



MARKETING RESEARCH
FOUNDATION

MAPS TECHNICAL REPORT

July 2021 – June 2022

PLUS 94

RESEARCH

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MRF Objectives and Business

The Core Business of the Company

The Marketing Research Foundation (MRF) is tasked with facilitating, co-ordinating and determining the joint industry research needs of its stakeholders and to ensure that these needs are met within the limitations of the funding available for this activity.

The Marketing Research Foundation is an independent non-profit company, acting as the custodian and repository of research expertise for marketers and their advertising industry partners. Its core objectives are to establish, commission and manage comprehensive, valid, reliable, independent, transparent, and continuous consumer behaviour research, surveys, investigations, and reports that provide data for targeting and segmentation, as well as multi-product/brand usage and multi-media information that reflects the totality and complexity of the South African society.

Main Objectives

The main objective of the Company is:

To provide tools for targeting and segmentation of markets as well as to establish, commission and manage comprehensive, valid, reliable, independent, transparent, and continuous media, consumer and product usage research, surveys, investigations and reports that provide comparable multi-media and multi-product/brand usage information that reflects the totality and complexity of the South African society.

Ancillary Objectives

The ancillary objectives of the Company are:

1. To co-ordinate joint industry research amongst the advertising, marketing and media industries;
2. To investigate any research techniques whether in practice or proposed and to establish the degree of validity and reliability of the results obtained thereby; to seek improved methods in consumer behaviour and product usage research and to provide improved tools for targeting and segmentation of markets;
3. To act as a liaison between the advertising, marketing and media industry and universities, media audience, demographic and product usage research as well as tools for targeting and segmentation of markets;
4. To arrange seminars and courses directly or indirectly sponsored by the Marketing Research Foundation on any or all aspects of MAPS™ data and the utilisation thereof including tools for market sizing, targeting and segmentation of markets;

5. To act as mouthpiece of the industry on matters pertaining to marketing, consumer behaviour and product usage research as well as tools for targeting and segmentation of markets;
6. To promote and maintain fair, reasonable and proper standards of media, consumer behaviour and product usage research as well as targeting and segmentation tools.
7. To maintain and augment a library containing information concerning media audience, product usage and related research as well as on tools for targeting and segmentation of markets, and to make it accessible to members and students;
8. To do all such other acts, including the publication in print or electronic format, of books, memoranda, journals, magazines, circulars, reports and any documents or databases as the Marketing Research Foundation may consider expedient to promote the interests of its members;
9. Likewise to do all things and carry on any activity related, connected to, or associated with any of the above objects and purposes; and
10. To finance the operations of the Company by engaging in any lawful activity which may generate funding for the Company.

MRF Management

Responsibility for the management of the MRF affairs rests with a Board of Directors, representing the members of the Foundation – The Marketing Association of South Africa, the Association for Communication and Advertising and the Advertising Media Forum – together with the Chief Executive Officer, under a chairman.

MRF Councils

The MRF Board of Directors is the highest MRF authority. It consists of directors nominated by all MRF stakeholders namely marketers and advertising agencies.

Much of the work done by the MRF is guided by a Research Committee with work groups and an Advisory Council. The MRF Research Committee and Advisory Council is involved with guidance and decision making regarding the direction of the research survey. The Research Committee consists of representatives from the subscriber base and research experts from the broad industry. The Advisory Council consists of research experts from the broad industry who do not sit on the Board or are members of the Research Committee. The Committee and Council's mandate is to advise the MRF Board on what research should be undertaken and, in instances where the necessary authority has been delegated to it, to decide on details. In addition, several research experts serve on this council to advise on how research should be carried out.

The MRF Board and the MRF Research Committee and Advisory Council operate on a voluntary basis.

MRF Contractor

The MRF MAPS™ Technical Report, tabular electronic reports, datafiles, presentations, MAPS™ Questionnaire, Products and Activities Questionnaire, and other interviewing material which includes an interviewer instruction booklet, were prepared by Plus 94 Research.

Coverage and Layout of this Technical Report

1. Introduction.
2. Special Notes: It is important that this be read before studying the individual electronic reports.
3. Definition of Terms: Particular attention is drawn to this section, since correct interpretation of the data in the numerous MAPS™ tables naturally depends on a clear understanding of the terms used.
4. Universe: Details of the population sampled are provided.
5. Sampling: The MAPS™ sampling method and the actual sample obtained is provided.
6. The Interview: The MAPS™ interview is described as well as questionnaire changes implemented.
7. Fieldwork: The fieldwork methods and the results obtained in terms of the original sample attained are discussed.
8. Analysis: This covers the treatment of the data after completion of the interviewing and the weighting methodology employed.
9. Segmentation
10. Living Standards Measure
11. Confidence Limits: The Technical Report concludes with the likely margins of error attached to the MAPS™ data.
12. Appendix: The MAPS™ research instruments [i.e., Face-to-Face questionnaire and Leave Behind questionnaire], questionnaire changes/additions, fieldwork areas covered by the study.

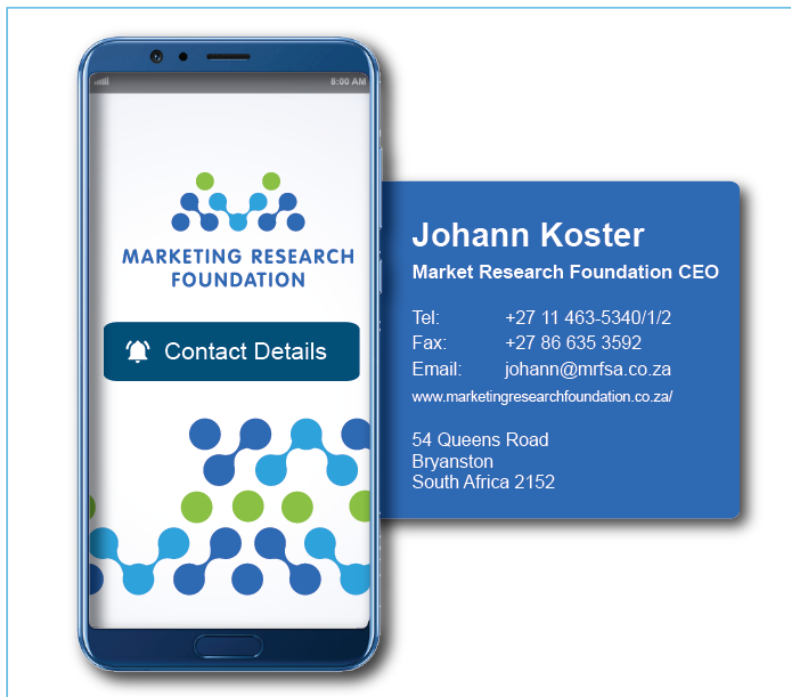
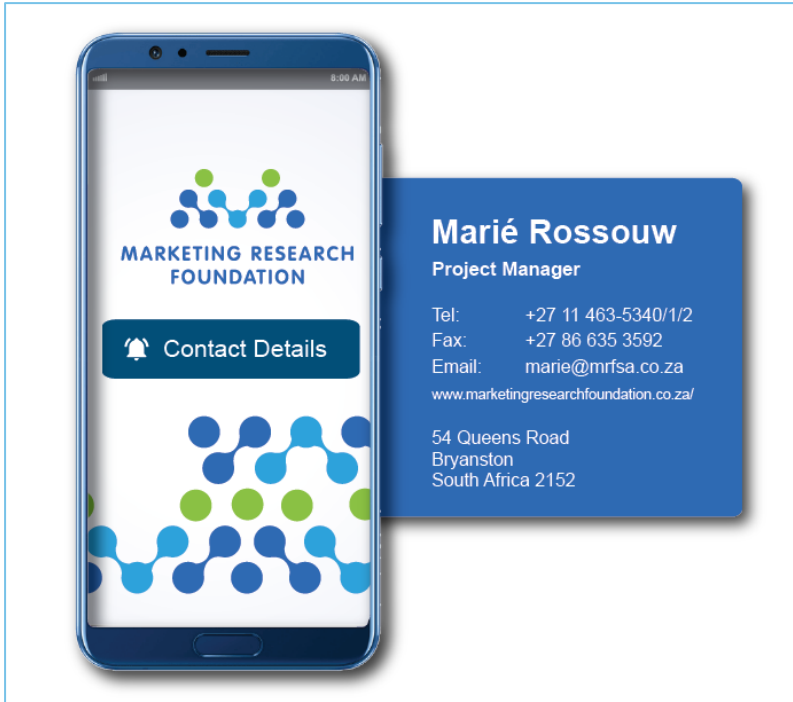
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MARKETING RESEARCH
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Section A:

Introduction and Key
Definitions

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RESEARCH

Section A: Introduction and Key Definitions

1.0 Introduction

MAPS™ aims to be the consumer-centric barometer of the customer journey, tracking consumption and related product and brand information. The results of the survey will aid consumer understanding for target marketing, target sizing, and act as the basis for planning media space and time.

The focus of the research is on product and brand consumption, media interaction and consumer behaviour, but has been expressed broadly as surveys, investigations and reports to allow for the best methods of collecting and reporting the information to be considered, with a view to establishing:

- Consumption behaviour relating to purchase, usage and ownership of products, services and brands;
- Comprehensive characteristics of users of products, services, brands, behaviour and media that can be used for segmentation development, and defining a multitude of target groups, including Living Standards Measures (LSMs), Socio-Economic Measures (SEMs), lifestyles and psychographics; and
- The usage of media (audience sizes and wide-ranging characteristics, including detailed demographics).

Naming of MRF MAPS™ Releases

The descriptors for the various MRF MAPS™ releases are as follows:

- The current release is described as MRF MAPS™ July 2021 – June 2022.

2.0 Special Notes

1. Age

There is one age question in the MRF MAPS™ questionnaire which captures the exact ages of the respondents. There is also a proportion of respondents who refuse to give their exact ages. Missing ages are imputed using relevant demographic variables such as age groups of own children.

2. Language

For reporting purposes, the language categories are as follows:

Afrikaans	Sesotho	Setswana
English	SiSwati	Tshivenda
IsiNdebele	XiTsonga	IsiZulu
Sepedi	IsiXhosa	Other

Each language code comprises only those respondents claiming that specific language as the language most spoken.

3. Population 2022

According to Statistics South Africa's 2022 mid-year population estimates, the total population of South Africa was estimated to be at 60.14 million. Approximately 71.9% (43.59 million) of the population is aged 15 years and older and this defines the universe for the MAPS™ study. About 9.2% (5.6 million) is 60 years and older whereas 28.1% of the population is aged younger than 15 years.

4. Radio Listenership

To assist with intermedia comparisons, the past 4 weeks, past 7 days and yesterday radio listening questions are incorporated into the MRF MAPS™ questionnaire.

Radio stations with 40 or more mentions are released individually on the database for both commercial and community and online stations.

Refer to the questionnaire in the Appendix of this report – for details of the radio station changes for MRF MAPS™ July 2021 – June 2022.

5. MRF MAPS™ Research Universe

The research universe is defined as adult males and females aged 15 years and older.

6. TV Viewership

To assist with intermedia comparisons, the past 4 weeks, past 7 days and yesterday TV viewing questions are incorporated into the MRF MAPS™ questionnaire. The TV currency is BRCTAMS data. BRCTAMS is not a product of the MRF and independently conducted by the BRC.

The figures for SABC 1, SABC 2, SABC 3, e.tv, M-Net and Community TV reflected in the electronic reports and on the database still reflect total viewership for these stations regardless of the platform through which they are viewed. “Total Community TV” currently includes Soweto TV, Cape Town TV, Bay TV, Tshwane TV, 1KZNTV and Platinum TV.

TV channels with 40 or more mentions are released individually on the database.

Refer to the questionnaire in the Appendix of this report – for details of all TV station/channel changes for MRF MAPS™ July 2021 – June 2022.

7. Question R12 of the Face-to-Face

Question: What is your occupation? (What type of work do you do?)

There were some respondents that listed various elementary jobs that were coded as “General hand worker” in the data.

“General hand worker” refers to the following occupations:

- General worker;
- Maintenance/recycling/street cleaner/municipal worker;
- Car guard;
- Ordinary labourer;
- Gardener; and
- Farmworker.

8. Question R17 of the Face-to-Face

Please note that the diploma qualification **excludes short courses** as these are covered by response options 6 and 7.

1. No schooling;
2. Some primary school;
3. Primary school completed;
4. Some high school;
5. Matric (high school completed);
6. Pre-Matric certificate;
7. Post-Matric certificate;
8. Diploma;
9. Undergraduate degree; and
10. Postgraduate degree.

3.0 Definition of Terms

In a study of this magnitude, it is important that certain user-terms be defined and agreed upon. This has a bearing on how the respondents are filtered. The MRF reserves all rights to provide such definitions and to modify them from time to time as may become necessary. Changes in the definitions are then incorporated into the questionnaire to modify the manner in which respondents are screened and their data interpreted. Below is a summary of the list of working definitions as they are currently used in the survey:

1. Average Issue Readership (AIR)

To qualify as an “average issue” reader of a publication, a respondent must have read or paged through any copy of the title under consideration within a period before the interview which is no longer than the issue period of that title. Furthermore, the respondent must have read or paged through that issue for the first time within that period.

For example, to qualify as an average issue reader of a weekly publication, a respondent must have read or paged through that issue for the first time within the past 7 days.

2. Children’s Primary Purchase Decision Maker

“Primary purchase decision maker for babies” refers to infants up to 23 months old, and “Primary purchase decision maker for children” refers to children from 2 to 14 years old.

A primary purchase decision maker for children is a person (male or female) who decides upon or chooses the products or services for children. These children can be his/her own children, other children who are dependent on him/her or any other children. It does not matter whether or not these children live with the person who primarily makes decisions for their purchases.

3. Cycle

A cycle (quarter) is a continuous period of three months.

4. Dip

A dip is a monthly survey of 1667 by 12 months equals 20 004 interviews. Three dips make a cycle of 5 001 interviews, and two cycles make a wave of 10 002.

5. Dwelling Unit

Structure or part of a structure or group of structures occupied or meant to be occupied by one or more than one household. Includes structure or part of a structure which is vacant and/or under construction but can be lived in at the time of the survey.

6. EA

EA is an acronym for an enumeration or enumerator area. It is a pocket-sized piece of a country which is visited by an enumerator during a census. In the MAPS™ study, EA maps were made use of by interviewers for ease of identifying the areas selected for the survey.

7. Area Type

The definition of metropolitan areas in the MAPS™ study is different from that of Statistics South Africa. There are no rural areas associated with the built-up areas. AfricaScope defines them as contiguous built-up areas. Definitions for rural and other urban areas are as defined by Stats SA.

Metro - Areas that fall under a **metropolitan municipality as per the official demarcation of municipalities**. The area might be a city e.g., Johannesburg under the City of Johannesburg Metropolitan Municipality or a town e.g., Centurion under the City of Tshwane Metropolitan Municipality or just a township e, g KwaThema in Ekurhuleni Metropolitan Municipality. There are 8 metropolitan municipalities.

Urban - **Urban areas that fall under a local or district municipality** as per the official demarcation of municipalities. The area might be a large town e.g., Polokwane under the Polokwane Local Municipality or a small town e.g., Krugersdorp under West Rand District Municipality.

Rural – **Farms and Traditional areas that fall under a local and district** municipality as per the official demarcation of municipalities.

Stats SA provides a list of with classifications showing if an area is urban or rural or if it falls under a metropolitan municipality or not. Sometimes there are fine margins, but we stick to them. For example, some areas in Westonaria on the West Rand are classified under Urban while some fall under rural. An informal settlement may fall under metro, urban or rural as well.

Refer to the Appendix (Section E) of this Technical Report for further information on area type.

8. Home Language

The respondent is asked for the language they personally speak most often at home. If the respondent cannot decide on one home language, they are asked for the language they spoke most often yesterday.

All 11 official languages are used as breakdowns in the electronic reports as follows:

Afrikaans	Sesotho	Tshivenda
English	SiSwati	IsiXhosa
IsiNdebele	XiTsonga	IsiZulu
Sepedi	Setswana	Other

8. Household

A household consists of a person, or a group of persons, who occupy a common dwelling (or part of it) for at least four days a week and who provide themselves jointly with food and other essentials for living. In other words, they live together as a unit. People who occupy the same dwelling, but who do not share food or other essentials, are enumerated as separate households. For example, people who share a dwelling, but who buy food and eat separately, are counted as separate households. Resident domestic workers and live-in gardeners are, however, excluded and regarded as forming a household of one or more persons.

9. Household Income

"Household income" is defined to the respondent as the "..... total monthly income" of the number of "income earners" previously enumerated within the relevant household "before tax and other deductions," but including "all sources of income, i.e. salaries, pensions, government grants, income from investments, etc."

In the cases of refusal to answer the question, the income is imputed using demographic variables such as the Living Standards Measure, Socio-Economic Measure, residential area and employment status.

10. Household Purchaser

Any respondent of either gender who claims to be solely or partly responsible for the day-to-day purchases of the household is described as a household purchaser (see the face-to-face questionnaire in the Appendix of this report, question M1).

These respondents, weighted to households, should be used for analyses on the household FMCG categories.

There may be more than one person who could claim to be a "household purchaser" within any given household, although only one would be interviewed.

11. Housing Unit

A unit of accommodation for a household, which may consist of one structure, or more than one structure, or part of a structure. (Examples of each are a house, a group of rondavels, and a flat.) It may be vacant or occupied by one or more than one household.

12. Internet

The Internet is introduced to respondents as an alternative means of communication, and that it can be accessed using a computer, cellular phone or another Internet-enabled device.

13. Large Item Decision Maker

To analyse the incidence, usage and purchase of large household items, a male or female respondent who claims to be the head of the household or who claims to be solely or partly responsible for the household purchases is described as a large item decision maker.

14. Level of Education

Respondents still undergoing full-time education are coded according to the level achieved as at the date of the interview.

15. Life Stages

Seven personal life stage groups are used as a breakdown and are included on the database. A description of these groups follows. Unless otherwise stated, a child is under 21 years of age.

Young Singles

- Up to 34 years old;
- Not married or not living together; and
- Do not have any dependent children in the household (own or other children) that the respondent is responsible for.

Mature Singles

- 35+ years old;
- Not married or not living together; and
- Do not have any dependent children in the household (own or other children) that the respondent is responsible for.

Young Couples

- Up to 49 years old;
- Married or living together; and
- No dependent children in the household (own or other children) that they are responsible for.

Mature Couples

- 50+ years old;
- Married or living together; and
- No dependent children in the household (own or other children) that they are responsible for.

Young Family

- Married or living together; and
- With at least one dependent child under 13 years in the household (own or other children) that they are responsible for.

Single Parent Family

- Not married or not living together; and

- With dependent children in the household (own or other children) that they are responsible for.

Mature Family

- Married or living together; and
- With no dependent children under 13 years in the household (own or other children) that they are responsible for, but with dependent children over the age of 13 years in the household.

16. Mothers with Children

"With babies" refers to infants up to 23 months old. "With children" refers to children in the age group from 24 months to 14 years.

17. Multiple Households

Two or more households living in the same dwelling unit.

18. Occupation

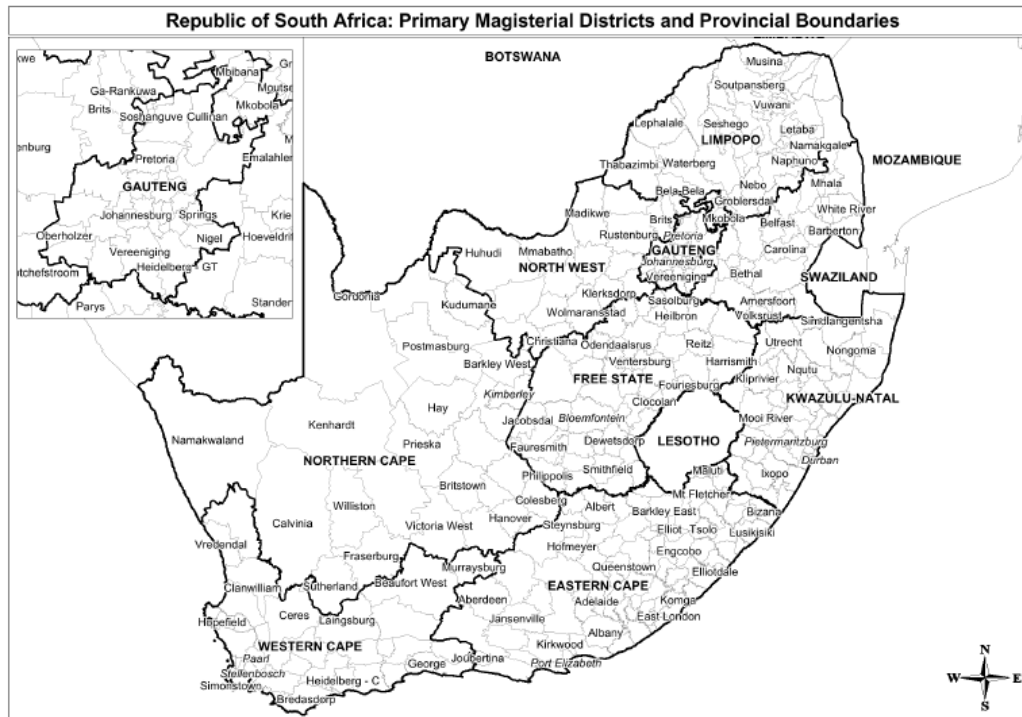
The occupation of respondents who work full-time or part-time or are self-employed is classified according to Stats SA "Standard Classification of Occupations" (Report 09-90-01) down to the level of unit groups (three-character codes). These appear on the database. (See Appendix of this report.) Note that the abbreviation n.e.c. used throughout the occupation classification list stands for "not elsewhere classified".

19. Out of Home

Out of Home media exposure covers billboards, digital screens, branding on the inside and outside of buses and taxis, signs on building wraps/construction site wraps, dustbins and street poles. Travel outside of home is measured by duration, destination and mode of travel.

20. Province

The nine province boundaries used in the MAPS™ sample coincide with those of Stats SA. The following map shows the boundaries of the provinces in terms of magisterial districts.



21. Radio Listening

"Radio listening" is defined as having personally listened to the radio – it may be all of a programme or only part of it via a radio set, a computer, a cell phone, the television, satellite, or any other means and it does not matter where you listened to it."

Note that the currency for radio listening is BRCRAM.

22. Readership

All references to numbers of readers, imply estimates of the "average issue readership" of the publication concerned.

23. Read or Paged Through

To have "read or paged through" is explained to the respondent as meaning that he/she has "..... read or paged through all or part of a copy, including any of the separate parts, sections or supplements which may come with it. It does not matter if it was an own copy or someone else's copy, or where it was read or paged through. It also does not matter if it was purchased personally or purchased by someone else, or whether it was received free of charge at home or elsewhere."

24. South African Population

The total population of the country is based on the official population according to Stats SA. The last census in South Africa was conducted between March and May 2022 and the official results will be released in 2023. Stats SA is currently using the cohort-component methodology to estimate the mid-year population. This refers to the population as it stands

during the month of June. The adjusted population estimates are released by Stats SA in July of each year.

25. TV Viewing

"TV viewing" is defined as "..... you personally have watched all or part of a programme – it does not matter where it was watched it – at home or elsewhere."

Note that the currency for TV viewing is BRCTAMS.

26. Wave

There are two waves in a year: wave 1 and wave 2. Each wave is made up of a period of 6 successive calendar months. The first fieldwork wave for the reporting period ran from the 17th of July 2021 to the 23rd of December 2021 whereas that of the second wave started on the 19th of January 2022 and came to an end on the 21st of June 2022. Two waves produced an annual sample of 20 059.

27. Working Life

Unemployed – any person that does not have a job and is actively looking for employment (this also includes individuals that have never worked before and are actively looking for jobs e.g., Matric graduate job seekers, University graduate job seekers etc.).

Not working – discouraged work seekers who are no longer actively looking for employment or anyone who is not actively looking for employment (this excludes housewives/househusbands, students and retired people as these categories have their own pre-codes in the questionnaire).



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Section B:

Research Universe and Sample



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Section B: Research Universe and Sample

4.0 Universe

The target population for the research is the adult (15+) population of South Africa. The following was used to filter the broad audience base of the respondents:



- Age: 15 years and older;
- Gender: Both males and females;
- Race: All racial groups; and
- Area: National (all 9 provinces).

Population 2022

According to Statistics South Africa's 2022 mid-year population estimates, the total population of South Africa was estimated to be at 60.14 million. Approximately 71.9% (43.59 million) of the population is aged 15 years and older and this defines the universe for the MAPS™ study. About 9.2% (5.6 million) is 60 years and older whereas 28.1% of the population is aged younger than 15 years. The table below summarises the adult population in the nine provinces:

Province	Adult Population (15 years+)	% of Population
Eastern Cape	4 495 853	10%
Free State	2 101 871	5%
Gauteng	12 312 692	28%
KwaZulu-Natal	7 950 182	18%
Limpopo	3 942 319	9%
Mpumalanga	3 390 484	8%
Northern Cape	929 692	2%
North West	2 991 722	7%
Western Cape	5 477 408	13%
Total	43 592 223	100%

Gender (15 years+)

Gender	Count	Percentage (%)
Female	22 580 134	52%
Male	21 012 089	48%
Total	43 592 223	100%

Race (15 years+)

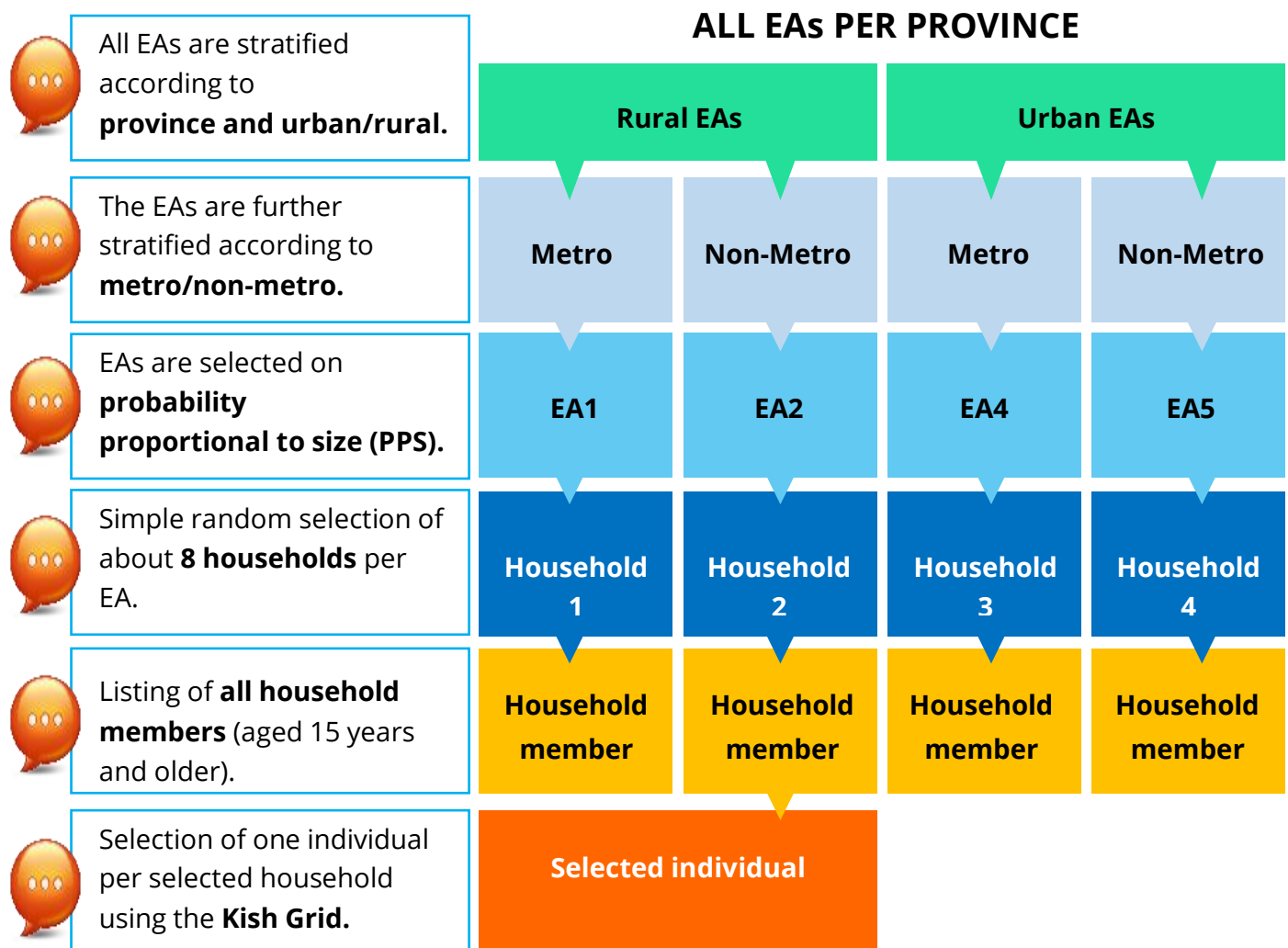
Race	Count	Percentage (%)
Black African	34 474 439	79%
Coloured	3 931 926	9%
Indian/Asian	1 261 112	3%
White	3 924 746	9%
Total	43 592 223	100%

Source: Statistics South Africa, Statistical Release P0302, Mid-year population estimates

5.0 Sample

Sampling Methodology

The sampling methodology is area stratified, multi-stage probability sampling. The Stats SA 2011 census data enumeration areas (EAs) are used as the sampling frame. EAs are drawn using a probability proportional to population size (PPS) approach. The EAs are the primary sampling units (PPUs), and the households are the secondary sampling units (SSUs). The stratification is based on the number of households per strata (province, rural/urban, metro/non-metro). The image below illustrates the sampling procedure for the MAPS™ study:



EAs that were 100% in the military barracks were removed from the sampling frame before selection. Prisons, hospitals, industrial areas, cemeteries and resorts were excluded from the survey. EAs that constitute these areas were only included if there was a residential component in the EA.

Professor Khangelani Zuma was responsible for drawing the EA sample for the MAPS™ study. Under his guidance, AfricaScope provided Plus 94 Research with the EA maps based on the drawn EA sample. Each map had 12 household locations/points that were randomly selected and assigned numbers from 1 to 12 along with the exact GPS coordinates for each point. Plus 94 Research fieldworkers were required to interview 8 respondents from household number 1 to 8 in each EA if there was no household replacement in an EA. The other four additional points (labelled 9, 10, 11 and 12) were used as replacement households where refusals were encountered with any of the respondents from household number 1 to 8. To ensure a wide geographic spread of points, all the randomly selected 12 points within an EA were physically spaced to such an extent that most of the enumeration area was adequately covered. The spread also ensured that all possible demographic profiles of respondents in every EA had a fair chance of participating in the MAPS™ study. Refer to the Appendix of this report to obtain finer details on the areas [province, district, municipality, main place name, sub-place name and area type (i.e., metro, urban and rural)] that were covered by the MAPS™ study between July 2021 and June 2022.

Half of the total sample of the MAPS face-to-face interview respondents were expected to complete the leave behind questionnaire. To ensure that the completed leave behind questionnaires were representative of the participants that took part in the face-to-face interviews, it was ensured that at least four respondents in each EA visited, filled in a leave behind questionnaire.

Disproportional Stratified Sample

Disproportional stratified sampling is a stratified sampling procedure in which the number of elements sampled from each stratum is not proportional to their representation in the total population. Population elements are not given an equal chance to be included on the sample. This sampling procedure helps improve precision at stratum (reporting domain) level by increasing sample size/allocation to smaller strata and decreasing the sample size to larger strata. In order to ensure a disproportionate sample for the MAPS™ study, the sample is structured as follows, taking into account the multi-stage stratified sampling approach:

- a) **50% metro area EAs;**
- b) **30% large, medium and small urban EAs; and**
- c) **20% rural EAs.**

A disproportionate stratified sample was applied in order to boost samples in urban and metro areas.

Weighting, Benchmarking and Weighting Efficiency

Previous Weighting Scheme

The previous weighting scheme by Professor Khangelani Zuma was applied on MAPS™ data which was gathered from July 2020 to March 2022. Below is a detailed description of the previous weighting approach.

Weighting of the data is conducted before data is analysed. Firstly, during the sampling of EAs, sampling weights are automatically generated (base weights). These EA weights assume that all the sampled EAs will be visited and will participate. However, not all sampled EAs are realised. Due to this, an adjustment is computed to adjust the base weights to correct for the non-realisation of some of the EAs to compute an EA weight.

A total of eight visiting points is visited within each EA. Using the estimated total number of households within each EA, a sampling weight of household is computed as the inverse of the sampling probability of 8 households within each EA. The final household weight is computed as the product of the EA weight and the sampling weight of 8 households within each EA.

The individuals within each household also have unequal sampling probabilities. An individual weight is computed as the inverse of the ratio of the number of individuals targeted within each household and the total number of eligible people within each household. The product of this weight and the household weight yields an individual weight.

These weights are based on the sample data. The final step is to benchmark these weights to the population of reference. The StatsSA mid-year population estimates are used for this benchmarking process. StatsSA does not provide mid-year for the metro:urban:rural split and so a demographer from AfricaScope estimates the split as well the racial distribution per province which are critical in the benchmarking process. The benchmarking process is conducted in STATA software. Benchmarked weights for individuals are computed using age, sex, race, province, geotype and banking status as the population totals for benchmarking. The banked base is benchmarked against the Finscope. FinScope, a FinMark Trust initiative, is the most comprehensive national household survey focused on the financial services needs and usage across the entire South African population. This process adjusts the sample distribution to the population of reference to produce benchmarked individual weight that adds to the total population of reference.

Finally, benchmarking using population totals of households by province is conducted to provide benchmarked household weights.

Current Weighting Scheme

After the MAPS Audit of 2022, it was recommended that the individual sampling weight component and the use of a specific product or service category (banking service in this case) be dropped when data weighting is conducted. This is because:

- Final individual weights of the previous weighting scheme were too dispersed resulting in a very low overall weighting efficiency;
- Individuals in a study sample are generally assumed to have been selected with equal selection probabilities in many market research surveys; and
- It is not common practice to use a specific product or service category in data weighting. Surveys similar to MAPS are usually controlled using known demographic weights in order to measure products and services.

Previously the weighting was done based on fixed five-year age bands, four race groups, the male or female gender, three area types and the nine provinces. Two new variables were introduced into the weighting: level of education and employment status. The source of the information is Statistics South Africa's Quarterly Labour Force Survey (QLFS). This means that for every release the most recent statistics from the QLFS will be used. However, it is important to note that the "level of education" variable was excluded from the weighting procedure for MAPS™ July 2021 – June 2022 data. The variable will be considered for future releases when the achieved sample structure is expected to tolerate the addition of more weighting variables such that the weighting efficiency is not negatively affected.

RIM Weighting Using the ANESrake Approach

Rim weighting was run using the Anesrake package in R <https://cran.r-project.org/web/packages/anesrake/anesrake.pdf>. This is a package used by the American National Election Studies that is used in a number of other weighting setups, mostly because it is easy to use and well documented. The resultant weights were projected so that it summed up to the national population (43 592 223).

Weighting data is a crucial step in survey analysis to ensure representative results. In some cases, there may be insufficient sample sizes within certain subgroups of the population. To address this issue and improve weighting efficiencies, the RIM (random iterative method) weighting technique was employed for the MRF MAPS™ July 2021 – June 2022 data release. This approach, implemented using the ANESrake package in R, allows for the interlacing and collapsing of certain weighting variables, such as age, gender, race, education level, employment status, area type, and province. Interlacing variables refers to combining or interweaving certain weighting variables when insufficient sample sizes are available within particular subgroups of the population. By interlacing variables such as age, gender, race, education level, employment status, area type, and province, the RIM weighting process can capture the joint distribution of these variables more effectively.

RIM Weighting Process

The RIM weighting technique is used to generate accurate weights that align the sample with the target population. The ANESrake package in R provides a user-friendly implementation of this method. The steps involved in the RIM weighting process using ANESrake are as follows:

1. Identify the Target Population: Define the population that the survey aims to represent accurately. This population is often characterized by demographic and geographic variables, such as age, gender, race, education level, employment status, area type, and province;
2. Calculate Population Totals: Obtain population totals for each combination of the identified weighting variables from external data sources, such as census or survey data. These population totals represent the known distribution of the target population;
3. Prepare the Survey Data: Ensure that the survey data includes the required variables for weighting, aligning them with the identified weighting variables in the target population. While it is necessary to incorporate all the specified variables in the weighting process, it is important to note that attempting to align the data to every single variable may lead to excessive strain on certain weights, resulting in extremely small or large values. Therefore, depending on the structure of the data, it may be appropriate to exclude certain variables from the weighting procedure;

4. Initialize the Weighting Process: Set an initial set of weights for each survey respondent. These initial weights are usually set to one;
5. Start Iterative Process: Begin the iterative process to update the weights based on the target population distribution. The ANESrake package employs an iterative proportional fitting (raking) algorithm to adjust the weights;
6. Perform Iterative Proportional Fitting: In each iteration, ANESrake adjusts the weights to minimize the differences between the survey data and the target population distribution. The package uses the raking algorithm, which iteratively redistributes the weights based on the joint distribution of the weighting variables;
7. Assess Convergence: Monitor the convergence of the iterative process to ensure stability in the weights. The process typically continues until a predetermined convergence criterion is met; and
8. Finalize the Weights: Once the iterative process converges, the final weights are obtained. These weights represent the adjusted values that align the survey data with the target population.

Achieved Weighting Efficiency

High weighting efficiencies in survey data analysis offer several advantages, ensuring accurate representation and reliable results. The benefits of high weighting efficiencies include improved representativeness, reduced bias, enhanced precision and robust statistical analysis. It is generally recommended to aim for a minimum weighting efficiency of 70% to maintain data quality and integrity. This minimum threshold ensures that the weighted data adequately reflects the target population.

The minimum efficiency of 70% at national level is set. It is crucial to note that while the minimum of 70% efficiency is acceptable, variations may occur at the provincial level. It is possible that certain provinces may have weighting efficiencies below this threshold due to smaller sample sizes or unique population characteristics.

Province	Achieved individual weighting efficiency (%)	Achieved household weighting efficiency (%)
Eastern Cape	63.86%	100%
Free State	68.70%	100%
Gauteng	68.18%	100%
KwaZulu-Natal	72.43%	100%
Limpopo	74.53%	100%
Mpumalanga	80.11%	100%
North West	77.65%	100%
Northern Cape	62.08%	100%
Western Cape	60.19%	100%
Overall	68.95%	99.08%

Effect of Changes in Weighting Approach [Examples]

1. The banked base has been generally low in the MAPS sample at 56%. Benchmarking against the FinScope Survey raised the weighted base to about 68%. There is now a lower banked base on exclusion of the FinScope benchmark.

Banked – Excluding SASSA Accounts (%)	Release	
	Q2 '21 to Q1 '22 Release	Q3 '21 to Q2 '22 Release
Yes	67.7%	56.8%
No	32.3%	43.2%
Overall	100%	100%

2. With the exception of the banking products, the change in the weighting approach had little/no effect on other financial services. Please see the comparison below.

Financial services/products (%)	Release	
	Q2 '21 to Q1 '22 Release	Q3 '21 to Q2 '22 Release
SASSA government grant beneficiary	39.7%	40.3%
Makes use of a service such as eWallet, CashSend, M-PESA or Instant Money	35.6%	34.2%
Has a loyalty/rewards retail store card with which you earn loyalty points	46.3%	46%
Is on a medical aid scheme	7.8%	7.9%
Invests on the stock exchange/security exchange or belong to a share scheme or buy shares	1.6%	1.9%
Has an investment in unit trusts	1.7%	1.8%
Belongs to a burial society	37.1%	35.5%
Short-term insurance policy	2.8%	2.9%
Bought any durable items, such as appliances/furniture, on credit during the PAST 12 MONTHS	6.9%	5.2%
Taken a personal loan/loan for funding expected and/or unexpected expenses	2.4%	2.3%
Belong to a stokvel	9.7%	9.2%
Transfers or sends money to family/friends who do not live with you on a monthly basis	16.3%	17.1%

3. Dropping individual sampling weights from the old weighing scheme resulted in improved weighting efficiencies. Please see the table below.

Province	Individual Weighting Efficiencies	
	Q2 '21 to Q1 '22 Release	Q3 '21 to Q2 '22 Release
Eastern Cape	40.25%	63.86%
Free State	37.71%	68.70%
Gauteng	34.54%	68.18%
KwaZulu-Natal	15.47%	72.43%
Limpopo	33.96%	74.53%
Mpumalanga	26.32%	80.11%
North West	31.56%	77.65%
Northern Cape	39.74%	62.08%
Western Cape	24.48%	60.19%
National	26.74%	68.95%

4. There were no changes in the demographic structure in terms of gender, race and provincial population distribution. Some shifts were noted in age bands and life stages. These shifts can be attributed to the change in the weighting approach.

Age (years)	Release				
	Q3 '20-Q2 '21	Q4 '20-Q3 '21	Q1 '21-Q4 '21	Q2'21-Q1 '22	Q3'21-Q2 '22
15-24	22.4%	22.4%	22.4%	22.4%	22.4%
25-34	25.4%	25.4%	25.4%	25.4%	24.9%
35-49	29.8%	29.6%	29.4%	29.4%	28.8%
50+	22.4%	22.6%	22.8%	22.8%	23.9%

Life Stages	Release				
	Q3 '20-Q2 '21	Q4 '20-Q3 '21	Q1 '21-Q4 '21	Q2'21-Q1 '22	Q3'21-Q2 '22
Young Singles	26.1%	26.7%	26.8%	27.5%	28.4%
Mature Singles	12.2%	12.0%	12.6%	12.6%	14.6%
Young Couples	3.3%	3.0%	3.1%	3.1%	3.9%
Mature Couples	6.3%	6.5%	6.2%	5.9%	6.7%
Young Families	13.9%	14.1%	13.7%	13.4%	12.9%
Mature Families	5.1%	5.1%	4.9%	4.9%	4.5%
Single Parent Families	33.2%	32.6%	32.7%	32.5%	29.1%

5. There has been a steady increase in the proportion of respondents who say they have never watched linear TV (the same trend applies to radio listenership). However, there was a drastic increase for the current release. On the other hand, there was a sharp decline in the proportion of respondents that chose the “Yesterday” period. Nothing suggests that the drastic jumps were due to changes in the weighting approach.

Watch linear/live TV via a TV set	Release				
	Q3 '20-Q2 '21	Q4 '20-Q3 '21	Q1 '21-Q4 '21	Q2'21-Q1 '22	Q3'21-Q2 '22
Yesterday	71.7%	70.6%	68.0%	65.1%	59.5%
In the past 7 days	7.3%	6.3%	5.7%	5.8%	5.6%
In the past 4 weeks	2.5%	2.2%	1.9%	1.7%	1.5%
In the past 6 months	1.6%	1.6%	1.1%	1.3%	1.1%
Longer than 6 months ago	4.4%	6.5%	9.3%	9.9%	11.6%
Never	12.3%	12.8%	14%	16.2%	20.7%

Listen to radio	Release				
	Q3 '20-Q2 '21	Q4 '20-Q3 '21	Q1 '21-Q4 '21	Q2'21-Q1 '22	Q3'21-Q2 '22
Yesterday	58.5%	56.5%	54.8%	53.7%	51.5%
In the past 7 days	12.4%	11.6%	11.2%	10.1%	10.0%
In the past 4 weeks	4.0%	3.8%	3.6%	3.5%	3.4%
In the past 6 months	1.7%	1.8%	1.7%	1.9%	1.6%
Longer than 6 months ago	4.9%	6.0%	7.4%	7.9%	7.6%
Never	18.6%	20.3%	21.3%	23.0%	26%

6. There has been a steady decline in newspaper readership over the previous data releases. The latest decline does not seem to be due to the changes in the weighting approach.

Read or page through a newspaper	Release				
	Q3 '20-Q2 '21	Q4 '20-Q3 '21	Q1 '21-Q4 '21	Q2'21-Q1 '22	Q3'21-Q2 '22
Yesterday	17.8%	16.2%	15.1%	15.0%	14.1%
In the past 7 days	17.9%	17.1%	15.9%	15.1%	14.0%
In the past 4 weeks	7.4%	6.9%	5.9%	5.1%	4.8%
In the past 6 months	3.7%	3.1%	2.4%	2.3%	2.2%
Longer than 6 months ago	14.3%	14.9%	15.7%	15.6%	14.4%
Never	38.9%	41.8%	45.0%	47%	50.4%

7. The fast-food consumption trend has been unstable, mainly due to the item non-response issue experienced in the leave behind questionnaire. There is no suggestion in the data that there is a weighting impact on the trend.

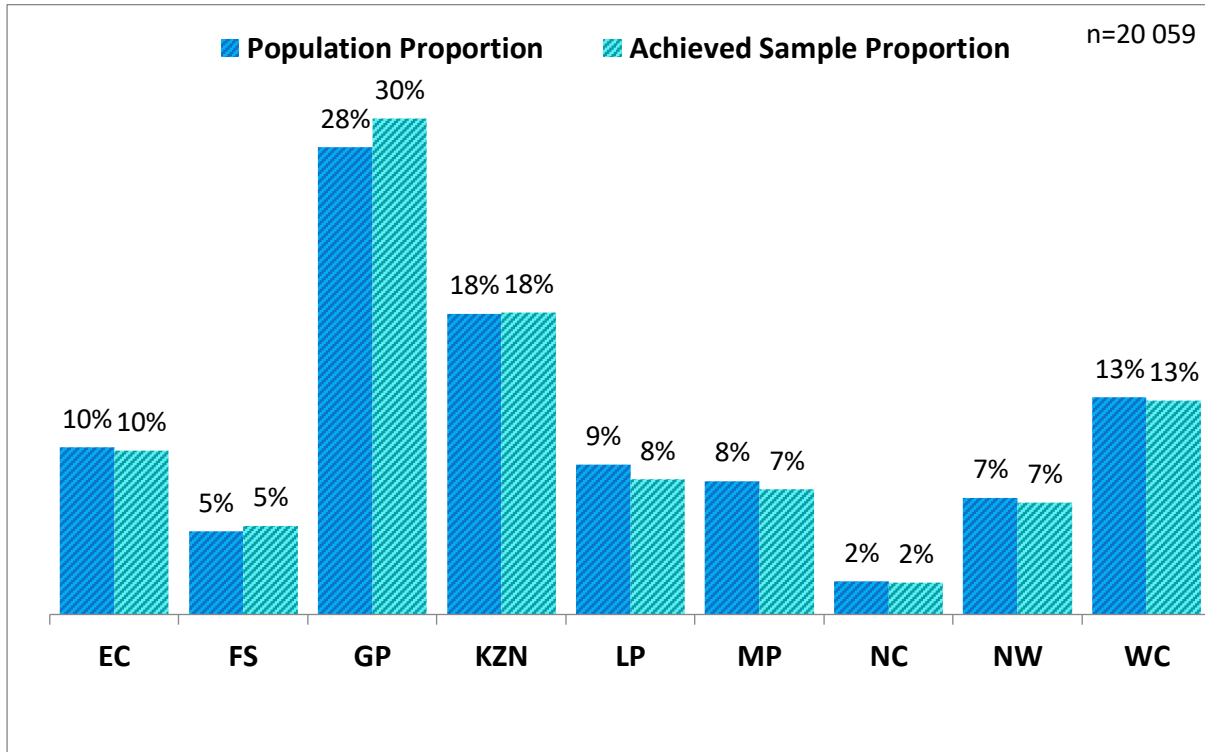
Bought fast-food past 4 weeks	Release				
	Q3 '20-Q2 '21	Q4 '20-Q3 '21	Q1 '21-Q4 '21	Q2'21-Q1 '22	Q3'21-Q2 '22
Yes	40.6%	54.7%	64.9%	57.7%	50.4%
No	59.4%	45.3%	35.1%	42.3%	49.6%

Conclusion [Change in Weighting Approach]

- Dropping the banked base benchmark has resulted in a lower banked base. There will be significant decrease across many banking products including the customer market sizes for various service providers in the banking sector when data is trended;
- The dropping of individual sampling weights has resulted in improved weighting efficiencies;
- There were some shifts in age bands. The current weighting scheme did not exactly align with the STATS SA benchmark population as the previous scheme;
- Stricter adherence to the proper use of the Kish Grid has resulted in improved respondent selection. Significant improvement in the banked base has so far been noted in the data collected from July 2022 and onwards. This is likely to result in an improved banked base going forward;

- Having noted the extent of the impact of the change in the weighting approach, there is no need to reweight previous datasets that have already been released; and
- The new weighting scheme needs to be refined over time for improved efficiencies and closer alignment to the STATS SA population benchmarks.

Population vs. Achieved Sample Proportions



National Sample Profile

	July 2021 to June 2022 [Unweighted Data]								Total
	Jul – Sept '21	%	Oct – Dec '21	%	Jan – Mar '22	%	Apr – Jun '22	%	
Total	5016	25%	5011	25%	5016	25%	5016	25%	20059
Female	2691	54%	2557	51%	2571	51%	2707	54%	10526
Male	2325	46%	2454	49%	2445	49%	2309	46%	9533
Black	3872	77%	3780	75%	3858	77%	3982	79%	15492
White	600	12%	640	13%	651	13%	450	9%	2341
Indian/Asian	91	2%	144	3%	119	2%	101	2%	455
Coloured	453	9%	447	9%	388	8%	483	10%	1771
15 – 24	1449	29%	1083	22%	1162	23%	1207	24%	4901
25 – 34	1587	32%	1689	34%	1578	31%	1584	32%	6438
35 – 44	954	19%	1040	21%	959	19%	974	19%	3927
45 – 54	467	9%	578	12%	620	12%	580	12%	2245
55 – 64	359	7%	404	8%	427	9%	402	8%	1592
65 – 74	154	3%	157	3%	217	4%	200	4%	728
75+	46	1%	60	1%	53	1%	69	1%	228

Sample Profile [Eastern Cape]

	July 2021 to June 2022 [Unweighted Data]								Total
	Jul – Sept '21	%	Oct – Dec '21	%	Jan – Mar '22	%	Apr – Jun '22	%	
Total	504	26%	492	25%	496	25%	472	24%	1964
Female	326	65%	254	52%	260	52%	271	57%	1111
Male	178	35%	238	48%	236	48%	201	43%	853
Black	412	82%	397	81%	452	91%	393	83%	1654
White	43	9%	50	10%	17	3%	25	5%	135
Indian/Asian	1	0%	0	0%	5	1%	1	0%	7
Coloured	48	10%	45	9%	22	4%	53	11%	168
15 – 24	135	27%	123	25%	98	20%	68	14%	424
25 – 34	132	26%	114	23%	125	25%	119	25%	490
35 – 44	91	18%	88	18%	88	18%	86	18%	353
45 – 54	58	12%	71	14%	60	12%	64	14%	253
55 – 64	51	10%	55	11%	73	15%	76	16%	255
65 – 74	28	6%	27	5%	40	8%	45	10%	140
75+	9	2%	14	3%	12	2%	14	3%	49

Sample Profile [Free State]

	July 2021 to June 2022 [Unweighted Data]								Total
	Jul – Sept '21	%	Oct – Dec '21	%	Jan – Mar '22	%	Apr – Jun '22	%	
Total	288	27%	256	24%	264	25%	264	25%	1072
Female	148	51%	128	50%	143	54%	166	63%	555
Male	140	49%	128	50%	121	46%	98	37%	455
Black	248	86%	232	91%	236	89%	246	93%	962
White	39	14%	24	9%	24	9%	8	3%	95
Indian/Asian	0	0%	0	0%	0	0%	0	0%	0
Coloured	1	0%	0	0%	4	2%	10	4%	15
15 – 24	86	30%	74	29%	74	28%	42	16%	276
25 – 34	95	33%	85	33%	93	35%	72	27%	345
35 – 44	48	17%	53	21%	49	19%	55	21%	205
45 – 54	34	12%	21	8%	24	9%	37	14%	116
55 – 64	18	6%	17	7%	20	8%	30	11%	85
65 – 74	4	1%	3	1%	3	1%	22	8%	32
75+	3	1%	3	1%	1	0%	6	2%	13

Sample Profile [Gauteng]

	July 2021 to June 2022 [Unweighted Data]								Total
	Jul – Sept '21	%	Oct – Dec '21	%	Jan – Mar '22	%	Apr – Jun '22	%	
Total	1488	25%	1487	25%	1496	25%	1496	25%	5967
Female	808	54%	746	50%	761	51%	755	50%	3070
Male	680	46%	741	50%	735	49%	741	50%	2897
Black	1190	80%	1122	75%	1143	76%	1240	83%	4695
White	233	16%	297	20%	274	18%	201	13%	1005
Indian/Asian	22	1%	26	2%	19	1%	16	1%	83
Coloured	43	3%	42	3%	60	4%	39	3%	184
15 – 24	461	31%	220	15%	333	22%	397	27%	1411
25 – 34	522	35%	591	40%	488	33%	530	35%	2131
35 – 44	262	18%	312	21%	281	19%	276	18%	1131
45 – 54	127	9%	179	12%	212	14%	159	11%	677
55 – 64	81	5%	122	8%	111	7%	88	6%	402
65 – 74	29	2%	55	4%	58	4%	39	3%	181
75+	6	0%	8	1%	13	1%	7	0%	34

Sample Profile [KwaZulu-Natal]

	July 2021 to June 2022 [Unweighted Data]								Total
	Jul – Sept '21	%	Oct – Dec '21	%	Jan – Mar '22	%	Apr – Jun '22	%	
Total	912	25%	904	25%	920	25%	888	25%	3624
Female	462	51%	458	51%	468	51%	467	53%	1855
Male	450	49%	446	49%	452	49%	421	47%	1769
Black	751	82%	723	80%	744	81%	738	83%	2956
White	83	9%	53	6%	80	9%	58	7%	274
Indian/Asian	65	7%	116	13%	95	10%	79	9%	355
Coloured	13	1%	12	1%	1	0%	13	1%	39
15 – 24	220	24%	221	24%	184	20%	177	20%	802
25 – 34	280	31%	258	29%	283	31%	286	32%	1107
35 – 44	197	22%	197	22%	190	21%	189	21%	773
45 – 54	94	10%	109	12%	120	13%	124	14%	447
55 – 64	75	8%	81	9%	91	10%	73	8%	320
65 – 74	35	4%	28	3%	42	5%	28	3%	133
75+	11	1%	10	1%	10	1%	11	1%	42

Sample Profile [Limpopo]

	July 2021 to June 2022 [Unweighted Data]								Total
	Jul – Sept '21	%	Oct – Dec '21	%	Jan – Mar '22	%	Apr – Jun '22	%	
Total	408	25%	416	26%	392	24%	408	25%	1624
Female	219	54%	208	50%	213	54%	214	52%	854
Male	189	46%	208	50%	179	46%	194	48%	770
Black	382	94%	408	98%	384	98%	403	99%	1577
White	15	4%	8	2%	8	2%	1	0%	32
Indian/Asian	1	0%	0	0%	0	0%	0	0%	1
Coloured	10	2%	0	0%	0	0%	4	1%	14
15 – 24	97	24%	61	15%	66	17%	105	26%	329
25 – 34	148	36%	172	41%	157	40%	139	34%	616
35 – 44	60	15%	99	24%	85	22%	80	20%	324
45 – 54	31	8%	38	9%	32	8%	37	9%	138
55 – 64	43	11%	34	8%	36	9%	30	7%	143
65 – 74	20	5%	7	2%	16	4%	12	3%	55
75+	9	2%	5	1%	0	0%	5	1%	19

Sample Profile [Mpumalanga]

	July 2021 to June 2022 [Unweighted Data]								Total
	Jul – Sept '21	%	Oct – Dec '21	%	Jan – Mar '22	%	Apr – Jun '22	%	
Total	360	24%	384	26%	376	25%	384	26%	1504
Female	189	53%	197	51%	189	50%	208	54%	783
Male	171	47%	187	49%	187	50%	176	46%	721
Black	350	97%	328	85%	320	85%	370	96%	1368
White	9	3%	48	13%	56	15%	8	2%	121
Indian/Asian	1	0%	0	0%	0	0%	5	1%	6
Coloured	0	0%	8	2%	0	0%	1	0%	9
15 – 24	88	24%	90	23%	55	15%	78	20%	311
25 – 34	105	29%	115	30%	89	24%	100	26%	409
35 – 44	77	21%	72	19%	79	21%	82	21%	310
45 – 54	40	11%	48	13%	61	16%	47	12%	196
55 – 64	34	9%	32	8%	56	15%	47	12%	169
65 – 74	14	4%	17	4%	25	7%	18	5%	74
75+	2	1%	10	3%	11	3%	12	3%	35

Sample Profile [Northern Cape]

	July 2021 to June 2022 [Unweighted Data]								Total
	Jul – Sept '21	%	Oct – Dec '21	%	Jan – Mar '22	%	Apr – Jun '22	%	
Total	96	25%	96	25%	96	25%	96	25%	384
Female	53	55%	51	53%	54	56%	54	56%	212
Male	43	45%	45	47%	42	44%	42	44%	172
Black	51	53%	37	39%	57	59%	43	45%	188
White	0	0%	6	6%	8	8%	0	0%	14
Indian/Asian	0	0%	0	0%	0	0%	0	0%	0
Coloured	45	47%	53	55%	31	32%	53	55%	182
15 – 24	13	14%	17	18%	14	15%	19	20%	63
25 – 34	31	32%	36	38%	35	36%	39	41%	141
35 – 44	35	36%	23	24%	27	28%	30	31%	115
45 – 54	10	10%	14	15%	10	10%	4	4%	38
55 – 64	4	4%	4	4%	3	3%	2	2%	13
65 – 74	2	2%	1	1%	5	5%	2	2%	10
75+	1	1%	1	1%	2	2%	0	0%	4




Sample Profile [North West]

	July 2021 to June 2022 [Unweighted Data]								Total
	Jul – Sept '21	%	Oct – Dec '21	%	Jan – Mar '22	%	Apr – Jun '22	%	
Total	336		328		344		336		1344
Female	161	48%	175	53%	157	46%	214	64%	707
Male	175	52%	153	47%	187	54%	122	36%	637
Black	313	93%	305	93%	312	91%	326	97%	1256
White	23	7%	23	7%	32	9%	8	2%	86
Indian/Asian	0	0%	0	0%	0	0%	0	0%	0
Coloured	0	0%	0	0%	0	0%	2	1%	2
15 – 24	89	26%	65	20%	80	23%	58	17%	292
25 – 34	110	33%	102	31%	123	36%	104	31%	439
35 – 44	70	21%	94	29%	63	18%	66	20%	293
45 – 54	26	8%	31	9%	44	13%	43	13%	144
55 – 64	24	7%	22	7%	15	4%	33	10%	94
65 – 74	13	4%	9	3%	16	5%	22	7%	60
75+	4	1%	5	2%	3	1%	10	3%	22

Sample Profile [Western Cape]






	July 2021 to June 2022 [Unweighted Data]								Total
	Jul – Sept '21	%	Oct – Dec '21	%	Jan – Mar '22	%	Apr – Jun '22	%	
Total	624		648		632		672		2576
Female	325	52%	340	52%	326	52%	358	53%	1349
Male	299	48%	308	48%	306	48%	314	47%	1227
Black	175	28%	228	35%	210	33%	223	33%	836
White	155	25%	131	20%	152	24%	141	21%	579
Indian/Asian	1	0%	2	0%	0	0%	0	0%	3
Coloured	293	47%	287	44%	270	43%	308	46%	1158
15 – 24	260	42%	212	33%	258	41%	263	39%	993
25 – 34	164	26%	216	33%	185	29%	195	29%	760
35 – 44	114	18%	102	16%	97	15%	110	16%	423
45 – 54	47	8%	67	10%	57	9%	65	10%	236
55 – 64	29	5%	37	6%	22	3%	23	3%	111
65 – 74	9	1%	10	2%	12	2%	12	2%	43
75+	1	0%	4	1%	1	0%	4	1%	10

Achieved Sample: Interviews

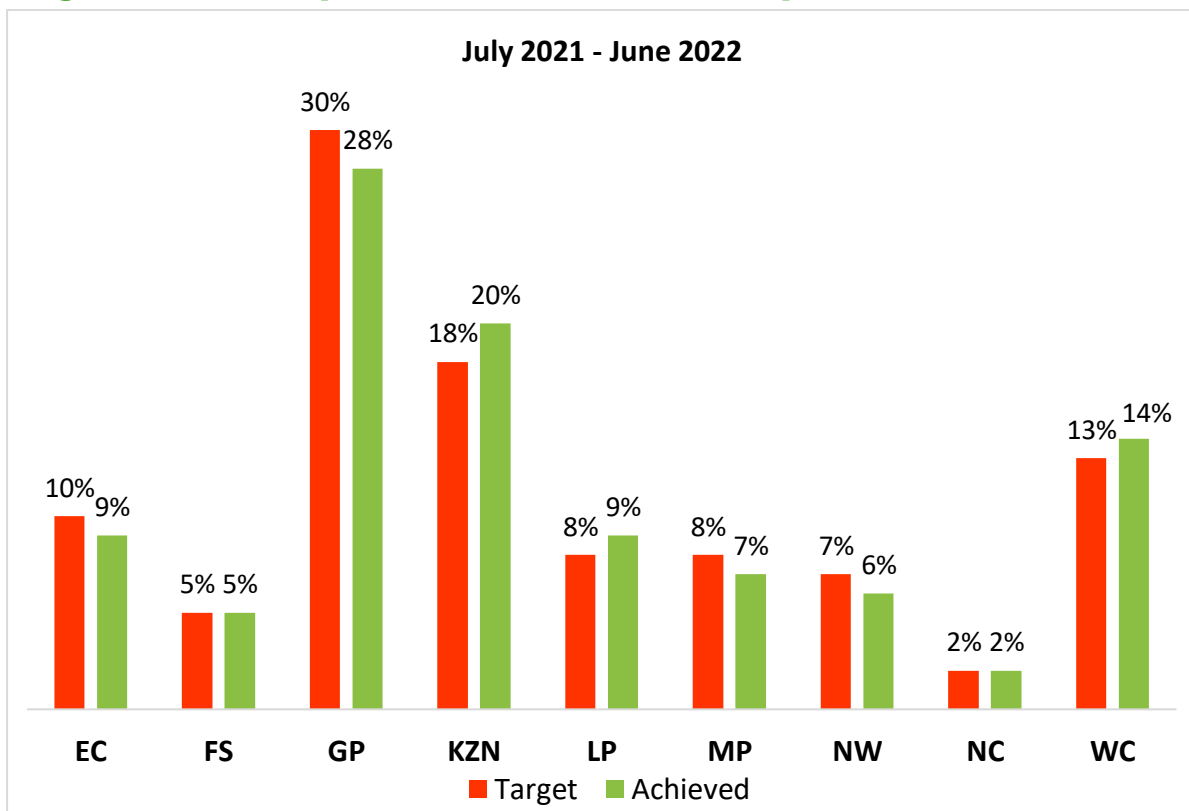
Province	July 2021 – June 2022		
	Target Sample 	Achieved Sample 	Variance 
Eastern Cape	1958	1964	0%
Free State	1069	1072	0%
Gauteng	5951	5967	0%
KwaZulu-Natal	3614	3624	0%
Limpopo	1620	1624	0%
Mpumalanga	1500	1504	0%
North West	1340	1344	0%
Northern Cape	383	384	0%
Western Cape	2569	2576	0%
Total	20004	20 059	

There was no variance between the target and achieved sample proportions across all provinces. Note that the variance is obtained as follows: For example, for Eastern Cape = Achieved sample % - Target sample % = $[(1964/20059) - (1958/20004)] \times 100\%$.

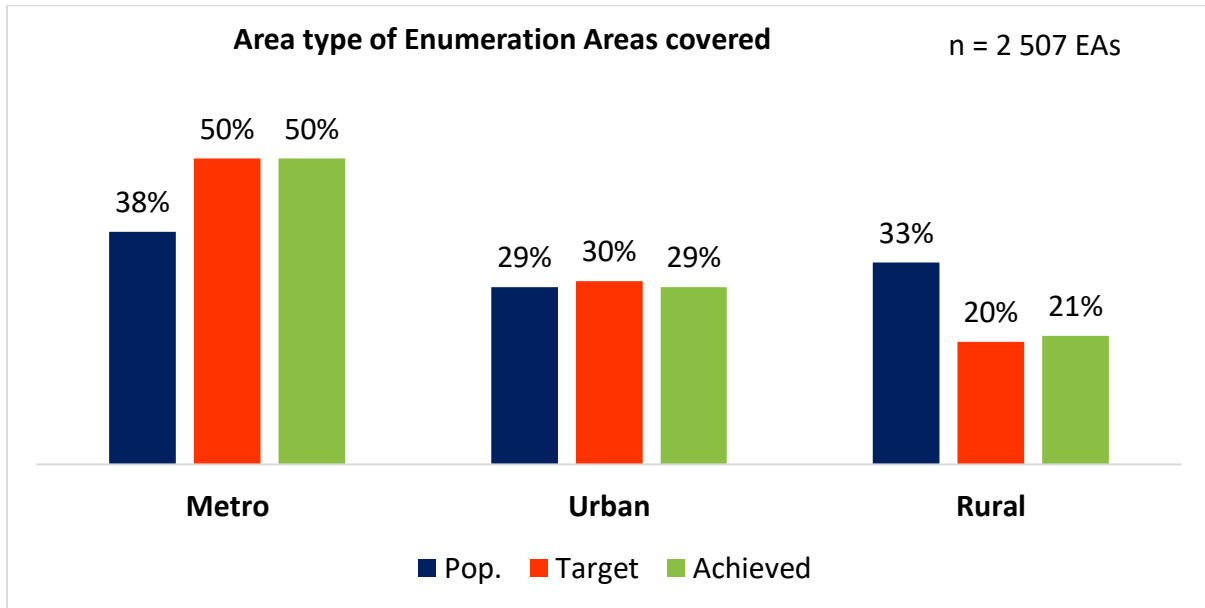
Achieved Sample: Leave Behind Questionnaires

Province	July 2021 – June 2022				
	Target	No. of paper leave behind questionnaires collected and processed	No. of online leave behind questionnaires submitted	Total number of leave behind questionnaires collected	Variance
					
Eastern Cape	979	974	40	1014	-0.71%
Free State	535	525	27	552	-0.40%
Gauteng	2975	2986	171	3157	-1.47%
KwaZulu-Natal	1807	2066	208	2274	+2.30%
Limpopo	810	908	94	1002	+0.88%
Mpumalanga	750	720	36	756	-0.73%
North West	670	609	7	616	-1.18%
Northern Cape	192	184	1	185	-0.26%
Western Cape	1284	1460	148	1608	+1.57%
Total	10002	10432	732	11164	

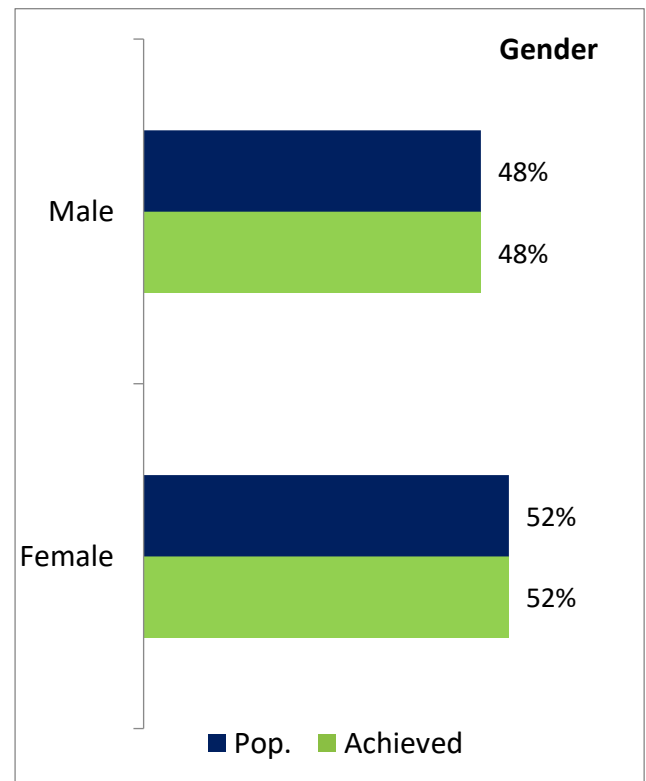
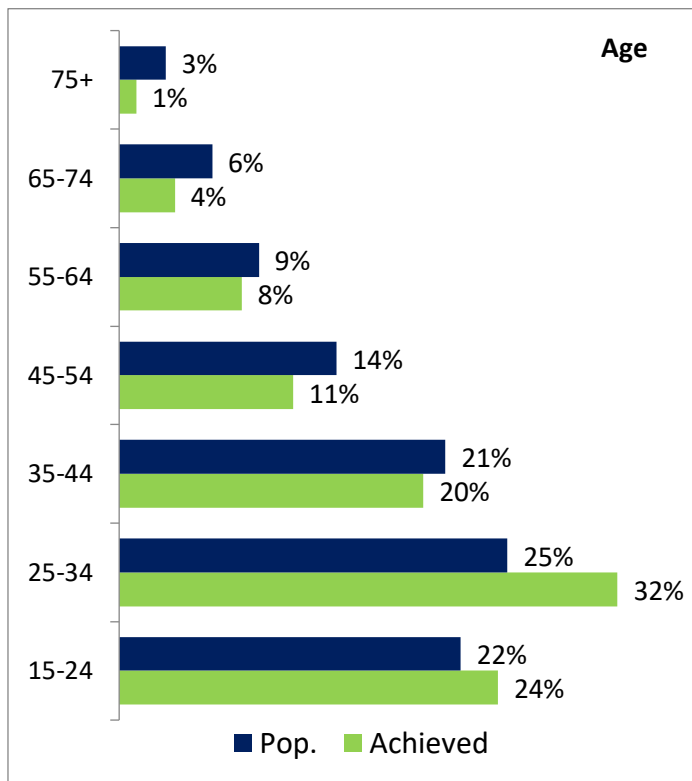
Target vs. Achieved [Leave Behind Questionnaires]



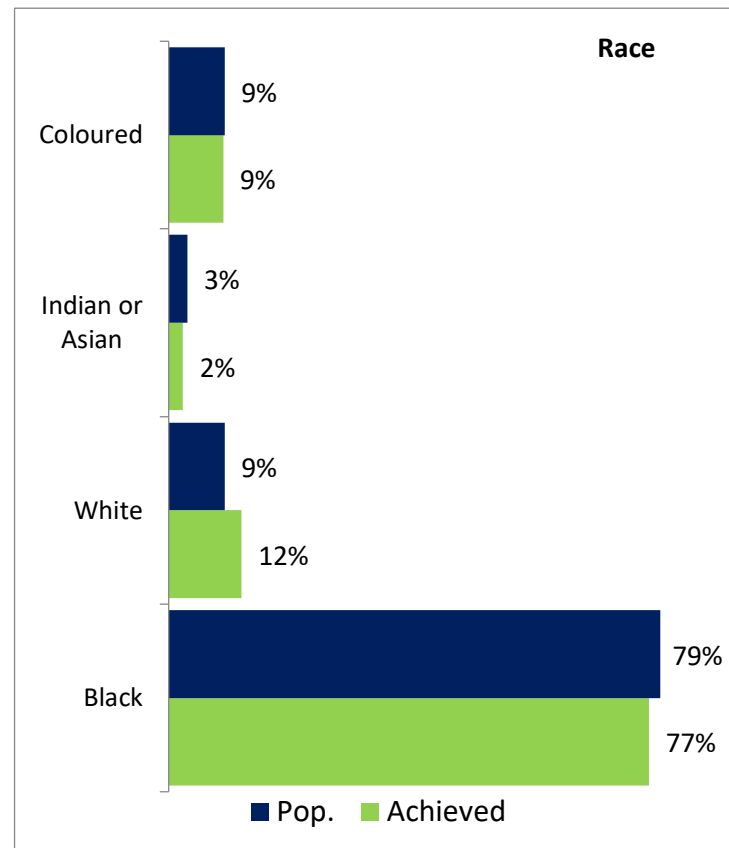
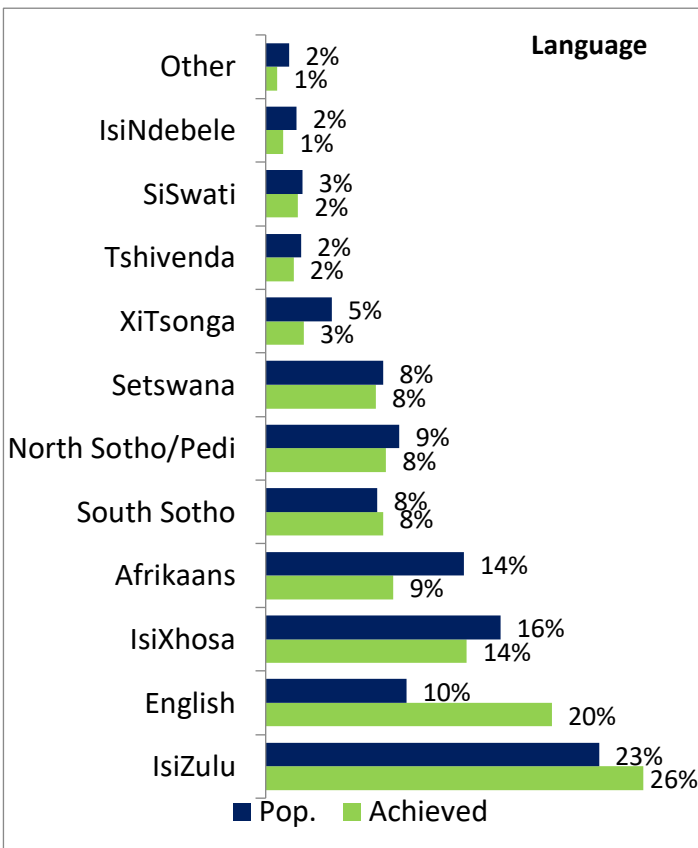
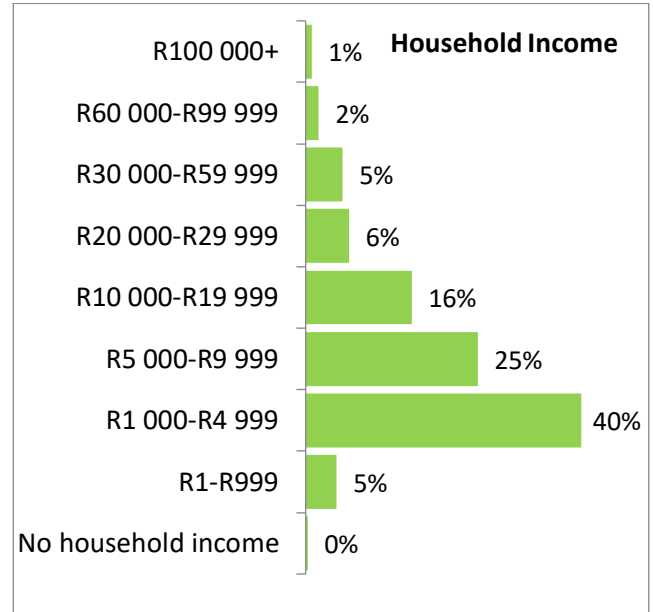
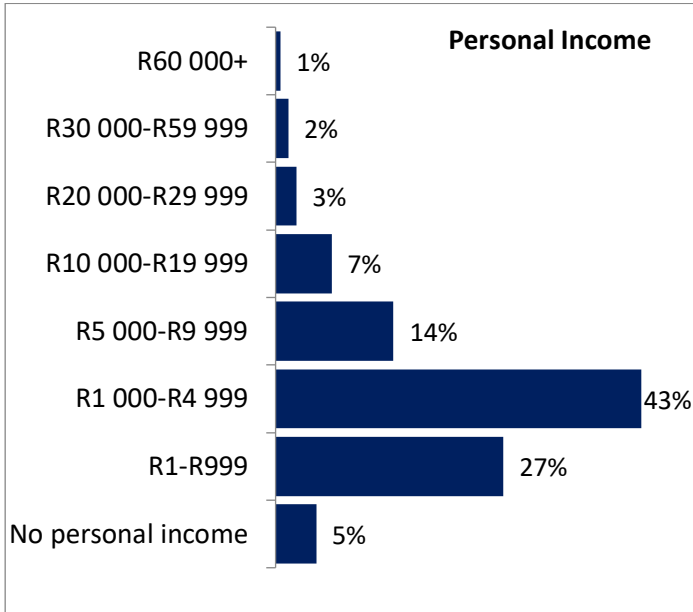
Area Distribution

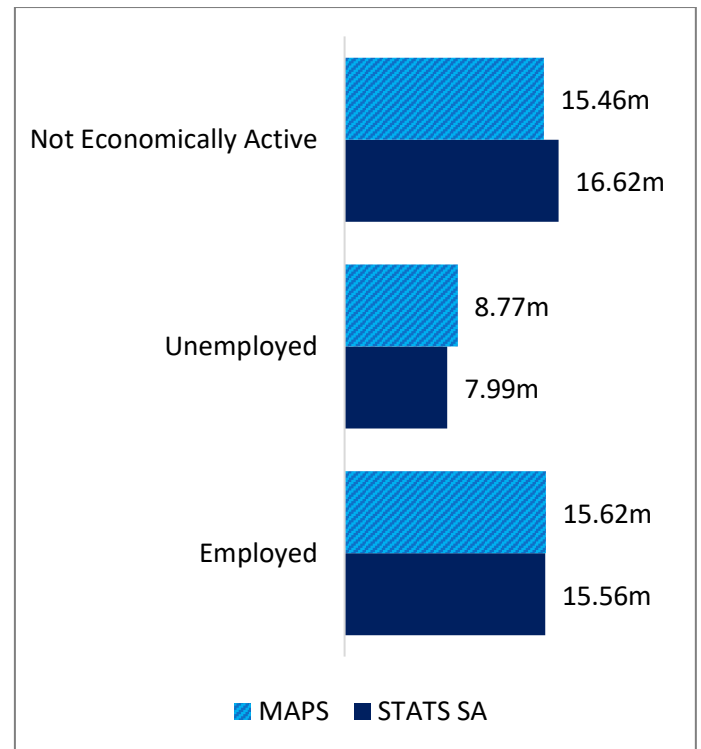
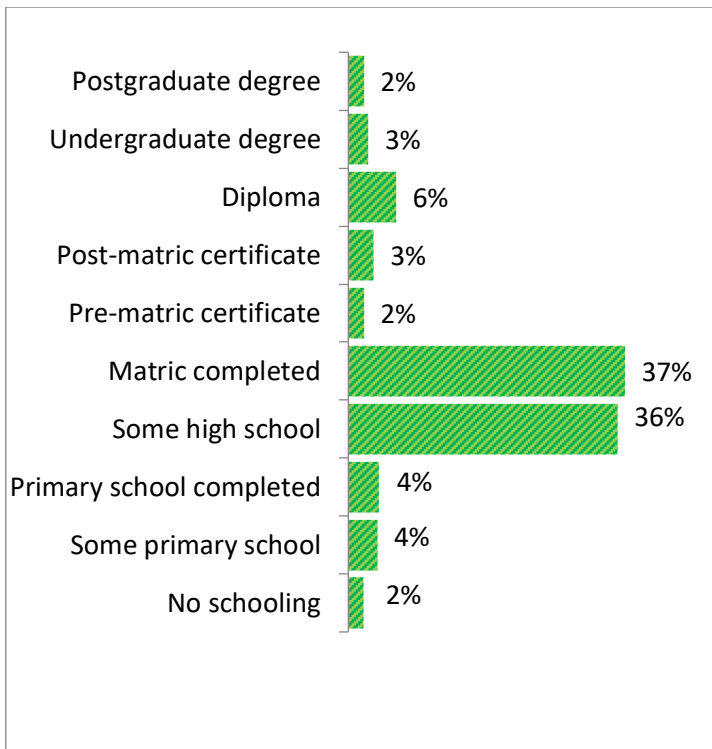


Respondent Profiles



Source: Statistics South Africa 2022 Mid-year Estimates [15+ years]







MARKETING RESEARCH
FOUNDATION

Section C:

Fieldwork

PLUS 94
RESEARCH

Section C: Fieldwork

6.0 Fieldwork

The Interview

In the event of a multi household interview point, the Kish grid is utilised to determine which household will be interviewed. After selection of the household to be interviewed, the number of adult males or females in the household who are 15 years and older, are determined to enable random selection of the individual to be interviewed. The Kish grid is once again utilised to randomly select the individual to be interviewed. Once the interview is completed, respondents are asked to complete a self-completion/leave behind questionnaire.

In rural areas, interviewers with knowledge of the language and customs of the local population are used and arrangements are made with the chief/headman in charge of areas where interviews must be done before working in the areas.

Two research instruments were used for the MAPS™ study:

- Face-to-face questionnaire; and
- Leave behind questionnaire.

The average interview length for the face-to-face questionnaire was between 55 and 60 minutes. Respondents were given between 3 and 5 days to fill in the leave behind questionnaire. Tablet-Assisted Personal Interviewing (TAPI) was utilised for the face-to-face interviews whereas Paper-Assisted Personal Interviewing (PAPI) and Computer-Assisted Web Interviewing (CAWI) methods were employed for the leave behind questionnaire.

Both the questionnaires are provided in the Appendix of this Technical Report.

Fieldwork Summary

Fieldwork for the MAPS™ July 2021 – June 2022 study began on the 17th of July 2021 and came to an end on the 21st of June 2022. Data collection took place when the country was under various COVID-19 adjusted alert levels with the exception of Q2 2022 fieldwork period (please see below).

ADJUSTED ALERT LEVEL	MAPS FIELDWORK PERIOD [July 2021 – June 2022]
4	17 – 25 July 2021
3	26 July – 12 September 2021
2	13 – 30 September 2021
1	1 October 2021 – 4 April 2022
National state of disaster lifted	5 April 2022
End of Q2 fieldwork	21 June 2022



The specific start and end dates of MAPS™ July 2021 – June 2022 are shown below:

18 January – 23 December 2021	
Quarter	Period
Q3 2021	17 July – 4 October 2021
Q4 2021	6 October – 23 December 2021
Q1 2022	19 January – 12 April 2022
Q2 2022	8 April – 21 June 2022

MAPS™ July 2021 – June 2022 Timeline

Consideration Area	Summary
Interviewers	<p>Approximately 120 interviewers [60% - old and 40% - new recruits] across all the nine provinces participated in a two-day training workshop between April and June 2022. The training of fieldworkers is a high priority area in the MAPS study because it plays a critical role in the quality of data that is collected. The project management team extensively covered the MAPS sampling methodology, use of EA maps and GPS co-ordinates, probing techniques, backchecks and most importantly, the content of the MAPS face-to-face and leave-behind research instruments. In addition to the training, fieldworkers were provided with continual support in weekly meetings, where they were given feedback on their performance and quality of data collected, with the aim of building a high-quality field force. About 170 interviewers took part in the data gathering process during the MAPS™ July 2021 – June 2022 fieldwork period. The use of fieldworkers familiar with the local language and culture in the sampled EAs spread across the country helped create an appropriate climate for the interviews and sensitivity to the concerns of the respondents.</p>

<p>Validating Fieldwork</p>	<p>Physical and telephonic back-checks were carried out on a regular basis in order to verify the authenticity of the interviews submitted. Plus 94 Research achieves this process by asking respondents to provide their name and telephone numbers at the beginning and end of the interview. To validate the work submitted, call centre interviewers called at least 25% of the respondents to enquire whether the fieldworkers conducted the interviews. Demographic information of certain variables were cross-checked against the information that was captured by the fieldworkers. In some instances, it was impossible to get hold of respondents as they deliberately chose not to answer phone calls from unknown sources and at times were handling busy work schedules. In addition, the Plus 94 Research GPS team plotted and checked the captured GPS coordinates of interview points daily to ensure that they were aligning with the prespecified visiting points on the EA maps produced by AfricaScope for the MAPS study. A few of the interviews that were outside the expected GPS location were deleted and redone.</p>
<p>Sampling</p>	<p>Results showed a skew towards younger age groups; the 25-34 years group was especially affected as it deviated by 7% from the expected percentage, possibly due to some interviewer Kish Grid violations which are under investigation. The rest of the age groups were within the expected error of margin. Age group skews were more pronounced in some provinces. Stricter measures were put in place in the third quarter of 2022 to curb problems associated with interviewer Kish Grid violation. The nature and outcome of these measures shall be covered in detail in the next reporting period.</p>
<p>Household Substitution</p>	<p>The overall household substitution rate has remained between 7% and 15% since the MAPS study started in July 2020 [Q3 2020 - 14%, Q4 2020 - 15%, Q1 2021 - 12%, Q2 2021 - 7%, Q3 2021 - 8%, Q4 2021 - 10%, Q1 2022 - 10% and Q2 2022 - 10%]. The breakdown for the two most recent quarters was as follows: Q1 2022 - 178 households and 41 EAs were substituted, Q2 2022 - 202 households and 39 EAs were substituted. A total of 162 EAs were substituted during the MAPS™ July 2021 – June 2022 fieldwork period.</p>
<p>EA Accessibility</p>	<p>As expected, it was relatively more difficult for fieldworkers to get access to enumeration areas that were situated in gated communities, mostly in Gauteng and KwaZulu-Natal. Where possible, Plus 94 Research establish relationships with homeowners' associations to gain access. Interviewers had to seek permission from local councillors, headmen and chiefs to interview respondents in some of the rural EAs situated in the Eastern Cape, Limpopo and KwaZulu-Natal. In some of the rural parts of the Eastern Cape, the road infrastructure was too bad to such an extent that interviewers had to walk on foot to finish off the journey so that they could reach the pre-specified households. Numerous communities required letters of introduction from fieldworkers to verify the authenticity of the MAPS™ survey. The five principal reasons which mainly contributed to the lack of EA access were as follows:</p> <ul style="list-style-type: none"> • Access denied (estate); • Access denied (farm); • EA no longer inhabited; • Non-residential EAs (e.g., prisons, business premises, lodge, hotel, SANDF base, wildlife parks etc); and • Unsafe areas

	<p>In addition, there were a couple of traditional chiefs that refused interviewers to conduct the MAPS survey within their areas of jurisdiction and lack of access due to damaged road infrastructure caused by floods.</p>
Crime	<p>Interviewers had to be very vigilant whilst working in some of the crime prone EAs in several provinces. In most cases, they were forewarned by community members to be careful as they went about these EAs. There is always a risk of the interviewers being physically attacked and having the tablets they use to collect MAPS data stolen. In situations where it was extremely dangerous for them to conduct interviews, EA replacements were provided.</p>



MARKETING RESEARCH
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Section D:

Analysis and Results

PLUS 94
RESEARCH

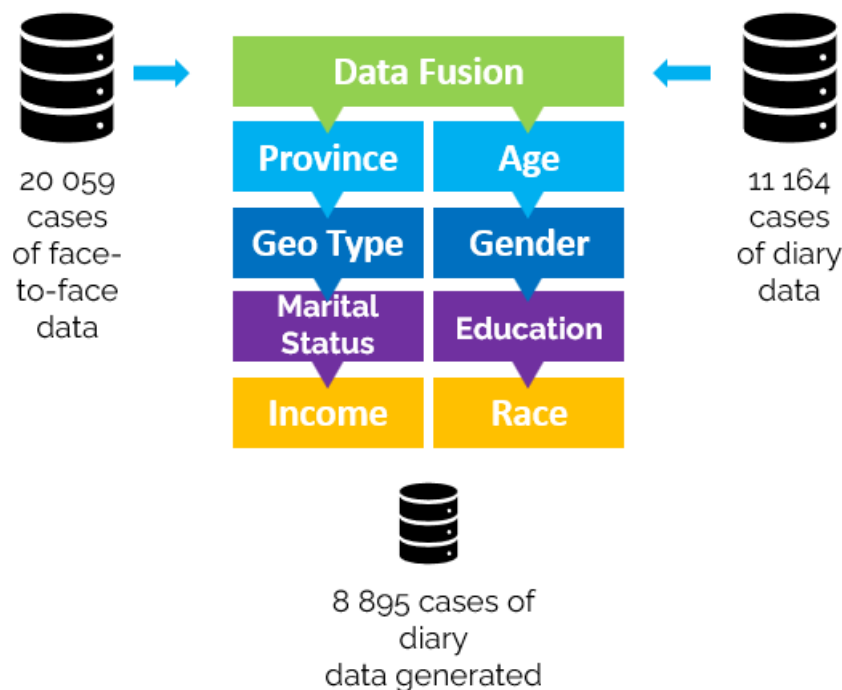
Section D: Analysis and Results

7.0 Analysis and Results

Data analysts, processors and project managers constantly scrutinised and cleaned the data collected during the first year of MAPS™ to ensure the integrity of the data and results.

Data Fusion

All 20059 respondents completed a face-to-face questionnaire. Half of them were expected to complete the leave behind questionnaire. A total of 11164 respondents successfully completed the leave behind questionnaire. For the 8895 respondents who did not complete the self-completion instrument, their non-available data was obtained through integrating the face-to-face interviews data with the leave behind questionnaire data. A number of hooks were considered in fusing data; these included behavioural ones, but most were demographic variables.



Substitution

In cases where the selected respondent was unavailable, and after a total of three visits at different times of the day, substitution of the interview point would occur. In order to reduce substitution rates, the interviewer would take the contact details of the selected respondent in a household and phone to make an appointment. The interview would be scheduled at a time that best suited the respondent. Each household replacement/substitution was approved by field supervisors in order to avoid

interviewer bias. The project manager was responsible for approving all EA replacements. Each interviewer's work was analysed for any patterns in the number of refusals and successful interviews. The substitution details for the MAPS™ July 2021 – June 2022 survey are shown below:

Reason for replacement	Number of households
Refused	327
House inaccessible (gated communities and farms)	70
Nobody home (after 2 call-backs)	137
EA inaccessible	1296 (162 EAs)
Other	90
Total	1920

The overall household substitution rate was approximately 10% which is considered low for the broad scope of the survey.

The table below unpacks the reasons for the replacement of 162 EAs across all the nine provinces:

Province	Reason for EA substitution						Total
	Access denied (Estate)	Access denied (Farm)	No longer inhabited	Non-residential EA	Unsafe area	Other	
Eastern Cape	5	0	2	3	1	1	12
Free State	3	0	0	0	0	2	5
Gauteng	63	1	1	2	0	1	68
KwaZulu-Natal	8	0	0	0	0	2	10
Limpopo	1	6	0	0	0	0	7
Mpumalanga	5	9	0	1	2	1	18
North West	6	7	7	4	2	0	26
Northern Cape	1	4	2	0	0	0	7
Western Cape	4	4	0	1	0	0	9
Total	96	31	12	11	5	7	162

Backchecking

At least a quarter of each interviewer's work was backchecked to verify the quality and legitimacy of key data collected for the MAPS™ study. Throughout the duration of the fieldwork, the Plus 94 Research call centre based backcheck team returns to a randomly chosen sub-sample of respondents. A smaller set of questions from the face-to-face questionnaire is used for the backcheck survey. The backchecking exercise enables Plus 94 Research to modify certain aspects of the data collection in

order to improve data quality. A total of **4839** respondents confirmed that the interviews had taken place and the information provided was correct.

8.0 Segmentation

Segmentation tools assist in grouping together “like” people in order to establish a brand’s relative potential in the marketplace. They enable the marketing and advertising industries to trend changes in the identified segments over time. The MAPS™ study offers a number of market segmentation tools in the analysis of the collected data. These are the Living Standards Measure (LSM), Socio-Economic Measure (SEM), Generations and Lifestages.

Socio-Economic Measure (SEM)

The Publisher Research Council and the Broadcast Research Council of South Africa have developed and co-own the Establishment Survey SEM™ segmentation model.

The SEM 2018 algorithm where each respondent is assigned a score that ranges from 0 to 100 was used to define the SEM segmentation. Ten segments were developed based on the input variables shown below:

Variable no.	Attribute	MAPS™ question no.
1	Built-in kitchen sink	H8
2	Tap water inside your home, or store-bought water for use in your home	H6A
3	Hot running water from a geyser	H6
4	Flush toilet in/outside house	H7
5	Home security service	H12A
6	Motor car	G1
7	Fridge or combined fridge/freezer	141a
8	Side-by-side fridge and freezer	141a
9	Deep freezer – free standing	141a
10	Microwave oven	141a
11	Floor polisher or vacuum cleaner	141a
12	Washing machine	141a
13	Roof tiles or concrete roofing	P1
14	None, earth or dung flooring	P2
15	Cement, concrete or raw wood flooring	P2
16	Finished floor with parquet, carpet, tiles, or ceramic flooring	P2
17	None or one sleeping room	P3
18	Two sleeping rooms	P3
19	Three or more sleeping rooms	P3
20	A post office near where you live	P4
21	A police station near where you live	P4

9.0 Living Standards Measure (LSM)

“The SAARF LSM (Living Standards Measure) divides the population into 10 LSM groups: 10 (highest) to 1 (lowest). It cuts across race and other outmoded techniques of categorising people, and instead groups people according to their living standards using criteria such as degree of urbanisation and ownership of cars and major appliances” (Source: www.saarf.co.za).

The LSM indicator variables that were used in the analysis of MAPS™ data are shown below:

Variable no.	Attribute	MAPS™ question no.
1	Hot running water from a geyser	H6
2	Computer – Desktop/Laptop	FQ2
3	Electric stove	141a
4	Number of domestic workers or household helpers in household (this includes live-in and part-time domestics and gardeners)	R23
5	0 or 1 radio set in household	FQ2
6	Flush toilet in/outside house	H7
7	Motor vehicle in household	G1
8	Washing machine	141a
9	Refrigerator or combined fridge/freezer	141a
10	Vacuum cleaner/floor polisher	141a
11	Pay TV subscription	C3
12	Dishwashing machine	141a
13	3 or more cell phones in household	E1
14	2 cell phones in household	E1
15	Home security service	H12A
16	Deep freezer – free standing	141a
17	Microwave oven	141a
18	Rural rest (excl. Western Cape and Gauteng rural)	*
19	House/cluster house/townhouse	H1
20	DVD player/Blu-ray player	141a
21	Tumble dryer	141a
22	Home theatre system	141a
23	Home telephone (excl. cell phone)	FQ3
24	Swimming pool	H14
25	Tap water in house/on plot	H6A
26	Built-in kitchen sink	H8
27	TV set	C1
28	Air conditioner (excl. fans)	141a
29	Metropolitan dweller (250 000+)	*

*By sample design

Lifestages

The Lifestages used for MAPS are adopted from the SAARF Lifestages. There are 8 SAARF Lifestages. These Lifestages are personal to the respondent and are determined by age, marital status and whether dependent children in various age categories are living with them or not. A child has been defined as someone who is under 21. It should be noted that the classifications are not always linear as there can be parallel age paths. MAPS has condensed two of the Lifestages (At-Home Singles and Young Independent Singles) into 'Young Singles' to end up with seven Lifestages [Young Singles, Mature Singles, Young Couples, Mature Couples, Young Families, Single Parent Families and Mature Families].

Generations

The Generations segments are as per the Telmar Global Generations definition, and they are as follows:

- Pre Boomers: 1945-earlier;
- Boomers: 1946-1964;
- Generation X: 1965-1985; and
- Millennials (Gen Y): 1986-2005
- Generation Z: 2006-present.

10.0 Confidence Levels

All sample survey results are, unavoidably, subject to a margin of error. How large this margin of error is depends principally on the size of the unweighted sample and, in the case of “yes/no” questions, (as are most the ones in the MAPS questionnaire) the unanimity of response – for a given sample size, the margin of error is larger, in absolute size, if 50% of people answer “yes” to a given questions and 50% “no”, as opposed to if only one person in ten says “yes”.

Contrary to widespread belief, the size of the margin of error is very little influenced, under certain conditions that generally apply in the MAPS™ case, by the size of the population that the sample represents or by the proportion of that population who are interviewed.

In a sample survey the sample data is used to estimate on a scientific basis the values of "universe" parameters (e.g., readership). Information based on sample data may vary from sample to sample, which implies that an estimated value may deviate from the "true" (albeit unknown) universe value. The latter is the value that would have been obtained if the whole population had been surveyed using the same questionnaire and survey method. The difference between an estimated value and the corresponding true or universe value is referred to as the sample error. This sample error will vary from sample to sample and this variation in the sample error is estimated by the so-called standard error of the estimate.

An interval around the estimated value can be calculated which will contain the true (universe) value with a given degree of confidence. This interval is referred to as a confidence interval for the (unknown) universe value. The boundaries of a confidence interval are obtained by subtracting a certain quantity from the estimated value and by also adding this quantity to the estimated value. This quantity is called the precision of the estimate and is, for a given confidence coefficient, equal to the maximum value of the sample error as defined above. In other words, the size of a sample error of an estimate cannot exceed the precision of the estimate. The precision of an estimate is calculated as the product of a constant and the standard error, where the value of the constant is determined by the chosen confidence coefficient. For a confidence coefficient of 0.95 or 95% the precision = 1.96 times the standard error, and for a confidence coefficient of 0.99 or 99% the precision = 2.58 times the standard error.

If the estimated value as well as its standard error is known, the true or universe value will not differ from the estimated value by more than 1.96 (approximately twice) the value of the standard error, assuming a 95% confidence coefficient.

The chart overleaf allows the approximate calculation of the "95% confidence limits" of any percentage shown in the MAPS™ reports. These confidence limits are such that there is only about one chance in 20 of the true percentage lying outside the limits given by the reported percentage plus or minus the confidence limits.

To obtain the confidence limit for any percentage, lay a straight edge across the chart so that it joins the relevant unweighted sample size on the left-hand scale and the percentage of interest on the right-hand scale. The confidence limits can then be read off the central scale, at the point where the straight edge cuts it.

Example

Suppose MAPS™ shows that, amongst men, the readership of a certain newspaper is 20% in Gauteng, with an unweighted sample size of 1 000 in this sub-group.

A straight edge laid across "1 000" on the left-hand scale and "20%" on the right-hand scale cuts the central scale at 3.5% approximately.

The 95% confidence limits of the readership level are thus 23.5% (i.e., 20% + 3.5%) and 16.5% (i.e., 20% - 3.5%). There is only about a 1 in 20 chance that the true (unknown) figure is either larger than 23.5% or smaller than 16.5%.

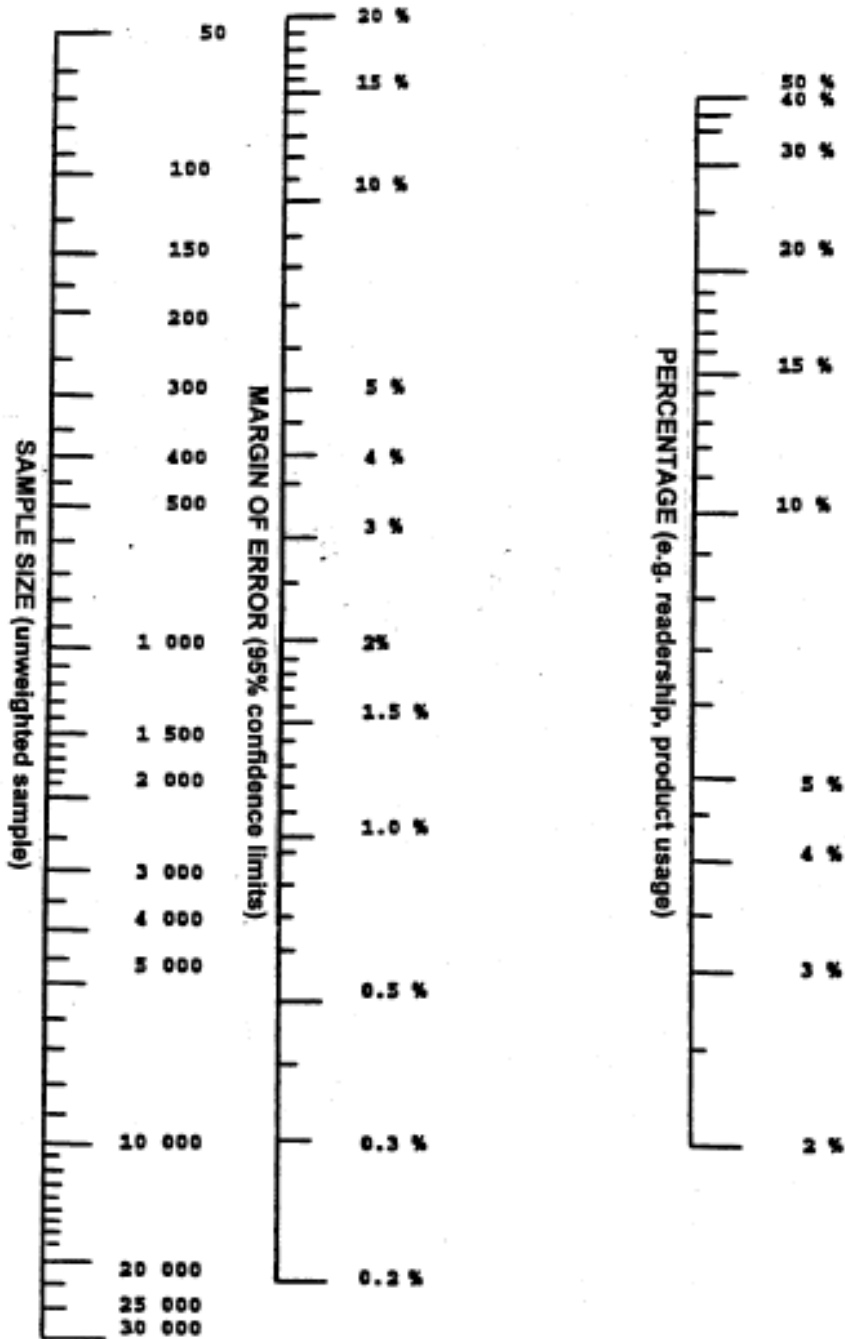
To obtain the confidence limits of the numbers of readers, multiply the results just obtained by the "Estimated population" of the target group.

Continuing the previous illustration, if the table shows that the number of males in Gauteng is 920 000, then the 95% confidence limits of the readership of the publication would be (23.5% of 920 000) or 216 000 and (16.5% of 920 000) or 152 000, approximately.

Technical Note

In view of the sample design employed for MAPS™, it is inappropriate to estimate confidence limits based on Simple Random sample assumptions. The nomogram has been constructed using a Design Factor of 1.25. Whilst experience and some calculations based on MAPS™ data can support this figure, it may be exceeded when, for example, a variable is highly skewed in its population distribution; the confidence limits will then be wider. An upper limit of 2.0 for the Design Factor may be reasonably assumed, implying confidence limits 62.5% greater than those calculated from the nomogram in the worst case.

CONFIDENCE LIMITS



Section E:

Appendix



Section E: Appendix

11.0 MAPS™ Research Instruments

In order to get access to the questionnaires that were used for the MAPS™ July 2021 – June 2022 survey, please click on the link below:

<https://mapssurvey.co.za/tests/docs/>

11.1 Questionnaire changes/additions

MAPS™ questionnaire changes/additions implemented between July 2020 and December 2022 can be accessed on the link below:

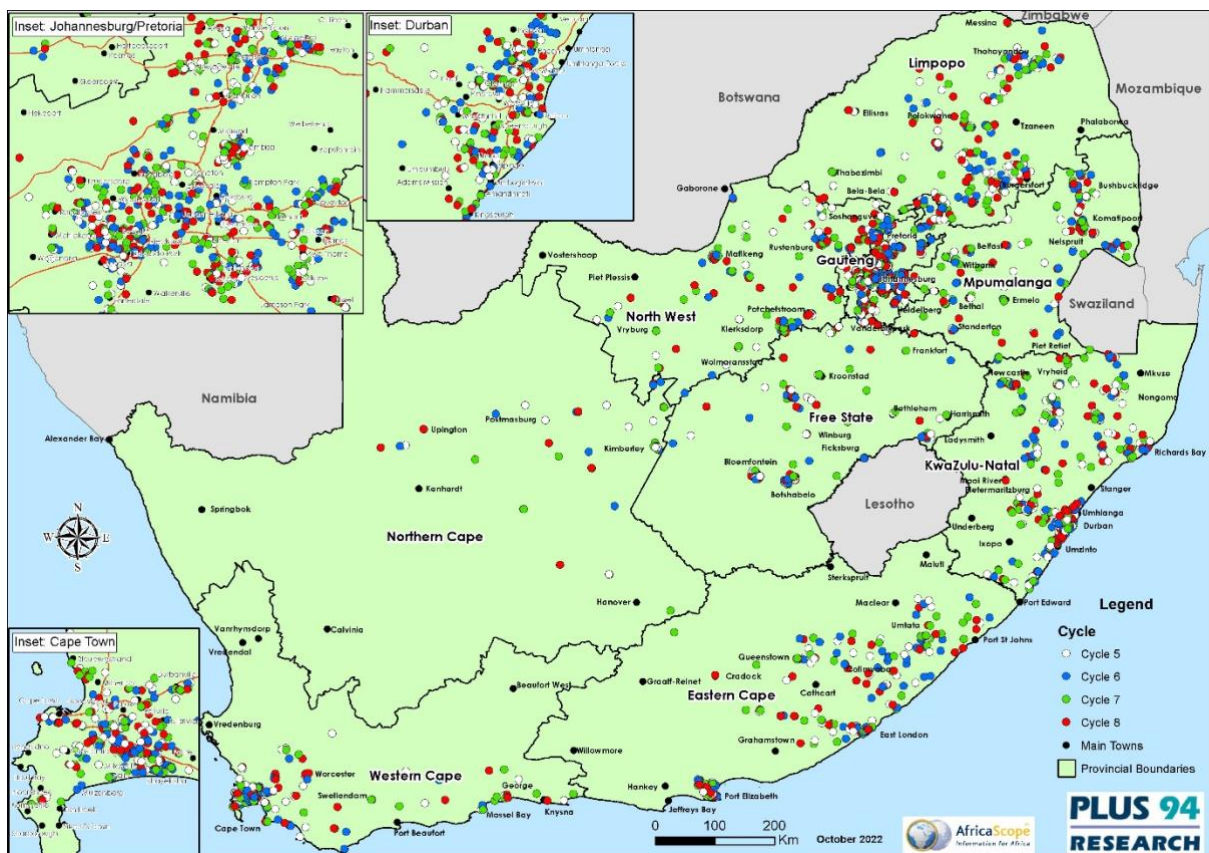
<https://mapssurvey.co.za/tests/questionnaire/>

11.2 Fieldwork areas

Areas that were covered by the MAPS™ survey can be accessed on the link below:

<https://mapssurvey.co.za/tests/areas/>

Below is the national map indicating the geographical spread of the areas that were covered:



11.3 Defining the Metropolitan Boundaries for MAPS™

BACKGROUND

In South Africa, there are eight metropolitan districts that serve as administrative regions encompassing major urban areas. These metropolitan districts play a crucial role in governing and managing the affairs of these densely populated cities. These areas also make a significant contribution to the economy of the country and consumption patterns in South Africa. The Municipal Demarcation Board has the responsibility of demarcating the boundaries of the metropolitan districts. These metropolitan districts are:

- City of Johannesburg Metropolitan District;
- City of Tshwane Metropolitan District;
- Ekurhuleni Metropolitan District;
- eThekweni Metropolitan District;
- Nelson Mandela Bay Metropolitan District;
- City of Cape Town Metropolitan District;
- Mangaung Metropolitan District; and
- Buffalo City Metropolitan District.

DEFINING THE URBAN CENTRES OF METROPOLITAN DISTRICTS

The definition of metropolitan areas in the MAPS™ study is different from that of Statistics South Africa. There are no rural areas associated with the built-up areas. AfricaScope defines them as contiguous built-up areas. Definitions for rural and other urban areas are as defined by Stats SA.

The eight metropolitan districts each have unique characteristics associated with them. Each of the metropolitan districts have large urban areas that are made-up of both formal and informal residential areas. Part of these large urban areas include the commercial and industrial regions of the metropolitan district.

These metropolitan districts also have rural areas associated with them that include both commercial farmlands and traditional areas. For example, large parts of the eThekweni metropolitan district consist of traditional areas with relatively low population densities. Within the boundaries of the metropolitan districts there are also small towns (e.g., Bronkhorstspuit in Tshwane metropolitan districts) that are discontinuous from the urban centre.

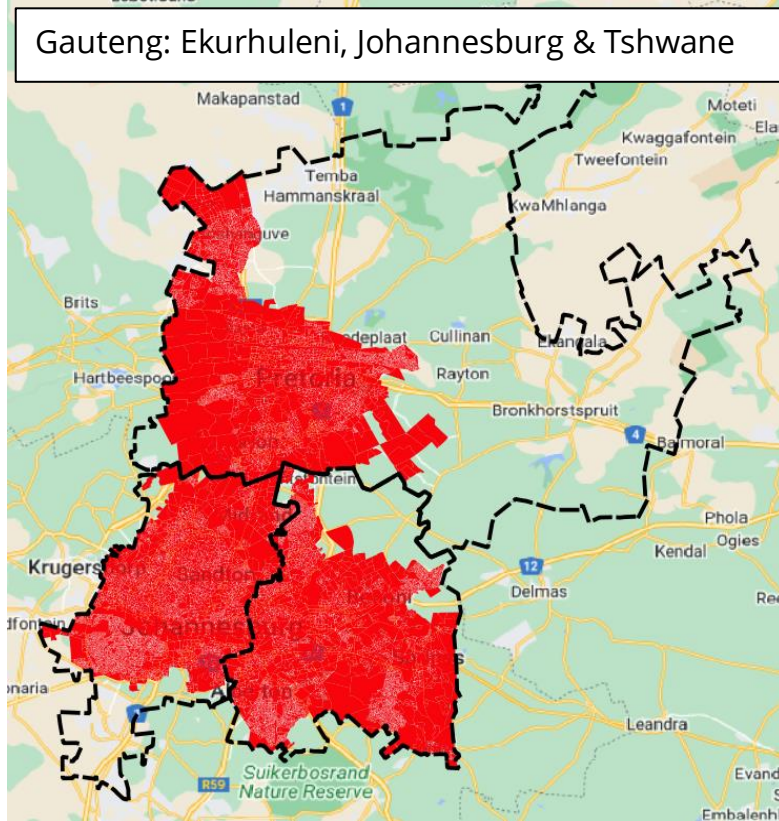
Several of the metropolitan districts have relatively small urban centres compared to their large rural areas. These non-urban areas within the metropolitan districts will have a distinctly different consumption pattern to that of the population living in the densely populated formal and informal urban areas. Consequently, it was decided to identify in each of the metropolitan districts the areas that are truly the urban centres.

To accomplish this, the census enumeration areas from the 2011 census were used as a basis, which were classified in terms of the type of area. However, 12 years after the census, the types of areas in the metropolitan districts have changed. Therefore, the enumeration area boundaries were overlaid onto satellite imagery and changes in the type of areas were taken into consideration in defining the truly urban centres of the metropolitan district. Whenever possible, the urban centres of the

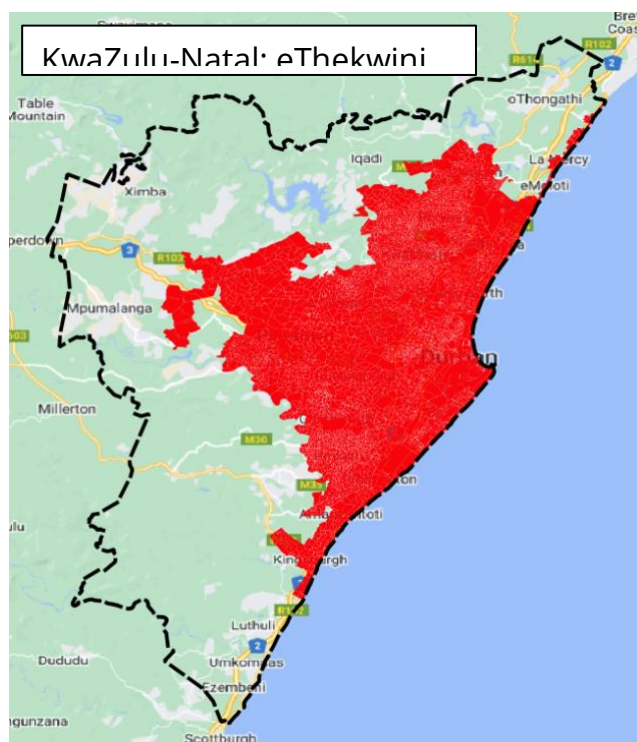
metropolitan areas were defined as contiguous areas. However, it is only within the City of Cape Town that the urban centres are not contiguous.

The urban centres of each metropolitan district are depicted in the maps below.

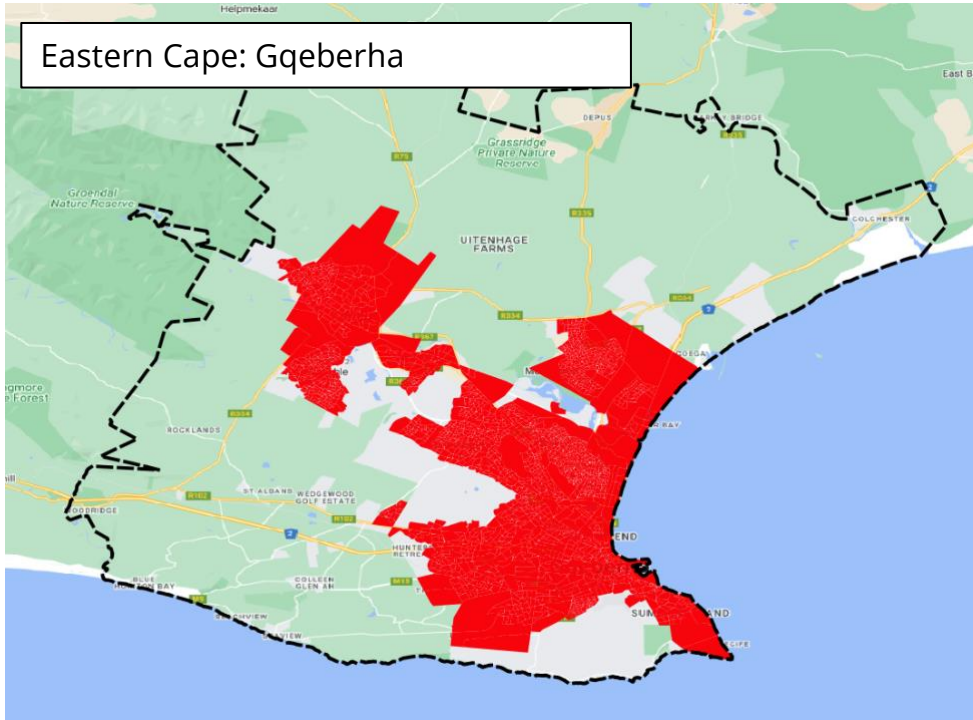
- Ekurhuleni Metro, City of Johannesburg and City of Tshwane Metropolitan District



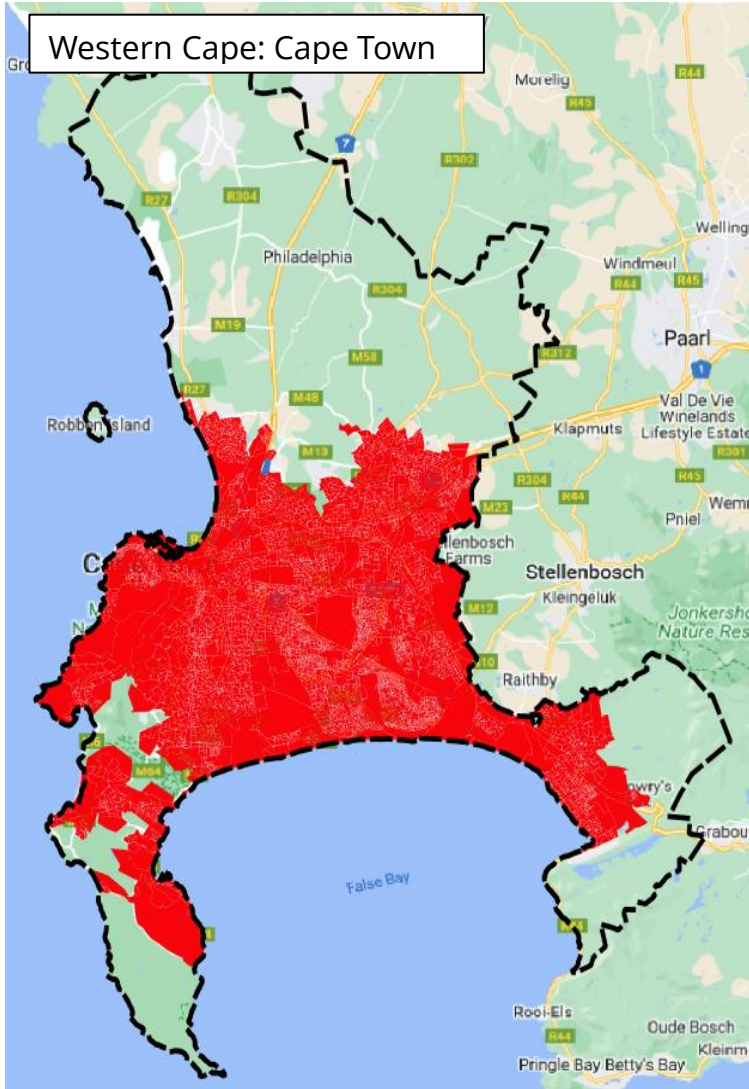
- eThekweni Metropolitan District



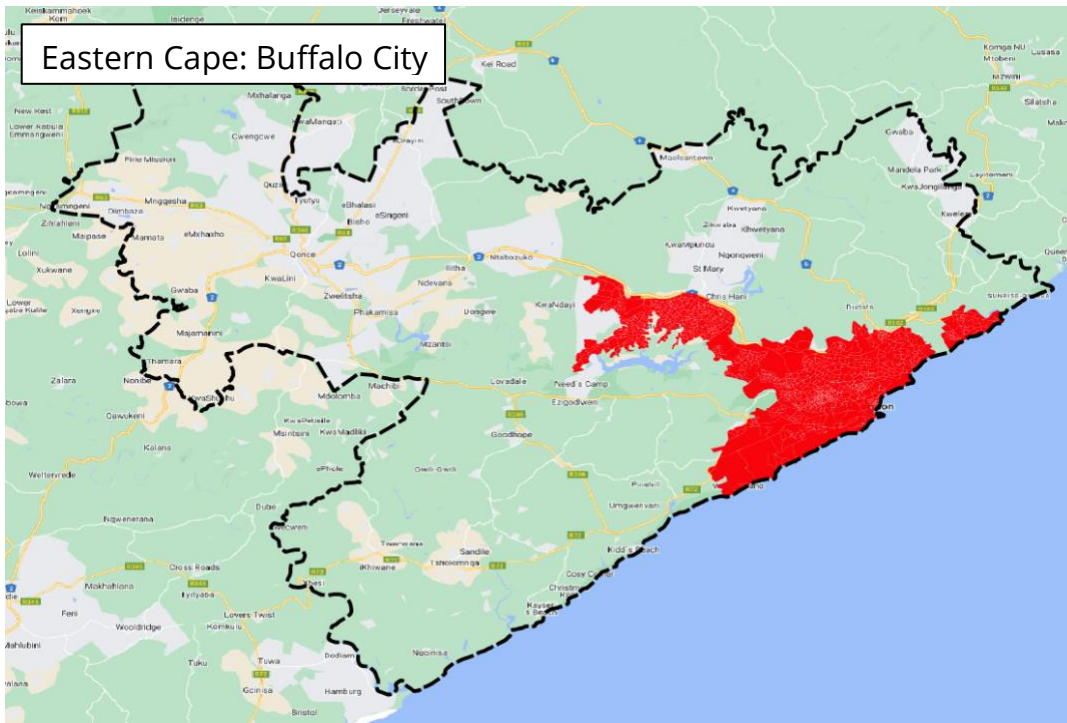
- Nelson Mandela Bay Metropolitan District



- City of Cape Town Metropolitan District



- Buffalo City Metropolitan District





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