

GCRO 2009 Quality of Life survey – Final weight calculations

The 2009 ward boundaries supplied by the Municipal Demarcation Board were used as the sampling frame for the survey. Statistics South Africa recomputed the Census 2001 population data and supplied a population database that was matched to the 2009 ward boundaries to obtain a Census 2001 population per ward and per municipality.

Due to a field sampling error, there were a number of wards that were over sampled, and a few that were not sampled. It was thus decided to apply the weights at a municipal level within Gauteng, and per total ward population for the sampled areas outside Gauteng. In these outlying areas, the sizes of the sampled wards in municipalities such as Metsimaholo, Madibeng etc, do not reflect the whole municipalities, but only those wards that were included in the study area or should have been included were used for weighting purposes.

In Gauteng for example, in Kungwini, the total sample of 160 was based on a population 109067 (a minimum of 160 per municipality was set to ensure that enough interviews were done in the smaller municipalities). The population of Kungwini is 0.0102 (1.02%) of the total population of the study area (109067/10696850). The number of interviews in Kungwini was 188. This was 0.0283 (2.83%) of the total number of questionnaires (188/6636). This means that Kungwini has proportionally too many interviews (which is possible due to the minimum numbers per municipality). To adjust for this, a weight of 0.35990 ($0.0102/0.0283$) is given to all the interviews conducted in Kungwini, which causes every interview in that municipality to have less weight in the total sample.

A weight of 1 would mean no adjustment, and a weight of above 1 would mean that interviews in areas with proportionally too few interviews are given a “bigger” voice in the overall sample. This would mean that if a frequency of the municipalities is run after applying the weights, the proportion of respondents would be the same as the proportion of the population/total population (the 5th column in the table below), instead of an unweighted frequency, which would give the proportions in the 6th column.

Note: Excel may not be able to handle weights and this will result in some discrepancies between the results in Excel and in SPSS.

Table 1: GCRO 2009 Quality of Life Survey weights

Weights based on ward population						
Municipality	Total pop	Total sample	Total actual	Proportion population: total population	Proportion actual/total actual	Weight (proportional to population)
Metsimaholo	78004	160	152	0.0073	0.0229	0.3184
Madibeng	86325	53	50	0.0081	0.0075	1.0711
Rustenburg	180174	107	107	0.0168	0.0161	1.0446
Tlokwe	99982	40	40	0.0093	0.0060	1.5506
Matlosana	306866	120	128	0.0287	0.0193	1.4873
Emfuleni	658,420	289	388	0.0616	0.0585	1.0527
Midvaal	64,643	160	190	0.0060	0.0286	0.2111
Lesedi	73,691	160	178	0.0069	0.0268	0.2568
Nokeng tsa Taemane	53,201	160	222	0.0050	0.0335	0.1487
Kungwini	109,067	160	188	0.0102	0.0283	0.3599
Mogale City	289,835	160	335	0.0271	0.0505	0.5367
Randfontein	128,731	160	235	0.0120	0.0354	0.3398
Westonaria	109,328	160	173	0.0102	0.0261	0.3920
Merafong	210481	160	224	0.0197	0.0338	0.5829
Ekurhuleni	2,478,630	1,087	1,224	0.2317	0.1844	1.2563
City of Joburg	3,225,308	1,415	1,529	0.3015	0.2304	1.3086
Tshwane	1,982,237	869	950	0.1853	0.1432	1.2944
Govan Mbeki	110704	46	46	0.0103	0.0069	1.4930
Emalahleni	210256	83	89	0.0197	0.0134	1.4656
Steve Tshwete	72866	31	31	0.0068	0.0047	1.4582
Thembisile	115710	105	103	0.0108	0.0155	0.6969
Dr. JS Moroka	52391	55	54	0.0049	0.0081	0.6019
Total	10696850	5740	6636	1	1	1