce the fundamental nature of such deprivations. For this reason, the measurement of poverty must be seen as an exercise of description, assessing the predicament of people in terms of the prevailing standards of necessities.

IV.2 Measurement Problems

Having defined poverty, we next determine the extent of poverty, i.e. (a) the number or proportion of the population whose consumption level is below the poverty line; (b) the depth of poverty represented by the income gap ratio or poverty gap, that is, the average per cent by which a person's income falls below the poverty line; and (c) the depth of extreme poverty. The measurement of poverty is usually divided into two distinct operations, viz: the identification of the poor and the aggregation of their poverty characteristics into an over-all measure to build a poverty profile. Identification usually begins with the specification of 'minimum' or 'basic' needs and then regarding the inability to meet these needs as the incidence of poverty.

IV.2.1. The direct versus indirect method of measuring poverty

Apart from the problem of specifying 'basic' needs in either tangible commodities or characteristics or a hybrid vector of both as discussed earlier, there is the problem of what method to use between the two major alternative approaches. The direct method or consumption approach is to check the set of people whose actual consumption leaves some basic needs unsatisfied. The second, the indirect or income method, is based on first calculating the minimum income at which all the specified basic needs would be met and then identifying those whose actual incomes fall below that poverty line. Obviously, the consumption method appears superior to the income method, since the former is not based on particular assumptions of consumption behaviour, which may or may not be met. The income method is a second best approach as it only signifies a person's ability to meet his basic needs (whether or not he in fact chooses to do so). It could, therefore, be argued that it is only in the absence of direct information on the satisfaction of specified basic needs that the income should feature. The direct method is constrained by taste factors which make programming of a cost-minimizing consumption line difficult, as taste constraints apply to both individuals and the society at large. The two alternatives are ways of measuring the same thing but represent two alternative conceptions of poverty. While the direct method identifies those whose actual consumption fails to meet the accepted conventions of basic needs, the income approach spots those who do not have the ability (means) to meet these needs within the behavioural constraints typical of the society of interest. However, the income method has the advantage of providing a metric of numerical distances from the poverty line in terms of income gaps/shortfalls which the direct method does not provide, as it merely identifies the shortfalls in each type of need. The income method presupposes that the pattern of consumption is uniform, otherwise it would be impossible to determine a specific level of income at which the typical consumer meets his/her basic needs. Secondly, if prices facing different groups of people differ, e.g. between social class, income groups, or localities, then the poverty line becomes group specific even when uniform norms and consumption habits are exhibited. These are real difficulties which cannot be ignored. That the assumption of a uniform poverty line for a given society distorts reality seems reasonably certain; what is much less clear, however, is the extent to which reality is distorted, and the seriousness of the distortion for the purposes for which the poverty measures may be used.

If poverty income can be derived from the typical behaviour of a society, the income method becomes adequate and allows for comparison within and between communities. In addition the income method via the principle of purchasing power

parity (PPP) commends it for cross country measurement and comparison and has resulted in its widespread usage.

IV.2.2. Calculations of minimum income

In calculating the income necessary for meeting the specific basic needs of families of different size, some method of corresponding family income with individual income is needed. While the simplest method of doing this is to divide the family income by the number of family members, this overlooks the economies of large-scale that operate for many items of consumption and also the fact that children's needs may be quite different from those of adults. To solve this problem, the common practice for both poverty estimation and social security operations is to convert each family into a certain number of 'equivalent scale' units or alternatively to convert the families into 'equivalent households' (Orshaky, 1965; Abel-Smith and Townsend, 1965; Atkinson, 1969 and Fields, 1980). But there tends to be a lot of arbitrariness in such conversion exercises as much depends on the exact consumption pattern of the people involved, which in turn is dependent on many factors - taste, size and age structure of families, nutritional requirements of different age groups, among others. One way of taking care of family size in this arbitrariness is to examine how much extra income is required to make larger families have the same standard of living as smaller ones.

IV.2.3. Problem of aggregation

Since the quantification study and measurement of poverty began, the head-count measure (*H*-measure), given by the proportion of the total population with incomes below the specified poverty-line income is the most common measure of over-all poverty. The head-count index *H* is simply the total number of people identified as being poor *q* divided by the total population *n* in the society. This measure of poverty is widely used for both inter-temporal and international comparisons. However, the head-count measure *H* is insensitive to the extent of the shortfall of incomes of all poor (i.e. how poor a person is) from the poverty-line and the distribution of income among the poor, all of which make *H* as an indicator of poverty unsatisfactory. Another measure that takes care of the extent of income shortfall is the 'poverty gap' or 'income-gap ratio' denoted by *I*, which is the aggregate shortfall of income of all the poor from the specified poverty line (Batchelder, 1971; Kakwani, 1980a; and Beckerman, 1979a and 1979b). The index can be normalized by expressing it as the percentage shortfall of the average income of the poor from the poverty line. While measure *I* takes care of the income shortfall of all

the poor, it neither pays attention to incomes transfers among the poor, as long as nobody crosses the poverty line by such transfers, nor is it sensitive to the number or proportion of poor people below the poverty line.

Since the income of every poor person is not the same, the problem of the distribution of income among the poor needs to be solved and combined with measures H and I to create an acceptable measure of poverty in all its ramifications. A third measure of poverty emerges with the introduction of the Gini concentration ratio or Gini coefficient G , i.e., the aggregate inequality measure or coefficient of the distribution of income among the poor. The index P , is therefore a function of H (the number of the poor), I (the aggregate poverty gap) and G (the inequality of income distribution below the poverty line).

The P -measure is represented mathematically thus:

Given H and I as head-count and income gap measures as defined above.

$$P = HI \quad (6)$$

for a normalized absolute deprivation whereby for all

$$i \in S ; y_i = y^*$$

When large numbers of the people are poor, the Gini concentration ratio or Gini coefficient denoted by G , an aggregate inequality measure, has to be introduced.

When G is the Gini co-efficient of income distribution among the poor represented by $(1-I)G$

$$P = H [I + (1-I) G] \quad (7)$$

The measure P is, thus, a recognition of the different features of poverty, such as absolute and relative deprivation due to the pluralism of the concept of poverty for poverty alleviation. The question of distribution remains relevant even when incomes below the poverty line are considered.

IV.3 Data Problems

Having overcome the conceptual issue; and identification and aggregation problems, the next constraint to poverty measurement is the availability of data, especially in developing countries like Nigeria. There are two main sources of data for poverty assessment. One is the household survey which is the unit of measure

as determined by minimum income calculation. This covers the income level, consumption, employment, location, education, nutrition, health status and other individual characteristics of the individual household. The other is the community survey which considers community services and social and economic infrastructure. This is usually resorted to where household survey data are not available. The community survey, however, could also complement household surveys when non-nutritional public goods such as access roads, water, health and education, etc., are being considered. Where either of these two sources are not available, an electric approach is taken using readily accessible information partial data such as micro surveys in various sectors.

V. Poverty Measurement in Nigeria

Earlier attempts at measuring poverty in Nigeria used various methods to eliminate the poverty line (World Bank, 1996). These studies, however, cannot be used for any systematic comparisons, either because some are based on a few selected states, or, where the coverage is comprehensive, key information is lacking. The most recent measurement was based on two national consumer surveys (NCS) conducted by the Federal Office of Statistics (FOS) in 1985 and 1992 covering household income and expenditure. These surveys gave poverty line of N395 per person per month at 1985 prices (World Bank, 1996). People whose incomes were at this level and below were classified as 'Poor'. People on a lower poverty line of N198 per person per month were considered 'extremely poor'. The World Bank Report, pointed out that the N395 level of expenditure would permit those at the poverty line in 1985 to consume food products containing 2,036 calories per person per day (slightly lower than the FAO recommended minimum of 2,100 calories) and a minimum of non-food commodities as well. In 1992, the poverty line expenditure would provide food with 2,219 calories per person per day, but a lesser amount of non-food commodities.

Based on the above poverty line measure, the nature of poverty in Nigeria shows that poverty is overwhelmingly a rural problem. In 1992, 66 per cent of the poor, those below the poverty line, lived in rural areas. Seventy-two per cent of those at the depth of poverty - the degree to which people fall below the poverty line - was in rural areas, and 69 per cent of those at the severity of poverty - those with expenditure below the lower poverty line of N198 - was rural. In addition, poverty is strongly influenced by location - nearly half the poor are in the northern agroclimatic zone (and mostly rural). Poverty is also strongly influenced by education and age (World Bank, 1996).

Using the income and the 'basic or minimum' need measures, a head count

was estimated. According to the FOS survey, the proportion of the population in poverty in Nigeria fell from 43 per cent in 1985 to 34 per cent in 1992 - from 36 million people (out of a population of 84 million) to 34.7 million people (out of population of 102 million). Of those in poverty, 10 million people were extremely poor in 1992, and of these 8.4 million lived in rural areas. The number of poor in rural areas fell sharply, from 26.3 million to 22.8 million, while those in urban poverty rose from 9.7 million to 11.9 million in the respective years. The reason for this is not far-fetched. This was because non-food requirements, i.e. social services including safe water, health and educational facilities were inadequate in the rural areas. At the household level, the FOS survey data showed that poor households possess certain characteristics. These include low per capita expenditure compared with the non-poor; and a high proportion (78%) of their per capita expenditure is expended on food. They also tend to have larger households as they have a large number of children.

The FOS National Consumer Surveys are laudable efforts. However, their usefulness is limited due to the time lag and irregularity of the surveys. Household surveys, to be a good indicator for policy purposes, should be conducted at least once in every five years.

The household survey may also have other limitations. These include, little information for gender analysis, lack of data on remittances, barter, non-formal activities and own consumption which are capable of being under-represented. These influence poverty conclusions and hence analysis based on them should be taken with some caution. However, in spite of these shortcomings they do provide a detailed picture of household expenditure useful for temporal and international comparison.

One way of solving the statistical problem in Nigeria and other developing countries is to increase funding and speed-up capacity building (both personnel and equipment) of agencies involved in data gathering to allow for the timely conduct of surveys and the processing of retrieved questionnaires. Another avenue is to seek technical assistance from international organizations.

VI. Conclusion and Recommendations

In conclusion, the concept of poverty can be regarded as synonymous with deprivation and is both absolute and relative. In spite of this, a society using its level of development could define what its own minimum standard of living should be, by specifying its expected norms for consumption. Anybody whose consumption is below that level would be regarded as poor. Once a generally acceptable definition is reached, then poverty can be measured by counting the number of

people whose consumption level falls below societal expectations. For a summary assessment of the extent and severity of poverty to be properly addressed, however, the income shortfall or poverty gap of the poor from the accepted income/consumption poverty line, as well as distribution of income below the poverty line should be taken into consideration, through the use of the *P*-Index which incorporates head-count, income shortfall and the inequality of income distribution below the poverty line. In this way, policy makers will be greatly assisted in determining the type of policy prescriptions that would alleviate poverty. The general issue that re-occurs in the measurement of poverty is the problem of what base or yardstick to use; whether to use an income or basic needs approach; or to use the poverty line to measure the depth and severity of poverty. For us to estimate poverty in a society, we need to add to consumption-based measures, other variables that measure the provision and outcome of social services. This exercise also requires clear understanding of the conceptual issues, the measurement difficulties and the data problems.

The following suggestions are made for the proper measurement of poverty. The head count measure could be employed using the income or basic needs approach. In using this an estimate of living standards should not be limited to income alone, but should take into account the provision of social infrastructure. Poverty should be viewed at both the household and the community levels. In particular, attention should be paid to whether essential social services are provided for through individual private initiative or by the government. Where the former is the case, the poverty line would be higher than for the latter. For public policy the *P*-Index is recommended for measuring poverty so that all the attributes of poverty can be included; such as the number of the poor, the poverty gap and the distribution of income below the poverty line. This will assist policy makers to alleviate poverty by introducing appropriate policy measures capable of re-distributing income within an economy and for enhancing incomes of the poor. In addition, gender issues should also be considered for policy purposes. In the computation of the individual/household's income/consumption level, the imputed value of own production, remittances, etc., should be included to reflect the actual consumption level of the individual. Socio-economic infrastructural facilities, especially access roads to link up all rural communities with the rest of the country should be accorded top priority so that household or community surveys will have comprehensive coverage and reflect the exact extent and depth of the problem of poverty. The data problem should be tackled head-on through adequate/sufficient funding of agencies responsible for data gathering and compilation, especially the FOS in the case of Nigeria. Similarly, such agencies should be exposed to the 'state of the art' data processing and compilation procedures for efficiency and effectiveness. A national

consumer survey should be conducted once in every five years at least, in order to make its data current so that policy measures based on them would reflect the changing circumstances of the economy by identifying the socio-economic conditions of a society at any given time. There is an urgent need for Nigeria to invest a sizable proportion of its resources in human capital development for poverty measurement and alleviation. In this wise, efforts should be directed at providing social overheads, including roads, potable water, education and health facilities, especially in the rural areas, where these facilities are in very short supply, to enable data gathering agencies reach the remote communities and enhance response. Such investments have dual policy relevance of not only reaching the poor for measurement purposes but also improving their living standard and thus alleviating poverty in the country.

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