Poverty: A Review and Analysis of Its Theoretical Conceptions and Measurements

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Abstract

Poverty is an undesirable and intolerable state of affairs which is considered as a social, economic, political or psychological problem. The word suggests that individuals or groups who are in poverty have to be helped to change their conditions. The reduction or eradication (if possible) of this poverty problem has now become the primary focus of the socio-economic development polices of developing world governments. There is therefore the need to have a yardstick to identify the poor, tools to measure the depth of their poverty which will then assist policy makers to assess their policy impact. This paper which forms part of a literature search and review of poverty for the author's PhD Thesis attempts to do just that. It first puts poverty in context and considers it as the absence of well-being. It explains the phenomenon and thereafter provides analysis of a wide range of measurements both qualitative and quantitative. How to use these measurements are then explained.

Key words: Poverty, Measurement, Well-being, Deprivation, Quantitative and Qualitative dimensions, Capability

1. Introduction

In recent years poverty has been seen as an 'endemic disease' as its persistent afflictions in developing countries has become unbearable. The well-being of many populations have been jeopardised by it. Many of the developing countries' governments as well as development organisations have devoted much of their attention and budgets towards its reduction to no avail. A typical country with such a development agenda is South Africa which this paper focuses and frequently refers to.

Furthermore the literature on poverty has dwelt more on economic matrixes as typical poverty manifestations and its measurements have concentrated on GDP at the macro (national) level and the poverty line at the micro (local) level. These conceptions have left many gaps which have affected policy on poverty. This paper attempts to fill some of these gaps. It first explores the meaning of poverty and conceptualises its multidimensionality, and thereafter looks at various types of poverty afflicting individuals and communities. The final and major thrust is on the examination of various measurements of poverty and inequality.

2. Conceptualising Poverty

Poverty is hard to define and as such many different meanings and definitions are resorted to in the development field. Moreover, what one understands by 'poverty' varies considerably from one locality to another and from one period in time to another. The definitions of poverty range from income and/or consumption-based to others that emphasise its multi-dimensional nature by highlighting its many manifestations. The many manifestations provide its meaning. The manifestations include:

- lack of productive resources to sustain livelihoods
- limited or no access to basic services such as water, health and education
- hunger and malnutrition
- increased morbidity and mortality
- living in an unsafe or insecure environment
- poor or no housing
- lack of participation in social, cultural and political life
- social discrimination or exclusion (Eldis, 2009: 1).

The different manifestations can reinforce each other. For example, hunger can lead to malnutrition which can be a causal factor in ill-health.

In turn, chronic ill-health can affect an individual's ability to participate in social and community activities, which in turn could lead to social exclusion and poverty.

2.1 Universal minimum standard

It is argued, therefore, that in order to define poverty, there ought to be a minimum standard that should be applied to all societies below which individuals can be said to be in poverty (Klugman, 2002). This minimum standard, poverty line, is based on subsistence and so it was earlier simply considered that, '*people are in poverty if they do not have the material resources to physically maintain human life'* (Haralambos, Holborn & Heald, 1991: 191). Current debates consider poverty as living below the acceptable social standards or threshold (Klugman, 2002). However, this idea is dismissed by relativists as being too general, and they argue that a definition of poverty should be related to standards of a particular society at a particular time. Therefore, people cannot all be branded as poor below one universal minimum standard, the poverty line (Eldis, 2009; Greig, Hulme & Turner, 2007; Lauer, 1998). By this view the poverty line varies (or should vary) according to how affluent that society is. It is thus a complex issue to define poverty.

However, in one aspect, poverty can be considered as a state of multiple deprivations of individuals or groups or communities of their well-being. This means, individuals lack or are deficient in socio-economic and psychological capabilities due to deprivations. This deficiency is manifested in the lack of income (money metric measures), lack of access to basic services, lack of access to assets, limited social networks (living in isolation) or social capital. Unarguably, it means the poor are hungry, lack shelter and clothing, lack schooling and also cannot access health care services i.e. they cannot care for themselves when sick. They are more prone or vulnerable to exogenous negative events (Greig, Hulme & Turner, 2007).

The World Bank's (2001) report shows that poverty is deprivation which encompasses not only material (i.e. income and basic needs or services) but also non–material aspects such as vulnerability, voicelessness, powerlessness and mental or psychological indispositions. Though one generally accepted conclusive definition and meaning cannot be found for poverty, due to its many manifestations and dimensions of deprivation, it can generally be defined and conceptualised as:

> A *condition of being deprived of well-being, being vulnerable to events outside one's control, being isolated and living below the acceptable socio-economic norms or prescriptions of society and psychologically and politically indisposed (Narayan et al., 2000).*

Ringen (1987) then defines poverty precisely as having 'a low standard of living', meaning deprivation in way of life because of insufficient resources to avoid such deprivation. The concept so far is considered to mean that people are "poor when they have both a low standard of living and a low income". It is the absence of well-being and a condition of ill-being. The World Bank's (2001 & 2008) position on poverty conceptualisation is clearly income based although it accepts poverty as encompassing not only material deprivation measured in terms of income or consumption but also low achievement in education and health. In its 2008 *Poverty Measurement and Analysis*, the Bank prioritizes income as the key measure of poverty by distinguishing between 'the poor', who live below a US$2 a day poverty line and the 'extreme poor', who live on less than US$1.25 a day. These are absolute measures of poverty (i.e. measures that quantify the numbers of people living below a certain threshold). The Bank thus sees poverty as an income level below some minimum level or threshold necessary to meet basic needs. This minimum level, usually called the 'poverty line', varies across time and societies.

Similarly we find Wilson & Ramphele (1989) referring to them as those that "live in a state of chronic want" and who live on or below this line. Those living below this line are also described as indigent ('*pauvre*' in French) or absolutely poor. While the poor may have some occasional bouts of reprieve, the indigent is chronically bound to poverty. It can be clearly stated here flowing from the above that poverty is multidimensional and should be conceptualised in both quantitative and qualitative terms. We can thus in these terms distinguish different types of poverty.

3. Types of Poverty

From the above various types of poverty can be distinguished reflecting its various meanings. The types this paper acknowledges and differentiates are Income Poverty, Human Poverty, Food Poverty, Absolute Poverty, Relative Poverty, Case Poverty, Community Poverty, Chronic Poverty and Transient or Transitory Poverty.

Income poverty is the lack of money and inability to gain access to income generating employment and it depends on a single factor, income; while Human Poverty refers to deprivation in certain essential aspects of human life and is multidimensional dependent. It reflects the distribution of progress and backlog of deprivation that still exists. Food poverty is considered as the inability of the individual to obtain one decent and nourishing square meal a day (De Beer & Swanepoel, 2000; UNDP, 1998; May, 1998). This kind is found among the rural communities in South Africa's North West Province, where children move to the towns to become 'begging street kids'. In considering other forms of poverty, De Beer and Swanepoel (2000) add case poverty and community poverty. They consider case poverty as occurring when individuals do not share in the general well-being of the society. Specific individuals may be experiencing poverty while the general society is experiencing prosperity. On the other hand community poverty occurs when almost everyone in the community is poor.

Poverty can also be classified as "relative" and "absolute". These depend on the levels of deprivation or disadvantage experienced. Absolute poverty refers to a below absolute standard of minimum requirements, while relative refers to falling behind most others in the community (Lauer, 1998:212). De Beer and Swanepoel (2000), in line with the World Bank (2001), indicate that absolute poverty refers to a situation where incomes are low and the minimum living standards cannot be maintained. This means '… a person is so poor that his next meal may mean the difference between life and death' (De Beer & Swanepoel, 2000). In the MDG report of Nepal (UNDP, 2003a), absolute poverty is defined as "… a level of income insufficient to procure a basket of minimum food (2124 kilocalories per person) per day". It is a situation where the net income of an individual or group is below the threshold (poverty line) of now US$1.25 income per day. Relative poverty refers to the poverty of one entity or community in relation to another. This type determines whether one has fallen behind most others by comparison. In doing so one would find that the poor in one community 'A' in relation to or compared to others in another 'B' may not be really poor. The lowest income group in community 'A' may not be really poor because they fared better than those in 'B' when compared, even though in community 'A' they are really poor.

In using this relationship it is cautioned that a better evaluation of the relationship may not be achieved if countries with very great disparities are used. This is because the standard of evaluating 'A's poor cannot be that of the starving in 'B'. 'A's poverty must be evaluated in terms of the standard of living attained by the majority of 'A'. Thus, if the deprivation or poverty is relative, then the deprivation must relate to similar conditions to have a proper assessment. That is, the poor in 'A' are deprived relative to others in 'A'. Similarly the poor in 'B' are deprived relative to the majority in 'B' (Lauer, 1998). So we must evaluate poverty in a country in terms of the standard of living attained by the majority of people in that country.

Relative poverty can thus be equated to 'case poverty' distinguished by De Beer and Swanepoel referred to above. They differentiate between the two (absolute and relative) where, absolute poverty refers to a desperate situation and relative poverty refers to a comparison of levels of poverty (De Beer & Swanepoel, 2000:3). Chronic poverty, also known as persistent poverty, refers to poverty of long duration. Currently, it is this aspect of poverty and that of transient poverty that are attracting the interest of poverty analysts and being discussed more in journals such as *World Development*. Chronic poverty is the poverty of those who are poor most of their lives and transmit their poverty to subsequent generations. Unlike chronic poverty, transient or transitory poverty occurs over a short period of time when one moves from 'non-poor' to 'poor' for a short period and moves back to non-poor. In such a situation, using a poverty line based on a dataset (usually monetary in nature), a population can be grouped into 2 waves – 'the poor' and 'non-poor' (Du Toit 2005:5). Having thus seen a broader picture of poverty it is important to state that development efforts are now being focused on addressing both income and non-income measures of well-being. It is also important for any analysis of poverty and social impacts of policy to focus not only on income (quantitative) but also non-income (qualitative) dimensions of welfare and poverty.

4. Nature, Extent and Measurements of Poverty

A typical question that arises in a poverty debate is: 'Why measure poverty?'

Poverty measurement is important as it gives meaning and understanding of the incidence and extent of poverty. It serves as aid to evaluate policy impact and targets set to reduce poverty. Furthermore, measurement of poverty is crucial because if any anti poverty action is to be taken, authorities need to know its extent, severity and effects so as to be persuaded to take such action. Measurements generally imply quantifications which are to deliver objective facts. However what matters most for the broad conceptualisation of poverty is the qualitative measure. Thus poverty measurement is both quantitative and qualitative.

We can also note that different measurements can produce different results based on indicators and standards (poverty line) against which the poor are assessed (Lister, 2004; Barnes et al., 2002). The measurements which are being discussed in this section provide the context by which detailed analysis of current policies of poverty reduction by development authorities can be evaluated.

The World Bank (2001:16) writes that measuring poverty is very important because it:

- aids the formulation and testing of hypothesis on the causes of poverty and the likely impact of policy interventions,
- presents an aggregate view of poverty over time, i.e. allows the capture of a broad picture of well-being and poverty and,
- enables a Government …to set itself measurable targets for judging actions,
- allows inferences about the conditions and evolution of poverty at the national level and,
- allows investigation into the relationship among different dimensions of poverty.

In other words the nature and extent of poverty as well as its causes in a country are known and determined by some differing measurement criteria. These criteria may either be qualitative or quantitative. It is possible therefore to use these criteria to evaluate the poverty reduction strategies employed in South Africa and for that matter any developing country. Before discussing any mode of measurement, I have to point out as does Du Toit (2005) that poverty measurement has difficulties. It requires identification of indicators and division of a population into two groups - the poor and non-poor - on the basis of the indicators. Though measurements are undertaken, there is no clearly cut specific scientific poverty measurement. This is clearly seen when finding where to set the poverty line in order to make poverty judgment. When setting a scientific standard based on dietary needs or caloric intake requirements, difficulties arise as to which poverty line would be appropriate and robust. When a line or standard is set, those who are at risk of starvation or malnutrition will be the ones counted as poor yet there may be a widespread poverty amongst people above the set poverty line, who may not be necessarily starving.

It is argued by academics that measuring the concepts of 'poverty' and 'inequality' can be approached at different levels. They call these levels 'objective' and 'subjective', which are aligned to quantitative and qualitative measurements respectively (May, 1998). The objective level deals with socio-economic indicators such as income levels, consumption expenditure, life expectancy and housing standards; while the subjective level deals with attitudes, needs and perceptions gathered directly from people through the use of participatory methodologies such as Participatory Learning Action (PLA), Participatory Rural Appraisal (PRA), and Participatory Action Research (PAR) (Du Toit, 2005; Kotze ,1997; Chambers, 1986). These measures reflect the constituents of well-being or measure the access that people have to the determinants of well-being. While 'access' is easily measurable, practical and uses conventional money metric measure thereby allowing inter-personal comparisons, 'well-being' is difficult to measure. Du Toit (2005) as well as May (1998) reason that even though a money metric measure of poverty is used, it is an imperfect means of measurement. It is used because many aspects of human well-being are hard to quantify for measurement and for making comparisons. Monetary dimensions include income and consumption and non-monetary measures include health and education (Carter and Ikegami, 2000).

4.1 Quantitative measurement and tools

Many quantitative measurement tools are used to determine the extent and nature of poverty. The tools include household survey, poverty lines, poverty gap and head count index.

4.1.1 Household Survey

Household Survey(HHS) is based on income and consumption expenditure patterns of households and draws on monetary indicators obtained from them. The income and consumption expenditure patterns in South Africa that are used for measurement are derived from the October Household Surveys compiled by the organisation, Statistic South Africa, which are detailed enough to bring out the pattern of consumption (STATSSA, 2000). The use of household survey for poverty measurement has several strengths, according to the World Bank (2001), because it is based on national representative samples and allows inferences about the conditions and evolution of poverty at the national as well as local levels.

It enables investigation into the relationship among different dimensions of poverty within the South African provinces. Nonetheless, the use of the household survey is not problem free. One problem is the difficulty in making comparisons because there are variations in survey designs of different countries over time. In the household surveys, some countries ask respondents about their spending on food once a month whilst others ask of spending over a week. The lack of consistency makes converting information from household surveys into measures of well-being to require many assumptions. In addition data collected at household levels do not reveal inequality within households. They thus understate overall inequality and poverty (World Bank, 2001).

Concerning the use of income and consumption patterns in this measurement, the use of consumption measure should be more preferred to income because, it is more closely linked to a person's well-being. Secondly, it can be calculated and recalled more than income or better measured than income particularly in an agrarian rural household environment, where income may fluctuate according to harvest season and remittance. Thirdly, consumption also reflects a households' actual standard of living and ability to meet basic needs (Klugman, 2002). It is further argued that the use of income measure has its own advantages as it allows distinctions to be made between sources of income. Income data from various sources are then easily compared to check the quality of data collected. The advantages and disadvantages notwithstanding, either one or both can be used to compare the incidence of poverty when data on both are available and analysed (Klugman, 2002).

However, it is advisable and necessary to aggregate information in the household survey and to make adjustments when dealing with either measure. The reasons for the adjustments which Klugman notes are that there are many differences in needs between households and intra household inequality. Differences exist also in price levels at different points in time and at different places in the country. Without adjustment the problem of over stating expenditure or double counting may occur

4.1.2 Poverty lines

To be able to have a credible measurable analysis of income and consumption poverty, the use of poverty lines is considered to be a very effective tool and a key building block in poverty measurement. As earlier noted, poverty line is defined as the cut off line in income or consumption below which an individual is considered poor (Klugman, 2002; World Bank, 2001). Klugman conceptualizes it as cut off points separating the poor and non-poor. For example, on non-monetary perspectives it can be considered as a certain level of literacy (based on a number of year's schooling etc.). May (2000), also drawing from the World Development Report (1990), notes that the poverty line is a separation line between the poor and non-poor based on 'expenditure necessary to buy a minimum standard of nutrition and other necessities'.

In principle, the poverty line's test for the ability to purchase a basket of commodities is roughly similar across the world and in South Africa. Countries have their country specific poverty lines that reflect the country's economic and social circumstances and expenditure pattern. When a poverty line is specified, the extent of poverty in a particular area can then be easily assessed (World Bank, 2001). Many researchers and academics go along these lines basing the income or consumption levels on money terms because that is easy and tractable. Though straight forward, it has disadvantages because it fails to realize that, among the poor people, there are wide income and consumption disparity levels. While some are just below the poverty line, others are far below it. If these were not noted by policy makers and all the poor were lumped together, poverty alleviation resources may only reach those closest to the poverty line. If these were found to be above the poverty line during time of evaluation of the effectiveness of policy, a wrong, deceptive general conclusion can be drawn to infer that those populations evaluated are above the poverty line whereas a large number would be below it (Klugman, 2002).

A solution to this problem is the use of multiple lines which can help distinguish between different levels of poverty. This is done based on various attributes of well-being, be they quantitative or qualitative. In this circumstance a poverty line then can be further defined as a certain defined threshold or point of income or consumption of non-monetary or monetary attribute (not necessarily separating the poor and the non-poor) below which an individual is referred to as poor. Below this threshold (which refers to an individual as poor) an individual or group of individuals becomes absolutely poor or falls into extreme poverty. For example, when a poverty threshold is identified, a certain percentage of the population, say 45%, falling below the line are considered poor and a further 20% below can then be considered ultra or extremely poor. In the context of this paper and using a country specific (South Africa) line of R524.00 (current equivalent of US$52.4) income per month, households expending less than this are considered poor.

Those earning below R524.00 pm are very poor, and those further below this threshold are ultra or extremely poor. Two major poverty lines can now be depicted. These are Relative poverty and absolute poverty lines earlier defined.

- Relative Poverty Lines refer to individuals' income etc in relation to the overall distribution of income or consumption in a country. It can be set at 50% or 40% of mean consumption.
- Absolute Poverty Lines are based on absolute standards of what households should be able to count on to meet basic needs.

These two lines are determined by the monetary value or cost of basic food needs, or cost of a nutritional basket considered minimum for the health of a typical family to which provision is made for non-food needs (Klugman, 2002; May, 2000).It is contended that the choice of a minimum standard or threshold to determine poverty line is arbitrary and varies yearly. It depends on a widely accepted social norm and what represents a minimum standard. Some countries may use minimum wage, or value of existing benefit widely known to represent a minimum standard. To construct a credible poverty line which may be either quantitative or qualitative, Klugman (2002) suggests that these three processes identified are ideal to be followed. The first is to identify the relevant dimension of poverty to measure, and the indicators of well-being in those dimensions. Second is to identify a poverty line or threshold below which an individual becomes poor. Third is to select a poverty measure to be used for reporting for the population as a whole or its subgroups. So by these processes it would be easier to identify the poor in a given population, the types of poverty they are afflicted with, and to determine the types of anti-poverty interventions to apply.

4.1.3 Other quantitative poverty measures

Some other quantitative measures that exist and are important to consider when evaluating poverty reduction policy implementation effectiveness are:

1. **Incidence of poverty (headcount Index)**. This refers to the number of the poor or portion of the population whose income is below the poverty line and who cannot afford the basic basket of goods. It is used to quantify those in poverty and extreme poverty (Klugman, 2002).
2. **Depth of poverty (i.e. poverty gap).** This gives information as to:
   - How far off households are from the poverty line. It gives information on income or consumption short-fall relative to the poverty line across the whole population. It is the total resources or money needed to bring all the poor to the level of the poverty line.
   - We refer to poverty gap therefore as the minimum amount of resources or money needed to eradicate poverty. May (2000:30) puts it as 'the aggregate poverty deficit of the poor relative to the poverty line'. That is the amount needed to lift the poor to the poverty line. This is demonstrated in the Lorenz curve, Figure 2.4.
3. **Poverty severity (squared poverty gap)**
   Poverty severity takes into account not only distance of the poor from the poverty line (i.e. poverty gap) but also the inequality among the poor. The further away one is from the line, the greater the weight or severity of poverty (Klugman, 2002).

The measurement of incidence, depth and severity of poverty can be calculated on a household basis by assessing the share of households that are below the poverty line using headcount index measure. But it is better to use a measure based on a whole population that takes into account individuals within households. Of importance to note is that the depth and severity measures are complements of the incidence of poverty which can be illustrated in Table 1.

Table 1: An illustration of Poverty gap, Incidence, and severity of some socio-economic groups

	Headcount incidence	Poverty Gap	Poverty severity	Rank
Small farmer	81.6	41	24.6	1
Large farmers	77	34.6	19	2
Unskilled workers	62.7	25.5	14	5
Herders/fishermen	61.4	27.9	16.1	3
Retirees/handicapped	50.6	23.6	14.1	4

Source: Klugman 2002

Analysis of this Table1 shows that some groups, such as unskilled workers, have a high poverty incidence but low poverty gap (when numerous members are just below the poverty line), while other groups have a low poverty incidence but a high poverty gap for those who are poor (when relatively few members are below the poverty line but with extremely low levels of consumption income). Depth and severity of poverty are particularly important for the evaluation of programmes and policies. While a programme might be effective in reducing the number of the poor (incidence of poverty) it might only lift those closest to the poverty line out of poverty (i.e. have low impact on the poverty gap). Other interventions might better address the situation of the very poor but may have a low impact on the overall incidence, if it only brings the very poor closer to the poverty line but not above it.

4.2 Qualitative measurement: non- monetary indicators

4.2.1 Human Development Indicators (HDI)

Like quantitative measures of poverty, qualitative measures or non-monetary measures are very important means of measuring well-being. In line with the concept poverty itself, qualitative measurements are associated with not only insufficient income and consumption expenditure but also with insufficient outcomes in health, nutrition, literacy, and deficient social relations, insecurity, low esteem, vulnerability and powerlessness as their indicators. When measuring poverty qualitatively, capabilities in the various indicators of well-being such as level of education, health status, etc. are compared with a given threshold or 'poverty line'. Below this threshold a person is said to be poor and unable to meet his/her basic needs. The Human Development Index (HDI) is taken as the threshold or poverty line for the non-monetary measurement of poverty. This represents a definitive level at which the indicators of the various dimensions of human development must attain or reach (World Bank, 2001:18-20; Klugman, 2002: 33).

Composite Indexes

There is also the Composite Indexes of wealth used for measurement. This takes into account a mix of characteristics in income, health, assets and education. However, this has limitations and difficulties in defining a poverty line for use. Capabilities in all these would either increase well-being (when achieved) or decrease it (in their absence).

What is revealed here so far is that both monetary and non-monetary measures use poverty lines. The difference is that monetary (quantitative) measurement uses some arbitrary absolute figures while non-monetary (qualitative) measures use defining characteristics or indicators or indices as poverty lines. UNDP (2006) and Davids et al., (2005) provide indicators in the various perspectives of poverty that could be used as the poverty lines or threshold in qualitative measurements. Table 2 gives typical examples of indicators to represent qualitative poverty lines. While income can be indicated with absolute figures for GNP and welfare payments, the basic needs' qualitative perspective uses description of defined characteristics such as literacy, access to potable water and nutrition levels. So also does social exclusion use inequality as its indicator.

Table 2: Poverty perspectives and the selection of indicators

Poverty Dimension /perspective	Type of Indicator
1. Income	GNP, Welfare payments, wage levels and poverty datum lines
2. Basic Needs Perspective	Access to potable water, literacy, access to housing and nutrition levels
3. Social exclusion perspective	Political, social and economic components of poverty& inequality
4. Sustainable livelihoods perspective	Community-generated indicators focus on Vulnerability, inability to cope with hardship, disability, breakdown of family, social problems of alcoholism
5. Human development perspective	Varied and complex indicators e.g. health factors, life expectancy, mortality rate, other HDIs

Source: Davids et al., 2005

4.2.2 Human Development Indicators/index (HDI) as measurement of well-being

The GDP and GNP per capita have been solely used by convention internationally to measure well-being in quantitative or economic terms for inter-country and regional comparisons. In other words it is often used as a measure of how developed a country is. But this has proven to be inadequate to portray poverty and well-being. Its usefulness as a measure of well-being is limited as it mainly refers to economic welfare (Brown, Burges & Davies, 2009).

The non-monetary measures of Human Development Indicators and its index have therefore been constructed by the UNDP to take care of the shortcomings and provide a good measure to compare poverty in various dimensions in countries. Thus the HDI is a measure of a country's economic and social well-being and average progress in human development (UNDP, 2009). Three equally weighted indicators are used to draw up the index, these being life expectancy at birth, adult literacy and enrolment rate (i.e. education attainment), and standard of living measured by real GDP per capita (UNDP, 2009;2003b; Klugman, 2002; May, 1998).

Table 3: Comparison of social indicators from selected middle income countries (1998)

Social Indicator	**Poland**	**Thailand**	**Venezuela**	**Botswana**	**Brazil**	**South Africa**	**Malaysia**
GNP per capita US$ 1994	*2410*	2410	2760	2800	2970	3040	3480
Life expectancy	72	69	71	68	67	64	71
Infant mortality rate (%)	15	36	32	34	56	49	12
Adult illiteracy rate (%)	N/A	6	9	30	17	18	17
Total fertility rate (%)	1,8	2,0	3,2	4,5	2,8	3,9	3,4
HDI-2009	87.0	78.1	79.2	69.4	80.0	67.4	81.1

Source: UNDP, 2009; Brown et al., 2009; May, 2000

The indicators in Table 3 as an illustration of GNP's limitation is quite revealing. In Table 3 the countries before South Africa (Poland, Thailand, Venezuela, Botswana, and Brazil) have lower per capita GNP but (with the exception of adult illiteracy and fertility rates in Botswana, and infant mortality rate in Brazil) they perform better in many of the other indicators than South Africa. The composite HDI of all the countries were better than South Africa in 2009 as can be found in the Table 3. Thus, judging well-being in South Africa solely by the GNP misses the point or conceals the reality. It clearly reveals the inadequacy of using per capita GNP as the sole indicator of development.

How HDI is constructed

The HDI is constructed and measured on the scale 0-1 (or 1-100 in some cases), '0' being the lowest and '1' being the highest. Countries with HDI below 0,5 (50) are considered to have low level human development, those between 0,5 (50) and 0,8 (80) as medium level and those above 0,8 (80) of high level of human development, and 1(100) as absolute development (UNDP, 2003b). However, HDI has not been without critics. Critics contend that in spite of its intuitive appeal and use in highlighting disparities between countries geographical areas and groups, its indicators are arbitrary and have implicit trade offs (Ravallion, 2002).

4.2.3 The Human Poverty Index (HPI)

Another poverty measurement is the Human Poverty Index which deals with the distribution of national achievement in human development – a multidimensional measure introduced in 1997. The HPI reflects the distribution of progress and measures the backlog of deprivation that still exists in the same indicators as for HDI, these being '*longevity* as measured by the probability at birth of not surviving to age 40; *knowledge*, using adult illiteracy rate and *economic provisioning* measured by the percentage of people not using improved water sources and percentage of children under age 5 who are underweight' for their age (UNDP, 2003: 45). A low HPI implies low deprivation in the combined index of the 3 indicators. High HPI therefore means greater deprivation and greater poverty of the population.

When HPI is calculated, the following are arrived at as illustrated in Figure 1.
Low HPI = Less deprivation (i.e. less poor/non-poor population). These are on the scale between 1- 50 or 0 - 0.5 and,
High HPI = Greater deprivation (i.e. Poor/Extreme Poverty.) These are on the scale 51-100 or 0.5 - 1.
We can deduce that the difference between the two measures, HDI and HPI, is latitudinal as illustrated in Figure 1. In Figure 1, the high HDI (moving from median 0,5 towards 1.0 on the right referred to as better well-being) is associated with higher numerical value, so also is high HPI (moving from median 50 towards 100 on the right constitutes a poor well-being) associated with higher numerical values. Increase in HPI means increase in human poverty or deterioration of well-being while increase in HDI means increase in well-being.

Figure 1: Linear representation of relationship between HDI & HPI.

	HDI			
Low/Poor HDI	←		→	High/Better HDI
0.0		0,5		1.0
	HPI			
Low/Better HPI	←		→	High/Poor HPI
1		50		100

In South Africa by 1995 the UNDP (2003b) claims that HPI was better at 16.4. But by 2001 the index had increased to 22.3 indicating a worsening of human poverty as measured by the index. The organisation attributes the decline in HPI to decline in probability at birth of not surviving to age 40. A probability increase from 17.8 to 31.02 is perhaps due to the HIV / AIDS pandemic. When these measurements are considered, especially the HDI, one finds a disadvantage in its usage mainly that it cannot be used for comparison between individual households but it is of great advantage for comparing disparities between large homogenous groups. This disadvantage is taken care of by Capability Poverty Measure (CPM).

4.2.4 The Capability Poverty Measure (CPM)

Capability Poverty Measure (CPM) is a measurement tool which, has been developed by the UNDP to take care of the deficiency in the HDI. It is argued that the HDI focuses on the country study and comparisons of capabilities at the macro level while the CPM focuses on the micro level capabilities of people and their lack of capabilities (May, 1998; UNDP, 1996). This index is composed of 3 indicators, like the other measurements reflecting the percentage of population with capability shortfalls in 3 basic dimensions of human development. These dimensions are, *living a healthy, well-nourished life; having the capability of safe and healthy reproduction, and being literate* and *knowledgeable (*STATSSA, 2000). Unlike HDI, it does not include income. It focuses on an individual's lack of capabilities rather than on the average level of capabilities in a country (May, 1998).

According to May (2000), when South Africa is ranked on the CPM for well-being it falls 6 places lower than when ranked on per capita income terms among middle income countries. This shows the impact of inequality, how poverty was made self- perpetuating and a widespread existence of capability poverty.

4.2.5 The subjective measurement

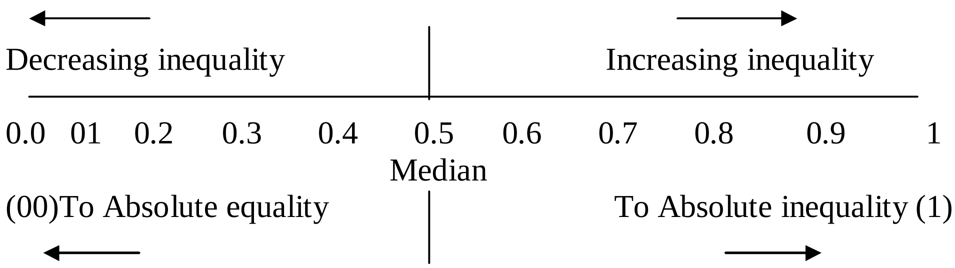
Another important qualitative measurement is the Subjective Measurement of Poverty (SMP). This measurement is obtained from a qualitative survey of individuals who rank their own poverty situation in a wealth strata or grouping. Indicators such as income and caloric intake may be used. From the poor's own perceptions of these and other characteristics, one can subjectively rank them May (2000) notes that these perceptions are shared characteristics that are expressed by groups in their communities. The World Bank (2001) considers that vulnerability, voicelessness and powerlessness are all measures of poverty and are known through the use of participatory methods and expressed by the people subjectively. From the analysis of these poverty measurement tools, it is clear that poverty itself and the degree to which households enter it can only be known through any of the various measurements of poverty. Analysis of these tools cannot be complete without delving into tools to measure inequality since inequality is a causal factor of poverty and its measurement relates to poverty.

5. Measurement of Inequality: The GINI Coefficient

Various inequality measures found in the literature include the Gini coefficient, Theil and Atkinson indexes and the Decile-dispersion-ratio. Of these, and for lack of space, the Gini index, also referred to as Gini coefficient, which is the most common is considered for inclusion in this article. Gini coefficient though not a measurement of poverty is necessary when poverty and inequality are being discussed, because the impact of unequal distribution of income is poverty in some dimensions. In other words, inequality causes poverty and its extent is indicative of poverty itself. The Gini coefficient is used to measure the degree and extent of inequality and is an indicator of the skewed distribution of income in South Africa and elsewhere (UNDP, 2003b). Klugman (2002) writes that the Gini coefficient is '…a statistical and normative measure' of variation in inequality'. The variation ranges between 0, indicating perfect equality and 1, indicating complete inequality.

That is, the Gini coefficient like HDI and CPM is measured on a scale from 0 to 1 or 1 to 100. Like CPM and unlike HDI, zero (0) Gini coefficient represents a complete and perfect income equality, (i.e. all have the same income or share of the state's wealth) while a Gini coefficient of 1 represents a complete perfect income inequality (meaning that one person has all the income or consumption of the state's wealth; all others have none) (UNDP, 2006: Klugman, 2002). This is represented in Figure 2 where the value 0.5 is the median point of inequality. Inequality increases from 0.5 to 1 but decreases from 0.5 towards 0.1 and finally 00.

Figure 2: Horizontal representation of Gini coefficient

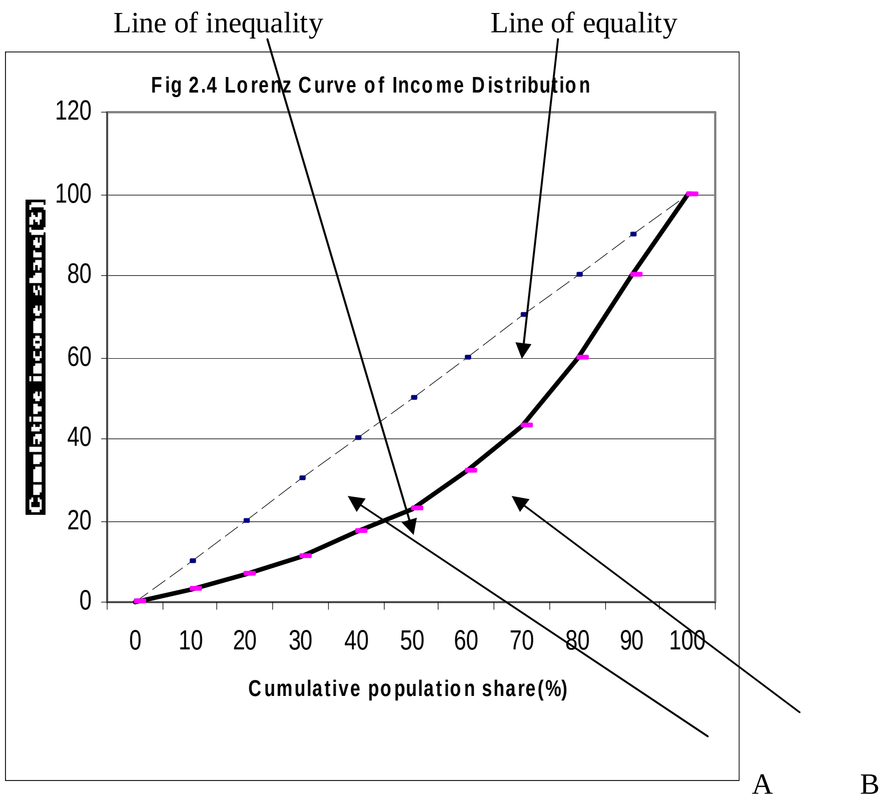


Graphically, the Gini coefficient is represented by the use of the Lorenz Curve and the line of equality, which is demonstrated in Figure 3. The graph in Figure 3 shows cumulative income share on the vertical axis and the population distribution on the horizontal axis. The line of equality is the straight broken line which the arrow points to, while that of inequality is the curved continuous line. The Lorenz curve is described and depicted as the line of inequality. The Gini coefficient or index is described as the area between the Lorenz Curve and the hypothetical line of absolute equality expressed as a percentage of the maximum area under the line. Chen, Datt and Ravallion (1993) call it a percentage of maximum area under the hypothetical line of absolute equality.

In this graph, 40% of the population share 20% of total income. But if everyone had the same income or if there were total equality, the income distribution curve would be represented by the straight line which is the line of total equality. In calculating the Gini coefficient (or to obtain the Gini coefficient), area A is divided by the sum of areas A and B. If income is distributed equally the Lorenz Curve and the line of total equality would merge and the Gini coefficient would reach '0'.

However if (where) one individual receives all the income, the Lorenz Curve would pass through the points (0,0), (100.0) and (100,100) and the surfaces A and B would be similar leading to a Gini coefficient value of 1 or 100, which is absolute inequality (Klugman, 2002).

Figure 3: The Lorenz Curve



Source: Adapted from Klugman, 2002

Looking at the Lorenz Curve again, the more it bends away from the line of equality the greater the existence of inequality. If the curve continues bending to the right to meet the bottom horizontal axis and the right-hand vertical line 100, a complete, perfect or absolute inequality is reached. That is the situation where one person receives all the national income and everybody else receives nothing (Todaro & Smith 2009).

By the use of the Gini coefficient we will appreciate and understand the disproportionate amount of poverty in South Africa, particularly the North West Province (NWP) and its extent. By the use of these measurements we will be able to establish whether poverty reduction strategies implemented for the poor necessitated by the adoption of the millennium development goals (MDGs) have had impact (brought them closer to or above the poverty line) and whether the poverty gap has been reduced on the basis of which a judgment can be made on the effectiveness of poverty reduction strategies.

Summary

This paper has reviewed the concept of poverty and inequality in the literature. It establishes that poverty is multidimensional in nature and has to be approached multidimensionally. Its definition is not only quantitative but also qualitative and very subjective, depending more on the one experiencing it. Various poverty measuring instruments to determine the extent and incidence of poverty have been reviewed and analysed culminating in the knowledge of how deep seated poverty is in South Africa generally.

References

Barnes, M., Heady. C., Middleton, S., Millan, J., Papadopolous, F. & Tsakloglou, P. 2002. Poverty and social exclusion in Europe. Northampton, Mass.: Edward Elgar.

Brown, S., Burges. A. & Davies, U. 2009. The Economist: Pocket World in figures. London: Profile Books Ltd.

Carter, M.R. Ikegami, M. 2000. Theory- based measures of chronic poverty and vulnerability: Concepts and application to South Africa. Madison: University of Wisconsin.

Chambers, R. 1986. Rural development: Putting the last first. Essex: Longman Scientific& Technical

Chen, S., Datt, G. & Ravallion, M. 1993. Is poverty increasing in the Developing World. Policy Research Working Paper. Washington DC: World Bank.

Davids, I., Theron, F. & Maphunye, K.J. 2005. Participatory Development in South Africa: A development management perspective. Pretoria: Van Schaik Publishers.

De Beer, F. & Swanepoel, H. 2000. Introduction to development Studies. Pretoria: J.L. van Schaik.

Du Toit, A. 2005. Poverty measurement blues: some reflections on the space for understanding `chronic' and `structural' poverty in South Africa. CPRC working paper 55. Cape Town: PLAAS & CPRC.

Du Toit, A. 2005a. Chronic and structural poverty in South Africa: Challenges for action research. CPRC working paper 56. Cape Town: PLAAS & CPRC

Eldis. 2013. Poverty and ill health. http://www.eldis.org/index.cfm?objectId (accessed on 15 July 2013).

Greig, A., Hulme, D. and Turner, M. 2007. Challenging Global inequality: Development Theory and Practice in the 21st century. New York: Palgrave.

Haralambos, M.; Holborn, M. & Heald, R. 1991. Sociology: Themes and Perspectives. London: Collins Educational.

Hulme, D. & Shephert, A. 2003. 'Conceptualizing Chronic Poverty' World Development, 31(No.3):403-424.

Klugman, J. (ed) 2002. A sourcebook for poverty reduction strategies. Washington: World Bank.

Kotzé, D.A. (ed.) 1997. Development administration and management: A holistic approach. Pretoria: JL van Schaik.

Lauer, R. 1998. Social Problems and the Quality of Life. Boston: Mc Graw-Hill.

Lister, R. 2004. Poverty: Key concepts. Cambridge: Polity Press.

Ravallion, M. 2002. The debate on globalization, poverty and inequality: Why measurement matters. Washington DC: World Bank

Ringen, S. 1987. The Possibility of Politics. Oxford: Clarendon Press.

Statistic S.A. 2000. Measuring Poverty in South Africa. Pretoria: Statistics South Africa.

Todaro, M.P. & Smith, S.C. 2009. Economic Development. Cape Town: Pearson Education Ltd.

UNDP. 1998. UNDP Poverty Report: Overcoming human poverty. New York: UNDP

UNDP. 1996. Human Development Report 1996. Economic growth and human development. New York: OUP.

UNDP. 2003b. South Africa Human Development Report 2003. The challenge of Sustainable Development in South Africa: Unlocking peoples creativity. New York: OUP.

UNDP. 2009. Human Development Report 2009: Country Facts sheet. <http;//hdrstats.undp.org/en/countries/country _fact_sheets/cty_fs_BWA.html> (accessed on 27/10/2012).

Wilson, F. & Ramphele, M. 1989. Uprooting Poverty: The South African challenge. Cape Town: David Phillips.

World Bank. 2008. Comparison of new 2005 PPPs with previous estimates. Washington DC: World Bank <www.worldbank.org/data/icp> (accessed on April 14, 2009).

World Bank. 2001. Attacking Poverty: World development report 2000/2001. Oxford: OUP