

Australian Perceptions of Prevention Survey – Wave 2

Technical Report

December 2018



Social
Research
Centre

Report prepared for:

Dr Anne Grunseit
Senior Research Fellow, Evaluation Analyst
The Australian Prevention Partnership Centre
University of Sydney

Report prepared by:

Matilda Page (Project Manager)
Dr Paul Myers (Executive Director, Quantitative Research Consulting)
The Social Research Centre
Level 9, 277 William Street
MELBOURNE VIC. 3000
Tel: (613) 9236 8500
Fax: (613) 9602 5422
Email: info@srcentre.com.au

Version: 3.0 – March 2020



PROFESSIONAL
ETHICS
2019-20

AMSRO



Contents

- 1. Introduction 1**
 - 1.1. Purpose of the document..... 1
 - 1.2. Research objectives..... 1
 - 1.3. Survey overview..... 1
 - 1.4. Sample design and size..... 3
 - 1.5. Minimising error 4
 - 1.6. Ethics and quality assurance 6
- 2. Timelines 7**
- 3. Minimising errors of representation..... 8**
 - 3.1. Sample frame and sampling 8
 - 3.2. Sample generation..... 8
 - 3.3. Respondent selection 10
 - 3.4. Response maximisation..... 10
 - 3.5. Weighting 18
- 4. Minimising errors of measurement 23**
 - 4.1. Questionnaire design 23
 - 4.2. Questionnaire testing and soft launch 23
 - 4.3. Data collection 24
 - 4.4. Data processing 25
- Appendix 1 Questionnaire..... 27**

List of tables

- Table 1 Key project statistics 2
- Table 2 National sample design and completed interviews..... 3
- Table 3 Tasmania boost sample design and completed interviews 4
- Table 4 Common dimensions of a Survey Quality Framework 4
- Table 5 Project timelines..... 7
- Table 6 National sample generation and usage 9
- Table 7 Tasmania boost sample generation and usage..... 9
- Table 8 SMS outcomes..... 11
- Table 9 National sample utilisation 12
- Table 10 Tasmania boost sample utilisation..... 13
- Table 11 Summary of result at last call attempt..... 14
- Table 12 Calculation of AAPOR response rate 16
- Table 13 Summary of reason for refusal 17
- Table 14 Benchmark targets used for weighting (age group by gender) 19
- Table 15 Benchmark targets used for weighting (market)..... 20
- Table 16 Benchmark targets used for weighting (age group by education) 20
- Table 17 Benchmark targets used for weighting (country of birth)..... 21
- Table 18 Benchmark targets used for weighting (telephony status)..... 21
- Table 19 Interview length by sample frame and sample type 23

1. Introduction

1.1. Purpose of the document

This report provides a summary of the data collection and methodological aspects for the 2018 Australian Perceptions of Prevention Survey (AUSPOPS), conducted by the Social Research Centre on behalf of the Australian Prevention Partnership Centre (APPC) and the University of Sydney. The 2018 AUSPOPS represents the second in the time series, with the first survey undertaken in 2016.

This technical report seeks to:

- document survey procedures so they can be replicated for subsequent surveys
- consolidate project information and field reports generated throughout the survey period
- provide analysis relating to sample characteristics and utilisation
- consolidate issues for consideration relating to the improvement of the questionnaire and refinement of the methodology for future surveys, if applicable.

1.2. Research objectives

The main research objectives for AUSPOPS were to explore, measure and track current:

- community awareness and understanding of government chronic disease prevention policies and programs
- exposure to and participation in such programs
- high level attitudes to prevention policies and programs, as well as attitudes to specific policies and programs
- perceptions about priorities for prevention
- perceptions of the value of chronic disease prevention policies and programs for oneself and for others
- perceptions and beliefs about the role of government in prevention and the balance of responsibility between the individual, government and other parties.

1.3. Survey overview

The AUSPOPS was first undertaken in 2016 to understand how Australian communities perceive government interventions aimed at reducing lifestyle-related chronic disease.

The 2016 AUSPOPS comprised a single national sample of adults (aged 18 years and over) who were residents of private households in Australia. In 2018 additional funding was secured from the University of Tasmania to boost the sample size in Tasmania. The total achieved sample size for the 2018 AUSPOPS was 2,601 (2,200 national sample, 401 Tasmania boost).

A dual frame sample design was employed to undertake the 2018 AUSPOPS. The split between the landline sample frame and mobile phone sample frame was increased to 30:70¹ to account for increases in the proportion of the mobile only population. Landline and mobile Random Digit Dialling (RDD) sample frames were used for the core national sample, while a landline RDD sample frame and a listed mobile sample frame was used for the Tasmania boost.

With the landline sample, the “next birthday” method was used to randomly select respondents from households where two or more in-scope persons were present. The phone answerer was the selected respondent with the mobile sample.

Key project statistics are summarised at Table 1

Table 1 Key project statistics

Field	National Sample	Tasmania boost sample	Total outcome
Interviews achieved (n)	2,200	401	2,601
Average interview duration (mins)	15.2	15.1	15.2
Cooperation rate (%)	58.2	60.8	58.6
Response rate (AAPOR RR3) (%)	16.2	20.5	16.7
Main fieldwork start date	17-Oct-18	17-Oct-18	17-Oct-18
Main fieldwork finish date	25-Nov-18	1-Dec-18	1-Dec-18

¹ A 40:60 landline mobile phone sampling frame was use in the 2016 AUSPOPS.

1.4. Sample design and size

Table 2 below sets out the sample design adopted for the national sample of the 2018 AUSPOPS. The design accounted for the following considerations:

- 70:30 split between the mobile and landline sampling frames
- stratifying the landline sample in proportion to population² based on state and capital city / rest of state divisions
- no geographic quotas were put in place for the mobile stratum as it is not possible to append geographic identifiers to randomly generated mobile numbers.

Table 2 National sample design and completed interviews

State	Geographic strata	Sample design n	National sample achieved n
NSW	Greater Sydney	137	137
	Rest of NSW	75	74
VIC	Greater Melbourne	131	132
	Rest of Victoria	41	41
QLD	Greater Brisbane	63	63
	Rest of Queensland	67	67
SA	Greater Adelaide	36	36
	Rest of South Australia	11	11
WA	Greater Perth	54	53
	Rest of Western Australia	14	14
TAS	Greater Hobart	6	6
	Rest of Tasmania	8	8
NT	Greater Darwin	4	5
	Rest of Northern Territory	2	1
ACT	Australian Capital Territory	11	12
Mobile		1,540	1,540
Total		2,200	2,200

Table 3 (overleaf) sets out the sample design adopted for the Tasmania boost. The design accounts for the following considerations:

- 70:30 split between the mobile and landline sampling frames
- Stratifying landline RDD and listed mobile sample in proportion to population based on state and capital city / rest of state divisions.

² Using the December 2017 release of the Estimated Resident Population by the Australian Bureau of Statistics (ABS)

Table 3 Tasmania boost sample design and completed interviews

Sample frame	Geographic strata	Sample design n	Tas. boost sample achieved n
Mobile	Greater Hobart	122	121
	Rest of Tasmania	158	160
Landline	Greater Hobart	52	52
	Rest of Tasmania	68	68
Total		400	401

1.5. Minimising error

The Social Research Centre's approach to survey research is based on the Total Survey Error (TSE) perspective (Groves et al, 2009³). TSE refers to the 'accumulation of all errors that may arise in the design, collection, processing and analysis of survey data' (Biemer, 2010⁴). The TSE paradigm relates to making survey design decisions, and sometimes trade-offs, so that resources are allocated in such a way as to reduce TSE for key estimates. As such, TSE is about optimising any given survey design within existing resource constraints. This is sometimes referred to as 'fit for purpose' design.

The TSE paradigm is part of a much broader concept of Total Survey Quality. Whereas TSE is primarily focussed on the deviation of a survey response from its underlying true population value, the total survey quality framework introduces other dimensions of importance to data users such as credibility, comparability, timeliness, and the like. If these other dimensions are ignored, and the sole focus of the researcher is on minimising TSE, the result could be data that are difficult and costly to access and inadequately documented.

Today, many national statistical agencies, including the Australian Bureau of Statistics (Australian Bureau of Statistics, 2009⁵), have a total survey quality framework which guides their overall approach to survey research. Minimising TSE is just one part of this framework. Most Total Survey Quality frameworks have dimensions similar to those outlined in Table 4.

Table 4 Common dimensions of a Survey Quality Framework

Dimension	Description
Accuracy	Total survey error is minimised
Credibility	Data are considered trustworthy by the survey community
Comparability	Demographic, spatial and temporal comparison are valid
Usability / Interpretability	Documentation is clear and metadata is well organised
Relevance	Data satisfy user needs
Accessibility	Access to the data is user friendly
Timeliness / Punctuality	Data deliverables adhere to schedules
Completeness	Data are rich enough to satisfy the analysis objectives without undue burden on respondents
Coherence	Estimates from different sources can be reliably combined

Source: (Biemer, 2010)

³ Groves, Robert M., Floyd J. Fowler Jr., Mick P. Couper, James M. Lepkowski, Eleanor Singer, and Roger Tourangeau. 2009. *Survey Methodology* (2nd Edition). Hoboken, NJ: John Wiley and Sons.

⁴ Biemer, P. J., 2010. Total Survey Error: Design, Implementation, and Evaluation. *Public Opin Q*, 74(5), pp. 817-848.

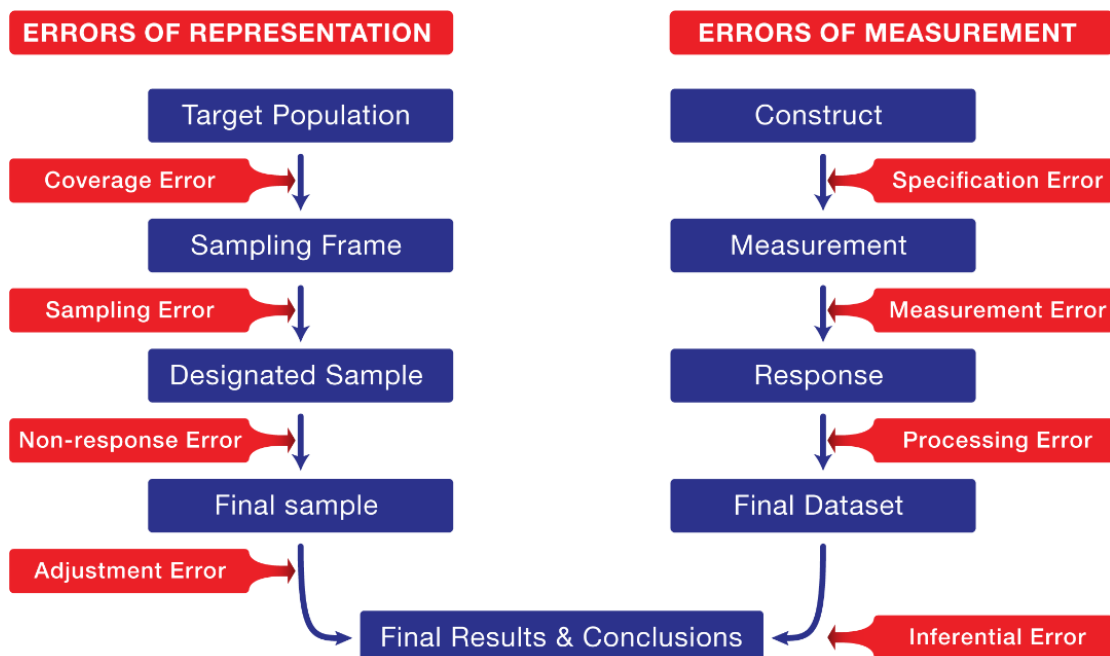
⁵ Australian Bureau of Statistics, May 2009. *ABS Data Quality Framework*, s.l.: s.n.

In keeping with the best practice approach to survey design adopted by leading survey research organisations around the world, the Social Research Centre also works within a survey quality framework with our design decisions informed by a TSE perspective. The TSE framework the Social Research Centre subscribes to (see Figure 1) both a theoretical and practical framework for all aspects of survey design and evaluation. It enables potential sources of error (bias and variance) to be explicitly assessed at every stage of the survey design cycle and supports improved survey design.

The representation side of the model is where errors of non-observation occur. These types of errors include:

- Coverage error – relating to ‘gaps’ in the sampling frame (e.g. the exclusion of mobile-only persons from landline sample frames).
- Sampling error – arising from inefficient or inappropriate sample designs (e.g. ensuring appropriate geographical coverage is obtained).
- Non-response errors – at both the unit-level (a function of non-contacts, refusals and being unable to participate [e.g. language barrier] and at the item-level (when a respondent may be unwilling or unable to answer a particular question).
- Adjustment errors – it is often the case that the final sample needs to be adjusted to account for the design effects introduced by the sample design and non-response. This is accomplished by weighting which adds error in the form of variance (imprecision) to the study’s findings. A well-designed weighting solution balances variance and bias with a view to reducing TSE overall.

Figure 1 The survey lifecycle from a TSE perspective



Adapted by (Lavrakas & Pennay, 2014) from (Groves, M, Couper, Lepkowski, Singer, & Torangeau, 2009).

The measurement side of the model is where errors of observation occur. These types of errors include:

- **Validity** (sometimes called errors of specification): This arises when the specific survey questions or scales do not adequately capture the construct or domain they are intended to measure. For example, asking a respondent their main labour force activity is not a valid measure of whether or not someone is employed.
- **Measurement error**: These arise from many sources including poor questionnaire design, mode effects, interviewer errors and respondent errors.
- **Processing error**: This can arise from how the raw data is transformed and can be attributable to issues such as the coding of free text or verbatim responses, the treatment of outliers, imputation of missing data, data derivations, etc.
- **Inferential error**: The types of errors that can be introduced to the survey process at the stage of interpreting the survey findings.

It is noteworthy that when adopting a TSE perspective, 'sampling error' and 'non-response' are not given elevated importance but are just two of many important error considerations. The Social Research Centre's role was mainly focussed on reducing errors in representation and measurement. Adopting a TSE perspective for reporting on the conduct of the AUSPOPS ensures that all potential sources of error are acknowledged and explored, and the attempts taken to minimise these errors evaluated.

1.6. Ethics and quality assurance

Ethics approval for the 2018 AUSPOPS was carried over from the previous survey in 2016. Ethics was granted by the Human Research Ethics Committee (HREC) at the University of Sydney.

This research was also undertaken in accordance with the Privacy Act (1988) and the Australian Privacy Principles contained therein, the Privacy (Market and Social Research) Code 2014, the Australian Market and Social Research Society's Code of Professional Practice, and ISO 20252 standards.

2. Timelines

The Australian Prevention Partnership Centre and the Social Research Centre agreed to overall timelines prior to project commencement. Overall project timelines are outlined in Table 5 below.

Table 5 Project timelines

Milestone/Deliverable	Date
Questionnaire	
Development	17 Sept
Reporting and questionnaire recommendations	12-13 Sept
Final sign-off of questionnaire for programming	28 Sept
Data collection	
Scripting and testing	1-12 Oct
Fieldwork	17 Oct – 1 Dec ⁶
Deliverables	
Data, coding and weighting finalised	7 Dec
Draft technical report, including response rates	19 Dec
Feedback on draft technical report	20 Dec
Final technical report	21 Dec

⁶ Fieldwork for the national sample finished earlier on 25 Nov 18

3. Minimising errors of representation

3.1. Sample frame and sampling

National sample

A custom RDD sample frame sourced from the commercial sample provider SamplePages was used for the national sample frame of the AUSPOPS, replicating the frame used in the previous survey. The essence of the custom approach is that landline and mobile phone numbers are randomly generated from exchange prefixes published by the Australian Communications and Media Authority (ACMA) and tested at the time of each request, rather than being drawn from a pre-existing (and potentially ageing) pool of numbers.

For landline sample, a 'best estimate' of postcode is assigned to each record at the number generation and testing stage, based on information available about the geographic area serviced by each individual telephone exchange.

For the mobile phone sample, phone numbers were generated and tested based on the known mobile phone number prefixes. No geographic information is currently available to researchers for mobile phone numbers generated in this way.

Landline and mobile telephone numbers were generated in the same fashion.

Tasmania boost

The Tasmania boost utilised the same landline RDD sample frame as the national sample. However, because geographic identifiers cannot be appended to randomly generated mobile numbers, mobile numbers for the boost were selected at random from SamplePages' list of mobile numbers, verified as belonging to Tasmanian residents.

These mobile numbers are sourced from a composite phone database built by contributors from different organisations, including charities, telemarketing companies and other business entities. The list is updated monthly, and at the time of the 2018 AUSPOPS included approximately 88,000 Tasmania mobile numbers.

3.2. Sample generation

A total of 24,209 sample records were generated for the national sample, of which 23,497 (97.1%) records were initiated during the fieldwork period. The number of records generated for each region was based on the quota for that region along with estimates of per cent yield based on similar surveys conducted in these regions. As Table 6 (overleaf) shows, the average number of records called to achieve an interview for the national sample was 10.7, with landline strata ranging from 7.0 in SA and 9.4 for mobile strata.

For the Tasmania boost sample, a total of 2,959 sample records were generated and 2,654 (89.7%) were initiated during fieldwork. As seen in Table 7(overleaf), the average number of records called to achieve an interview for the Tasmania boost sample was 6.6, ranging from 7.3 for landline strata and 6.3 for mobile strata.

Table 6 National sample generation and usage

Region	Sample generated n	Sample used n	Sample used %	Interviews achieved n	Avg. records per interview %
Landline strata					
Sydney	2,228	2,203	98.9	137	16.1
Rest of NSW	666	649	97.4	74	8.8
Melbourne	2,254	2,225	100.0	132	17.1
Rest of VIC	448	416	92.9	41	10.1
Brisbane	859	761	88.6	63	12.1
Rest of QLD	810	773	95.4	67	11.5
Adelaide	457	457	100.0	36	12.7
Rest of SA	94	77	81.9	11	7.0
Perth	680	657	96.6	53	12.4
Rest of WA	258	210	81.4	14	15.0
Hobart	51	49	96.1	6	8.2
Rest of TAS	123	91	74.0	8	11.4
Darwin	152	111	73.0	5	22.2
Rest of NT	250	146	58.4	1	146.0
ACT	244	198	81.1	12	16.5
<i>Total Landline</i>	9,574	9,052	94.5	660	13.7
Mobile strata					
National	14,635	14,445	98.7	1,540	9.4
TOTAL	24,209	23,497	97.1	2,200	10.7

Table 7 Tasmania boost sample generation and usage

Region	Sample generated n	Sample used n	Sample used %	Interviews achieved n	Avg. records per interview %
Landline strata					
Hobart	402	350	87.1	52	6.7
Rest of TAS	605	530	87.6	68	7.8
<i>Total Landline</i>	1,007	880	87.4	120	7.3
Mobile strata					
Hobart	852	843	98.9	121	7.0
Rest of TAS	110	931	84.6	160	5.8
<i>Total Mobile</i>	1,952	1,774	90.9	281	6.3
TOTAL	2,959	2,654	89.7	401	6.6

3.3. Respondent selection

The in-scope population for the national sample of the 2018 AUSPOPS was defined as persons aged 18 years and over residing in Australia. For the Tasmania boost sample, the in-scope population was defined as persons aged 18 years and over residing in Tasmania.

For landline sample, the 'next birthday' method for respondent selection was used in households where two or more in-scope persons were present. This ensures a representative sample is obtained. Selected respondents were then screened according to the in-scope criteria.

For mobile samples, the phone answerer was the survey respondent if they met the in-scope criteria following screening.

3.4. Response maximisation

Procedures to maximise response for the 2018 AUSPOPS included:

- operation of an 1800 number throughout the survey period by the Social Research Centre, to help establish survey bona fides, address sample members' queries, and encourage response
- sending a primary approach text to all mobile numbers as described in 3.4.1. below
- batched release of sample as described in 3.4.2. below
- managing appointments so that appointments with identified in-scope households are prioritised
- controlling the spread of call attempts as described in 3.4.3 below
- focus on project specific interviewer training and respondent liaison techniques
- performance monitoring and quality control as described in 4.3.2 below
- refusal aversion and call tailoring techniques to overcome any initial reluctance by sample members to participate in the survey
- soft refusal conversion attempts which was implemented with 2,410 records in total (2,109 national sample, 301 Tasmania boost) and achieved 161 interviews (144 national sample, 17 Tasmania boost), 6.7% of all attempts as a result.

3.4.1. Primary approach text

An external text messaging service was used to send out a primary approach text message to all mobile numbers for both the national and Tasmania boost samples. Mobile phone numbers were sent the text message as the batch was released. Calls to mobile numbers did not commence for at least 24 hours after the text message had been sent.

The primary approach text sent to mobile sample members was as follows:

"This message is on behalf of the University of Sydney. In the coming days, the Social Research Centre will call you to see if you can take part in an important national study on community health. Reply '1' if you are 18+. Call 1800023040 to get more info or to opt out."

As can be seen, the primary intent of this message was to ‘screen’ for in-scope sample members rather than elicit cooperation. Records where an ‘Out of Scope’ (i.e. under 18 years of age) or ‘Opt Out’ response was received within 24 hours were not loaded into the CATI sample management system and did not receive calls. ‘Out of scope’ and ‘Opt out’ responses received after the sample had been loaded into the sample management system were flagged with the appropriate final disposition code. Table 8 shows the SMS outcomes received for both national and Tasmania boost samples.

Table 8 SMS outcomes

SMS outcome	Total mobile sample		National		Tas. boost	
	n	%	n	%	n	%
Total sent SMS	16,587	100.0	14,635	100.0	1,952	100.0
In scope - 18+	475	2.9	383	2.6	57	4.7
Opt out	142	0.9	120	0.8	22	1.1
No reply	15,970	96.3	14,132	96.6	1,838	94.2

3.4.2. Sample release

In order to further maximise response rates and sample representativeness and minimise the risk of biases in response dynamics, sample was released to interviewers in batches so that:

- calls to each batch could be exhausted, as far as was possible within the project schedule, prior to initiating calls to a fresh batch of sample
- the interview rate by location and sample type could be assessed, with a view to estimating the minimum number of records to release in ensuing batches to enable the timely completion of the project and minimise the proportion of residual non-contacts at the end of the fieldwork period.

3.4.3. Call procedures

The call procedures included:

- an eleven call regime (six calls to contact a household, followed by five further calls to secure an interview), with call attempts spread over different times of day and days of the week, with a view to maximising the sample yield
- in order to yield maximum response from the agreed number of call attempts, it was necessary to control the “spread of call attempts” such that, subject to other outcomes being achieved, contact attempts are spread over: weekday evenings 6.30 pm to 8.30 pm; weekday late afternoon / early evening 4.30 pm to 6.30 pm; Saturdays 10 am to 5 pm; Sundays 11 am to 4 pm, and weekdays before 4.30 pm (weekdays between 9 am to 4:30 pm are typically reserved for appointment management)
- appointments set for any time that the call centre is operational (weekdays 9 am to 8.30 pm; weekends 11 am to 5 pm)
- capping the maximum number of unanswered call attempts placed to mobile phone sample to no more than three so as to avoid appearing overzealous in our attempts to achieve interviews

- not making initial calls to RDD mobile phone sample any earlier than 9 am Western Australian Time, as there is no way of knowing the location (and hence time zone) of the respondent
- mobile phone sample asking if it is safe to take the call (given mobile phone answerers may be driving, for example)
- offering mobile phone sample, a call back on a landline number.

No interviewing was undertaken in languages other than English and no messages were left on answering machines.

3.4.4. 1800 number operation

An 1800 number was operational throughout the survey period to encourage response, address sample member queries, help establish survey bona fides, and support the response maximisation effort.

In addition to this the Social Research Centre has an Inbound Call Solution (ICS) for dealing with incoming calls generated as a result of sample members using 'call back' functions to respond to a missed call. These calls are routed to our permanently staffed 1800 lines where trained interviewers deal with each call appropriately. This provides a unique opportunity to convert otherwise wasted incoming calls (and presumably interested community members) to appointments and interviews.

3.4.5. Call results and response analysis

All call attempts

A total of 85,480 calls were placed to a sample pool of 23,497 sample records in the national sample to achieve 2,200 interviews (see Table 9 below). This equates to an interview every 32.5 calls (55.1 calls per interview for landline numbers and 26.7 calls per interview for mobile numbers).

The average number of calls made to each sample record was 3.3 (4.0 calls per sample record for the landline frame and 2.8 calls per record for the mobile frame). An average of 10.7 sample records were used to generate each interview (13.7 sample records per interview for the landline frame and 9.4 records per interview for the mobile frame).

Table 9 National sample utilisation

National sample	Total n	Landline n	Mobile n
Sample selected	24,209	9,574	14,635
Sample initiated in CATI	23,497	9,052	14,445
All call attempts	85,480	36,344	41,073
Interviews completed	2,220	660	1,540
Average calls per interview	32.5	55.1	26.7
Average calls per sample record	3.3	4.0	2.8
Average sample records per interview	10.7	13.7	9.4

A total of 8,063 calls were placed to a sample pool of 2,654 sample records in the Tasmania boost sample to achieve 401 interviews (see Table 10). This equates to an interview every 20.1 calls (25.7 calls per interview for landline numbers and 17.7 calls per interview for mobile numbers).

The average number of calls made to each sample record was 3.0 (3.50 calls per sample record for the landline frame and 2.8 calls per record for the mobile frame). An average of 6.6 sample records were used to generate each interview (7.3 sample records per interview for the landline frame and 6.3 records per interview for the mobile frame).

Table 10 Tasmania boost sample utilisation

	Total n	Landline n	Mobile n
Sample selected	2,959	1,007	1,952
Sample initiated in CATI	2,654	880	1,774
All call attempts	8,063	3,085	4,978
Interviews completed	401	120	281
Average calls per interview	20.1	25.7	17.7
Average calls per sample record	3.0	3.5	2.8
Average sample records per interview	6.6	7.3	6.3

3.4.6. Final call disposition

Table 11(overleaf) presents the final call results by sample (national vs. Tasmania boost) and sample type (landline vs. mobile) for all numbers initiated.

The major difference between the samples was a higher proportion of ‘unusable sample’ outcomes in the national (14.8%) as compared to the Tasmania boost (8.1%). This is likely due to the difference in sample design with Tasmania boost utilising listed mobile phone numbers compared to RDD mobile numbers in the national sample, as well as Tasmanian’s being more willing to take part in surveys than their mainland counterparts. Apart from this, the samples achieved similar final outcomes.

In terms of sample types, the major differences in final outcomes were:

- a higher sample yield among the mobile frame (national 10.7%, Tasmania boost 17.6%) compared to the landline frame (national 7.3%, Tasmania boost 13.6%)
- a higher proportion of ‘respondent refusals’ among the landline frame (national 2.7%, Tasmania boost 2.3%) compared to the mobile frame (national 0.4%, Tasmania boost 0.2%)
- a higher proportion of ‘answering machine’ outcomes among the mobile frame (national 37.1%, Tasmania boost 45.1%) compared to the landline frame (national 25.8, Tasmania boost 32.3%).

Final outcomes between sample type are comparable to those seen in the 2016 AUSPOPS.

Table 11 Summary of result at last call attempt

Final outcome	Total		National sample				Total		Tasmanian boost			
	n	%	Landline		Mobile		n	%	Landline		Mobile	
	n	%	n	%	n	%	n	%	n	%	n	%
Completed Interview	2,200	9.4	660	7.3	1,540	10.7	401	16.3	120	13.6	281	17.6
Refusals	2,031	8.6	969	10.7	1,062	7.4	285	10.7	102	11.6	183	10.3
Household refusal	644	2.7	644	7.1	-	-	76	2.9	76	8.6	-	-
Respondent refusal	304	1.3	248	2.7	56	0.4	24	0.9	20	2.3	4	0.2
I800 number (ICS) refusal	89	0.4	22	3.3	67	0.5	10	0.4	1	0.1	9	0.5
Remove number from list	67	0.3	19	0.2	48	0.3	3	0.1	-	-	3	0.2
Midway termination	69	0.3	36	0.4	33	0.2	9	0.3	5	0.6	4	0.2
Refused screening questions	849	3.6	-	-	849	5.9	162	6.1	-	-	162	9.1
SMS refusal (mobile)	9	<0.1	-	-	9	0.1	1	<0.1	-	-	1	0.1
Appointments	127	0.5	62	0.7	65	0.4	36	1.4	9	0.9	27	1.5
Hard appointment	2	<0.1	2	<0.1	-	-	9	0.3	-	-	9	0.5
Soft appointment	125	0.5	60	0.7	65	0.4	27	1.9	9	1.0	18	1.0
Other contacts	819	3.5	399	4.4	420	2.9	50	1.9	28	3.2	22	1.2
Away duration	77	0.3	28	0.3	49	0.3	8	0.3	2	0.2	6	0.3
Claims to have done survey	5	<0.1	2	<0.1	3	<0.1	-	-	-	-	-	-
LOTE no follow-up	486	2.1	201	2.2	285	2.0	9	0.3	4	0.5	5	0.3
Too old / frail / ill-health	223	0.9	160	1.8	63	0.4	31	1.2	22	2.5	9	0.5
Unreliable respondent / drunk	28	0.1	8	0.1	20	0.1	2	0.1	-	-	2	0.1
Out of scope	323	1.4	10	0.1	313	2.2	35	1.3	-	-	35	2.0
Under 18 years (mobile)	303	1.3	-	-	303	2.1	28	1.1	-	-	28	1.6
No-one 18 plus	20	0.1	10	0.1	10	0.1	7	0.3	-	-	7	0.4
Non-contacts	14,515	61.8	5,252	58.0	9,263	64.1	1,602	60.4	479	54.4	1,123	63.3
Answering machine	7,704	32.8	2,339	25.8	5,365	37.1	1,084	40.8	284	32.3	800	45.1
Engaged	601	2.6	373	4.1	228	1.6	29	1.1	12	1.4	17	1.0
No answer	6,210	26.4	2,540	28.1	3,670	25.4	489	18.4	183	20.8	306	17.2
Unusable sample	3,482	14.8	1,700	18.8	1,782	12.3	214	8.1	142	16.1	72	4.1
Fax	209	0.9	2.4	2.3	5	<0.1	22	0.8	22	2.5	-	-
Incoming call restriction	110	0.5	10.	0.1	100	0.7	1	<0.1	-	-	1	0.1
Named person/organisation not known	9	<0.1	3	<0.1	6	<0.1	1	<0.1	1	0.1	-	-
Not a residential number	1,369	5.8	1,060	11.7	309	2.1	120	4.5	82	9.3	38	2.1
Number disconnected	1,785	7.6	423	4.7	1,362	9.4	33	1.2	37	4.2	33	1.9

Response rate calculations

The response rate used for this report is AAPOR Response Rate 3 (RR3). This relies on estimating the proportion of cases of unknown eligibility that may have been eligible for the survey and including this estimate in the denominator for the calculation of the survey response rate.

The formula for Response Rate 3 is:

$$RR3 = \frac{I}{(I+P)+(R+NC+O) + e(UH+UO)}$$

Where:

I=Interviews

P=Partial interviews

R=Refusals

NC=Non-contacts

O= Other

e= Estimate of the proportion of unknown outcomes likely to have been in-scope

UH=Unknown, if household / occupied

UO=Unknown, other.

The e value is the default value calculated by the AAPOR on-line Response Rate Calculator. This was calculated as follows ...

$$e = \frac{(Interviews + Partial completes) + (Eligible non-interviews)}{(Interviews + Partial completes) + (Eligible non-interviews) + (Not eligible)}$$

As shown in Table 12 (overleaf) the overall **response rate** for the national sample was 16.2%, which comprises of 13.3% for the landline frame and 18.1% for the mobile phone frame. The Tasmania boost sample achieved a higher overall response rate of 20.5%, comprising of 21.1% for the landline frame and 20.1% for the mobile phone frame

Table 12 Calculation of AAPOR response rate

	National sample			Tasmanian boost		
	Total n	Landline n	Mobile n	Total n	Landline n	Mobile n
Total phone numbers used	23,601	9,052	14,549	2,675	880	1,795
I=Complete Interviews (1.1)	2,200	660	1,540	401	120	281
R=Refusal and break off (2.1)	1,283	969	314	143	102	41
NC=Non-Contact (2.2)	77	28	49	8	2	6
O=Other (2.0, 2.3)	869	433	436	79	35	44
E (%)	0.62	0.55	0.66	0.77	0.65	0.84
UH=Unknown household (3.1)	14,515	5,252	9,263	1,602	479	1,123
UO=Unknown other (3.2-3.9)	849	-	849	162	-	162
	%	%	%	%	%	%
Response Rate 3						
$I / ((I+P) + (R+NC+O) + e(UH+UO))$	16.2	13.3	18.1	20.5	21.1	20.1
Cooperation Rate 3						
$I / ((I+P)+R)$	58.2	41.4	68.6	60.8	54.1	63.8
Refusal Rate 3						
$R / ((I+P)+(R+NC+O))$	29.0	46.4	13.4	22.7	39.4	11.0
Contact Rate 3						
$(I+P)+R+O / (I+P)+R+O+NC$	98.3	98.7	97.9	98.7	99.2	98.4

The **cooperation rates** for the survey (interviews / interviews + refusals) are more typically reported as the ‘response rate’ for Australian surveys. The overall cooperation rate for the national sample was 58.2%, with large variation between the landline frame (41.4%) and the mobile phone frame (68.6%). These results are comparable to the first wave of AUSPOPS. A similar overall cooperation rate (60.8%) was achieved for the Tasmania boost sample with similar variations between landline (54.1%) and mobile (63.8%) frames also reflected.

The **refusal rate** is the proportion of all cases in which a household or respondent refuses to do an interview. The overall refusal rate was for the national sample 29.0% and the Tasmania boost sample was 22.7%, again with both samples having a large variation between the landline frame (46.4% and 39.4% respectively) and the mobile frame (13.4% and 11.0% respectively).

The **contact rate** is the proportion of all cases in which some member of the housing unit was reached by the survey. The national and Tasmania boost samples achieved very similar overall contact rates (98.3% and 98.7 respectively), both with only slight variations between the landline frame (98.7% and 99.2% respectively) and the mobile frame (97.9 and 98.4% respectively)

Reason for refusal

A reason for refusal was collected for a total of 2,067 records (1,807 from the national sample, 260 from the Tasmania boost sample), or 89.2% of refused interviews (89.0% national sample, 91.2% Tasmania boost).

As can be seen in Table 13 below, the most common reason for refusal for both samples appears to be related to a perceived lack of salience with 56.0% records in total 'not interested' (56.5% of the national sample, 52.3% Tasmania boost sample). The second most common reason for both samples was a respondent hanging up without making comment (25.3% of national sample, 25.8% Tasmania boost sample), followed by respondents being too busy (9.0% national sample, 13.5% Tasmania boost sample). This pattern of reasons for refusal is reflective of the previous AUSPOPS and is similar to most other surveys conducted by the Social Research Centre.

Table 13 Summary of reason for refusal

Reason for refusal	Total sample		National		Tas. boost	
	n	%	n	%	n	%
Base	2,067	100.0	1,807	100.0	260	100.0
Not interested	1,157	56.0	1,021	56.5	136	52.3
No comment / just hung up	524	25.4	457	25.3	67	25.8
Too busy	198	9.6	163	9.0	35	13.5
Never do surveys	32	1.5	30	1.7	2	0.8
Don't trust surveys	21	1.0	20	1.1	1	0.4
Get too many calls for surveys	16	0.8	14	0.8	2	0.8
Don't like subject matter	5	0.2	5	0.3	-	-
Survey length is too long	13	0.6	12	0.7	1	0.4
Objected to being called on mobile phone	5	0.2	4	0.2	1	0.4
Silent number	14	0.7	14	0.8	-	-
Don't believe surveys are confidential / privacy concerns	19	0.9	15	0.8	4	1.5
Too personal / intrusive	25	1.2	19	1.1	6	2.3
Other	38	1.8	33	1.8	5	1.9

3.5. Weighting

To ensure that estimates made from the survey dataset are as representative as possible of the target population, weights were calculated for each respondent. A two-step process was followed:

1. Design weights were calculated as the inverse of the probability of a respondent being selected to participate in the survey. This probability accounts for the dual-frame collection methodology in which persons may have two chances of selection – one through a landline telephone and another through a mobile telephone.
2. The design weights were adjusted (calibrated) so that they matched known external benchmarks for key demographic characteristics.

Design weight

The design weight accounts for the difference in probability for each respondent participating in the survey. Each respondent's weight is the inverse of their probability of selection where the chance of selection is calculated via the following formula:

$$p = \frac{S_{LL}(LL)}{U_{LL}AD_{LL}} + \frac{S_{MP}MP}{U_{MP}}$$

Where:

- S_{LL} is the number of survey respondents contacted by landline
- U_{LL} is the population of the universe of landline numbers
- LL indicates the number of landlines in the respondent's household
- AD_{LL} is the number of in-scope adults in the respondent's household
- S_{MP} is the number of survey respondents contacted by mobile
- U_{MP} is the population of the universe of mobile numbers
- MP indicates the number of mobile phones the respondent owns.

LL , AD_{LL} , MP and PP_{MP} come from the respondents' answers to survey questions. U_{LL} (134,593 for Tasmania, 5,897,584 for the rest of Australia) and U_{MP} (380,385 for Tasmania, 17,366,237 for the rest of Australia) are derived from figures published by the Australian Bureau of Statistics and by the Australian Communication and Media Authority.

Calibration

To account for the different rates of response that may have occurred across sub-groups of persons, the design weights were then adjusted so that they added to Australian Bureau of Statistics benchmarks for the following characteristics:

- Age group by gender (Table 14)
- State by part of state (Table 15)
- Age group by highest level of educational attainment (Table 16)
- Country of birth (Table 17)
- Telephony status⁷ (Table 18).

⁷ Estimated from Australian Communications and Media Authority (2017).

These characteristics are commonly used for weighting by The Social Research Centre since they tend to be correlated with the sorts of questionnaire items asked in the present survey.

Weighting was carried out using generalised regression weighting, as implemented in the *survey* package (Lumley, 2004 and 2014) for the R statistical environment (R Core Team, 2016).

Table 14 Benchmark targets used for weighting (age group by gender)

Region	Age group	Gender	Benchmark
Rest of Australia	18-24	Female	1,119,481
	25-34		1,819,021
	35-44		1,609,678
	45-54		1,587,680
	55-64		1,414,464
	65-74		1,065,589
	75-100+		899,941
Rest of Australia	18-24	Male	1,171,698
	25-34		1,803,935
	35-44		1,597,652
	45-54		1,528,702
	55-64		1,353,502
	65-74		1,028,738
	75-100+		698,643
Tasmania	18-24	Female	23,250
	25-34		30,882
	35-44		29,148
	45-54		33,899
	55-64		35,686
	65-74		29,055
	75-100+		18,538
Tasmania	18-24	Male	21,267
	25-34		31,069
	35-44		30,930
	45-54		35,928
	55-64		37,197
	65-74		29,693
	75-100+		23,425
Total adults			19,108,691

Table 15 Benchmark targets used for weighting (market)

State	Benchmark
Sydney	3,966,165
Rest of NSW	2,159,898
Melbourne	3,757,298
Rest of VIV	1,188,137
Brisbane	1,831,357
Rest of QLD	1,948,513
Adelaide	1,053,569
Rest of SA	305,221
Perth	1,567,511
Rest of WA	415,506
Hobart	178,770
Rest of TAS	231,197
Darwin	114,966
Rest of NT	69,863
ACT	320,721
Sydney	3,966,165
Total adults	19,108,691

Table 16 Benchmark targets used for weighting (age group by education)

Region	Age group	Highest educational attainment	Benchmark
Rest of Australia	18-24	Bachelor and above	307,146
	25-34		1,404,230
	35-44		1,160,291
	45-54		814,700
	55-64		616,926
	65-74		348,789
	75-100+		156,293
Rest of Australia	18-24	Below Bachelor	1,984,033
	25-34		2,218,727
	35-44		2,047,039
	45-54		2,301,682
	55-64		2,151,040
	65-74		1,745,537
	75-100+		1,442,291
Tasmania	18-24	Bachelor and above	3,307
	25-34		16,449
	35-44		15,820
	45-54		14,254
	55-64		14,081
	65-74		9,078
	75-100+		3,929

Region	Age group	Highest educational attainment	Benchmark
Tasmania	18-24	Below Bachelor	41,210
	25-34		45,502
	35-44		44,258
	45-54		55,573
	55-64		58,802
	65-74		49,670
	75-100+		38,034
Total adults			18,434,692

Table 17 Benchmark targets used for weighting (country of birth)

Region	Country of birth	Benchmark
Rest of Australia	Australia	12,313,950
	Other English speaking countries	1,996,038
	Non-English speaking countries	4,388,736
Tasmania	Australia	346,471
	Other English speaking countries	33,811
	Non-English speaking countries	29,685
Total adults		19,108,691

Table 18 Benchmark targets used for weighting (telephony status)

Region	Telephony status	Benchmark
Rest of Australia	Mobile only	6,706,136
	Dual user	10,666,305
	Landline only	1,326,283
Tasmania	Mobile only	155,787
	Dual user	226,302
	Landline only	27,878
Total adults		19,108,961

Weighting variables

The following dataset variables were used for each of the characteristics included in the weighting:

- Age group (*agegroup*)
- Gender (*dem4*)
- State (*state*)
- Part of state (*metro*)
- Education (*dem10*)⁸
- Country of birth (*dem5*)⁹
- Telephony status (*sampletype, w1, w3*).

⁸ Responses of "Bachelor degree" and "Post-graduate degree" were assigned to the benchmark category "Bachelor and above" and all other responses were assigned to "Below Bachelor".

⁹ Responses of "Australia" were assigned to the benchmark category "Australia", responses of "Canada", "Ireland", "New Zealand", "South Africa", "United Kingdom" and "USA" were assigned to "Other English speaking countries", and all other responses were assigned to "Non-English speaking countries".

There was a small number of respondents who did not answer some of the above items. To enable weighting to be carried out for these respondents, missing values were imputed (generally to the median response). Given the low¹⁰ prevalence of missing data it is not expected that the imputation process will have any observable impact on weighted estimates obtained from the dataset.

Notes for Stata

When analysing the survey dataset in Stata, it will be necessary to use the `svyset` command and to specify the weight and strata variables:

```
svyset [pweight=weight], strata(market)
```

¹⁰ There were only 81 cases (3% of respondents) with missing data, almost all of whom omitted just a single response.

4. Minimising errors of measurement

4.1. Questionnaire design

The 2018 AUSPOPS questionnaire was based on that used in the 2016 survey, with some minor modifications.

The 2018 questionnaire included new statements to questions within section E ‘Responsibility for Prevention’, which will feed into research regarding the sale of sugar and sweetened beverages on government premises. Section A ‘Government Spending and Priorities’ was removed entirely for the second wave and Section D ‘Barriers to Prevention’ was presented earlier in the survey.

Refer to Appendix 1 for the final version of the questionnaire.

4.2. Questionnaire testing and soft launch

Prior to fieldwork commencing, standard operational testing procedures were applied to ensure that the data collection script truly reflected the agreed word processed version of the questionnaire. These included:

- rigorous checking of the questionnaire in ‘practice’ mode by the Social Research Centre project management and supervisory team, including checks of the on screen presentation of questions and response frames
- randomly allocating dummy data to each field in the questionnaire and examining the resultant frequency counts and dummy data file to check the structural integrity of the CATI script.

A soft launch (or slow start) to fieldwork was implemented for the 2018 AUSPOPS. This involved pausing interviewing after the first night in field so that frequency counts of the responses to each question could be thoroughly checked to ensure data structure and logic prior to main fieldwork. No changes were required following the soft launch and fieldwork recommenced.

4.2.1. Interview length

Final interview length by sample and sample type is provided in Table 19. As can be seen, interview length was fairly consistent within the national sample, however within the Tasmania boost sample mobiles took considerably less time to complete the survey than landlines.

Table 19 Interview length by sample frame and sample type

	Total	National Landline	National Mobile	Tas. Boost Landline	Tas. Boost Mobile
Interview length (minutes)	15.2	15.7	15.0	16.2	14.7

4.3. Data collection

4.3.1. Interviewer briefing

All interviewers and supervisors selected to work on the 2018 AUSPOPS attended a two-hour briefing session, which focused on all aspects of survey administration, including:

- survey context and background
- survey procedures and sample management protocols
- privacy and confidentiality
- respondent selection procedures
- strategies to gain and maintain co-operation
- refusal aversion techniques
- strategies to minimise mid-survey terminations
- detailed examination of the survey questionnaire, with a focus on uniform interpretation of questions and response frames, the use of pre-coded response lists and item-specific data quality issues.

After the initial briefing session, interviewers engaged in comprehensive practice interviewing. Additional briefings were held as required during the fieldwork period.

A total of 46 interviewers were briefed on the survey, with a core team of 17 interviewers conducting 64% of the interviews.

4.3.2. Fieldwork quality control procedures

The in-field quality monitoring techniques applied to this project included:

- monitoring of each interviewer by a supervisor at least once during their first three shifts on the project, whereby at least 75% of the interview is listened to, and providing comprehensive feedback on data quality issues and respondent liaison techniques
- validation of 138 interviews (or approximately 5.2% of each interviewer's work) via remote monitoring covering the interviewers' approach and commitment-gaining skills, as well as the conduct of the interviews (in accordance with ISO 20252 procedures)
- field team de-briefing after the first shift, and thereafter, whenever there was important information to impart to the field team in relation to data quality, consistency of interview administration, techniques to avoid refusals, appointment-making conventions, or project performance
- regular examination of verbatim responses to open-ended / other specify questions by a member of the coding team
- providing an FAQ sheet for interviewers' reference
- monitoring of the interview-to-refusal ratio by interviewer
- holding re-briefings as required, to address any issues of data quality or consistency of questionnaire administration.

4.4. Data processing

4.4.1. Coding

All questions with an 'other specify' were back coded by the coding team. All coding was undertaken by experienced, fully briefed coders. Outputs were validated in accordance with ISO 20252 procedures, using an independent validation approach.

4.4.2. Output editing

Unweighted single level frequency counts of the responses to each question were produced, initially in draft format, at the completion of fieldwork. These were used to check data structure and logic prior to data file preparation.

4.4.3. Electronic data provision

A final version of the data file (with weights) was provided to the APPC in Stata format. Supporting documentation, including a data dictionary, was provided to the APPC.

References

- Australian Bureau of Statistics (2018). Estimated Resident Population. Catalog number 3101.0.
- Australian Bureau of Statistics (2015). Household and Family Projections. Catalog number 3236.0.
- Australian Communication and Media Authority. (2011). Communications report 2010–11 series Report 2 – Converging communications channels: Preferences and behaviours of Australian communications users.
- Australian Communication and Media Authority. (2017). ACMA Communications Report 2016-17.
- Lumley, T. (2004). Analysis of complex survey samples. *Journal of Statistical Software* 9(1): 1-19.
- Lumley, T. (2014). survey: analysis of complex survey samples". R package version 3.30. <https://CRAN.R-project.org/package=survey>.
- R Core Team (2016). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. <https://www.R-project.org/>.
- Templ, M., A. Alfons, A. Kowarik and B. Prantner (2016). VIM: Visualization and Imputation of Missing Values. R package version 4.5.0. <https://CRAN.R-project.org/package=VIM>.

Appendix 1 Questionnaire