

Does Estimated Completeness of death Registration in South Africa Provide Evidence of Overestimation of Population Size from the 2011 South African Population Census?

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Knowledge about the size of the population is indispensable for efficient planning and allocation of resources to various sectors in any population. Information about the size of the population is conventionally obtained from censuses. But because, censuses are undertaken every ten years in most countries, or five years in a few countries, census figures are usually updated by population projections with the last census as the base for the projections. Accuracy of census figures can be in doubt even when a post enumeration survey (PES) has been undertaken and used to adjust the census figures.

South Africa has undertaken three post-apartheid censuses (1996, 2001 and 2011). Although the census figures were adjusted using the PESs, the official adjusted figures were all controversial.

In addition to the censuses, South Africa has a long history of registration of deaths. Death registration data are a useful for various purposes if reliable. From a demographic and epidemiological standpoints, they constitute the numerator for mortality rates. However, in many sub-Saharan Africa, their use is limited due to incomplete coverage of the population. Completeness of death registration in South Africa has been estimated by various researchers to have increased over time.

Estimates of the completeness of death registration often focus on the numerator of the estimates (number of registered deaths). However, there could be errors in the denominator of the estimates (the population at risk of experiencing deaths i.e. the estimated population size). If that were the case, this would give inaccurate impression of the completeness of death registration. It appears therefore that estimating “completeness” of death registration could provide indications of the “accuracy” of official population size estimates from censuses.

The overall objective of this study is to assess whether estimated completeness of registered deaths for 2011 in comparison with the estimate for 2001 is an indication of overestimate of the South African population size in 2011 as officially given. The question this study seeks to answer is: Does

estimated completeness of death registration in South Africa provide evidence of overestimation of population size from the 2011 South African population census? In an attempt to answer this question, the specific focus of this study are: (1) Examine the consistency in trend completeness of death registration focusing on 2001 and 2011; (2) Examine completeness of death registration in 2011 by provinces based on PES weighted 2011 census population size as denominator in the estimates of completeness of death registration; (3) Examine the impact of different assumed percentage overestimation of population size on estimated completeness of death registration in 2011; (4) Examine the implications of Completeness of death registration based on unweighted and weighted PES census data on life expectancies at birth.

The data utilised for this study were the 2001 and 2011 South African Censuses as well as the 2001 and 2011 Causes of Death Registrations. Completeness of death registrations was estimated using Brass Growth Balance method. The results showed inconsistency in trend in completeness of death registration comparing 2001 and 2011, counter intuitive low level of completeness of death registration in Gauteng Province which suggest probable overall exaggeration of the size of South Africa's population as provided by the official estimates from the 2011 census and most especially in Gauteng. Using the official estimates as denominators in deriving age specific death rates and life tables from the 2011 registered deaths therefore over estimate life expectancies at birth nationally and provincially in 2011.