Technical notes on the data sources

General Household Survey[1]

The GHS is a multi-purpose annual survey conducted by the national statistical agency, Statistics South Africa (Stats SA), to collect information on a range of topics from households in the country's nine provinces. The survey uses a sample of approximately 30,000 households. These are drawn from census enumeration areas using a two-stage stratified design with probability proportional to size sampling of primary sampling units (PSUs) and systematic sampling of dwelling units from the sampled PSUs. The resulting weighted estimates are representative of all households in South Africa.

The GHS sample consists of households and does not cover other collective institutionalised living-quarters such as boarding schools, orphanages, students' hostels, old-age homes, hospitals, prisons, military barracks and workers' hostels. These exclusions should not have a noticeable impact on the findings in respect of children.

Changes in sample frame and stratification

The sample design for the 2015 GHS was based on a master sample that was designed in 2013 as a general purpose sampling frame to be used for all Stats SA household-based surveys. The same master sample is shared by the GHS, the Quarterly Labour Force Survey, the Living Conditions Survey and the Income and Expenditure Survey. The 2013 master sample is based on information collected during the 2011 population census. The previous master sample for the GHS was used for the first time in 2008, and the one before that in 2004. These again differed from the master sample used in the first two years of the GHS: 2002 and 2003. Thus there have been four different sampling frames during the 14-year history of the annual GHS, with the changes occurring in 2004, 2008 and 2013. In addition, there have been changes in the method of stratification over the years. These changes could compromise comparability across iterations of the survey to some extent, although it is common practice to use the GHS for longitudinal monitoring and many of the official trend analyses are drawn from this survey.

Weights

Person and household weights are provided by Stats SA and are applied in Children Count analyses to give estimates at the provincial and national levels. The GHS weights are derived from Stats SA's mid-year population estimates. The population estimates are based on a model that is revised from time to time when it is possible to calibrate the population model to larger population surveys (such as the Community Survey) or to census data.

In 2013, Stats SA revised the demographic model to produce a new series of mid-year population estimates. The 2013 model drew on the 2011 census (along with vital registration, antenatal and other administrative data) but was a "smoothed" model which did not mimic the unusual shape of the age distribution found in the census. The results of the 2011 census were initially questioned because it seemed to over-count children in the 0 – 4 age group and under-count children in the 4 – 14-year group.

The 2013 model was used to adjust the benchmarking for all previous GHS data sets, which were re-released with the revised population weights by Stats SA, and was still used to calculate weights for the GHS up to and including 2015, even though it is now known that the mid-year population estimates on which the weights are based are incorrect.[2] All the Children Count indicators were re-analysed retrospectively, using the revised weights provided by Stats SA, based on the 2013 model. The estimates are therefore comparable over the period 2002 to 2015. The revised weights particularly affected estimates for the years 2002 – 2007.

Users may find that the baseline estimates reported here are different from those reported in issues of the *South African Child Gauge* prior to 2016. The revised indicators for all the intervening years are available on the website: *www.childrencount.uct.ac.za.*

It is now thought that the fertility rates recorded in the 2011 population census may have been an accurate reflection of recent trends, with an unexplained upswing in fertility around 2009 after which fertility rates declined gradually. Similar patterns were found in the vital registration data as more births were reported retrospectively to the Department of Home Affairs, and in administrative data from schools, compiled by the Department of Basic Education. In effect, this means that there may be more children in South Africa than appear from the analyses presented here, where we have applied weights based on a model that it is now known to be inaccurate.

Reporting error

Error may be present due to the methodology used, i.e. the questionnaire is administered to only one respondent in the household who is expected to provide information about all other members of the household. Not all respondents will have accurate information about all children in the household. In instances where the respondent did not or could not provide an answer, this was recorded as "unspecified" (no response) or "don't know" (the respondent stated that they didn't know the answer).

National Income Dynamics Study[3]

NIDS is the first national panel survey to be conducted in South Africa. The baseline survey, or first "wave" of data collection, was undertaken in 2008, with subsequent waves planned at intervals of two years. In the first wave, data were obtained for every member of each sampled household, and these individuals became the permanent sample members or panel – even if they were children or babies. Subsequent waves endeavour to return not only to the original households, but also to each original household member, even if members have moved out of the household. So far, four waves of data collection have collected in 2008, 2010, 2012 and 2014/2015. The advantage of a panel survey is that it enables longitudinal analysis of the variables or outcomes under study, while effectively controlling for variation in individual characteristics. Through NIDS, individual South Africans are tracked over time to monitor changes in different aspects of their lives, including health, nutrition, education, employment and poverty.

Wave 1 data collection began in February 2008, and involved 7,305 households and 28, 255 individuals. The study used a two-stage stratified and clustered sampling approach, where in the first stage, primary sampling units were selected from Stats SA's master sample.

Wave 4 data collection took place from October 2014 to August 2015 and covered 37,396 individuals; 25,266 of these were individuals who had been interviewed in wave 1.[4] The remaining (12,128) were new individuals who had joined the households of continuing panel members.[5]

NIDS collects data on household demographics, income and expenditure patterns, living conditions, and anthropometric measurements among other indicators.

The anthropometric measurements provide the data for the nutrition analyses in Children Count. To obtain the measurements, fieldworkers record two height and two weight measurements for each child, and a third one if the one and two sets of measurements were more than one centimetre or one kilogram apart respectively. An average of the first two measurements was in each case taken for the purposes of Z-scores derivation while the third measure was used for Z-scores derivation if the first two were more than a centimetre or one kilogram apart in the height and weight measurements respectively. The weights and heights collected during the study were converted to Z-scores based on the 2006 World Health Organisation's international child growth standards for children aged up to five years.[6] In the case of children older than five years, the WHO growth standards for school-going and adolescent children were used.

Data on height-for-age, weight-for-age and height-for-weight cover children aged up to five years. In the process of derivation, absolute Z-scores for height-for-age and weight-for-age greater than six were treated as biologically implausible and excluded from further analysis.[7] Likewise, absolute Z-scores for weight-for-height of greater than five were also found to be implausible and excluded. While NIDS uses a national sample, further disaggregation is limited due to the relatively small sample size.

SOCPEN database[8]

Information on social grants is derived from the Social Pensions (SOCPEN) national database maintained by the South African Social Security Agency (SASSA), which was established in 2004 to disburse social grants for the Department of Social Development. Prior to this, the administration of social grants and maintenance of the SOCPEN database were managed directly by the department and its provincial counterparts.

There has never been a published, systematic review of the social grants database, and the limitations in terms of validity or reliability of the data have not been quantified. However, this database is regularly used by the department and other government bodies to monitor grant take-up, while the computerised system, which records every application and grant payment, minimises the possibility of human error. Take-up data and selected reports are available from the department on request throughout the year. Children Count provides grant take-up figures as at the end of March.

References

1   Statistics South Africa (2003 – 2015) *General Household Survey Metadata 2002 – 2015.* Pretoria: Stats SA. Available: http://interactive.statssa.gov.za:8282/webview/.
2   Personal communication with Statistics South Africa, July 2017.
3   Leibbrandt M, Woolard I & de Villers L (2009) *Methodology: Report on NIDS Wave 1. Technical Paper No.1.* Cape Town: Southern African Labour and Development Research Unit, UCT.
4   Southern Africa Labour and Development Research Unit (2016) *National Income Dynamics Study. Wave 4 Overview.* Cape Town: SALDRU, UCT.
5   See 4 above.
6   Ardington C & Case A (2009) *Health: Analysis of the NIDS Wave 1 Dataset.* Discussion paper no. 2. Cape Town: Southern Africa Labour and Development Research Unit, UCT.
7   See 6 above.
8   South African Social Security Agency (2004 – 2017) SOCPEN social grants data. Pretoria: SASSA.