

Chapter 6 Towards a national Index of Multiple Deprivation

The original intention was to produce a ward level South African Index of Multiple Deprivation (i.e. a single index for the whole country). However, the country's wards vary considerably in population size, especially by province. Though the national mean ward level population size is around 11 500, mean ward size by province ranges from around 5 000 in the Northern Cape to 20 000 in Gauteng. This raises two important issues: first, provinces with large wards will tend to be under-represented in national indices of deprivation; and second, pockets of deprivation in larger wards may be 'diluted' or hidden by relative non-deprivation in the vicinity.

The first issue is to some extent side-stepped by the creation of the PIMDs described in this report, although they do not address the second issue. However, both issues would be satisfactorily addressed by the creation of a new small area level statistical geography, the properties of which are described below.

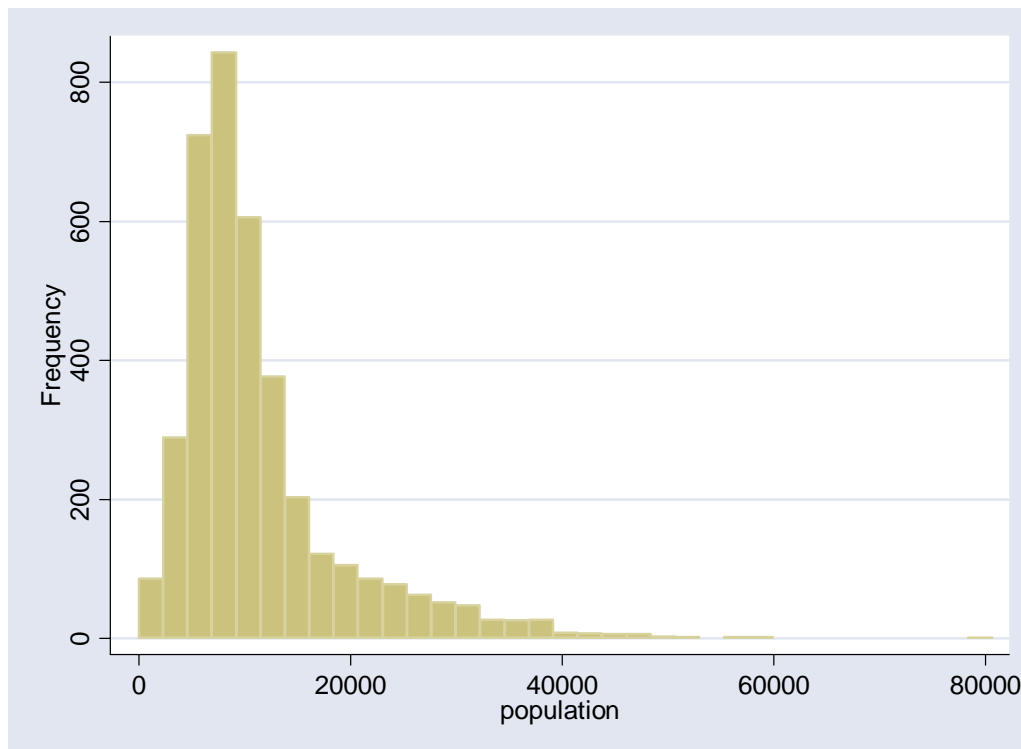
A new statistical geography

Ideally, deprivation measures should be constructed at the smallest possible spatial scale that is consistent with robust measurement. The units should also be of more or less equal size in terms of population and should be relatively homogenous in terms of deprivation.

Electoral wards¹⁶ were selected for each PIMD as the most robust small area option currently available. However, as indicated above, electoral wards vary greatly in size, with populations ranging from fewer than 150 people to more than 80 000 (Mean 11 416 Standard Deviation 7 973), across the country. The histogram below shows the population sizes for all wards in South Africa. Wards exist that have either very small populations or very large populations, and in general the large wards are found in the six metropolitan areas. Of the 482 wards with populations greater than 20 000, 88 (18.3%) are in Cape Town; 98 (20.3%) are in Johannesburg; 92 (19.1%) in Ethekwini; and 56 (11.6%) are in Tshwane.

¹⁶ Wards are clusters of voting district polygons obtained from the Independent Electoral Commission. The Municipal Demarcation Board created wards in 2000.

Distribution of population by ward (2001 ward boundaries)



To address the issues raised above, it is recommended that a new small area unit be constructed that takes into account homogeneity and population size. The research team accordingly plans to develop Data Zones for South Africa which use Enumeration Areas as building blocks. This exercise will draw on work that has been carried out to create new small area geographies by the Office for National Statistics (England and Wales), the General Register Office for Scotland and the Northern Ireland Statistics and Research Agency. In these countries, similar problems with ward size and changing boundaries were encountered and it was therefore decided to develop a range of *statistical* areas that would be of consistent size and whose boundaries would not change.¹⁷

The key thing to note is that Data Zones would be analytical or statistical boundaries not political or administrative boundaries. They would be generated solely to ensure equity and consistency in the geographical measurement of deprivation.

¹⁷ For more information please visit the following websites:
England and Wales - <http://www.statistics.gov.uk/geography/soa.asp>
Northern Ireland - http://www.nisra.gov.uk/whatsnew/dep/super_output_areas.html
Scotland - <http://www.sns.gov.uk/>

Harnessing administrative data to create indices of multiple deprivation that are both up to date and updateable

The PIMDs 2001 and the proposed SAIMD 2001 draw exclusively from the 2001 Census. This represents the picture as at October 2001. Inevitably, change will have occurred since then and although for most areas the relative position will not have altered greatly, it is important to explore ways to bring the measurement of multiple deprivation up to date. Furthermore, some types of deprivation cannot be incorporated since census data have no or insufficient information on them, for example educational attainment for children still at school, the prevalence of crime in an area, and the extent of morbidity in an area.

It is therefore important to explore the availability of non-Census data sources. The main focus would be on the possibilities of using administrative data.¹⁸ Such data would enable deprivation indicators to be produced at a small area level that could generate a small area index of multiple deprivation which is both up to date and which can be updated more frequently.

¹⁸ See Smith and Noble (2000) on the merits of using administrative data in the UK context.