

2024 ACT Gambling Survey Technical Report



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Prepared for:

The ACT Gambling and Racing Commission

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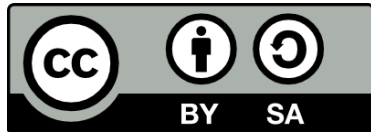
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May 2025



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Introduction

Background

This technical report accompanies the main report, 2024 ACT Gambling Survey, which presents the findings from the ACT Gambling Survey 2024, commissioned by the ACT Gambling and Racing Commission.

Gambling prevalence surveys have been undertaken in the ACT since 2001. The Commission undertakes these studies to assess and monitor changing trends in participation, emerging technologies and the extent of different levels of problem gambling, as well as the demographic and geographic profile of people who gamble. The surveys provide an invaluable and detailed picture of gambling in our community over time. Recent prevalence surveys were conducted in 2001, 2009, 2014 and 2019. The Commission first adopted a public health approach to gambling harm with the 2017-18 Gambling Harm Prevention Plan (Australian Capital Territory Gambling and Racing Commission, 2017), and has continued this with the Strategy for gambling harm prevention in the ACT 2019-2024 (Australian Capital Territory Gambling and Racing Commission, 2019). The Strategy takes a broad perspective about responsibility and areas for action. Instead of focusing only on treating 'problem gamblers' it also aims to prevent problems and promote wellbeing.

The 2024 ACT Gambling Survey includes a sample of 10,007 participants and aims to provide a current snapshot of their gambling related activity, impacts they reported experiencing from their own or another persons' gambling, information and help seeking, and their attitudes towards specific gambling activities and policies.

As in 2019, the 2024 ACT Gambling Survey implemented the Short Gambling Harm Screen (SGHS), now called the Gambling Harms Scale (10 items; GHS-10). Distinct from the PGSI, the SGHS was developed to measure the harm experienced by people who gamble directly (Browne et al. 2017) and is adapted from a 72-item scale compiling a more comprehensive list of gambling-related harm (Langham et al. 2016). The GHS-10 asks 10 questions about gambling harms and whether participants had experienced these harms in the past 12 months.

The number of harms reported provides the individual an SGHS score between 0 and 10. The survey also collected information about how an individual's gambling may affect those around them and assessed the nature and extent of any harms experienced, as well as the forms of help that affected others would seek and whether they had attempted to talk about gambling with the person whose gambling had affected them.

Research objectives

The purpose of this study was to collect data on gambling participation and gambling related harm in ACT, building and maintaining comparability with previous prevalence surveys where possible. Specifically, the objectives were to:

- investigate gambling participation, including frequency, expenditure, and session duration (where relevant) by activity.
- improve the Commission's understanding of gambling harm as well as problem gambling.
- improve the Commission's understanding of gambling harm amongst people around affected by someone else's gambling.
- distinguish types of activity from modality of gambling (where feasible) paying particular attention to Electronic Gaming Machines (EGM) and online gambling.
- enable comparison with previous surveys (where relevant and feasible) - specifically monitoring any changes in:
 - the composition of gambling (mode and product)
 - problem gambling and
 - gambling harm over time.
- establish baseline population levels of Gambling Harm Literacy and stigma associated with gambling harm.
- identify population sub-groups for targeting harm prevention and reduction initiatives.
- investigate the co-occurrence of health and wellbeing issues and gambling harm.
- describe help-seeking for gambling related harm in the general population both in the last year and across the lifetime.

This report

The purpose of this methodological report is to explain in detail the approach taken for sample design, questionnaire design, data collection procedures, data cleaning and data processing calculations (including weighting and margins of error).

The project was carried out in compliance with ISO 20252 and membership requirements for Australian Data and Insights Association (ADIA) and The Research Society (TRS).

Sample design

IPND sample frame

The target population for the 2024 ACT Gambling Survey was residents of the ACT aged 18 years or over.

The Computer Assisted Telephone Interview (CATI) survey was conducted using a single sampling frame approach, using the Integrated Public Number Database (IPND). Ipsos submitted their application to the Australian Communications and Media Authority (the ACMA) to access the IPND for use in this project on 9th April 2024. Access was authorised by the ACMA on 3rd July 2024.

The IPND is a centralised database that contains the record of each telephone number issued by Carriage Service Providers to their customers in Australia. It therefore contains a record of most Australian phone numbers and owner details. The main advantage of using it as a sample frame is the availability of postcode information which enables the sample to be restricted to defined geographic areas (in this case the state of ACT), without the need for extensive (and expensive) screening. The latter would have been the case if random digit dial (RDD) mobile sample was used, where no geographic details would be available or ascertainable from the mobile number prefix.

The IPND has listed and unlisted phone numbers. A listed number is one a person has agreed can be shown in phone number directories and related services. An unlisted (or 'silent') number is one a person does not want to make available. Telephone providers must give their customers a choice of a listed or unlisted number.

Researchers can apply to use unlisted mobile phone numbers and related postcodes from the IPND. This must be research that is not commercial and relates to:

- Public health
- Federal, state and local government electoral matters
- Commonwealth government public policy.

Ipsos recommended the exclusion of listed numbers for the ACT Gambling Prevalence survey based on the significant quality issues associated with the listed mobile IPND numbers. The listed mobile IPND numbers that can be provided are deficient in that they do not include silent numbers or numbers on the Do Not Call (DNC) Register. In addition to this, listed numbers are not regularly updated, meaning that they contain a significant proportion of disconnected and invalid numbers. Furthermore, it is worth noting that owners of listed mobile numbers need to opt in to have a listed number (unlike landline where people are automatically listed and need to opt out to be unlisted). This means that owners of listed mobile numbers tend to be people who want their number to be included in lists and

directories for marketing, business purposes. It would be expected that many of these owners would also have unlisted numbers and are thus still represented on the IPND sample being extracted.

It is not possible to obtain a representative sample from combined listed and unlisted numbers. This is because Telstra maintains these lists on two separate databases and will only provide a fixed sample from these databases (e.g. X thousand listed numbers and Y thousand unlisted numbers). Telstra is unable to provide accurate counts of the listed and unlisted numbers for NSW which means it is not possible to draw a sample with the same selection probabilities in an approach when fixed sample sizes (not sample fractions) need to be specified. A possible solution to this, requires requesting that the same sampling fraction be applied to both databases when being drawn by Telstra (e.g. a 1 in X sample from both databases) but such a request was previously rejected for another project.

Following authorisation from the ACMA, the sample comprising n=300,000 randomly selected unlisted mobile numbers with related postcode was provided to Ipsos by the IPND Manager at Telstra on 4th July 2024. Ipsos provided the specifications (agreed with the project team at Central Queensland University) to Telstra on the selection of the numbers.

Two categories of Unlisted mobile phone numbers were requested from Telstra, as highlighted (shaded) in the previous table above:

- Unlisted Residential mobile phone numbers; and
- Unlisted Not Captured mobile phone numbers.

Business, Charity and Government were not requested.

Telstra took a random sample of the required size (n=300,000) by combining the Unlisted Residential mobile phone numbers and the Unlisted Not captured mobile phone numbers deemed to be in-scope (ACT) based on their postcode. From this combined group the random sample was obtained by firstly randomly sorting the mobile phone numbers in that group then taking the first n=300,000 records as the sample.

Stratification of the sample

Ipsos recommended that the ACT IPND sample was not stratified by geography, but rather the achieved sample was allowed to fall-out randomly. The rationale for this was as follows:

- Firstly, it is not possible to stratify the sample within the Canberra GCCSA (which takes in the whole of the ACT) since there is not an accurate measure of each record's geographic location (due to postcode inaccuracy). The sample could have been stratified by this variable if an accurate measure of location existed.
- Secondly, the selected sample (by Telstra) is expected to be exactly proportional to population for Canberra GCCSA (or for any regional disaggregation). This is because the sampling is random. Differential response rates across Canberra GCCSA would, however, lead to a disproportional sample. The resulting disproportional sample is fully accounted for by the weighting. This does result, however, in a small reduction in the effective sample size through increased variabilities in the weights.

Participant selection and sample size

The mobile phone user contacted was selected if that person was an ACT resident and aged 18 years or over, otherwise, they were screened out. No other demographic or geographic quota was imposed on the sample.

A total of sample of 10,007 randomly selected ACT residents aged 18 years or over completed the survey between 22 July to 26 September 2024.

Sub-sampling

Sub-sampling was used for the 2024 survey, with sections on health and wellbeing, attitudes, and help seeking asked based on participants' gambling status and Problem Gambling Severity Index (PGSI) (Ferris & Wynne, 2001) score.

- All gamblers with PGSI scores greater than zero, along with 15% of the rest of the sample, were asked questions about health and wellbeing and attitudes. These participants are referred to as Sub-sample 2.
- All gamblers who have experienced harms, along with 10% of the rest of the sample (including gamblers and non-gamblers), were asked questions on help seeking behaviour. These participants are referred to as Sub-sample 3.

Table 1 summarises the sampling strategy and the resultant sample size for each sub-sample.

Table 1 – Overall sub-sampling by gambler status (unweighted counts)

Sub-sample	Group	Percentage sub-sampled
Sub-sample 2	Overall (n=10,007)	23.0%
	PGSI score of 1 or more, i.e. low-risk, moderate-risk and problem gambling (n=939)	100%
	PGSI score of 0 (minimal-risk gambling) and people who do not gamble (n=9,068)	15%
Sub-sample 3	Overall (n=10,007)	17.6%
	GHS-10 score of 1 or more, i.e., people experiencing harm from their gambling (n=888)	100%
	GHS-10 score of 0 (no harm) and people who do not gamble (n=9,119)	10%

Base: All participants (n=10,007)

Incentives

In 2024, an incentive was offered for participating in the survey. A \$20 Prezzy e-gift certificate was offered for completing the survey. The incentive was offered at the start of the call, prior to conducting the interview, to participants who initially refused to take part. For all other participants, the incentive was offered just before the interview started. Participants were asked if they wanted to redeem the incentive or not. Given that the Australian Communications and Media Authority does not allow further contact with participants via email or SMS, a code was read out to participants, that they could then redeem on the Prezzy website.

Sixty percent (60%, n=6,025) of participants opted to receive the incentive, with the remaining 40% (3,982) declining.

Questionnaire design

Questionnaire

The content and structure of the 2024 ACT Gambling Survey questionnaire was developed by Central Queensland University (CQU) in consultation with the ACT Gambling and Racing Commission. To allow for comparability with previous prevalence surveys, the questions asked were kept the same where possible. All items were reviewed and where necessary updates were made to ensure the questionnaire captured contemporary gambling activities and topics. All participants who indicated they had participated in at least one gambling activity in the last twelve months completed the PGSI and all were asked to confirm their frequency of play and out of pocket expenditure for each activity they had participated in. All gamblers also completed sections on gambling harms and help seeking. The content of the 2024 survey is summarised below. The final 2024 questionnaire is provided in an appendix in the main report.

The questionnaire included the following sections:

- Details about the IPND being the sample source (*added in 2024*).
- Screener Demographics
- Gambling Participation
- Poker and gaming machines
- Table games at a casino
- Online pokies or casino games
- Horses and greyhounds
- Instant scratch tickets
- Lotto and lottery games
- Keno
- Bingo
- Sports betting and other events
- Informal games
- Past gambling and self-identification of gambling problems
- Problem Gambling Severity Index
- Gambling harms (gamblers)
- Legacy harms (*added in 2024*).
- Help seeking (*asked of sub-selection only in 2024: gamblers who had experienced harm(s), plus ten percent of all other participants*).
- Gambling harms (affected others)
- Help seeking among affected others
- Health and wellbeing (*asked of sub-selection only: those with at least 'some problem gambling' on the PGSI, plus fifteen per cent of all other participants*).
- Attitudes (*asked of sub-selection only: those with at least 'some problem gambling' on the PGSI, plus fifteen per cent of all other participants*).
- Demographics
- Telephony status

- Recontact and end
- Support details were offered to any participants who indicated that they wanted help with gambling related issues. Participants were offered contact details for the Central Queensland University Human Research Ethics Committee should they have concerns or complaints about the conduct of the research.

Ethics considerations and approval

Ethics approval for the study was obtained from the Central Queensland University Human Research Ethics Committee (Application Reference 24834). Specific approaches used to manage participant sensitivities included:

1. Being mindful when speaking with participants, as issues associated with problem gambling or gambling harm can often be traumatic, not only for gamblers themselves but also for their friends and family members.
2. Immediate termination of the survey if participants became distressed, allowing the participant to stop participating in the survey.
3. Availability of support service numbers (i.e. ACT Gambling Support Service Helpline, Lifeline, 1800RESPECT). These were included on the introduction page and throughout the survey as pop-up menus for interviewers to use if required. This was a CATI (Computer Assisted Telephone Interviewer) administered survey and interviewers were able to access support numbers at any point during the interview.
4. All participants being asked at the initial introduction whether it was a safe time for them to take the call on their mobile phone.
5. Asking participants if they wanted to go somewhere private to talk before commencing the survey.

Harm to interviewers was minimised through a personal briefing that clearly explained the content of the survey before assigning work, and through using specially selected, experienced interviewers. Ipsos also put in place a 'buddy' system where interviewers had a contact (a supervisor or another interviewer) whom they were encouraged to talk to if they were finding the interviews distressing. They were also encouraged to take breaks after difficult interviews before proceeding to the next.

The final draft questionnaire, CATI programming and operational procedures were tested prior to the main fieldwork through a pilot survey (n=296) between 22 – 31 July 2024. A detailed debrief with interviewers was conducted at the completion of the pilot and feedback was provided on the questionnaire length, content and sequential order. The pilot feedback is provided in Appendix A.

All interviewing was conducted from Ipsos's dedicated CATI facility in Melbourne. After the pilot, the questionnaire and operational procedures were finalised. The main fieldwork was fully launched on 1st August 2024. All interviewers were closely

monitored on their first shifts and a strong floor presence was maintained. The fieldwork period (including the pilot) was from 22 July to 26 September 2024.

The required sample size was $n=10,000$, and 10,007 interviews were completed. The eligible participant was an ACT resident aged 18 years or over who answered the mobile phone and agreed to be interviewed.

Data collection

Field team briefing

Ipsos implemented a comprehensive briefing and training program for all interviewers and supervisors who worked on the project. The team of interviewers selected were briefed by the Ipsos project team prior to the commencement of the fieldwork, and the briefing covered the following:

1. Project background, objectives and procedures;
2. All aspects of administering the survey questionnaire, including specific data quality issues;
3. Overview of participant liaison issues, including refusal avoidance techniques; and
4. Special procedures for calling mobile phone numbers such as ensuring safety and offering to call back.

A total of 82 interviewers were briefed on the survey.

Following the briefing, the selected interviewers conducted a full practice 'dummy' interview using the CATI terminal to ensure that they were comfortable with the interview before commencing fieldwork. Supervisors closely monitored each interviewer. Interviewers who appeared to require additional instruction on any point were further briefed individually where necessary.

Call times and call back procedures

The fieldwork calling times were 2:30pm to 8:30pm Monday to Friday, and 11:00am to 5:00pm on weekends. Appointments were made for any time within the hours of operation of the call centre.

The CATI call-back protocols were as follows:

1. From the frame, calls were made to new or 'virgin' numbers. If no contact was made for a particular number the CATI telephone management system (using a customised algorithm) re-allocated that number for the next day at a different time. This meant interviewers were able to work on both 'virgin' sample as well as call-backs and non-contacts.
2. A maximum of five call attempts were made to 'no answers', 'answering machines' and 'busy' numbers. Additional calls were made if call backs or appointments were scheduled through the life of the record.
3. All appointments for call-backs were presented to the interviewer who made the appointment, at least one minute before the appointment time. If the interviewer who made the original appointment was not available, it was presented to the next available interviewer.
4. Engaged numbers were rescheduled to be recalled in 30 minutes. If still engaged the number was again rescheduled in another 30 minutes.

5. Numbers which were not answered were rescheduled to be called back in eight hours' time and then on another day.

Once fieldwork was finished, all phone numbers that were used for the survey were coded to one of the following final call outcome categories shown in Table 2:

Table 2 – Call outcomes

Call outcomes	Description
Voicemail	Contact not made at all – voicemail on all required contact attempts made
Business	Out of scope - business phone number
Complete	Interview completed
Final language/not available	Contact made, call-back arranged with participant but language/availability issues on final call
Final non-contact	Contact made, call-back arranged with participant but non-contact on final call
Invalid/disconnected	Invalid or disconnected phone number
Language/not available	Contact made – no interview (language barrier, not available during fieldwork period, other)
Non-contact	Contact not made at all – no answer on all required contact attempts made
Not ACT/Under 18	Contact made – mobile sample not in ACT and/or aged 17 or younger
Refusal	Contact made – refusal

Interviews other than English

Non-English interviewing was available in 7 languages (Arabic, Cantonese, Greek, Hindi, Mandarin, Spanish, and Vietnamese). The questionnaire was translated by the interviewer conducting the Language other than English (LOTE) interviewing.

Once the preferred language of a sample member was identified, these records were stockpiled until a reasonable workload for a bi-lingual interviewer was available.

A total of 4 interviews were conducted in a language other than English (2 in Arabic, 1 in Mandarin, and 1 in Hindi).

Results and data processing

Response Rates and Cooperation Rates

The response rates and cooperation rates were calculated based on the internationally recognised American Association for Population Opinion Research (AAPOR) standards. The cooperation rate for the IPND frame was 91.9%. The response rate for the IPND frame was 9.6% (Table 3).

Table 3 – Response categories, call outcomes, response rate and cooperation rate for the IPND frame

Call outcomes (IPND sample)	Count	% of total
A. Contact Not Made - Eligibility Unknown	86100	45.80%
Invalid/disconnected	12778	6.80%
Non-contact	73322	39.00%
Voicemail	49000	26.06%
B. Contact not made - Not eligible	975	0.52%
Business - out of scope	47873	25.46%
Invalid/disconnected	152	0.08%
Non-contact	38414	20.43%
C. Contact made - Eligibility Unknown	149	0.08%
Final language/not available	235	0.12%
Invalid/disconnected	174	0.09%
Language Barrier	252	0.13%
Non-contact	154	0.08%
Not Available	35951	19.12%
Refusal	1499	0.80%
Voicemail	3597	1.91%
D. Contact made - Not eligible	15	0.01%
Business - out of scope	4	0.00%
Non-contact	3578	1.90%
Not ACT/Under 18	886	0.47%
E. Contact made - Eligible (non-complete)	509	0.27%
Final non-contact	12	0.01%
Invalid/disconnected	1	0.00%
Language Barrier	17	0.01%
Non-contact	7	0.00%
Out of scope	246	0.13%
Refusal	94	0.05%
Voicemail	86100	45.80%
F. Contact made - Eligible (completed interview)	10,007	5.32%
Complete	10,007	5.32%
Grand Total	188,004	100.00%

Table 4 – Calculations for cooperation rate and response rate

Calculation	Outcome
Eligible sample contacted ($K=E+F$)	10,893
Cooperation rate (F/K)	91.9%
Eligibility rate ($G=(E+F)/(D+E+F)$)	75.2%
Estimated eligible of contacts/non-contacts with unknown eligibility ($H=(G \times (A+C))$)	93,605
Estimated total eligible ($J=(H+E+F)$)	104,498
Response rate (F/J)	9.6%

The low response rates observed in this survey are consistent with a global decline in response rates from telephone surveys. A 2017 AAPOR task force on this very topic¹ reported that:

“The survey that the Task Force conducted of recent cell phone RDD and landline RDD response rate trends for survey organizations in the United States suggests that DFRDD surveys are continuing to see response rate declines. Landline rates declined from an average of 15.7 percent in 2008 to an average of 9.3 percent in 2015 (a relative decline of 41 percent), and cell phone response rates declined at the same rate, from an average of 11.7 percent to an average of 7.0 percent (a relative decline of 40 percent).”

Sample profile

The sample profile tables in this section show the proportion of participants who completed the survey (based on unweighted and weighted counts), by age, sex, location: ACT districts, and language spoken at home.

Table 5 – Gender

Gender	Unweighted %	Weighted %
Male or man	54.0%	48.4%
Female or woman	45.2%	50.8%
Non-binary/third gender	0.5%	0.6%
Self-describe	0.0%	0.0%
<i>Refused</i>	0.2%	0.2%

Base: Participants (n=10,007)

¹ (Lavrakas et al., 2017)

Table 6 – Age group

Age group	Unweighted %	Weighted %
18 to 24 years	12.5%	12.9%
25 to 34 years	18.3%	22.5%
35 to 44 years	18.3%	19.6%
45 to 54 years	16.8%	15.4%
55 to 64 years	14.4%	12.2%
65 or over	19.7%	17.4%

Base: Participants (n=10,007)

Table 7 – Location: ACT Districts

ACT district	Unweighted %	Weighted %
Belconnen	22.4%	23.1%
Gungahlin	15.1%	8.1%
North Canberra	17.6%	18.3%
South Canberra/East Canberra	8.4%	14.9%
Tuggeranong	18.2%	8.2%
Weston Creek/ Molongo/ Urriarra - Namadgi	9.0%	18.8%
Woden Valley	9.4%	8.6%

Base: Participants (n=10,007)

Table 8 – English the main language spoken at home

Main language spoken at home	Unweighted %	Weighted %
Yes - English	89.3%	89.3%
No – A language other than English (LOTE)	10.6%	10.5%
<i>Refused or don't know</i>	0.2%	0.2%

Base: Participants (n=10,007)

Table 9 – Main language other than English

Main language other than English	Unweighted %	Weighted %
Mandarin Chinese	21.2%	22.9%
Hindi	6.4%	6.8%
Spanish	3.6%	3.5%
Cantonese Chinese	3.2%	3.3%
Tagalog (Filipino)	3.1%	3.0%
Vietnamese	3.1%	2.2%
Chinese	2.7%	2.7%
Arabic	2.5%	3.0%
French	1.6%	2.1%
Korean	1.5%	1.5%
German	1.2%	1.3%
Russian	1.1%	1.3%
Serbian	1.0%	0.6%
Indonesian	0.9%	0.8%
Portuguese	0.7%	0.6%
Greek	0.6%	0.7%
Croatian	0.5%	0.5%
Polish	0.5%	0.4%
Italian	0.4%	0.2%
Dutch	0.2%	0.2%
Macedonian	0.2%	0.1%
Turkish	0.1%	0.0%
Other	41.6%	40.6%
Don't know/ Refused	2.0%	1.5%

What is the main language spoken in your household? Base: Asked of those who spoke a language other than English (n=1,057)

Table 10 – Marital status

Marital status	Unweighted %	Weighted %
Married	48%	44.5%
De facto / in a relationship	16%	18.1%
Single	25%	26.8%
Divorced	5%	4.4%
Widowed	3%	3.3%
Separated	3%	2.3%
Refused/ Don't know	1%	0.6%

What is your current marital status? Base: n=10,007

Table 11 – Work status

Work status	Unweighted %	Weighted %
Employed full-time	53.5%	55.1%
Employed part-time or casual	16.1%	17.2%
Not in the paid labour force	25.3%	22.7%
Employed part-time and looking for work	1.3%	1.4%
Unemployed, looking for work	3.4%	3.3%
Refused/ Don't know	0.4%	0.4%

Which of the following best describes your current work status? Base n=10,007

Table 12 – Education

Education	Unweighted %	Weighted %
Post-Graduate Degree	29.9%	31.1%
Bachelor Degree	29.0%	30.0%
Diploma	9.1%	8.7%
Trade/ apprenticeship	1.7%	1.4%
Other TAFE/ Technical Certificate	6.3%	5.7%
Year 12	16.6%	16.2%
Year 11	1.1%	1.0%
Year 10	3.2%	2.8%
Year 7 to Year 9	0.9%	0.8%
Primary school	0.1%	0.1%
Other	1.5%	1.5%
Refused	0.6%	0.5%

What is the highest education qualification you have received? Base n=10,007

Table 13 – Personal income

Income	Unweighted %	Weighted %
Negative income	0.1%	0.1%
\$0 or nil income	2.0%	1.9%
\$1 - \$7,799 per year	0.7%	0.6%
\$7,800 - \$15,599	1.4%	1.4%
\$15,600 - \$20,799 per year	1.8%	1.8%
\$20,800 - \$25,999 per year	2.4%	2.5%
\$26,000 - \$33,799 per year	3.0%	3.1%
\$33,800 - \$41,599 per year	3.0%	2.8%
\$41,600 - \$51,999 per year	4.6%	4.6%
\$52,000 - \$64,999 per year	6.1%	5.9%
\$65,000 - \$77,999 per year	6.7%	7.0%
\$78,000 - \$90,999 per year	9.6%	9.6%
\$91,000 - \$103,999 per year	9.0%	9.4%
\$104,000 - \$155,999 per year	21.6%	22.2%
\$156,000 - \$181,999 per year	6.4%	6.4%
\$182,000 or more per year	10.1%	9.8%
Refused/ Don't know	11.4%	10.9%

Which of the following categories contains your total annual PERSONAL income from all sources before tax?

Base n=10,007

Data cleaning

During data processing, some recoding of the data was undertaken (Table 14).

Table 14 – Recoding

Serial No.	Variable	Recoded to	Reason
22	F3MONEY	50	Updated with correct figure based on F3 responses.
566	H2MONEY	1	Updated with correct figure based on H2 responses.
120	H2MONEY	120	Updated with correct figure based on H2 responses.
15	J2MONEY	100	Collected during pilot and was not populated, therefore calculated it based on J2 responses.
All	SQ2C11, SQ2C2b, E2, F1, H1, I1, L1, J1	If=0, Recode to None	Where number of times per week/month/year was 0, Frequency was coded as 'None'.

Weighting

Sub-sampling of participants

The weighting requirements for this survey are more complex than standard weighting because some participants were randomly sub-sampled during the interview. Sub-sampling was used to reduce data collection cost. Details of this sub-sampling are set out below.

Sections R (Health and Wellbeing) and B (Attitudes) were asked of the those who had 'Some Problem Gambling' (PGSI = 2) and 15% of the rest of the sample. This is referred to as Sub-sample 2.

The following questions in Section S (Demographics) were asked of the full sample:

- Marital status (S3)
- Country of birth (S4)
- Language (S11)
- LOTE (S12)
- Work status (S8a/S8c)
- Education (S9)
- Income (S10)
- Mobile phones (W10) (*weighting variable*)
- Business mobile phones (W11) (*weighting variable*)
- Postcode (REGION) (*weighting variable*)
- Age group (S1a) (*weighting variable*)
- Gender (S2) (*weighting variable*)

Sub-sampling rules

The decision on whether a participant was assigned to Sub-sample 2 were based on two classifications which were determined in Section QF: (1) PGSI and (2) 15% Coverage of rest of sample.

Full and Short questionnaire

The sub-sampling design described above can be considered to be equivalent to having a full questionnaire a short questionnaire, with the short questionnaire being administered to the full sample and the full questionnaire being administered to the sub-samples. The table below shows the variables on the two questionnaires.

Table 15 – Questionnaire sections involved in short and full questionnaire

Questionnaire sections		
A, C, G, N, D, E, F, H, I, J, K, L, O,P, YMCA,Y, QF, S (<i>Non-sampled</i>)	Short questionnaire	Full questionnaire
R, B		

The table below shows the probability of selection for the full questionnaire for Sub-sample 2.

Table 16 – Selection criteria for sub-sampling

Variables from sections	Sub-sample 2
Probability of selection for full questionnaire	IF PGSI score is 1 or higher AND (15% Rest of Sample)

Weight calculations

The full sample provides responses to the short questionnaire and the subsamples provide responses to the full questionnaire. The differential selection probabilities of the two groups for the full questionnaire will require the calculation of full questionnaire weights which consider the varying selection probabilities of the sub-sampled groups. Before considering the full questionnaire weights it is necessary to calculate the short questionnaire weights based on the full sample.

Short questionnaire weight calculations

Step 1: Calculate the initial short questionnaire weights (for the full sample)

1. For each record in the full sample, i , calculate the number of non-business mobile phones, $NBMP_i$, as the W10 value (total mobile phones) less the W11 value (business mobile phones).
2. Calculate the capped non-business mobile phone $NBMP_capped_i$ as the minimum of 2 and the $NBMP_i$, that is $NBMP_capped_i = \text{Min}(NBMP_i, 2)$
3. Calculate the initial short questionnaire weight, $SQWt(1)_i$, as the inverse of $NBMP_capped_i$, that is $SQWt(1)_i = 1/NBMP_capped_i$

Note the initial weight is un-scaled (and hence will not sum to the population size) but this issue will be cancelled out at the next stage.

Step 2: Calculate the final short questionnaire weights.

The final short questionnaire weights are calculated by a process of calibration, calibrating the initial short questionnaire weights so that the sum of short questionnaire final weights, across the full sample, for each weighting cell level equals the population value for that cell.

1. Set up weighting cells classified by Age (using the questionnaire classifications) x Sex x Region (ACT SA3 ASGS geography).
2. Determine the sample size, across the full sample, for each weighting cell.
3. For cells with sample sizes less than 5 collapse across age within Sex and Region, collapsing across adjacent age groups.
4. For each cell, h , calculate the weighted estimated total, $X(1)_h$ by aggregating across the full sample, the initial weights of all records in cell h .
5. For each cell, h , calculate a calibration factor C_h as the ratio of the population value for that cell (N_h) divided by $X(1)_h$, that is $C_h = N_h/X(1)_h$
6. For each record, i , in the full sample the final short questionnaire weight $SQWt_i$ is then calculated as the initial short questionnaire weight $SQWt(1)_i$ multiplied by the calibration factor C_h for the cell to which that record belongs.

Important note: At the completion of the calculation of short questionnaire weights, every sample record will have a short questionnaire weight. These short questionnaire weights are independent of whether or not each record was selected for the full questionnaire.

Calculating the Full questionnaire weights

Full questionnaire weights need to be calculated separately for Sub-sample 2 to reflect their different probabilities of selection for completing the full questionnaire.

Calculating the full questionnaire weights for Sub-sample 2

1. Using the short questionnaire weights and the full sample, calculate the weighted estimates of Sub-sample 2 ($SUBS2 = 1$) where PGSI is not equal to 2, classified by Age x Sex x Region, using the same classifications as used for the weighting cells. These values are the Sub-sample 2 population values which will be used to determine the full questionnaire weights for Sub-sample 2.
2. For each cell h , label these weighted aggregates as $G1_h$.

2. Using the short questionnaire weights, and just the Sub-sampled participants who are PGSI not equal to 2, aggregate the short questionnaire weights to the Age x Sex x Region level, using the same classifications as used for the weighting cells. For each cell h , label these weighted aggregates as $G1_h'$.
3. For each cell h , determine a Group 1 sub-sampling calibration factor as $C1_h = G1_h / G1_h'$
4. In Sub-sample 2, those who are PGSI = 2 represent themselves, while those who are PGSI not equal to 2, represent 15% of the total population. Therefore, those who are PGSI not equal to 2, will have their short questionnaire weight recalibrated via multiplication with their $C1_h$ calibration factor. Given the 15% sampling fraction applied to this group, the full questionnaire weights for those in Sub-sample 2 whose PGSI is not 2, should be approximately 7 times the size of their original short questionnaire weights. The summation of this group's weights should equal the summation of the short questionnaire weights.

Important note: At the completion of the calculation of full questionnaire weights every sub-sampled record will have a full questionnaire weight, but records which were not sub-sampled will have no full questionnaire weights.

Using the weights

It is recommended that two datasets be produced for survey analyses:

1. A short questionnaire dataset, containing only the variables on the short questionnaire for the full sample. There should only be one weighting variable on this dataset: the short questionnaire weight.
2. A full questionnaire dataset containing the full set of variables across the questionnaire for the sub-sampled records ($SUBS2 = 1$). There should only be one weighting variable on this dataset: the full questionnaire weight.

Any approach which uses a single dataset with the two weights and sub-sampling indicators should not be considered as it would introduce a substantial risk of error through from using a wrong weight.

Final note and caution

It is recognised that there is some apparent anomaly in the use of the term full questionnaire weights which are only defined for sub-sampled participants, and short questionnaire weights which are defined for the full sample. These weighting terms have been deliberately chosen to ensure that the analyses is focused on the variables being used in the analyses (and thus the appropriate weight) and not on whether or not the analyses are for the full or part sample. This focus is designed to reduce the chance of errors in carrying out analyses from this complex dataset.

Normalising weights

Once the weights were successfully applied and validated as final, a secondary version of them was created to normalise the values (centering them around 1) for use in analysis when being used in survey analysis tools . The normalisation of weights involved dividing every case into the mean of the weight, making it relative +/- to the mean value of the original weight.

Margin of error of totals

The survey results are based on a sample of the population and are therefore subject to sampling error. Sampling error is measured by the standard error (SE) and the margin of error (MOE). Knowledge of the SE, and hence the MOE, enables the 95% confidence intervals to be constructed around survey results and also enables statistical significance testing to be carried out.

The 95% confidence interval for a (weighted) survey result is calculated as the survey result plus or minus $1.96 \times$ the SE. For example, if a weighted survey result of 100,000 had a SE of 10,000 then the 95% confidence interval is $100,000 \pm 1.96 \times 10,000 = 100,000 \pm 19,600 = (80,400 - 119,6000)$.

The value of $1.96 \times$ the SE is called the MOE. It can be seen from the previous paragraph that knowledge of the MOE is sufficient to calculate the 95% confidence intervals. For this reason, the sampling error values are presented as MOE values not SE values. SE values can be calculated by dividing the MOE values by 1.96.

Another way of summarising the sampling error is to calculate the relative margin of error (RMOE) which is the MOE divided by the weighted survey result, expressed as a percentage.

The MOE and the RMOE of survey results are summarised in Tables 17 and 18. These tables set out the RMOE and MOE for a range of possible weighted estimates in the range 15,000 to 6,000,000

The following example demonstrates the use of these tables. Consider a weighted survey result of 200,000. Table 17 below shows that the MOE for this result is 24,600. This means the 95% confidence interval for the survey result is $200,000 \pm 24,600 = (175,400 - 224,600)$.

Table 17 – MOE of estimates of total

Weighted survey estimate	MOE (Core data)	MOE (Sub-sampled data)
15,000	6,700	11,500
25,000	8,700	14,800
50,000	12,300	21,000
100,000	17,400	29,600
150,000	21,300	36,300
200,000	24,600	41,900
250,000	27,500	46,900
300,000	30,100	51,300
400,000	34,700	59,300
500,000	38,800	66,300
750,000	47,500	81,200
1,000,000	54,900	93,700
1,500,000	67,200	114,800
2,000,000	77,600	132,500
2,500,000	86,800	148,200
3,000,000	95,100	162,300
3,500,000	102,700	175,300
4,000,000	109,800	187,400
4,500,000	116,500	198,800
5,000,000	122,800	209,600
5,500,000	128,800	219,800
6,000,000	134,500	229,600

Table 18 – RMOE of estimates of total

Weighted survey estimate	RMOE (Core data)	RMOE (Sub-sampled data)
15,000	44.8%	76.5%
25,000	34.7%	59.3%
50,000	24.6%	41.9%
100,000	17.4%	29.6%
150,000	14.2%	24.2%
200,000	12.3%	21.0%
250,000	11.0%	18.7%
300,000	10.0%	17.1%
400,000	8.7%	14.8%
500,000	7.8%	13.3%
750,000	6.3%	10.8%
1,000,000	5.5%	9.4%
1,500,000	4.5%	7.7%
2,000,000	3.9%	6.6%
2,500,000	3.5%	5.9%
3,000,000	3.2%	5.4%
3,500,000	2.9%	5.0%
4,000,000	2.7%	4.7%
4,500,000	2.6%	4.4%
5,000,000	2.5%	4.2%
5,500,000	2.3%	4.0%
6,000,000	2.2%	3.8%

Margin of error of proportions

The above MOE tables enable the MOE to be calculated for weighted estimates of total (e.g. 200,000 people have participated in a particular form of gambling) for both the core data and the sub-sampled data. These tables may also be used to calculate MOE values for estimates of proportions (e.g. 18% of people have participated in a particular form of gambling). To calculate the MOE of survey proportions the steps needed to be taken are shown by means of an (imaginary) example.

Consider an example in which an estimated that, from the main data, 10% of people in a particular category have participated in a particular form of gambling:

1. Step 1 – determine the numerator and denominator values which give rise to the estimate of proportion. For example, if there are an estimated 250,000 people in the category of interest and of those 25,000 (10%) have participated in the particular form of gambling.
2. Use Table 18 above to determine the relative MOEs (RMOEs) of the numerator and denominator totals. From Table 18 it can be seen that the RMOE of the numerator (25,000) is 34.7% and for the denominator (250,000) is 11.0%
3. The relative MOE of the proportion (10%) is then calculated by squaring the two relative RMOE values ($34.7\%^2 = 0.120586187$ and $11.0\%^2 = 0.012058619$) and subtracting the squared value for the denominator from the squared value of the numerator to get 0.108527568 ($0.120586187 - 0.012058619$).
4. Finally, the RMOE of the proportion is the square root of this final figure obtained (0.108527568) which is 0.329435226 or 32.9%. This figure is the RMOE of the estimate of 10%. The MOE of the estimate of 10% is then $32.9\% \times 10\% = 3.2\%$ (since the MOE is the RMOE divided by the estimate).
5. From the above we can then conclude that the 95% confidence interval for the estimate of 10% is $10\% \pm 3.2\% = (6.8\% - 13.2\%)$.

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Appendix A: Pilot debrief notes

Project Name	<u>ACT Gambling Study</u>	Project No	<u>23-076344-01</u>
Client	<u>Central Queensland University</u>	Consultants	<u>Steven Pukallus</u>
Field Start	<u>22/07/2024</u>	Field End	<u>31/07/2024</u>

Qn	Text	Feedback	Proposed solution	Client feedback
MTEL	Taking part in the survey is voluntary and confidential. The information and opinions you provide will be deidentified prior to analysis and used only for research purposes. The survey is voluntary, and you can withdraw consent at any stage during the call.	Highlighted text is also in the INTRO Too repetitive and adds to interview length	Remove highlighted text	Approved
AM_FLAG	Are you leaving a voice-mail message?	Reducing productivity for little gain and interrupts the survey flow One participant has called the 1800# from VM message	Remove AM_FLAG and stop leaving VMs	Approved
IN3	*(ALL) IN3 Is it okay to confirm that you're 18 or older, as required for this survey? Yes Not a resident of ACT (GO TO TERM1) Respondent Under 18 (GO TO TERM2)	Pathway to the incentive script for refusal avoidance too long	Add the following responses: 4. Respondent SOFT refusal – stays on the phone (GO TO Incentive 1)	Approved

	Respondent refusal (RECORD REASON) (GO TO RR1) Selected respondent does not speak English (PLOTE) Queried about how telephone number was obtained (GO TO MTEL) Wants further information about the study (GO TO SCRIPT 2)		5. Respondent HARD refusal – hang up (RECORD REASON) (GO TO RR1)	
SQ5 & P1	PGSI and GHS-10 asked of all people who gamble.	While people experiencing problem gambling will inevitably produce longer surveys, even someone that has only bought 1 instant scratchy in the past 12 months is prompted to answer follow up questions as they are classed as a “gambler” EG they are asked SQ5 & P1	Can we narrow the qualification for these questions EG include a frequency of gambling activity check like NSW Gambling?	Can’t be changed Assumptions can’t be made about gambling frequency/problem
O0	(*ALL) O0 In your opinion, what are all the ways people might be harmed by gambling? *INTERVIEWER NOTE: PROBE FULLY TO RESPONSE FRAME. ASK “IS THERE ANYWHERE ELSE?”.	Interviewers mentioned that one of the largest causes of long interview length is the open-ended question about gambling harms. The question encourages long tangents from the participant and takes interviewers time	A multiple response question with the most common answers/harms, with an Other Specify box Revert back to Q9_HARMS_LITERACY	Only 10% of participants go through O0 now instead of ALL

		to record and edit their responses		
INCENTIVE1 & INCENTIVE2	INCENTIVE1. I need to mention that this survey has a \$20 Prezzy gift certificate as a thank you for participating. INCENTIVE2. I need to mention that this survey has a \$20 Prezzy gift certificate.	the scripting introducing the incentive did not provide enough detail to the participant	Proposed Edit: I need to mention that this survey has a \$20 E-Gift certificate, provided by Prezzy. A code will be provided to you at the end of the survey that you can redeem on their website. IF NEEDED: Everyone is getting the gift certificate if they want one. Please let me know at the end of the survey if you want to opt out.	Approved
IN4	IN4 It may last 5 to 20 minutes based on your responses.	Participants are put off by "5-20 minutes", Difficult to predict how long the survey will take (e.g. in the above example of someone who has bought 1	Replace highlighted text with "most take less than 10 mins"	Approved

		scratchy in 12 months, we cannot promise that their survey will be short if they have not gambled much, as they still will need to go through multiple follow up questions)		
W9	W9. As a thank you for your participation, we'd like to offer you a \$20 Prezzy gift certificate.	Interviewers found the mention of Prezzy at the end of the survey confusing as it is not worded as a question and thus requires ad-libbing.	Can we add "Would you like to redeem this gift?" we should add our 1800 hotline number to the script here for participants in case they need to get in touch about their code also explain that their first point of contact should be with Prezzy themselves	Approved
CLOSE	That is all the questions that I have for you. This research has been conducted on behalf of the Central Queensland University and in keeping with the Australian Privacy Principles, the industry Privacy Code and the market research industry's Code of Professional Behaviour. Our privacy policy is available on our website (https://www.ipsos.com/en-	Interviewers find this page/spacing difficult to read.	After the last sentence of required info " <i>Your individual deidentified data (responses) will only be used by, or on behalf of, the Central Queensland University for research and</i>	Approved

	au/privacy-aus). This policy explains how you can access or correct your personal information, the process for making a privacy related complaint.		<i>planning purposes,</i>” can we add a question such as “Did you want any further information?”	
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