

MAPS TECHNICAL REPORT

YEAR 1

July 2020 – June 2021

PLUS 94

RESEARCH



MARKETING RESEARCH
FOUNDATION

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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.

Foreword

The commencement of the first wave of the MAPS™ project was impacted by the arrival of the COVID-19 pandemic in South Africa and the subsequent national lockdown. This required innovative thinking and flexibility in all facets of the project and from its team members to investigate alternate methods of fieldwork. After a delayed start, fieldwork hit the ground running with face-to-face interviews as soon as the national alert levels allowed.

Careful attention was paid to health and safety of both interviewers and interviewees. Various measures were employed to ensure that the project would continue safely whilst maintaining the highest research ethics and standards.

The value of the data collected during the first two waves of MAPS™ is priceless. With an ever-changing landscape, the insights curated with MAPS™ will provide understanding into how South Africans live, consume and purchase during an unprecedented time in history.

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™ questionnaires and areas covered by the study

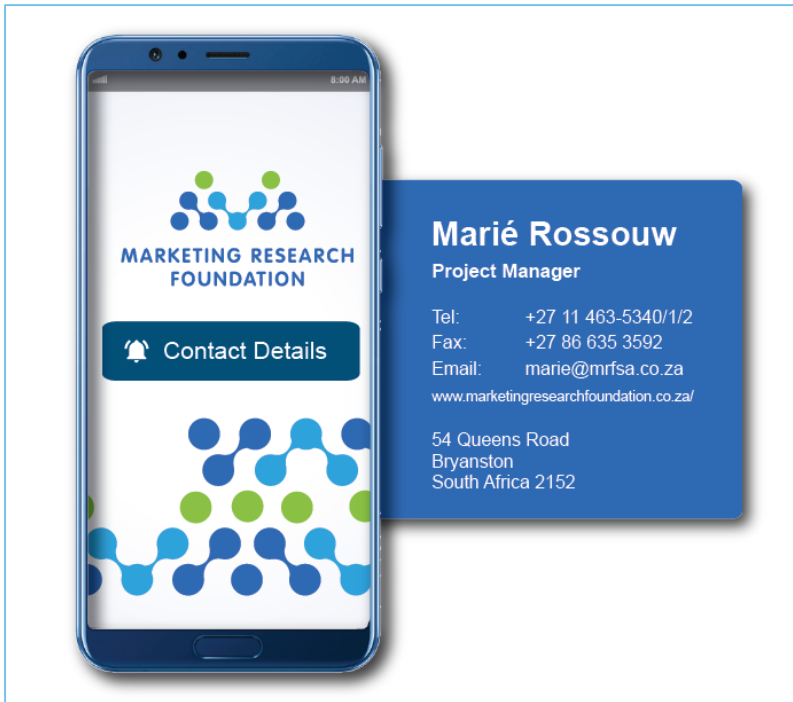
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Section A:

Introduction and Key Definitions

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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 2020 – June 2021.

2.0 Special Notes

1. Age

There are two age questions in the MRF MAPS™ questionnaire: one on exact age and the other a grouping of fifteen age categories on independent and dependent household/family members of respondents. However, the weighting cells are 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75-79 and 80+ (not the individual ages) and analysis by any other age groupings will not necessarily reflect the correct population statistics. There is also a proportion of respondents who refuse to give their exact age and therefore adding the individual exact ages will not necessarily equate to the groups in the grouped age question.

2. Language

For reporting purposes, the language categories are as follows:

Afrikaans	Southern Sotho	Tswana
English	Swazi	Venda
Ndebele	Tsonga	Zulu
Northern Sotho	Xhosa	Other

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

3. Population 2021

According to Statistics South Africa's 2021 mid-year population estimates, the total population of South Africa was estimated to be at 60.14 million. Approximately 71.7% (43.1 million) of the population is aged 15 years and older and this defines the universe for the MAPS™ study. About 9.2% (5.5 million) is 60 years and older whereas 28.3% 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 2020 – June 2021.

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.

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 2020 – June 2021.

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
- 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
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 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. 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	South Sotho	Venda
English	Swazi	Xhosa
Ndebele	Tsonga	Zulu
North Sotho	Tswana	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
- 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
- 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
- No dependent children in the household (own or other children) that they are responsible for

Mature Couples

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

Young Family

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

Mature Family

- Married or living together
- 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

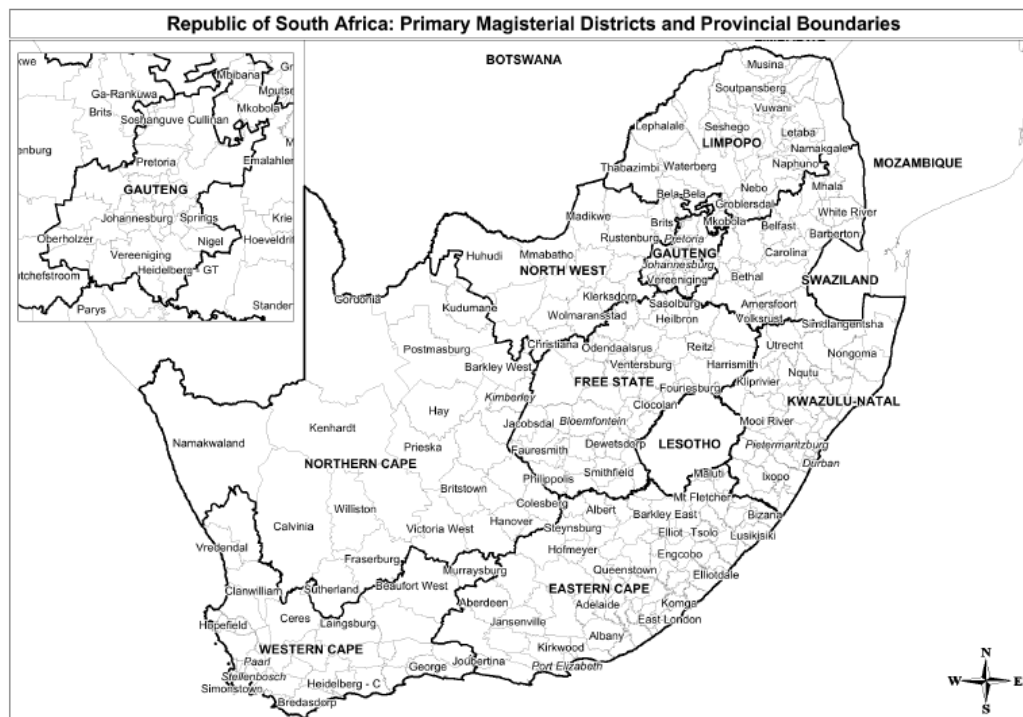
The occupation of respondents who work full-time or part-time or are self-employed is classified according to Stats SA "Standard Classification of Occupations" (Report 09-90-01) down to the level of unit groups (three-character codes). These appear on the database. (See Appendix of this report.) Note 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 in 2011. Since then, Stats SA has been 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 of 2020 ran from July to December whereas that of the second wave started in January 2021 and came to an end on the 25th of June 2021. Two waves produce an annual sample of 20 049.

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).

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 2021

According to Statistics South Africa's 2021 mid-year population estimates, the total population of South Africa was estimated to be at 60.14 million. Approximately 71.7% (43.1 million) of the population is aged 15 years and older and this defines the universe for the MAPS™ study. About 9.2% (5.5 million) is 60 years and older whereas 28.3% 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	4 495 873	10%
Free State	2 097 647	5%
Gauteng	12 088 567	28%
KwaZulu-Natal	7 908 863	18%
Limpopo	3 920 833	9%
Mpumalanga	3 353 909	8%
Northern Cape	921 922	2%
North West	2 942 587	7%
Western Cape	5 381 156	12%
Total	43 099 703	100%

Gender (15 years+)

Gender	Count	Percentage (%)
Female	22 337 042	52%
Male	20 762 661	48%
Total	43 099 703	100%

Race (15 years+)

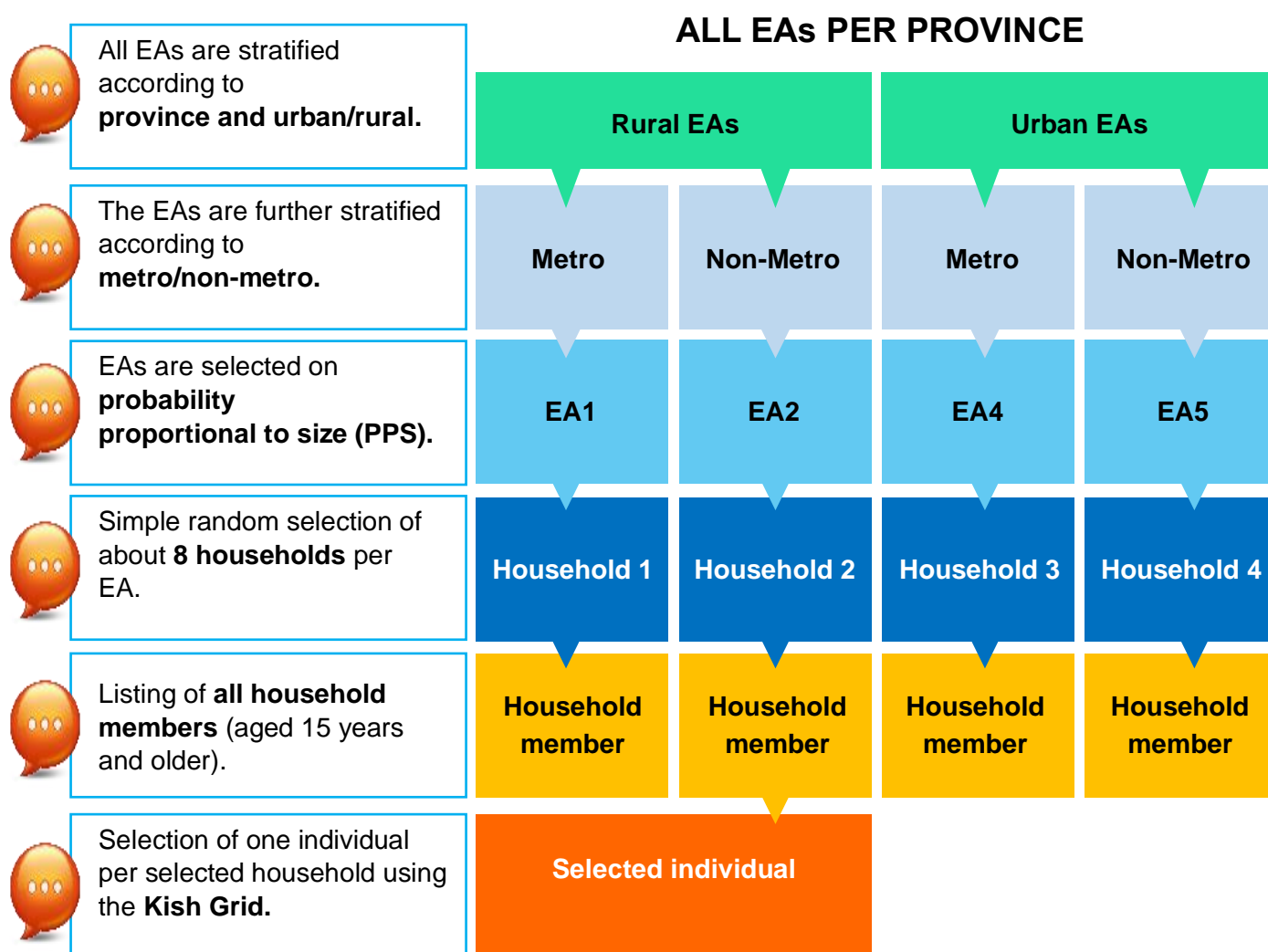
Race	Count	Percentage (%)
Black African	34 028 958	79%
Coloured	3 886 064	9%
Indian/Asian	1 251 197	3%
White	3 933 484	9%
Total	43 099 703	100%

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 2020 and June 2021.

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**
- c) 20% rural EAs**

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

Weighting and Efficiency

According to sampling theory, the weights must be calculated to:

- (i) compensate for the deviation of the design from a simple random sample through the replacement of initially sampled EAs and households; and**
- (ii) represent the population (aged 15 years+ according to the Statistics South Africa 2021 mid-year estimates).**

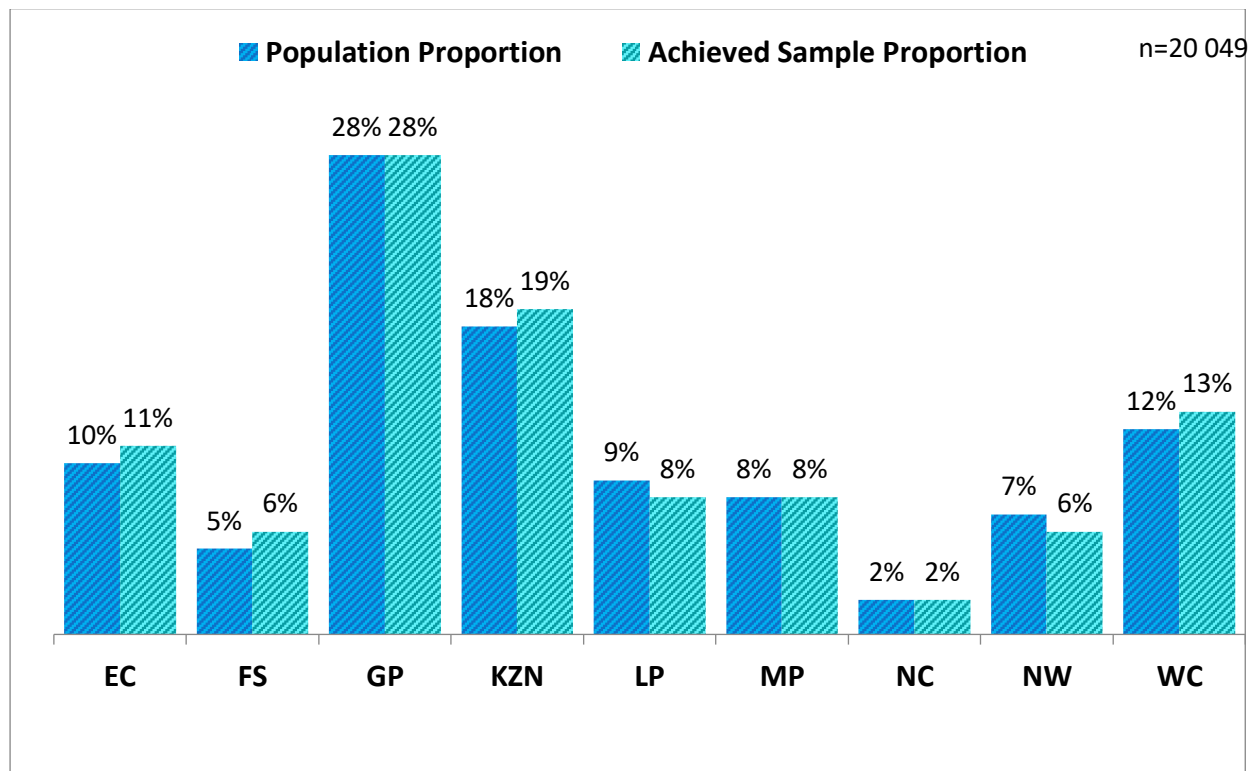
The calculation of the design weight therefore takes all three sampling stages into account. The weight of an EA is given by the inverse of the selection probability of an EA to be selected. The household weight per EA is given by probability (change) that a household will be selected, given the EA is selected. The respondent weight is linked to the average number of persons aged 15 years and older in the selected households.

A combination of the above three weights becomes the weight that is assigned per respondent.

The amount of correction needed to match the population profile is measured inversely using the weighting efficiency score which ranges from 0 to 100%. A low efficiency score indicates a sample that poorly represents the population. A weighting efficiency of at least 70% indicates that the sample design is balanced and safe to apply.

Province	Achieved weighting efficiency (%)
Eastern Cape	67%
Free State	70%
Gauteng	80%
KwaZulu-Natal	72%
Limpopo	71%
Mpumalanga	79%
North West	79%
Northern Cape	67%
Western Cape	76%
Overall	74%

Population vs. Achieved Sample Proportions



National Sample Profile

	July 2020 to June 2021 [Unweighted Data]								Total
	Jul – Sep '20	%	Oct – Dec '20	%	Jan – Mar '21	%	Apr – Jun '21	%	
Total	5016	25%	5008	25%	5016	25%	5009	25%	20049
Female	2810	56%	2628	52%	2676	53%	2795	56%	10909
Male	2206	44%	2380	48%	2340	47%	2214	44%	9140
Black	3940	79%	3985	80%	3893	78%	3976	79%	15794
White	446	9%	500	10%	578	12%	525	11%	2049
Indian/Asian	139	3%	115	2%	107	2%	102	2%	463
Coloured	491	10%	408	8%	438	9%	406	8%	1743
15 – 24	1305	26%	1496	30%	1524	31%	1513	30%	5838
25 – 34	1542	31%	1494	30%	1457	29%	1556	31%	6049
35 – 44	987	20%	909	18%	950	19%	934	19%	3780
45 – 54	591	12%	541	11%	506	10%	496	10%	2134
55 – 64	344	7%	366	7%	340	7%	302	6%	1352
65 – 74	165	3%	139	3%	160	3%	146	3%	610
75+	53	1%	49	1%	46	1%	42	1%	190
Refused	29		14		33		20		96

Sample Profile [Eastern Cape]

	July 2020 to June 2021 [Unweighted Data]								Total
	Jul – Sep '20	%	Oct – Dec '20	%	Jan – Mar '21	%	Apr – Jun '21	%	
Total	736	34%	456	21%	512	24%	464	21%	2168
Female	414	56%	248	54%	291	57%	304	66%	1257
Male	322	44%	208	46%	221	43%	160	34%	911
Black	652	89%	393	86%	444	87%	411	89%	1900
White	26	4%	26	6%	32	6%	22	5%	106
Indian/Asian	1	0.1%	1	0.2%	0	-	1	0.2%	3
Coloured	57	8%	36	8%	36	7%	30	6%	159
15 – 24	178	24%	123	27%	138	27%	115	25%	554
25 – 34	178	24%	128	28%	133	26%	122	26%	561
35 – 44	141	19%	85	19%	95	19%	94	20%	415
45 – 54	93	13%	41	9%	62	12%	51	11%	247
55 – 64	77	11%	49	11%	45	9%	49	11%	220
65 – 74	47	6%	20	4%	28	5%	29	6%	124
75+	15	2%	9	2%	10	2%	3	1%	37
Refused	7		1		1		1		10

Sample Profile [Free State]

	July 2020 to June 2021 [Unweighted Data]								Total
	Jul – Sep '20	%	Oct – Dec '20	%	Jan – Mar '21	%	Apr – Jun '21	%	
Total	336	30%	248	22%	280	25%	264	23%	1128
Female	187	56%	148	60%	154	55%	139	53%	628
Male	149	44%	100	40%	126	45%	125	47%	500
Black	267	79%	207	83%	218	78%	231	88%	923
White	69	21%	39	16%	48	17%	24	9%	180
Indian/Asian	0	0%	1	0.4%	0	0%	0	0%	1
Coloured	0	0%	1	0.4%	14	5%	9	3%	24
15 – 24	59	18%	61	25%	56	20%	74	28%	250
25 – 34	112	34%	62	25%	79	28%	81	31%	334
35 – 44	77	23%	52	21%	71	25%	56	21%	256
45 – 54	43	13%	35	14%	35	13%	26	10%	139
55 – 64	28	8%	29	12%	25	9%	17	6%	99
65 – 74	11	3%	5	2%	8	3%	7	3%	31
75+	4	1%	3	1%	6	2%	3	1%	16
Refused	2		1		0		0		3

Sample Profile [Gauteng]

	July 2020 to June 2021 [Unweighted Data]								Total
	Jul – Sep '20	%	Oct – Dec '20	%	Jan – Mar '21	%	Apr – Jun '21	%	
Total	1192	21%	1520	27%	1432	25%	1520	27%	5664
Female	659	55%	740	49%	733	51%	807	53%	2939
Male	533	45%	780	51%	699	49%	713	47%	2725
Black	870	73%	1220	80%	1113	78%	1215	80%	4418
White	225	19%	236	16%	268	19%	249	16%	978
Indian/Asian	28	2%	10	1%	8	1%	11	1%	57
Coloured	69	6%	54	4%	43	3%	45	3%	211
15 – 24	270	23%	397	26%	429	30%	509	33%	1605
25 – 34	357	30%	481	32%	460	32%	495	33%	1793
35 – 44	272	23%	312	21%	293	20%	273	18%	1150
45 – 54	142	12%	170	11%	133	9%	146	10%	591
55 – 64	89	7%	112	7%	88	6%	66	4%	355
65 – 74	43	4%	31	2%	18	1%	20	1%	112
75+	15	1%	16	1%	9	1%	11	1%	51
Refused	4		1		2		0		7

Sample Profile [KwaZulu-Natal]

	July 2020 to June 2021 [Unweighted Data]								Total
	Jul – Sep '20	%	Oct – Dec '20	%	Jan – Mar '21	%	Apr – Jun '21	%	
Total	1024	27%	912	24%	888	24%	944	25%	3768
Female	602	59%	472	52%	469	53%	508	54%	2051
Male	422	41%	440	48%	419	47%	436	46%	1717
Black	838	82%	752	82%	738	83%	782	83%	3110
White	38	4%	39	4%	41	5%	68	7%	186
Indian/Asian	103	10%	100	11%	90	10%	90	10%	383
Coloured	45	4%	21	2%	19	2%	4	0.4%	89
15 – 24	260	26%	259	29%	193	22%	208	22%	920
25 – 34	358	35%	289	32%	284	32%	322	34%	1253
35 – 44	181	18%	152	17%	167	19%	178	19%	678
45 – 54	111	11%	93	10%	112	13%	112	12%	428
55 – 64	70	7%	68	7%	67	8%	76	8%	281
65 – 74	30	3%	38	4%	50	6%	38	4%	156
75+	9	1%	11	1%	4	0.5%	7	1%	31
Refused	5		2		11		3		21

Sample Profile [Limpopo]

	July 2020 to June 2021 [Unweighted Data]								Total
	Jul – Sep '20	%	Oct – Dec '20	%	Jan – Mar '21	%	Apr – Jun '21	%	
Total	352	23%	392	25%	392	25%	414	27%	1550
Female	228	65%	229	58%	229	58%	252	61%	938
Male	124	35%	163	42%	163	42%	162	39%	612
Black	340	97%	377	96%	392	100%	414	100%	1523
White	11	3%	8	2%	0	0%	0	0%	19
Indian/Asian	0	0%	0	0%	0	0%	0	0%	0
Coloured	1	0.3%	7	2%	0	0%	0	0%	8
15 – 24	102	29%	132	34%	83	21%	113	27%	430
25 – 34	116	33%	127	32%	120	31%	137	33%	500
35 – 44	68	20%	64	16%	77	20%	81	20%	290
45 – 54	42	12%	40	10%	51	13%	38	9%	171
55 – 64	15	4%	17	4%	36	9%	23	6%	91
65 – 74	4	1%	10	3%	20	5%	16	4%	50
75+	0	0%	2	0.5%	5	1%	6	1%	13
Refused	5		0		0		0		5

Sample Profile [Mpumalanga]

	July 2020 to June 2021 [Unweighted Data]								Total
	Jul – Sep '20	%	Oct – Dec '20	%	Jan – Mar '21	%	Apr – Jun '21	%	
Total	336	22%	392	26%	400	26%	388	26%	1516
Female	206	61%	237	60%	208	52%	213	55%	864
Male	130	39%	155	40%	192	48%	175	45%	652
Black	318	95%	359	92%	375	94%	371	96%	1423
White	18	5%	33	8%	16	4%	8	2%	75
Indian/Asian	0	0%	0	0%	8	2%	0	0%	8
Coloured	0	0%	0	0%	1	0.3%	9	2%	10
15 – 24	85	26%	110	28%	100	25%	76	20%	371
25 – 34	116	35%	105	27%	132	33%	115	30%	468
35 – 44	64	19%	68	17%	73	18%	74	19%	279
45 – 54	46	14%	60	15%	50	13%	61	16%	217
55 – 64	15	5%	31	8%	28	7%	32	8%	106
65 – 74	4	1%	16	4%	12	3%	20	5%	52
75+	2	1%	2	0.5%	5	1%	10	3%	19
Refused	4		0		0		0		4

Sample Profile [Northern Cape]

	July 2020 to June 2021 [Unweighted Data]								Total
	Jul – Sep '20	%	Oct – Dec '20	%	Jan – Mar '21	%	Apr – Jun '21	%	
Total	128	33%	72	19%	80	21%	103	27%	383
Female	76	59%	29	40%	42	52%	56	54%	203
Male	52	41%	43	60%	38	48%	47	46%	180
Black	79	62%	43	60%	36	45%	53	51%	211
White	22	17%	0	0%	0	0%	8	8%	30
Indian/Asian	0	0%	0	0%	0	0%	0	0%	0
Coloured	27	21%	29	40%	44	55%	42	41%	142
15 – 24	20	16%	10	14%	11	15%	8	8%	49
25 – 34	36	28%	26	36%	21	28%	36	36%	119
35 – 44	24	19%	17	24%	16	22%	35	35%	92
45 – 54	19	15%	14	19%	15	20%	13	13%	61
55 – 64	18	14%	4	6%	4	5%	5	5%	31
65 – 74	9	7%	1	1%	5	7%	4	4%	19
75+	2	2%	0	0%	2	3%	0	0%	4
Refused	0		0		0		0		0




Sample Profile [North West]

	July 2020 to June 2021 [Unweighted Data]								Total
	Jul – Sep '20	%	Oct – Dec '20	%	Jan – Mar '21	%	Apr – Jun '21	%	
Total	264	20%	368	29%	344	27%	312	24%	1288
Female	117	44%	196	53%	165	48%	151	48%	629
Male	147	56%	172	47%	179	52%	161	52%	659
Black	257	97%	362	98%	335	97%	289	93%	1243
White	4	2%	5	1%	2	1%	20	6%	31
Indian/Asian	2	1%	0	0%	0	0%	0	0%	2
Coloured	1	0.4%	1	0.3%	7	2%	3	1%	12
15 – 24	67	25%	81	23%	99	30%	77	26%	324
25 – 34	100	38%	112	31%	96	29%	117	39%	425
35 – 44	46	17%	72	20%	77	23%	60	20%	255
45 – 54	37	14%	45	13%	21	6%	26	9%	129
55 – 64	7	3%	36	10%	23	7%	12	4%	78
65 – 74	6	2%	10	3%	13	4%	7	2%	36
75+	0	0%	4	1%	3	1%	0	0%	7
Refused	1		8		12		13		34

Sample Profile [Western Cape]






	July 2020 to June 2021 [Unweighted Data]								Total
	Jul – Sep '20	%	Oct – Dec '20	%	Jan – Mar '21	%	Apr – Jun '21	%	
Total	648	25%	648	25%	688	27%	600	23%	2584
Female	321	50%	329	51%	385	56%	365	61%	1400
Male	327	50%	319	49%	303	44%	235	39%	1184
Black	319	49%	272	42%	242	35%	210	35%	1043
White	33	5%	114	18%	171	25%	126	21%	444
Indian/Asian	5	1%	3	0.5%	1	0.1%	0	0%	9
Coloured	291	45%	259	40%	274	40%	264	44%	1088
15 – 24	264	41%	323	50%	415	60%	333	56%	1335
25 – 34	169	26%	164	25%	132	19%	131	22%	596
35 – 44	114	18%	87	13%	81	12%	83	14%	365
45 – 54	58	9%	43	7%	27	4%	23	4%	151
55 – 64	25	4%	20	3%	24	3%	22	4%	91
65 – 74	11	2%	8	1%	6	1%	5	1%	30
75+	6	1%	2	0.3%	2	0.3%	2	0.3%	12
Refused	1		1		1		1		4

Achieved Sample: Interviews

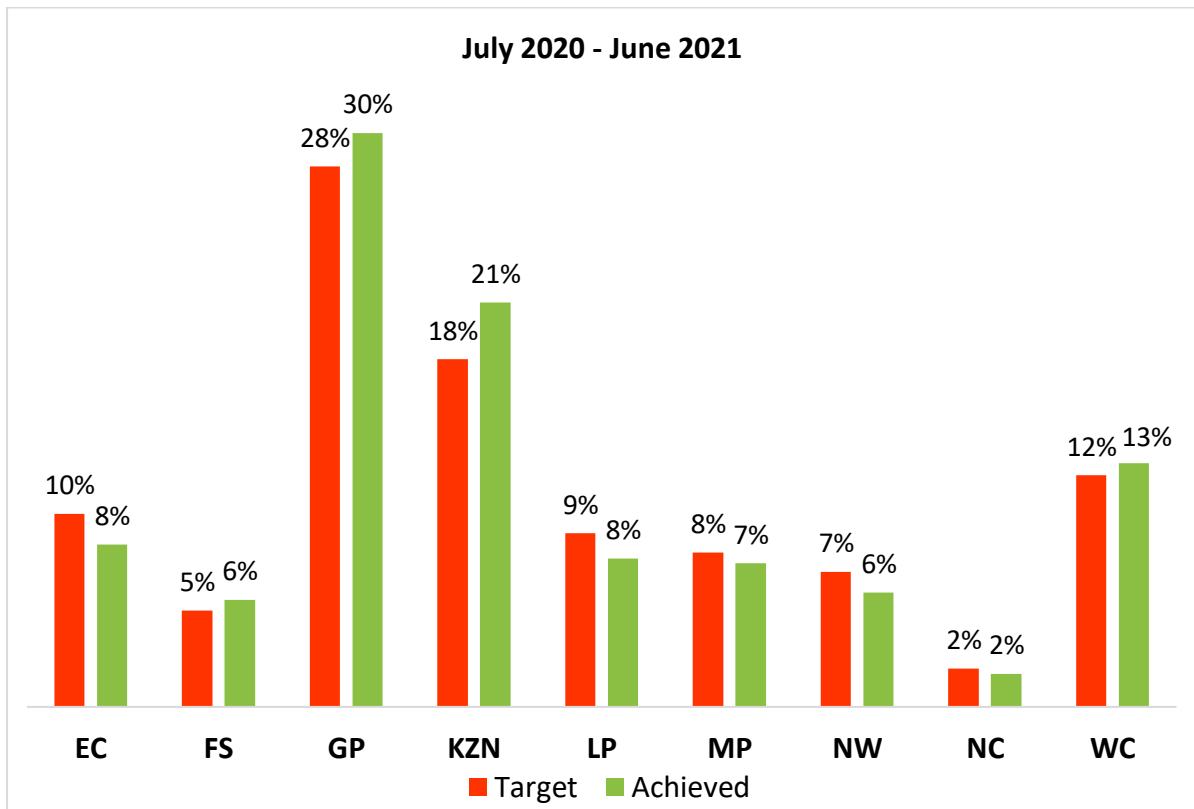
Province	July 2020 – June 2021		
	Target Sample 	Achieved Sample 	Variance 
Eastern Cape	2163	2168	0%
Free State	1125	1128	0%
Gauteng	5651	5664	0%
KwaZulu-Natal	3761	3768	0%
Limpopo	1547	1550	0%
Mpumalanga	1513	1516	0%
North West	1285	1288	0%
Northern Cape	382	383	0%
Western Cape	2577	2584	0%
Total	20004	20049	

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 % = $[(2168/20\ 049) - (2163/20\ 004)] \times 100\%$.

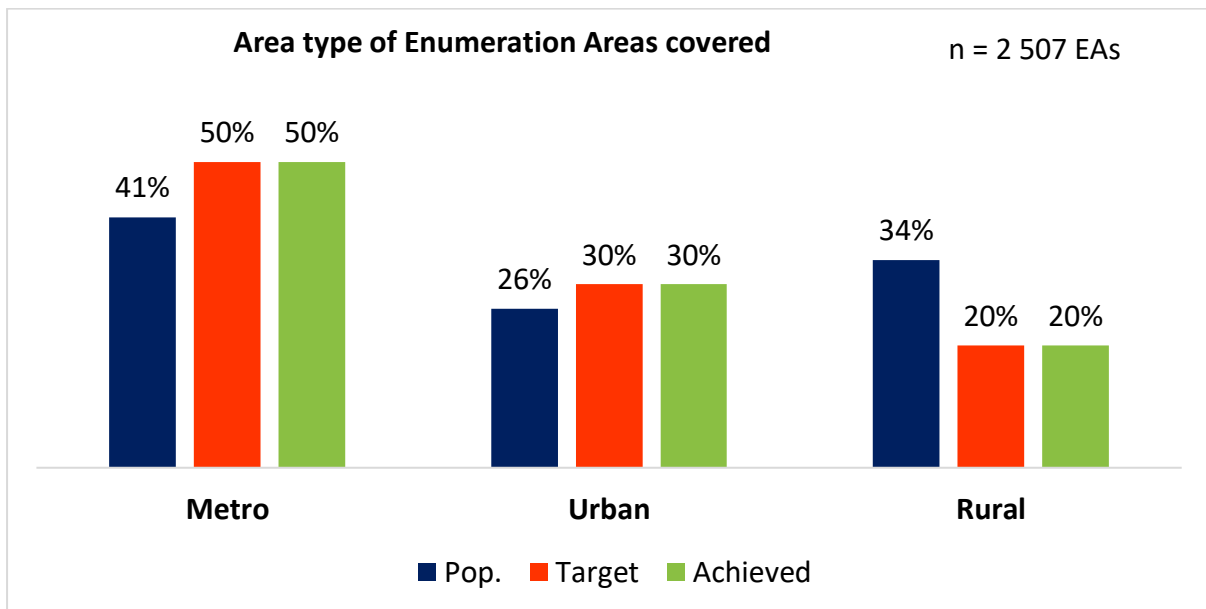
Achieved Sample: Leave Behind Questionnaires

Province	July 2020 – June 2021				
	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	1082	795	104	899	-2.39%
Free State	562	554	37	591	+0.08%
Gauteng	2826	2935	238	3173	+1.48%
KwaZulu-Natal	1881	2048	188	2236	+2.15%
Limpopo	773	710	109	819	+0.05%
Mpumalanga	756	731	62	793	+0.13%
North West	642	586	46	632	-0.19%
Northern Cape	191	153	30	183	-0.50%
Western Cape	1289	1225	121	1346	+0.27%
Total	10002	9737	935	10672	

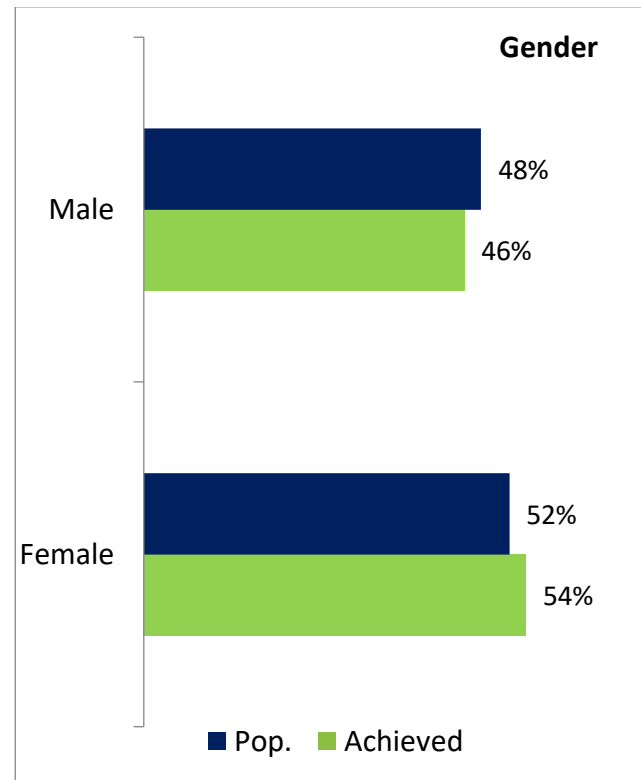
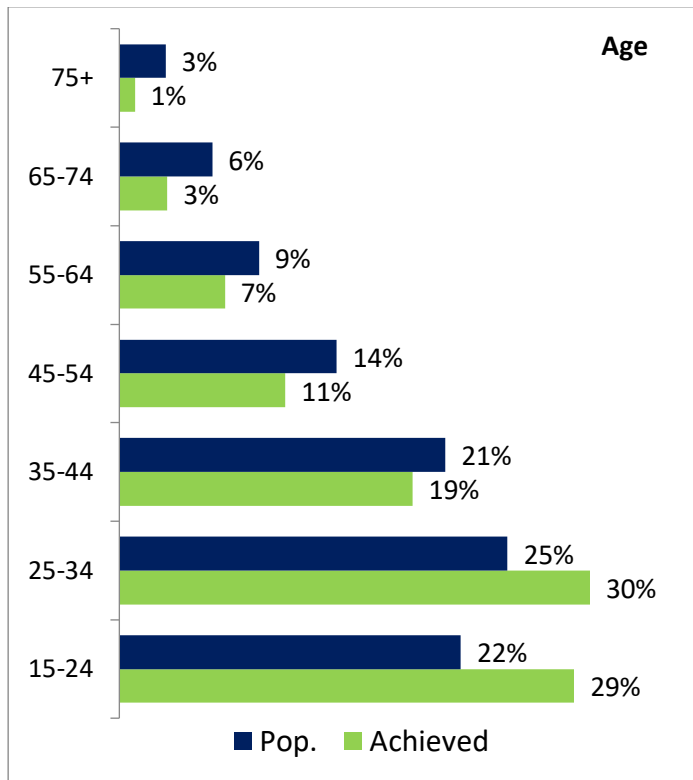
Target vs. Achieved [Leave Behind Questionnaires]



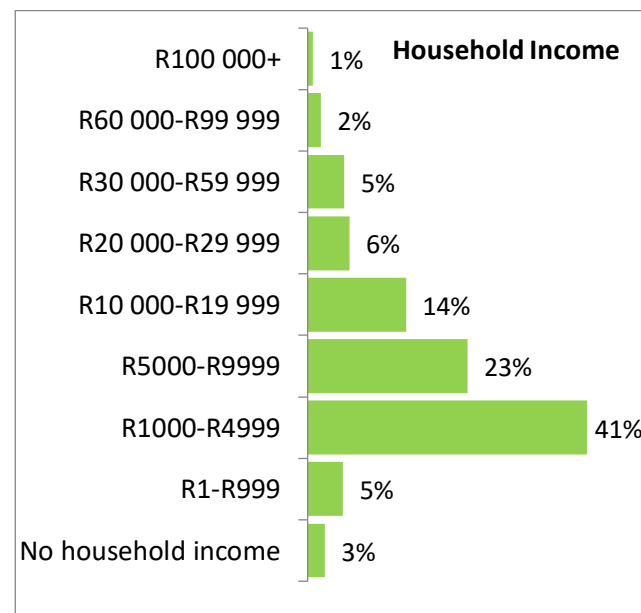
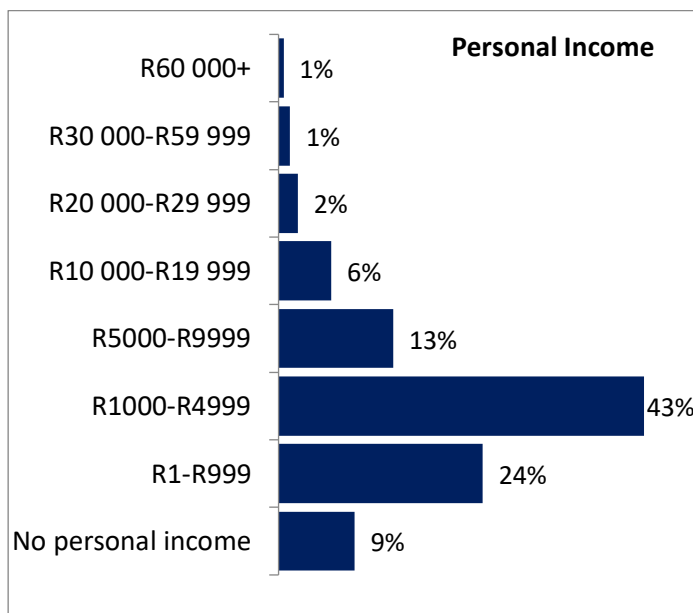
Area Distribution

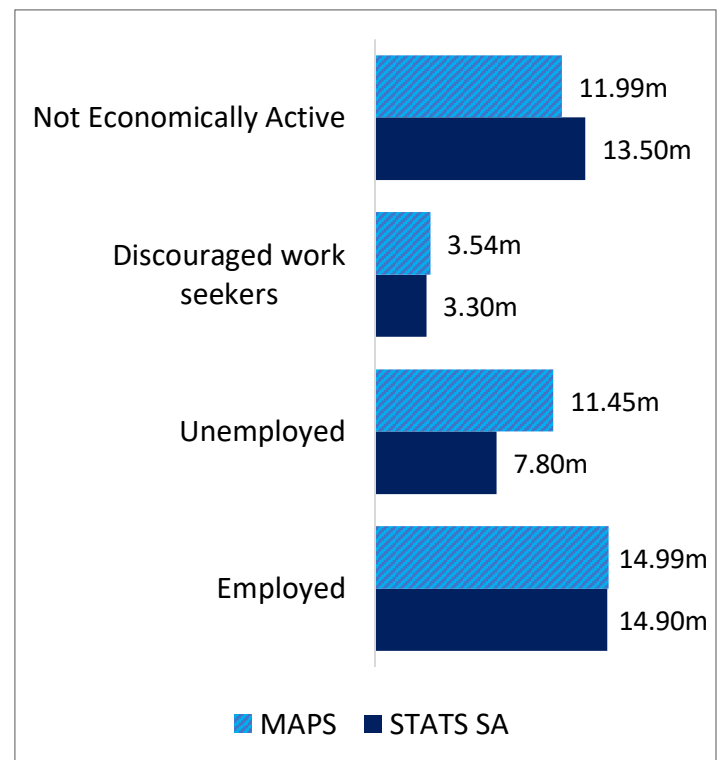
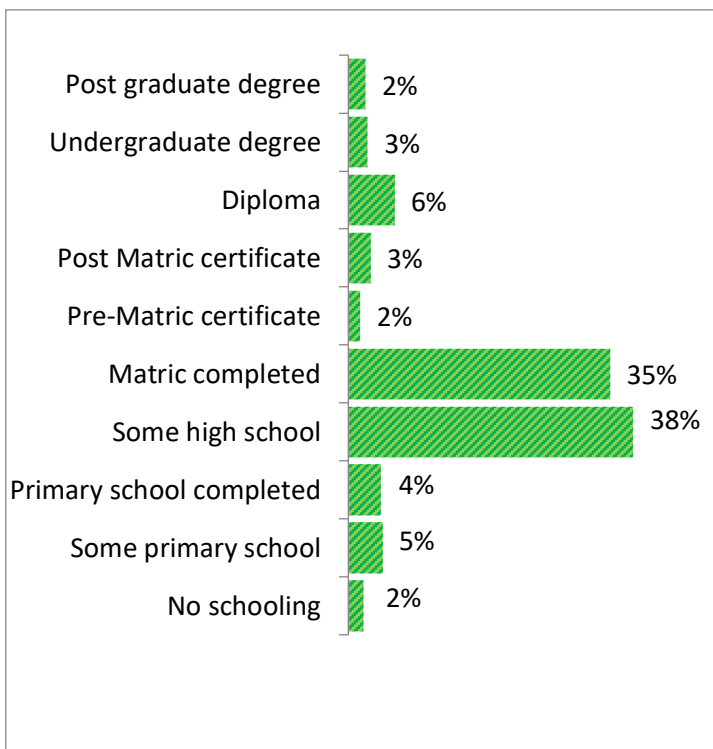
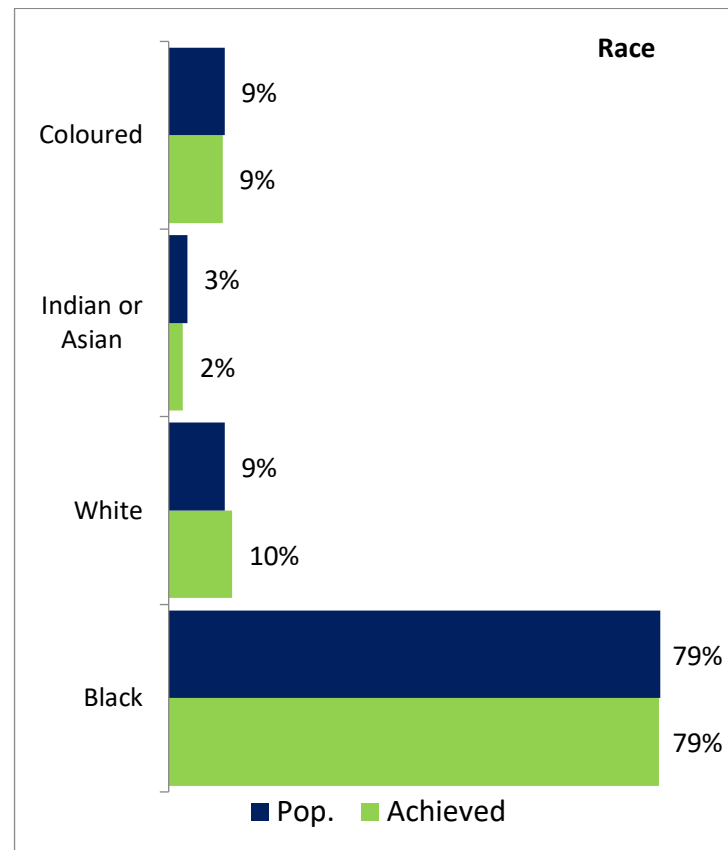
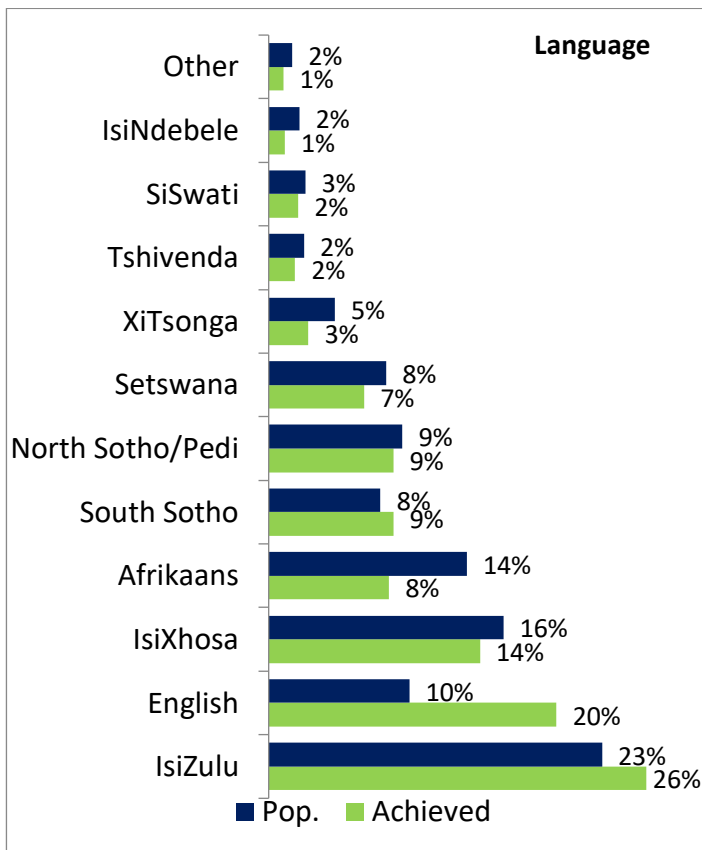


Respondent Profiles



Source: Statistics South Africa 2021 Mid-year Estimates [15+ years]





Section C:

Fieldwork

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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 45 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.

Background

Fieldwork for the MAPS™ study was scheduled to begin on the 23rd of March 2020. However, due to level 5 lockdown regulations, fieldwork had to be suspended. The regulations and restrictions put in place as a result of the COVID-19 pandemic delayed the MAPS™ commencement. Face-to-face data gathering methods were impossible during level 5 and 4 restrictions such as lockdown, restricted travelling and no access to respondents' homes. Alternative means of collecting data from respondents which did not infringe any of the social distancing regulations were explored in May and part of June 2020. Challenges were experienced with the use of telephone lists.

1. The questionnaire proved to be too long for effective telephone interviewing; and
2. There was no way the geo location of the respondent could be ascertained/confirmed.

A pilot study to investigate the feasibility of face-to-face interviews considering the prevailing COVID-19 pandemic situation in South Africa was conducted in June 2020. The Marketing Research Foundation (MRF) was furnished with a pilot report on the 26th of June by Plus 94 Research. The MRF Board gave Plus 94 Research the nod to commence face-to-face fieldwork for the full-scale project in mid-July 2020.

Although the mandated social distancing and lockdowns made face-to-face interviews a challenge to some extent, the field team managed to conduct interviews using the TAPI (Tablet-Assisted Personal Interviewing) methodology without facing any major difficulties. However, high-income areas that are traditionally a challenge to access became even more difficult. Most of the respondents based in low-income areas were more willing to take part in the survey than their counterparts residing in the high-income areas. Gated communities posed a major challenge in provinces such as Gauteng and KwaZulu-Natal. After more than one attempt had been made to seek permission to interview these hard-to-reach communities, they were replaced by EAs with matching profiles. The higher rate of refusals in estates/gated communities including farms resulted in an additional 473 EAs with a matching profile being provided to boost the EA replacement reserve.

Fieldwork for cycles 2, 3 and 4 was conducted with greater ease compared to that of the first cycle as lockdown and access restrictions were relaxed. Respondents became more willing to participate in the face-to-face interviews as the fear and tension surrounding the COVID-19 pandemic had significantly subsided in the last quarter of 2020. Given the unpredictable nature of the lockdowns, some dips/months had fewer fieldwork days than others. There is no doubt that the different phases of lockdown that the country went through had a profound impact on the behavioural dynamics of consumers.

The geographic distribution of the EAs for the MAPS™ study made it easier for the interviewers to locate almost all the EAs without facing any poor road network challenges since the bulk (80%) of them were situated in metros and urban areas. Consequently, the pace with which data was collected was fairly quick. However, KwaZulu-Natal, Limpopo and Eastern Cape had a few of those areas where the road network were very poor. In crime-prone areas, interviewers found it difficult to conduct interviews. With the assistance of community members, interviewers eventually managed to get access to respondents in some difficult-to-access areas. Interviewers worked in pairs in every EA that they visited to minimise their vulnerability, especially in unsafe areas. Extremely unsafe EAs, were replaced to avoid endangering interviewers' lives.

The return rate of the leave behind questionnaire (loosely referred to as the “diary”) during the first cycle was very low owing to a number of challenges experienced during the early stages of the MAPS™ study. As the study progressed into its second cycle, most of the inevitable teething troubles had been dealt with so that by the end of the first wave of MAPS™ in December 2020 it became possible to achieve the overall set target [5 000] for the leave behind questionnaires. A total of 5 079 diaries had been collected and processed by the end of fieldwork.

Fieldworkers

A total of 132 interviewers took part in the data collection process during the first year of the MAPS™ study. Each of the cycles had an average of 60 to 65 interviewers collecting data with the exception of the second cycle where more than 75 interviewers took part in collecting data due to the limited number of days available for fieldwork during the festive season of 2020. All the interviewers attended MAPS™ training sessions in which they were trained how to use the face-to-face and leave behind questionnaires. Regular debriefing sessions were conducted throughout the first year of MAPS™ as these significantly assist in informing interviewers on areas that need improvement, and they help maintain the high standards of data that is collected. In addition, feedback from the field assists in improving process.

With every dip, interviewers became more efficient as they became more familiar with the face-to-face script which resulted in the interview durations decreasing. Besides the minimum academic qualification (matric certificate) required for interviewers, Plus 94 Research also appreciates the importance and benefits of contextual fit when interviewers are recruited. As a result, there were no language barrier challenges reported between respondents and interviewers. The continuous monitoring, support and guidance provided by project managers, field operations executives and field quality controllers across all the provinces was also pivotal in ensuring that the face-to-face interviews and leave behind questionnaires were successfully completed within the expected timeframe.

The breakdown of academic qualifications of the Plus 94 Research fieldworkers assigned to work on MAPS™ is shown below:

Highest level of education	No. of fieldworkers
Matric successfully completed – National Certificate	67
Post-Matric Certificate	33
Diploma	19
Undergraduate Degree	5
Postgraduate Degree	8
Total	132

Health and Safety

A COVID-19 health and safety committee was formed at Plus 94 Research in May 2020 in order to facilitate co-operation in developing and implementing measures to improve the safety of workers including interviewers. The committee led the process of developing health and safety standards, rules and procedures pertaining to the COVID-19 pandemic environment. All members of staff (including interviewers) are expected to adhere to set rules and procedures at all times. Throughout the first year of the MAPS™ study, all interviewers made use of sanitisers and personal protective equipment (including face shields). As required, during levels 2 and 3 of lockdown, all interviewers carried travel permits which they showed to police, security guards and respondents, if required.

It was observed that many respondents (especially in townships) had become very complacent in terms of the use of masks and social/physical distancing in cycles 2, 3 and 4. In such circumstances, interviewers provided free masks to respondents to minimise the risk of COVID-19 infections.

Fieldwork Timeline

The specific start and end dates of each cycle of year 1 of MAPS™ are shown below:

Year 1: 17 July 2020 – 25 June 2021	
Cycle	Period
1	17 July – 30 September 2020
2	18 October – 15 December 2020
3	18 January – 2 April 2021
4	13 April – 25 June 2021

Year 1 MAPS™ Timeline

Section D:

Analysis and Results

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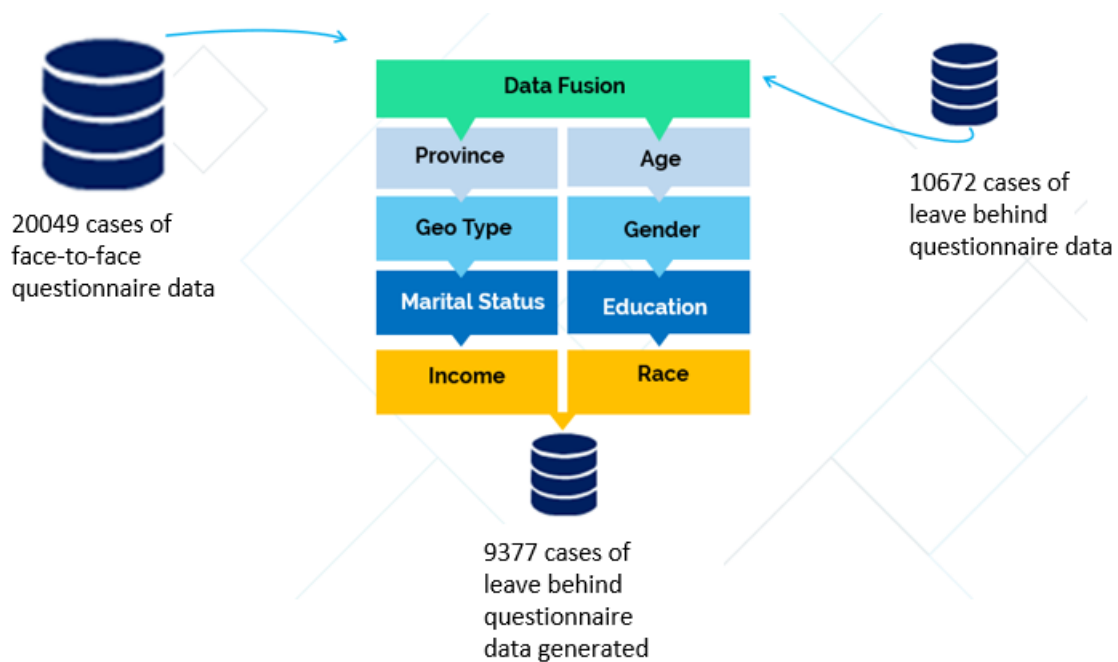
Section D: Analysis and Results

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 20049 respondents completed a face-to-face questionnaire. Half of them were expected to complete the leave behind questionnaire. A total of 10672 respondents successfully completed the leave behind questionnaire. For the 9377 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 year 1 of MAPS™ are shown below:

Reason for replacement	Number of households
Refused	506
House inaccessible	239
Nobody home (after 2 call-backs)	243
EA inaccessible	1352 (169 EAs)
Other	84
Total	2424

The overall household substitution rate for year 1 was 12% which is considered low for the broad scope of the survey.

Backchecking

Throughout the course of year 1, **25%** of each interviewer’s work was backchecked to verify the quality and legitimacy of key data collected for the MAPS™ study. A total of **5047** 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 two market segmentation tools in the analysis of data collected in year 1. These are the Living Standards Measure (LSM) and Socio-Economic Measure (SEM).

Socio-Economic Measure (SEM)

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™ year 1 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

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%.

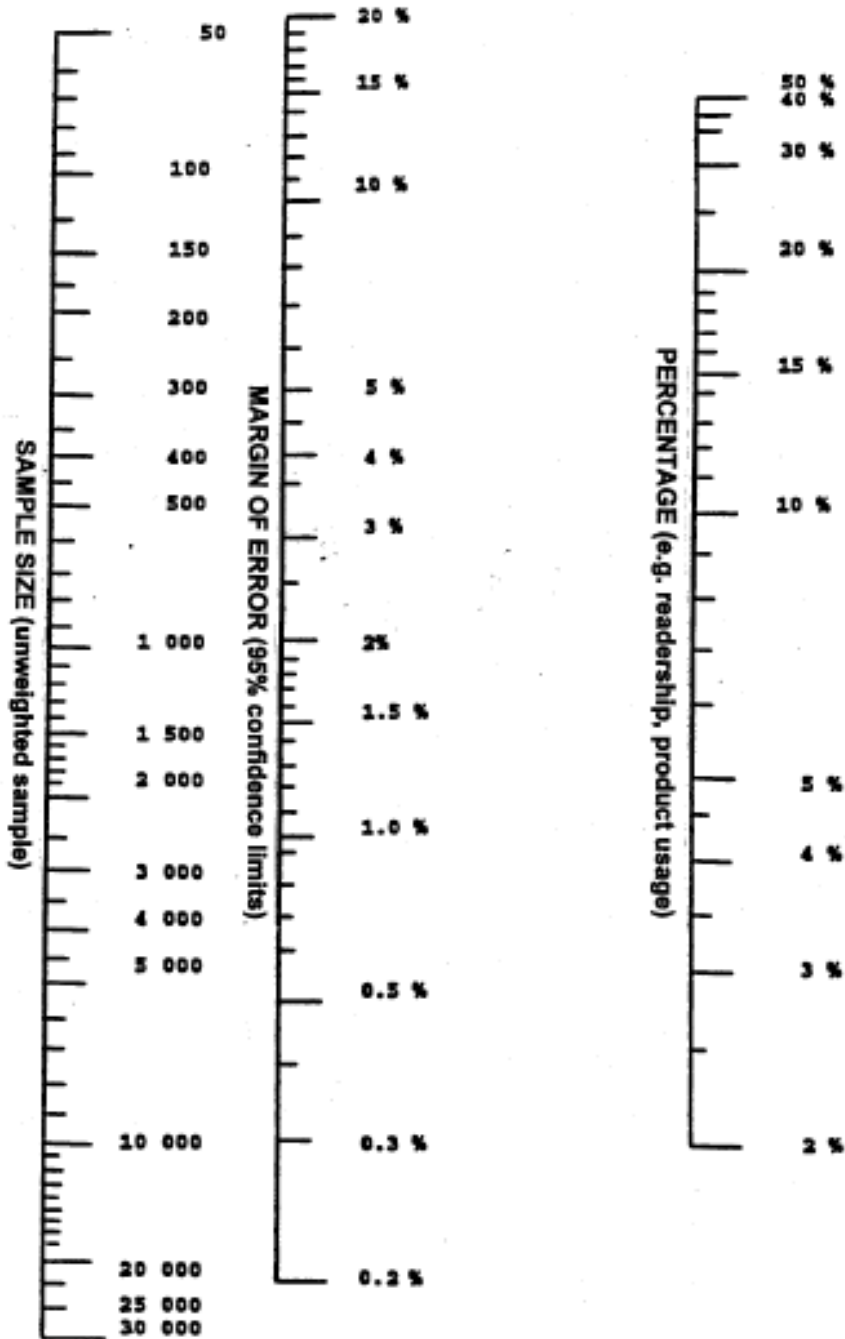
To obtain the confidence limits of the numbers of readers, multiply the results just obtained by the "Estimated population" of the target group.

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

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RESEARCH



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Section E: Appendix

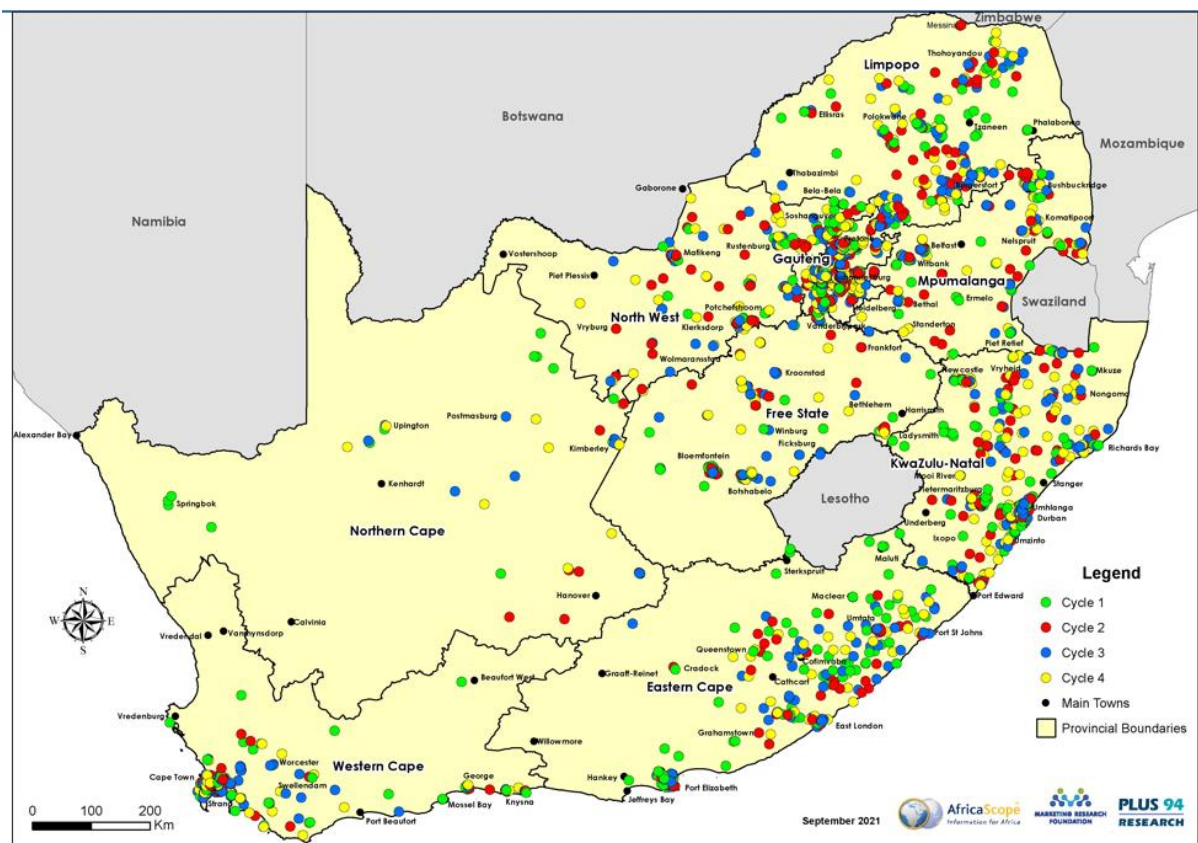
In order to get access to the questionnaires that were used for the MAPS™ survey (July 2020 to June 2021), please click on the link below:

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

Areas that were covered by the MAPS™ survey between July 2020 and June 2021 can be accessed on the link below:

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

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



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RESEARCH



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