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General Household Survey, Selected development indicators, Metros 2021

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IMPROVING LIVES THROUGH DATA ECOSYSTEMS

Contents

List of Abbreviations

ASER	Age-specific Enrolment Ratio
CVs	Coefficient of Variations
DOA	Department of Agriculture
DUs	Dwelling Units
EAs	Enumeration Areas
GHS	General Household Survey
PSUs	Primary Sampling Units
RDP	Reconstruction and Development Programme
UN	United Nations
VIP	Pit Toilet with ventilation
WSA	Water Services Authorities
MAFA	Municipal Finance Management Act
MTREF	Medium Term Revenue and Expenditure Framework

1 Introduction and methodology

1.1 Background

This report presents selected findings from GHS 2021 on a set of development indicators at metropolitan level. Although the GHS was first introduced in 2002, Metro level reporting only became possible with the introduction of a new master sample for the GHS 2015 collection. The first report was released in May 2016 as a discussion document.

The current report is the seventh in the series and summarises the data for each metro and metros as a whole as measured by GHS 2021.

1.2 Methodology and fieldwork

Stats SA suspended face-to-face data collection for all its surveys in early 2020 to ensure that the field staff and respondents were not exposed to the risk of contracting the coronavirus and to contain its spread. The restrictions remained in place for most of 2021.

As in 2020, data collection continued using Computer-Assisted Telephone Interviews (CATI) rather than face-to-face Computer Assisted Personal Interviews (CAPI). Since Stats SA uses a dwelling unit sample, the GHS 2019 sample was re-used and households that provided operational telephone numbers in 2019 were contacted by Survey Officers (SOs) in 2020 and in 2021.

Non-contacts were, however, quite high since many households did not provide useable contact numbers in 2019 while many contact numbers were furthermore found to be invalid. All of these were regarded as non-contacts and were adjusted for during the weighting processes. Dwellings that were out-of-scope in 2019 remained so in 2020 and 2021. To increase the number of households that could be contacted, survey officers physically visited all households without legitimate telephone numbers, including those that were out-of-scope in 2019, to source updated contact details. This exercise yielded positive results.

Despite the slight improvements, the change in the survey mode of collection from CAPI to CATI, and the fact that the GHS 2021 estimates are not based on a full sample, comparisons with previous years should be made with caution.

More details of how the adjustment was done are contained in the Technical notes section of GHS 2021 report (P0318).

Given the change in the survey mode of collection and the fact that the GHS 2021 estimates are not based on a full sample, comparisons with previous years should be made with caution.

1.3 Data revisions

Editing and imputation was done using a combination of manual and automated editing procedures. Details about this process can be found in the GHS 2021 report (P0318).

Section 4 describes the methods used to calculate each indicator value. When calculating percentages, missing and do not know values were discarded from the denominator unless otherwise stated.

Risenga Maluleke
Statistician-General

2 Indicator tables

2.1 Education

Table 2.1: Education indicators by metro

Indicators	Metro								
	City of Cape Town	**Buffalo City**	**Nelson Mandela Bay**	**Mangaung**	**eThekwini**	**Ekurhuleni**	**City of Johannes -burg**	**City of Tshwane**	**All Metros**
Age-specific Enrolment Ratio (ASER) expressed as a percentage									
Primary School	97,9	98,8	97,6	96,8	98,2	95,9	99,7	99,5	**98,3**
All	91,5	97,6	96,5	93,4	94,6	92,8	96,0	99,0	**94,9**
% of 16-18-year-olds who attend any institution	77,0	93,2	90,7	68,2	85,3	82,9	85,9	97,0	**85,2**
% of learners in public schools that do not pay school fees	47,1	71,4	52,6	71,8	50,4	66,8	67,5	55,0	**58,1**
% of learners in schools receiving social grants	46,5	60,5	61,2	59,9	60,7	50,3	49,7	50,8	**52,6**
Numbers of learners enrolled (16–18) in any institution N ('000)	217	28	61	16	153	151	259	183	**1067**
% of learners in public schools benefiting from the nutrition programme	51,3	77,4	60,9	77,7	53,1	62,3	61,4	61,9	**59,4**
Adult literacy rates (persons 20 years and older with less than Grade 7 as highest level of education)	5,4	8,3	3,8	11,7	7,9	4,7	4,4	3,4	**5,4**
% of orphans aged 7–18 years attending educational institutions	80,3	97,3	96,6	100,0	93,1	88,8	91,3	96,7	**90,2**

2.2 **Health**

Table 2.2: Health Indicators by metro

Indicators	Metro								
	City of Cape Town	**Buffalo City**	**Nelson Mandela Bay**	**Mangaung**	**eThekwini**	**Ekurhuleni**	**City of Johannes-burg**	**City of Tshwane**	**All Metros**
% of persons with medical aid coverage	26,2	19,5	25,8	26,7	19,7	25,0	19,9	31,6	**24,1**
% of households for which the usual place of consultation is a public facility	47,5	80,6	63,9	62,5	68,2	64,0	67,2	58,0	**62,3**

2.3 **Human settlement**

Table 2.3: Human settlement indicators by metro

Indicators	Metro								
	City of Cape Town	Buffalo City	Nelson Mandela Bay	Mangaung	eThekwini	Ekurhuleni	City of Johannes-burg	City of Tshwane	All Metros
% of households who live in an RDP or state-subsidised house	23,3	24,4	36,9	13,5	18,7	19,1	9,9	18,3	**18,0**
% of households living in informal dwellings/tents/caravans	16,6	19,3	5,6	15,0	9,7	15,5	17,3	16,4	**15,0**
% of households who pay rent for a state provided/RDP house	21,6	9,9	5,7	4,7	11,0	4,8	9,0	12,7	**11,4**
% of households who fully own their dwellings	49,5	79,1	71,4	64,9	62,9	41,2	38,7	38,6	**48,2**

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2.4 **Social development**

Table 2.4: Social development indicators by metro

Indicators	Metro								
	City of Cape Town	Buffalo City	Nelson Mandela Bay	Mangaung	eThekwini	Ekurhuleni	City of Johannes-burg	City of Tshwane	All Metros
Number of persons 60 years and older N('000)	469	87	149	77	382	326	441	322	**2 253**
Number of households with at least one person 60 years and older N ('000)	345	72	111	73	295	224	337	236	**1 694**
% of persons 60 years and older who are disabled (UN definition)	17,2	17,6	17,2	38,9	23,2	9,0	15,6	18,3	**17,6**
% of people 60 years and older who received old-age grant	99,4	98,5	100,0	100,0	100,0	100,0	100,0	98,9	**99,7**
% of people 60 years and older who received social grants	50,2	84,6	50,1	75,5	69,3	64,4	67,7	55,4	**61,8**
% of households with persons 60 years and older and classified as:									
Food access adequate	76,8	81,1	88,8	69,8	92,7	84,0	77,6	89,4	**83,0**
Number of households classified as N ('000)									
Food access adequate	1 016	203	325	193	1 150	1 138	1 592	1 133	**6 750**
% of poor households with children aged 7–18 who do not spend money on school fees	67,4	100,0	73,5	82,9	68,3	80,5	75,2	71,1	**75,3**
Number of households classified as poor using household monthly expenditure of below R2 500 as the cut-off N ('000)	222	94	106	103	275	415	640	427	**2 280**
Number of households classified as poor using household monthly expenditure of below R2 500 as the cut-off and who have children aged 7–18 N ('000)	95	38	44	51	87	126	234	117	**792**

2.5 **Transport**

Table 2.5: Transport indicators by metro

Indicators	Metro								
	City of Cape Town	Buffalo City	Nelson Mandela Bay	Mangaung	eThekwini	Ekurhuleni	City of Johannes-burg	City of Tshwane	All Metros
# of passenger trips made per month with each public transport mode N ('000):									
Minibus/taxi	4 139	582	993	774	7 055	4 717	8 250	3 580	**30 090**
Bus	920	4	133	301	373	22	380	367	**2 502**
% of the household's income spent on transport per month									
1–10%	46,1	40,9	68,0	54,5	39,8	52,1	48,3	48,2	**47,8**
11–20%	32,7	33,5	26,7	18,0	30,4	28,5	33,0	21,0	**29,3**

2.6 **Water, sanitation and environment**

Table 2.6: Water, sanitation and environment variables by metro

Indicators	Metro								
	City of Cape Town	Buffalo City	Nelson Mandela Bay	Mangaung	eThekwini	Ekurhuleni	City of Johannes-burg	City of Tshwane	All Metros
Number of households with water supply infrastructure of RDP standard or higher N ('000)	1 311	219	363	255	1 209	1 340	2 045	1 244	**7 987**
Number of households with water supply infrastructure less than RDP standard N ('000)	12	30	3	22	31	15	6	24	**143**
Consumer perception index of water quality N ('000)									
Number of households with access to a functioning basic sanitation facility (strategic framework) N ('000)	1 253	248	361	232	1 038	1 260	1 947	1 055	**7 393**
% households with access to improved sanitation facilities	94,6	99,2	98,4	83,9	84,2	93,1	95,0	83,5	**91,1**
% of households whose refuse is removed by a local authority or private company or municipality	90,3	64,7	89,9	64,2	85,9	92,5	88,3	75,9	**85,6**

3 Indicator tables

3.1 MFMA Circular No. 88 metro indicator data elements, 2021

Table 3.1: MFMA Circular No. 88 metro indicator data elements, 2021

Indicators	Metro							
	City of Cape Town	Buffalo City	Nelson Mandela Bay	Mangaung	eThekwini	Ekurhuleni	City of Johannes-burg	City of Tshwane
EE1.1 (1) Number of households with access to electricity	1 270 896	190 000	355 922	267 913	1 094 053	1 156 460	1 591 528	1 117 698
EE1.1 (2) Total number of households in the municipality	1 323 879	249 704	366 341	276 903	1 240 807	1 353 147	2 045 578	1 262 847
ENV3.1 (1) Number of households who have their refuse removed at least once a week.	1 185 086	161 607	326 857	162 717	1 025 509	1 249 818	1 796 026	962 112
ENV3.1 (2) Total number of households in the municipality	1 263 598	167 265	332 899	210 890	1 098 207	1 272 634	1 927 706	1 092 946
HS1.1 (1) Number of households residing in formal dwellings in the municipality	1 098 715	193 926	340 167	220 098	1 096 794	1 094 630	1 679 986	1 053 635
HS1.1 (2) Total number of households in the municipality	1 323 879	249 704	366 341	276 903	1 240 807	1 354 187	2 050 801	1 267 704
HS2.3 (1) Number of households in formal dwellings 'renting'	269 653	15 430	47 120	50 923	206 708	340 568	601 187	260 206
HS2.3 (2) Number of households residing in formal dwellings in the municipality	1 098 715	193 926	340 167	220 098	1 096 794	1 094 630	1 679 986	1 053 635

Table 3.2: MFMA Circular No. 88 metro indicator data elements, 2021 (Concluded)

Indicators	Metro							
	City of Cape Town	Buffalo City	Nelson Mandela Bay	Mangaung	eThekwini	Ekurhuleni	City of Johannes-burg	City of Tshwane
WS2.1 (1) Number of households with the main source of drinking water piped (tap) water inside dwelling/institution	1 048 330	140 096	329 553	97 807	732 152	901 231	1 104 382	819 048
WS2.1 (2) Number of households with the main source of drinking water piped (tap) water inside yard	154 643	29 046	25 904	128 405	344 216	349 535	789 432	361 916
WS2.1 (3) Number of households with the main source of drinking water piped (tap) water on community stand: distance less than 200m from dwelling/institution	108 436	43 886	8 032	28 534	113 249	82 549	135 744	34 432
WS2.1 (4) Total number of households in the municipality	1 323 879	249 704	366 341	276 903	1 240 807	1 354 187	2 050 801	1 267 704
WS1.1 (1) Number of households using a flush toilet (connected to sewerage system)	1 249 727	184 531	355 716	161 296	916 595	1 232 727	1 827 426	1 002 408
WS1.1 (4) Total number of households in the municipality	1 319 591	249 704	366 341	272 723	1 232 863	1 353 147	2 048 082	1 262 847
Total number of households in the municipality (estimate)	1 323 879	249 704	366 341	276 903	1 240 807	1 354 187	2 050 801	1 267 704
Total population of the municipality (estimates)	4 477 820	791 408	1 263 861	827 474	3 941 822	3 914 597	6 076 885	3 886 349

Note: COVID-19 forced Stats SA to adopt telephonic interviews as fieldwork methodology in 2020 and 2021. This lead to a substantial decline in response rates that particularly affected the accuracy with which less common events could be measured. As a result of this, the following MFMA Circular No. 88 indicator data elements were not supplied this year: **ENV1.3 and WS1.1(2-3).**

Table 3.3: Basic household and population data used for benchmarking the GHS 2021

Indicators	Metro								
	City of Cape Town	Buffalo City	Nelson Mandela Bay	Mangaung	eThekwini	Ekurhuleni	City of Johannes-burg	City of Tshwane	All Metros
# of persons N ('000)	4 478	791	1 264	827	3 942	3 915	6 077	3 886	**25 180**
# of households N ('000)	1 324	250	366	277	1 241	1 354	2 051	1 268	**8 130**

4   Technical notes

4.1   Target population

The target population of the survey consists of all private households in all nine provinces of South Africa and residents in workers' hostels. The survey does not cover other collective living quarters such as students' hostels, old-age homes, hospitals, prisons and military barracks, and is therefore only representative of non-institutionalised and non-military persons or households in South Africa.

4.2   Sample design

The General Household Survey (GHS) uses the Master Sample frame which has been developed as a general-purpose household survey frame that can be used by all other Stats SA household-based surveys having design requirements that are reasonably compatible with the GHS. The GHS 2021 collection was based on the 2013 Master Sample. This Master Sample is based on information collected during the 2011 Census conducted by Stats SA. In preparation for Census 2011, the country was divided into 103 576 enumeration areas (EAs). The census EAs, together with the auxiliary information for the EAs, were used as the frame units or building blocks for the formation of primary sampling units (PSUs) for the Master Sample, since they covered the entire country and had other information that is crucial for stratification and creation of PSUs. There are 3 324 primary sampling units (PSUs) in the Master Sample with an expected sample of approximately 33 000 dwelling units (DUs). The number of PSUs in the current Master Sample (3 324) reflect an 8,0% increase in the size of the Master Sample compared to the previous (2008) Master Sample (which had 3 080 PSUs). The larger Master Sample of PSUs was selected to improve the precision (smaller coefficients of variation, known as CVs) of the GHS estimates.

The Master Sample is designed to be representative at provincial level and within provinces at metro/non-metro levels. Within the metros, the sample is further distributed by geographical type. The three geography types are Urban, Tribal and Farms. This implies, for example, that within a metropolitan area, the sample is representative of the different geography types that may exist within that metro. The sample for the GHS is based on a stratified two-stage design with probability proportional to size (PPS) sampling of PSUs in the first stage, and sampling of dwelling units (DUs) with systematic sampling in the second stage.

Table 4.1: Comparison between the 2007 (old) Master Sample and the new Master Sample (designed in 2013)

	2007 Master Sample (GHS 2008-2014)	2013 Master Sample (GHS 2015 onwards)
Design	Two-stage stratified design	Two-stage stratified design
Number of primary sampling units (PSUs)	3 080 PSUs	3 324 PSUs
Number of dwelling units (DUs)	Approximately 30 000 DUs	Approximately 33 000 DUs
Stratification	No stratification by geo-type within metros/non-metros	Stratification by geo-type within metros/non-metros
Geo-types	4 geo-types, namely urban formal, urban informal, tribal areas, and rural formal	3 geo-types, namely urban, traditional, and farms
Sample	Sample representative at national, provincial and metro levels, but estimates only produced to provincial level	Sample representative at national, provincial and metro levels Weights produced to publish estimates at metro level

There are a number of aspects in which the two Master Samples differ. The number of geo-types were, firstly, reduced from four to three (excluding urban informal, and keeping urban, rural traditional and rural farms). The new Master Sample, furthermore, allows for the publication of estimates at metro level.

Primary stratification occurred at provincial and metro/non-metro levels, for mining, and geography type, while the secondary strata were created within the primary strata based on the demographic and socio-economic characteristics of the population.

Given the change in the provincial distribution of the South African population between 2001 and 2011, the Master Sample was accordingly adjusted. This is presented in Figure 18.1. There was also an 8% increase in the sample size of the Master Sample of PSUs to improve the precision of the GHS estimates. In particular, the sample sizes increased most notably in Gauteng, Eastern Cape and KwaZulu-Natal.

4.3   Allocating sample sizes to strata[1]

The randomised PPS systematic sampling method is described below, This procedure was applied independently within each design stratum.

Let N be the total # of PSUs in the stratum, and the # of PSUs to be selected from the stratum is denoted by n, Also, let x_i denote the size measure of the PSU i within the stratum, where $i = 1, 2, 3, ..., N$. Then, the method for selecting the sample of n PSUs with the Randomised PPS systematic sampling method can be described as follows:

Step 1: Randomise the PSUs within the stratum

The list of N PSUs within the stratum can be randomised by generating uniform random between 0 and 1, and then by sorting the N PSUs in ascending or descending order of these random numbers. Once the PSUs have been randomised, we can generate permanent sequence #s for the PSUs.

Step 2: Define normalised measures of size for the PSUs

We denote by x_i the measure of size (MOS) of PSU i within the design stratum. Then, the measure of size for the stratum is given by $X = \sum_{i=1}^{N} x_i$. We define the normalised size measure p_i of PSU i as $p_i = {x_i}/{X}; \quad i = 1, 2, 3, --- N,$ where N is the total # of PSUs in the design stratum. Then, p_i is the relative size of the PSU i in the stratum, and $\sum_{i=1}^{N} p_i = 1$ for all strata. It should be noted that the value of $n \times p_i$, which is the selection probability of PSU i must be less than one.

Step 3: Obtain inverse sampling rates (ISRs)

Let R be the stratum inverse sampling rate (ISR). The stratum ISR is the same as the corresponding provincial ISR because of the proportional allocation within the province. It should also be noted that the proportional allocation within the province also results in a self-weighting design.

Then, the PSU inverse sampling rates (ISRs) are obtained as follows:

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[1] Source: Sample Selection and Rotation for the Redesigned South African Labour Force Survey by G. Hussain Choudhry, 2007.

First, define N real #s $Z_i = n \times p_i \times R; i = 1, 2, 3, ---, N$. It is easy to verify that $\sum_{i=1}^{N} Z_i = n \times R$. Next, round the N real #s $Z_i; i = 1, 2, 3, ..., N$ to integer values $R_i; i = 1, 2, 3, ..., N$ such that each R_i is as close as possible to the corresponding Z_i value and the R_i values add up to $n \times R$ within the stratum. In other words, the sum of the absolute differences between the R_i and the corresponding Z_i values is minimised subject to the constraint that the R_i values add up to $n \times R$ within the stratum. Drew, Choudhry and Gray (1978) provide a simple algorithm to obtain the integer R_i values as follows:

Let $"d"$ be the difference between the value $n \times R$ and the sum $S = \sum_{i=1}^{N} [Z_i]$, where $[.]$ is the integer function, then R_i values can be obtained by rounding up the $"d"$ Z_i values with the largest fraction parts, and by rounding down the remaining $(N - d)$ of them. It should be noted that the integer sizes $R_i; i = 1, 2, 3, ..., N$ are also the PSU inverse sampling rates (ISRs) for systematic sampling of dwelling units.

Step 4: Obtain cumulative ISR values

We denote by $C_i; i = 1, 2, 3, ..., N$ the cumulative ISRs of the PSUs within the stratum. It should be noted that the PSUs within the stratum have been sorted according to the sequence numbers that were assigned after the randomisation. Then, the cumulative ISRs are defined as follows:

$$C_1 = R_1,$$
$$C_j = C_{(j-1)} + R_j; \quad j = 2, 3, ---, N.$$

It should be noted that the value C_N will be equal to $n \times R$, which is also the total # of systematic samples of dwelling units that can be selected from the stratum.

Step 5: Generate an integer random # r between 1 and R , and compute n integers $r_1, r_2, ---, r_n$ as follows:

$$r_1 = r$$
$$r_2 = r_1 + R$$
$$r_3 = r_2 + R$$
.
.
$$r_i = r_{(i-1)} + R$$
.
.
$$r_n = r_{(n-1)} + R.$$

Step 6: Select n PSUs out of the N PSUs in the stratum with the labels (sequence numbers) number $i_1, i_2, \ldots, i_n$ such that:

$$C_{i_1-1} < r_1 \le C_{i_1}$$
$$C_{i_2-1} < r_2 \le C_{i_2}$$
.
.
$$C_{i_n-1} < r_n \le C_{i_n}.$$

Then, the n PSUs with the labels $i_1, i_2, \ldots, i_n$ would get selected with probabilities proportional to size, and the selection probability of the PSU i will be given by $R_i \big/ R$.

4.4 Weighting [2]

The sample weights were constructed in order to account for the following: the original selection probabilities (design weights), adjustments for PSUs that were sub-sampled or segmented, excluded population from the sampling frame, non-response, weight trimming, and benchmarking to known population estimates from the Demographic Analysis Division within Stats SA.

The sampling weights for the data collected from the sampled households were constructed so that the responses could be properly expanded to represent the entire civilian population of South Africa. The design weights, which are the inverse sampling rate (ISR) for the province, are assigned to each of the households in a province.

Mid-year population estimates produced by the Demographic Analysis Division were used for benchmarking. The final survey weights were constructed using regression estimation to calibrate to national level population estimates cross-classified by 5-year age groups, gender and race, and provincial population estimates by broad age groups. The 5-year age groups are: 0–4, 5–9, 10–14, 55–59, 60–64; and 65 and over. The provincial level age groups are 0–14, 15–34, 35–64; and 65 years and over. The calibrated weights were constructed such that all persons in a household would have the same final weight.

The Statistics Canada software StatMx was used for constructing calibration weights. The population controls at national and provincial level were used for the cells defined by cross-classification of Age by Gender by Race. Records for which the age, population group or sex had item non-response could not be weighted and were therefore excluded from the dataset. No additional imputation was done to retain these records.

Household estimates that were developed using the UN headship ratio methodology were used to weight household files. The databases of Census 1996, Census 2001, Community Survey 2007 Census 2011 were used to analyse trends and develop models to predict the number of households for each year. The weighting system was based on tables for the expected distribution of household heads for specific age categories, per population group and province.

4.5 Bias-adjustment procedure

The GHS 2021 data was collected using Computer-assisted Telephone Interviews (CATI) due to COVID-19. The data collection was based on the 2019 sample, from which only households that provided contact information (i.e. telephone/cellphone) were enumerated. Therefore, this may attribute biasness in the sample

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[2] Source: Sampling and Weighting System for the Redesigned South African Labour Force Survey, by G. Hussain Choudhry, 2007

due to differences in the characteristics of households and persons within households that provided contact information and those that did not.

The bias adjustment factors were computed using the GHS 2019 data, and the adjustment was applied to the GHS 2021 calibrated survey weights. The bias adjustment factors were computed for various household level, person level, and demographic characteristics at provincial, and metropolitan and nonmetropolitan area levels within provinces. The bias adjustment factors were computed as the ratio between the estimates for each cell of the selected variables (or cross-classification of the selected variables) for the full sample households (households that provided contact information and those that did not) and households that provided contact information. Bias adjustment factor R^j is given as:

$$R^j = \frac{X_{full}^j}{X_{tel}^j}$$

Where X_{full}^j is the domain estimate derived from the full sample and X_{tel}^j is the domain estimate derived from the households or persons within households that provided contact information.

The GHS 2021 bias adjusted weights were used to compute the GHS 2021 estimates. These GHS 2021 estimates will not be consistent with the demographic population estimates because the bias adjustment factors are non-linear statistics. Therefore, the GHS 2021 estimates that were based on the bias adjusted weights were further adjusted to achieve consistency simultaneously with the known total population, and the internal consistency across all variables (or cross-classification of variables). These adjusted estimates were then used as control totals to compute the final survey weights as described in the next sub-section.

4.6   Final survey weights

In the final step of constructing the sample weights, the calibrated sample weights were raked by applying the raking procedure twice with different sets of control totals at each stage of raking. The person level and household level sample weights were raked independently.

In the first application of the raking procedure, the following control totals were used to compute the intermediate raked weights:

Control totals set for person level weights
- Child Care arrangement (36 cells)
- Attendance of educational institution (9 cells)
- Highest level of education (8 cells)
- Disability by gender (58 cells)
- Medical aid coverage (27 cells)
- Benefit from social grants (3 cells)

Control totals set for household level weights
- Main dwelling type (22 cells)
- Tenure status (45 cells)
- Main source of energy or cooking (30 cells)
- Main source of water (18 cells)
- Access to sanitation (22 cells)
- Access to refuse removal (40 cells)
- Main source of household income (54 cells)
- Vulnerability to hunger (26 cells)

The intermediate raked weights computed above were further raked with the following control totals to compute the final survey weights:

Control totals set for person level weights
- Age by Gender (32 cells)
- Age by Population Group (64 cells)
- Age by Province (54 cells)
- Age by Metro/Non-metro (68 cells)
- Gender by province (18 cells)

Control totals set for household level weights
- Age by Gender (8 cells)
- Age by Population Group (16 cells)
- Age by Province (36 cells)
- Age by Metro/Non-metro (68 cells)

The advantage of applying the raking procedure twice would be that the population estimates would be consistent with the known population totals from Demographic Analysis. Moreover, the second application of raking would introduce variability in the survey estimates while correcting for the bias due to non-coverage of the households that did not provide contact information.

4.7 Sampling and the interpretation of the data

Caution must be exercised when interpreting the results of the GHS at low levels of disaggregation. The sample and reporting are based on the provincial boundaries as defined in census 2011. These new boundaries resulted in minor changes to the boundaries of some provinces, especially Gauteng, North West, Mpumalanga/Limpopo and Eastern and Western Cape. In previous reports the sample was based on the provincial boundaries as defined in 2001, and there will therefore be slight comparative differences in terms of provincial boundary definitions.

Given the change in the survey mode of collection and the fact that the GHS 2021 estimates are not based on a full sample, comparisons with previous years should be made with caution.

4.8 Definitions of terms

Term	Definition
Household	A household is defined as a person, or group of persons, who occupy a common dwelling unit (or part of it) for **at least four nights in a week** on average during the past four weeks prior to the survey interview. Basically, **they live together and share resources as a unit.** Other explanatory phrases can be 'eating from the same pot' and 'cook and eat together'. Persons who occupy the same dwelling unit but do not share food or other essentials, are regarded as separate households. For example, people who share a dwelling unit, but buy food separately, and generally provide for themselves separately, are regarded as separate households within the same dwelling unit. **Conversely, a household may occupy more than one structure, If persons on a plot, stand or yard eat together, but sleep in separate structures (e.g., a room at the back of the house for single young male members of a family), all these persons should be regarded as one household.**
Multiple households	Multiple households occur when two or more households live in one sampled dwelling unit. If there are two or more households in the selected dwelling unit and they do not share resources, all households are to be interviewed.

Term	Definition
	The whole dwelling unit has been given one chance of selection and all households located there were interviewed using separate questionnaires.
Household head/Acting household head	The head of the household is the person identified by the household as the head of that household and must (by definition of 'household') be a member of the household. If there is difficulty in identifying the head, the head must be selected in order of precedence as the person who: • Owns the household accommodation, • Is responsible for the rent of the household accommodation, • Has the household accommodation as an allowance (entitlement), etc., • Has the household accommodation by virtue of some relationship to the owner, lessee, etc., who is not in the household, • Makes the most decisions in the household. If two or more persons have equal claim to be head of the household, or if people state that they are joint heads or that the household has no head, then denote the eldest as the head.
Formal dwellings	Include a house on a separate stand, a flat or apartment in a block of flats, a townhouse, a room in a backyard, and a room or flatlet on a shared property.
Informal dwellings	Refer to shacks or shanties in informal settlements or in backyards
Piped water in dwelling or on site	Includes piped water inside the household's own dwelling or in their yard, It excludes water from a neighbour's tap or a public tap that is not on site.
Electricity for cooking, heating and/or lighting	Refers to electricity from the public supplier.
UN disability	Concentrating and remembering are grouped together as one category. If an individual has 'Some difficulty' with two or more of the 6 categories then they are disabled. If an individual has 'A lot of difficulty' or is 'Unable to do' for one or more category they are classified as disabled.
Severe disability	If an individual has 'A lot of difficulty' or is 'Unable to do' for one or more category they are classified as severely disabled.
Poor household	Poor households have been defined households who spend less than R2 500 per month.
Water of RDP standard or higher	'Piped water in dwelling or in yard' and 'Water from a neighbour's tap or public/communal tap' are also included provided that the distance is less than 200 metres.
Improved sanitation facility	Flush toilet connected to a public sewerage system or septic tank or a pit latrine with ventilation pipe.

5   Specific departmental indicators and question linkages

Table 5.1: Education

Indicator	Annual reporting level	Questions in the GHS	GHS relative to other sources	Definitions and/or formulas
Age-specific Enrolment Ratio (ASER)	National Provincial UNESCO	EDU_GRD E, D	Main source	# (persons aged 7–13 attending educational institutions)/ # persons aged 7–13 * 100 # (persons aged 7–18 attending educational institutions)/ # persons aged 7–18 *100
Enrolment for 16–18-year-olds	National Provincial	EDU_GRD E, EDU_EDUI	Validation Data confrontation	# aged 16–18 who are enrolled in any institution # who attend any institution/(# 16–18 years old) *100
Percentage of learners in public schools that do not pay school fees	National Provincial	EDU_TOTF EES	Validation Data confrontation	# persons attend public school who do not pay school fees/# of persons attending public schools*100
Percentage of learners in schools receiving social grants	National Provincial	EDU_EDUI , SOC_GRA NT	Main source Data confrontation	# persons attending school who receive any grant/# of persons who attend school and answered the question*100
% of orphans aged 7–18 years attending educational institutions	National and provincial	HHC_FAT H_ALIVE, HHC_MOT H_ALIVE, EDU_ATTE ND	Main source	# of children aged 7–18 years who lost one or both of their biological parents attending school/ # of children aged 7–18 who lost one or both of their biological parents*100

Table 5.2: Health

Indicator	Annual reporting level	Questions in the GHS	GHS relative to other sources	Definitions and/or formulas
% of persons with medical aid coverage	National and provincial	HLT_MEDI	Main source	# of persons who responded 'Yes' in HLT_MEDI/# of persons who responded to the question*100
% of households for which the usual place of consultation is a public facility	National and provincial	HHW_HLTF AC	Descriptive/ interpretive One of the sources	# of persons who responded 'Yes' to options 1–3 in HHW_HLTFAC/# of persons who responded to the question*100

Table 5.3: Human settlement

Indicator	Annual reporting level	Questions in the GHS	GHS relative to other sources	Definitions and/or formulas
Percentage of households who live in an RDP or state subsidised house	National and provincial	HSG_RDP	Main source	# of households who replied 'Yes' in HSG_RDP/# of households who answered the question*100
Percentage of households who living in informal dwellings/tents/caravans	National and provincial	HSG_MAIND	Main source	# of households option (8, 9 and 11) /# of households who answered the question*100
Percentage of households who fully own their dwellings	National and provincial	HSG_TENU RE	Main source	# of households options 5 in HSG_TENURE/# of households who answered the question*100

Table 5.4: Social development

Indicator	Annual reporting level	Questions in the GHS	GHS relative to other sources	Definitions and/or formulas
% of persons 60 years and older that are disabled	National and provincial	D, DSB	Only source	# of persons aged 60 years and older who are disabled UN definition/# of persons who answered the question *100
% of persons 60 years and older that are severely disabled	National and provincial	D, DSB	Only source	# of persons aged 60 years and older who are severely disabled/# of persons who answered the question *100
% of people 60 years and older who received old-age grant	National and provincial	D, soc_grant_ oag	Only source	# of persons aged 60 years and older who received an old-age grant/# of persons who answered the question *100
% of people 60 years and older who received social grants	National and provincial	D, SOC_GRA NT	Only source	# of persons aged 60 years and older who received a social grant/# of persons who answered the question *100
% of households with persons 60 years and older with: Food access adequate	National and provincial	D, FSD_WOR RIED - FSD_WHL DAY	Descriptive/ interpretive Validation	# of persons aged 60 years and older who answered 'Yes' to FSD_WORRIED - FSD_WHLDAY/# of persons who answered the question *100

Table 5.5: Transport

Indicator	Annual reporting level	Questions in the GHS	GHS relative to other sources	Definitions and/or formulas

# of passenger trips made per month with each public transport mode: 	
    Minibus/taxi
    Bus
	National and provincial	TRA_Taxi_trips, TRA_bus_trips	Validation	Only calculated for household members who made trips using public transport

% of the household's income spent on transport per month:
    1-10%
    11-20%
	National and provincial	TRA_Taxi_cost, TRA_bus_cost, FIN_INC	Main source	Only calculated for households with valid income and expenditure on transport data

Table 5.6: Water, sanitation and environment

Indicator	Annual reporting level	Questions in the GHS	GHS relative to other sources	Definitions and/or formulas
# of households with water supply infrastructure of RDP standard or higher	National and provincial	WAT_DRINK WAT, WAT_DIST	Validation and data confrontation	On or above RDP is piped water in dwelling or yard or borehole in the yard (options 1,2,3) or tap less than 200 meters from yard (options 5,6&9) and option 1 WAT_DIST; all others are below,
# of households with water supply infrastructure of RDP standard or higher	National and provincial	WAT_DRINK WAT, WAT_DIST	Validation and data confrontation	On or above RDP is piped water in dwelling or yard or borehole in the yard (options 1,2&3) or tap less than 200 meters from yard (options 5,6&9) and option 1 WAT_DIST; all others are below,
# of households with access to a functioning basic sanitation facility (strategic framework)	National and provincial	SAN_TOIL – SAN_LOCAT ION	Main source	'Basic facility' is defined as options 1, 2,3 and 5 in SAN_TOIL
Percentage of households whose refuse or rubbish is removed by a local authority or private company	National and provincial	SWR_RUB	Main source	# of households options 1 and 2 in SWR_RUB/# of households who answered the question*100

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