

Chapter 1 Background

Section 1.1: Conceptual framework for the Provincial Indices of Multiple Deprivation 2001

Since the beginning of the post-apartheid era, a key objective of the South African government has been the improvement of the quality of life of all South Africans and the reduction of poverty and social inequality. The South African constitution requires the Parliament to ensure that financial resources are distributed equitably among provincial and sub-provincial governments, based partly on levels of poverty and disadvantage (Alderman *et al.*, 2003). It is therefore critical that robust measures are developed to quantify the nature and extent of social deprivation at sub-national level and thereby accurately identify the areas of greatest need (i.e. the most deprived areas).

Defining poverty and deprivation

Townsend defined people as poor if ‘they lack the resources to obtain the types of diet, participate in the activities and have the living conditions and amenities which are customary, or at least widely encouraged or approved in the societies to which they belong’ (Townsend, 1979: 31). Conversely he defined people as deprived if ‘they lack the types of diet, clothing, housing, household facilities and fuel and environmental, educational, working and social conditions, activities and facilities which are customary’ (Townsend, 1987: 131 and 140). Deprivation therefore refers to peoples’ unmet needs, whereas poverty refers to the lack of resources required to meet those needs. This underpins our model of multiple deprivation. Townsend also lays down the foundation for articulating multiple deprivation as an accumulation of single deprivations (Townsend, 1987) - a concept which also underpins this project.

In South Africa this multi-dimensionality was asserted in the Reconstruction and Development Programme (RDP):

It is not merely the lack of income which determines poverty. An enormous proportion of very basic needs are presently unmet. In attacking poverty and deprivation, the RDP aims to set South Africa firmly on the road to eliminating hunger, providing land and housing to all our people, providing access to safe water and sanitation for all, ensuring the availability of affordable and sustainable energy sources, eliminating illiteracy, raising the quality of education and training for children and adults, protecting the environment, and improving our health services and making them accessible to all. (African National Congress, 1994)

More recently it has been argued that poverty should be seen:

... in a broader perspective than merely the extent of low income or low expenditure in the country. It is seen here as the denial of opportunities and choices most basic to human development to lead a long, healthy, creative life and to enjoy a decent standard of living, freedom, dignity, self-esteem and respect from others. (Statistics South Africa, 2000: 54)

During the past three decades there have been significant developments in the way that this multi-dimensional approach to poverty has been interpreted and measured (Thorbecke, 2004).

Though Townsend's work mainly (though not entirely) referred to individuals experiencing deprivations - single or multiple – the arguments can, in modified form, extend to area based measures. At an area level it is difficult to measure the percentage of the population experiencing one, two or more deprivations. It is possible, however, to look at single deprivations at an area level and state that a certain proportion of the population experiences that deprivation, a proportion experiences some other form of deprivation etc., and at an area level describe the combination of single deprivations as area level multiple deprivation.

The area itself can be characterised as deprived *relative to other areas*, in a particular dimension of deprivation, on the basis of the proportion of people in the area experiencing the type of deprivation in question. Having attributed the aggregate of individual experience of deprivation to the area, it is possible to say that an area is deprived in that particular dimension. Once the specific dimensions of deprivation have been measured, these can be understood as elements of multiple deprivation.

Why is small area level deprivation important? First, geographical patterns of social disadvantage (or advantage) are not random: the spatial distribution reflects the results of dynamic social processes, economic change, migration, availability and costs of living space, community preferences, and policies that may distribute particular groups to certain areas or exclude them from others. Second, the spatial concentration of multi-dimensional deprivation means that – when correctly measured – the most deprived areas can effectively be targeted (Smith, 1999; Kleinman, 1999; Smith *et al.*, 2001). Third, the concentration of poor people in an area may mean that local services struggle to meet high demand, or that areas lack resources to support certain services. Fourth, when a range of deprivation measures is collected on an area basis, the exact mix of problems will vary from area to area.

Dimensions of deprivation

This view of multiple deprivation allows the separate measurement of different dimensions of deprivation, such as education deprivation and health deprivation. In the case of low income, there is an argument that, following Townsend, within a multiple deprivation measure only the deprivations resulting from a low income would be included and low income itself would not be a component. However, the considerable

problems of measurement of material deprivations such as lack of adequate diet, clothing etc., mean that a measure of low income or consumption could be regarded as a useful proxy for material deprivation.

To summarise, the model which emerges from this theoretical framework is of a series of uni-dimensional domains of deprivation which may be combined, with appropriate weighting, into a single measure of multiple deprivation.

Measuring different aspects of deprivation and combining these into an overall multiple deprivation measure raises a number of questions (Noble *et al.*, 2005c). For example, how should the different dimensions of deprivation be weighted? To what extent should the same people or households be represented in more than one of the dimensions of deprivation? These and other issues are addressed in this report. First, previous research in this area is reviewed and compared to the above approach.

Section 1.2: Review of previous research measuring poverty at a small area level in South Africa

The majority of the literature on levels of poverty and inequality in post-apartheid South Africa is based on either national or sub-national population surveys. Key national datasets used, either alone or in combination, include the Income and Expenditure Surveys (1995 IES and 2000 IES), the October Household Surveys (OHS), the Labour Force Surveys (LFS), and the 1996 and 2001 Censuses. A number of sub-national surveys have also been undertaken for particular provinces or sub-provincial regions e.g. the KwaZulu-Natal Income Dynamics Study (KIDS) and the Cape Area Panel Study.

Alderman *et al.* (2000) combined the 1995 IES, 1995 OHS and 1996 Census to construct estimates of household expenditure. Households with expenditure below the threshold set by the Department of Local Government were deemed to be living in poverty. The results yielded estimates of the proportion of households living in poverty at various geographical levels, but with declining precision for small sub-units of major administrative divisions.

Hirschowitz *et al.* (2000) used the Alderman *et al.* (2000) methodology for imputing expected expenditures in their construction of provincial level 'development indices' for Statistics South Africa (Stats SA). Average monthly household expenditure was joined by ten indicators from the 1996 Census in a factor analysis. Two indices were identified: a 'Household Infrastructure Index' and a 'Household Circumstances Index'. The Infrastructure Index was based on eight variables relating to the state of housing, access to services, education and expenditure. The Circumstances Index was based on the remaining three variables relating to unemployment, household size and number of children.

Hirschowitz *et al.* state that their indices can be used '...to monitor change in the life circumstances of poor households over time, as funding becomes utilised, and

development programmes implemented... They can [also] be used to plan services within funding allocations, and to act as baseline information against which to monitor change, as and when new policies are introduced and put into operation' (Hirschowitz *et al.*, 2000: 81). Between them, the two Stats SA indices encompass a far wider range of indicators of social deprivation and inequality than those analyses restricted to measuring income, expenditure or consumption alone. However, the Stats SA indices are not an articulation of any explicit model of multiple deprivation; five of the eleven variables entered into the factor analysis relate to access to services, while the remaining six relate to housing, education, employment, expenditure and household demographics. This results in far greater weight being given to the issue of access to services than to the other aspects of social disadvantage.

McIntyre *et al.* (2000) produced four alternative deprivation indices at magisterial district level using data from the 1996 Census in order to look at the relationship between deprivation and health inequalities in South Africa. They produced a general index of deprivation using principal component analysis (PCA) of a number of variables relating to socio-economic, demographic and physical household characteristics. They also produced a policy-perspective index of deprivation, using 'groups identified by policy-makers as being particularly disadvantaged or as groups who should receive priority in social service delivery'. Their third index, called a single index of deprivation (SID), was a single variable: access to piped water. Their fourth index was a health-related index of deprivation, again using PCA. These indices, with the exception of the SID, could be regarded as indices of multiple deprivation since they each contain variables relating to different aspects of deprivation. However, they were not designed to conform to any particular model of multiple deprivation.

Klasen (2000), using data from the Project for Statistics on Living Standards and Development, constructed a deprivation index comprising of education, income, wealth, housing, water, sanitation, energy, employment, transport, financial services, nutrition, health care, safety and perceived well-being indicators. Though an important step forward, this index, based as it was on survey data at national level, did not allow the identification of small area multiple deprivation.

Using data from seven 1999-2000 Afrobarometer surveys in Southern Africa,¹ Mattes, Bratton and Davids (2003) developed a multi-faceted unidimensional Lived Poverty Index (LPI) that focuses on peoples' ability to obtain basic necessities. This index is intended to measure one specific aspect of overall well-being and was developed by combining responses to questions on how often the respondent or their family went without seven basic necessities in the year prior to interviewing. The necessities were as follows: a cash income, food, medical treatment, home fuel, water, electricity and home safety. In addition, five further indices were produced, namely an ill-health index, a development infrastructure index, an index of community services, an agricultural activity index, and an access to schools index. While the results produce cross-country estimates of the 'lived poverty' of households, the LPI (and indeed the other five

¹ The seven included countries are Botswana, Lesotho, Malawi, Namibia, South Africa, Zambia and Zimbabwe.

complementary indices) is again constrained by its inability to identify deprivation at the small area level.

Bhorat *et al.* (2004), noting that South Africa does not have a recent data set on which poverty counts can be confidently based, 'provide a picture of asset and services deprivation, economic activity, and health and safety' and demonstrate, using Census data, changes that have taken place between 1996 and 2001. However, the data are presented only for discrete indicators rather than dimensions of deprivation or composite indices. Furthermore there is no presentation at sub-province level.

The South African Human Development Report 2003 (UNDP, 2003) constructed and calculated a Service Deprivation Index (SDI) 'to provide a more encompassing measure of the distribution of progress, and to measure the backlog of deprivation that still exists in seven dimensions of basic services... The seven basic services used for the calculation of SDI are: housing, energy for cooking, energy for heating, energy for lighting, water, toilet facilities and refuse removal' (UNDP 2003: 47). The SDI is calculated nationally and by province, race and gender.

The Social Research and Population Development Unit of the Department of Health and Social Services in the Western Cape created a Human Development Index (HDI) specifically for the Western Cape province (Department of Health and Social Services, 1999). Terming their index a Provincial Human Development Index the Unit combined four indicators with equal weight to form a composite index. These four indicators - income, employment status, literacy and water supply - were each formed from one or more variables from the 1996 Census. The four indicators were constructed independently and combined with equal weight. This work has been further developed (Western Cape Department of the Premier, 2005) using the 2001 Census to produce an HDI at municipality level. This combines variables relating to a long and healthy life (life expectancy) with variables relating to 'knowledge' (adult literacy and gross school enrolment) and a decent standard of living (using mean household income). The 2005 work also involved the generation of a set of indices which are combined to form a City Development Index (CDI), also largely based on the 2001 Census. The CDI is a combination of the following indices: education, infrastructure, health, income and waste removal. The CDI is presented at Census main place level. This approach has much in common with the Provincial Indices of Multiple Deprivation, presented and discussed in this report but is designed for a different purpose - to measure human development relevant to urban populations - rather than multiple deprivation at small area level.

Section 1.3: Structure of the report

The Provincial Indices of Multiple Deprivation 2001 for South Africa have been developed using the model described in **Section 1.1**. They build on work undertaken by CASASP's sister research centre, the Social Disadvantage Research Centre (SDRC) in constructing national indices of deprivation at small area level (e.g. for England see Noble *et al.*, 2000a; Noble *et al.*, 2004; for Wales see Noble *et al.*, 2000b; for Northern

Ireland see Noble *et al.*, 2001; Noble *et al.*, 2005a; for Scotland see Noble *et al.*, 2003; for Bangladesh see Smith *et al.*, 2005). Each Provincial Index of Multiple Deprivation (PIMD) was developed using the 10% sample of the 2001 Census and then produced using the full 100% Census.

Chapter 2 presents the domains and indicators for each PIMD and **Chapter 3** explains the methodological approach used. **Chapter 4** presents each PIMD at ward level. Recommendations on how to use a PIMD are made in **Chapter 5** and **Chapter 6** suggests areas for future work.

Though this document presents an Index of Multiple Deprivation for each province, it is intended that in due course a South African Index of Multiple Deprivation (SAIMD) will be produced for the whole of the country. As is explained in Chapter 6, a national index is contingent on further work on small area geographical units, which it is hoped will be completed during the first half of 2006.

It should therefore be stressed that each PIMD only provides information about relative levels of deprivation *within* the province in question. The PIMDs are *not* comparable across provinces. This means that neither the PIMD scores nor ranks can be compared *between* provinces. As the data point is 2001, changes will inevitably have occurred since that time. These measures do, however, provided a *starting point* from which to consider small area level deprivation, and can be used alongside local up-to-date information.