

# Chapter 1

## Introduction

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Reduction of poverty and inequality has been a central concern of South Africa's government since 1994. Yet quantitative description and analysis in this field has been slow to emerge. The main reason is that evidence has had to be built up (mainly by Statistics South Africa) from a very limited historical base.

Even now, there is little information on trends. We have had one post-apartheid population census (in 1996) and one income and expenditure survey (in 1995). The next census is due in 2001, and the next income and expenditure survey (IES) in 2000. Five sets of October household surveys (OHSs) have been published (for 1994, 1995, 1996, 1997 and 1998); one more has been conducted (in 1999) and its results were recently published. From the October household surveys, we know that unemployment increased between 1995 and 1998, but in 1999, there may have been a slight decrease.

Rising unemployment works to worsen poverty and inequality, but it may be offset by other changes in social and economic variables. We shall not know the overall trend in inequality between households or in money measures of poverty until at least the publication of the 2000 income and expenditure survey. If we measure poverty by the absence of services or the paucity of human capital, we can use successive October household surveys to establish trends in these variables at the national or provincial level, we shall have to wait for the publication of the 2001 census to establish trends in these variables. Small area analysis without sampling error will have to wait until publication of the 2001 population census.

Despite these limitations, much can be done with existing information. The 1998 *Poverty and Inequality Report*<sup>1</sup> was the first substantial post-apartheid publication using historical and contemporary data. The four studies in this collection are further examples of what is possible at present. They raise as many questions as they answer; in doing so, they reveal themselves as fruitful pieces of research in a developing field of enquiry.

The study by Alderman, Babita, J Lanjouw, P Lanjouw, Makhatha, Mohamed, Özler and Qaba in this collection, *Combining census and survey data to construct a poverty map of South Africa*, argues that the income variable in the 1996 population census is an insufficient basis for measuring poverty. The average monthly income per household, including remittances, from the census was R2 454, compared with income of R3 309 and expenditure of R2 954 (in October 1996 prices) from the 1995 income and expenditure survey. Grossed up, the IES estimate is a lot closer to the relevant national accounts variables. Alderman *et al.* therefore regressed expenditure (as a more accurate proxy than income for welfare in low-income households) on variables found both in the IES (or, more precisely, the linked IES/OHS data set) and in the census. The explanatory variables include the number of men and women of various ages and of two population groups (African and white), dwelling variables (type, number of rooms and ownership), service variables (electricity for lighting, refuse removal and telephone) and human capital variables (completed primary education, professionals, skilled labourers). The regression

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<sup>1</sup> May, J. (1998). *Poverty and inequality in South Africa*. Report prepared for the office of the executive deputy president and the inter-ministerial committee for poverty and inequality. Praxis Publishing, Durban.

coefficients were estimated using the IES/OHS data set, and were then used to impute expenditures in the census, using the full census data set.

The comparison between poverty estimates based on imputed expenditures and reported census incomes is striking. Using a household poverty line of R800 per month, the percentage of poor in the population is put at 28,4% using imputed expenditure and 52,2% using census income. Using a per capita poverty line of R250 per month, the estimates are 48,4% and 60,8% respectively. The difference is not to be explained by the difference between expenditure and income but by the fact that a single income question is not suitable for households who receive income from a number of sources. Average imputed expenditure per household in Census '96 was R2 789 per month. The proportion of the population in households spending less than R800 per month is 28,5%, virtually identical with the IES estimate.

In order to construct a poverty map, Alderman *et al.* estimate the probability that each household lies below the poverty line given the explanatory variables used in estimating household expenditure. In each geographical area, the number of poor people is estimated by the weighted sum of individual household probabilities. Poverty estimates are produced for provinces, district councils and magisterial districts.

Angus Deaton has pointed out that the difficulty with this procedure arises when the geographical breakdown is to smaller areas than those adequately represented in the IES. Going down to the district council/metro level (of which there were 48\*) presents few difficulties. Disaggregating to the more than 300 magisterial districts pushes the IES/OHS sample of 28 585 rather harder. At the level of villages, small towns, and limited rural areas, one has no hope of incorporating 'area effects' (not captured in the explanatory variables) in the estimates of poverty derived from imputed expenditures. This is not to claim that the Alderman *et al.* estimates are biased or inefficient in relation to the IES data. But the resolution to the IES data is limited. In the end, accurate small area estimates depend on accurate small area statistics. (For further discussion on how this will be dealt with in future see the article by Alderman *et al.*)

Hirschowitz, Orkin and Alberts' *Key baseline statistics for poverty measurement* considers poverty as indicated by

- the Alderman *et al.* imputed expenditure; and
- a range of indicators of dwelling conditions, services, educational/labour market status and household composition.

Households were divided into five expenditure categories, of which the lowest two were below R600 per month (the very poor) and between R600 and R1 000 per month (the poor). On this basis 16,5% of households were very poor and a further 24,8% were poor. In urban areas, the estimates were 10,7% and 15,4% and in rural areas 25,4% and 38,8% respectively. There is considerable variation by race and by province.

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\* In the Alderman *et al.* paper in this volume, the four metropolitan councils in Gauteng (Johannesburg, Pretoria, Khayalami and Lekoa/Vaal) are treated as a single unit and referred to as 'Metropolitan Areas'. Hence the total number of district councils listed on page 28 is 45 rather than 48.

When it comes to housing, 35% of South African households lived in traditional dwellings or shacks and 46% were living in three or fewer rooms. Forty-four per cent of households had a tap inside the dwelling and 50% had a flush or chemical toilet. While access to these facilities depends on expenditure, there are independent effects of population group and place of residence (urban or rural). The effects of education, occupation and gender on expenditure are also analysed.

The final section of the Hirschowitz *et al.* paper constructs development indices on the basis of factor analysis of 11 service level and demographic/education/employment status/ expenditure variables. These variables are estimated for each of the nine provinces. The factor analysis produced two main factors, jointly accounting for 74% of the variance. The first is called a *household infrastructure index* (the service level variables load on to it as well as the education of the household head and monthly expenditure) and the second a *household circumstances index* (on which load the unemployment rate, average household size and young children variables). Instead of using the scores emerging from the factor analysis, each variable is trichotomised and a value of 1, 2 or 3 assigned. These scores are added for the groups of variables behind each index. On this basis, provinces are ranked by the two indices. The authors suggest that the indices, further weighted by the square root of the number of households, could be used to allocate funds for infrastructural development or for skills training by province. The ranking of provinces by the two indices is somewhat different.

One has to be cautious about using these indices for the allocation of funds if the objective is sustainable development. What can be sustained is what people can afford for themselves plus the support that the government is able to give them. A constant eye has to be kept on the expenditure variable and low levels of infrastructural or human capital identified *relative to the average for a given level of expenditure*. Low relative levels rather than low absolute levels offer the best opportunities for sustainable development.

Debbie Budlender's *Earnings inequality in South Africa* is an attempt to chart the recent course of inequality without two reliable observations of all household income. She does this by confining the analysis to 'pay' (wages and salaries alone) and 'earnings' (pay plus income from self-employment). Both these variables can be obtained from the OHS. Budlender considers changes between 1995 and 1998 (the data in this last year were taken from an alpha version of the OHS, which has now been circulated). She aggregates these two variables within each household and then divides them by household size to get a measure of per capita income from pay and earnings accruing to each member of the household. As Budlender notes, this method ignores intra-household inequality in access to pay/earnings. The derived variables are then analysed from a distributional point of view. Gini coefficients are calculated as well as quartile incomes. A lot of individuals belong to households with no wage or salary income: half of Africans, 24% of coloureds, 28% of Indians and 36% of whites were so placed in 1998. Budlender finds an increase in the Gini coefficients from 1995 to 1998, but gives no standard error for her estimates, making it hard to assess whether the differences are significant. The biggest change was between 1995 and 1996. She concludes that 'overall the analysis suggests that the country still has high levels of inequality – levels which appear to be somewhat higher than they were in 1994'.

The first part of the conclusion is uncontroversial and can be supported by the general proposition that inequality does not change rapidly in any country short of an economic revolution. It is the second part that, for two reasons, should be treated with some caution. First, the basis on which the income

measure is constructed is unusual, both in terms of what it omits (for instance, most of the 36% of white households without a salary or wage income must have been living off property income and many others must have been living off state transfers) and in terms of how it is constructed (Gini coefficients are commonly constructed from aggregate household incomes). Secondly, we have no idea of the standard error of the estimates, which are likely to be appreciable when it comes to the quartile levels of income per capita. Our confidence in the magnitude and even the sign of the trends must be rather fragile until fuller evidence is available.

Anemé Malan's *Income distribution in South Africa - a social accounting matrix approach* is an input-output table-based contribution to the debate. Final social accounting matrices (SAMs) for South Africa are available for 1978 and 1988 and a preliminary matrix is available for 1993. From SAM data, Malan concludes that the African share of personal income rose from 27,1% in 1978 to 45,2% in 1993. The former estimate is plausible, but the latter estimate is well above others made for the period between 1990 and 1995, casting some doubt on the accuracy of her sources or her interpretation of them. Malan uses SAM data to estimate household savings rates and taxation rates in various quintiles. On taxation, she comes to somewhat different conclusions about progressivity from the Department of Finance's study of redistribution through taxation and state expenditure, published in the *2000 Budget Review*.

The limitation of SAMs is that they are static models, based on linear homogeneous production functions. They can accommodate neither input substitution based on price changes nor technological change. Nonetheless, they can be used to explore certain 'what if' questions, provided that small changes only are considered. The questions dealt with in the paper include:

- \* the impact of an exogenous increase in household income (by race and income quintile) on GDP;
- \* the impact of an exogenous increase in household income on imports.

Malan concludes that a costless redistribution of income from rich to poor will have a small positive impact on GDP. It will also increase imports. She concludes that analysis of substantial policy changes will require a fully articulated general equilibrium model. This may require a rather different approach to modelling policy options; this together with a more complex model of the economy may produce rather different results.

The achievements and limitations of these studies underscore the complexity of quantitative poverty and inequality analysis. One has first to judge the quality of the available data and possibly undertake some quite complex statistical manoeuvres to construct reasonably reliable indices. Then one has to produce descriptive measures which have interpretative significance. Finally, one has to work out the relationship between positive analysis and quantitative measures for the guidance of policy. All these challenges are substantial in contemporary South Africa, as the studies usefully show in their attempts to grapple with them.