ACT Government

GAMBLING AND RACING COMMISSION

Australian National University

Final Report 8 June 2016

GAMBLING EXPENDITURE IN THE ACT (2014): BY LEVEL OF PROBLEM GAMBLING, TYPE OF ACTIVITY, AND SOCIOECONOMIC AND DEMOGRAPHIC CHARACTERISTICS

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8 June 2016

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This report was funded by the Australian Capital Territory Gambling and Racing Commission.

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Chapter 1: Executive summary

1.0 Background

Spending money is a defining feature of gambling. In 2013/14, Australian's lost around $21 billion on gambling reflecting average losses of $1,172 per adult (Australian Gambling Statistics, 2015). In 2010, the Australian Productivity Commission noted that gambling losses represented 3.1% of all household final consumption expenditure for the country. Despite the large sums involved, a relatively small proportion of gambling research has investigated the *amounts* of money spent by gamblers.

A previous report by the ANU Centre for Gambling Research (CGR) explored the proportion of gambling expenditure derived from people with gambling problems and amongst different socioeconomic and demographic population subgroups. This report used the *2009 ACT Survey on Gambling, Health and Wellbeing* and was funded by the ACT Gambling and Racing Commission (GRC). Since 2009, the ACT has seen a 15% reduction in gambling participation rates (Davidson *et al.,* 2015). Industry data also show large reductions in gambling expenditure over this time period. The degree of the reduction in expenditure differs substantially across individual gambling activities, with the biggest declines evident for races (a 40% reduction), table games at the casino (a 32% reduction) and electronic gaming machines (EGMs: a 28% reduction) (ACT Gambling and Racing Commission, 2015). The recent and rapid changes in the ACT's gambling expenditure landscape raise questions as to whether findings and recommendations derived from the 2009 data are still applicable. In 2015, the GRC funded a replication study using data from a subsequent ACT survey conducted in 2014. The current report presents findings from the 2014 ACT Survey.

Information on gambling expenditure in Australia comes from three main sources, (i) *Industry data* as reported and released publically for Australian Gambling Statistics (AGS), (ii) *Individual self-report surveys* asking questions on money spent by individual respondents, and (iii) *Household self-report surveys* including questions about gambling expenditure at the household level. These different sources have their own strengths and weaknesses. Industry data provide objective measures for particular types of gambling and can be used to chart trends over time. However, they do not include any information on the characteristics of individuals who spend their money on gambling. Self-report information from specialist surveys can include a wide range of data on personal characteristics. However, self-reports can be inaccurate and it is well established that expenditure on certain gambling activities is substantially underreported and some is overreported. Household expenditure surveys are a potentially valuable means of assessing differences in expenditure both within and between households, but their use to date has been very limited. They, too, are constrained by underreporting.

1.1 Objectives

The Objectives of this report are broadly the same as those pertaining to the 2009 data. Unlike 2009, the 2014 Survey data allowed a detailed breakdown of expenditure shares by means of gambling, that is for money lost gambling over the internet compared to money lost by other means. It also enabled comparisons in expenditure shares over time.

As in 2009, there are two main objectives for this replication study. The first involves estimating the share of gambling expenditure contributed by different subgroups in the population, using data from the 2014 ACT Gambling Prevalence Survey. More specific aims are as follows:

- to disaggregate expenditure across (a) level of problem gambling; (b) type of activity; (c) socioeconomic and demographic subgroups; and (d) internet and other means of gambling[1];
- to report aggregate expenditure for representative subgroups of the ACT population as well as average and proportional expenditure; and
- where possible, to compare findings across 2009 and 2014 data.[1]

The second objective of this report involves comparing the self-reported 2014 Survey data with Industry expenditure figures for the approximate same period of time, i.e. 2014-15. More specifically we:

- compare the 2014 ACT Survey and AGS industry data on specific activities and across all activities for the ACT population;
- explore whether the prevalence survey can be compensated to match industry data; and
- evaluate the impact of such compensation.

1.2 Methods

The 2014 ACT Survey contacted 7,068 adult residents of the ACT who were invited to complete computer assisted telephone interviews (CATIs). Of these, 2,294 completed longer and more detailed interviews covering their gambling over the previous 12 months. The information from this sample can be weighted to provide estimates for the ACT adult population at that time. Expenditure data used in this report comprise total net expenditure (i.e. losses) across all types of gambling, and net expenditure on the five most common activities: lottery, EGMs, horse and greyhound races, scratch tickets and sports and special events.

To estimate net expenditure shares across levels of problem gambling, respondents were grouped according to their scores on the Problem Gambling Severity Index (PGSI), the most commonly used measure of problem gambling internationally in recent years. A score of 0 indicates a non-problem gambler, 1-2 indicates a low-risk gambler, 3-7 indicates a moderate-risk gambler and 8+ indicates a problem gambler. The last two groups are often combined in research studies to give a group of moderate risk/problem gamblers (PGSI 3+). The proportion of total population expenditure which is attributed to people with gambling problems is known as the Problem Gambling Expenditure Share (PGES). A literature review and summary of estimates of PGES obtained worldwide are summarised in our previous report, using 2009 ACT Survey data (Rodgers *et al.,* 2015).

We adopted a parallel approach in order to estimate net expenditure shares for socioeconomic and demographic subgroups in the population. The share of overall net gambling expenditure, and net expenditure on individual gambling activities (e.g. lottery), were estimated for (i) men and women, (ii) people in different age groups, (iii) people who were not married or living with a partner (and those who were), and (iv) people with different levels of education. From this, we established whether a subgroup contributes a disproportionately large amount or a disproportionately small amount to the population's spending on gambling overall or on a particular gambling activity.

1. A new objective for the 2014 ACT Survey data.

1.3 Gambling expenditure shares in the ACT

The present report details our findings for net expenditure by people with different levels of problem gambling. Gamblers with PGSI scores of three or more (moderate risk/problem gamblers) accounted for 21% of reported losses even though they represent only 2% of the ACT adult population. Extending the analyses to those who scored one or more on the PGSI, 44% of all gambling revenue was derived from the 6% of the population that has some level of gambling problem. The proportion of losses attributable to people with problems varied considerably across different activities. Just 7% of losses for lottery came from moderate risk/problem gamblers compared with 11% for scratch tickets, 24% for horse and greyhound races, 28% for EGMs and 42% for sports betting. People who reported any level of problem gambling (PGSI 1+) accounted for 73% of losses for sports betting, 64% for EGMs and 58% for races.

We also present the expenditure shares for socioeconomic and demographic subgroups. Disproportionately high losses were from men and those with lower levels of education. Losses were fairly evenly spread across age groups when spending was considered for all types of gambling combined. Again, the pattern of losses varied considerably across different types of activity. Buying scratch tickets was the only major gambling activity where women and men in the ACT spent similar amounts, whereas men accounted for over 80% of losses on sports betting and races. The youngest age group (18 to 24) contributed disproportionately small amounts for lottery and EGMs. In contrast the oldest age group 65+ contributed more to lottery and EGMs. The 25-44 age group accounted for the greater part of expenditure on sports and special events (65%). Expenditure amongst people who were partnered was generally in keeping with their prevalence in the population.

Striking differences were found for gambling losses in relation to education. Net expenditure across all activities by people without either Year 12 education or post-school qualifications was more than three times that of people with degrees. For EGMs the differences were even greater with the least qualified losing 6 times the amount on EGMs than people who have degrees.

1.4 Gambling expenditure shares, 2009 to 2014

This report compares expenditure shares from the 2009 and 2014 ACT Surveys. Despite large decreases in gambling expenditure over time, there were no significant differences in the problem gambling expenditure shares across the two surveys. In contrast, there were some changes over time in the socioeconomic and demographic profiles of expenditure shares. Older adults and people who were partnered accounted for a greater share of losses summed across all activities in 2014 than in 2009. This reflects an underlying change in total gambling expenditure over time. That is, losses on lottery accounted for a greater proportion of total losses (10% more) over surveys. Consequently, the socioeconomic and demographic profile of total gambling expenditure more closely resembled that of lottery in 2014 than 2009.

The current report documents a significant change in the age profile of gambling expenditure over the last five years. The oldest adults accounted for a significantly greater proportion of losses across all activities, and for some individual activities (lottery, EGMs and races) in 2014 than 2009. The findings suggest that the age profile of gambling expenditure is influenced by cohort differences, that is, as people age they retain their gambling preferences and behaviour over time. If this is the case the age profile of gambling losses will be very different in the future.

1.5 Gambling expenditure shares and means of gambling (internet and non-internet) in 2014

The 2014 data allowed internet shares to be compared for money lost gambling over the internet and money lost gambling via other means (Chapter 8). It is important to keep in mind that the internet provides a means of gambling across a wide range of products. Internet gambling reflects a mix of different activities and is not an activity in itself. Only 15% of gambling expenditure was lost over the internet, the majority was lost gambling using non-internet means (85%). The proportion of internet losses (18%) derived from moderate risk/problem gamblers was large given they reflect just 3% of gamblers. However, moderate risk/problem gamblers accounted for a similar proportion of the money lost gambling using other (non-internet) means (21%). Extending the analyses to include those who scored one or more on the PGSI, 57% of internet losses were derived from the 11% of gamblers reporting some level of problem gambling. However, the proportion of money accounted for by people with some level of problem gambling was also not significantly different for internet and non-internet gambling. Men (86%) and those aged 25 to 44 (57%) accounted for a disproportionately large amount of internet losses compared to their losses gambling using other means (64% and 40% respectively). In contrast, people aged 65+ (5%) and with less than Year 12 qualifications (5%) accounted for a disproportionately small amount of money lost over the internet compared to money lost gambling via other means (26% and 17% respectively). Overall, the findings indicate that a disproportionately large amount of gambling revenue comes from people with problems, regardless of whether they are losing money over the internet or via other means. However, men and people aged 25-44 account for a larger proportion of internet losses than money lost gambling in other ways.

1.6 Comparing survey and industry data

Chapters 9 and 10 outline the methodology used to compare gambling industry figures as provided to the AGS for the ACT with the self-reported survey information from 2014. Underreporting of certain types of expenditure is described. Estimated aggregate losses for EGMs, casino table games and Keno were considerably less from the 2014 ACT Survey compared with AGS industry figures. These differences were used to derive compensation factors for these three activities, which could then be used to weight the survey data appropriately. This led to a second approach for estimating (i) problem gambling expenditure shares and (ii) shares for population subgroups based on the greater weighting given to EGM, casino and Keno losses. This approach slightly increased the shares attributable to people with gambling problems, but had next to no impact on the socioeconomic and demographic expenditure shares.

A strength of the study has been the use of multiple analytic approaches and datasets to determine whether findings are different across analyses. For instance, the different statistical methodologies used in this report included the above described compensation strategy, which adjusted for underreporting. As noted the findings were little changed. Similarly, despite large reductions in gambling expenditure over the last five years, there were very few differences in the problem gambling expenditure shares or the socioeconomic and demographic expenditure shares using the 2009 and 2014 datasets. This increases our confidence about the robustness of findings and underlines the value of research using self-reported data on gambling expenditure.

1.7 Conclusions

This report has demonstrated that gambling revenue is not drawn evenly from different sections of the ACT population. In both the 2009 and 2014 ACT Surveys, far more money was derived from those with gambling problems than from gamblers who do not report problems. More came from men than women, and there is a striking gradient in that losses are much higher for people with lower levels of education. These patterns are more prominent for certain types of gambling than others. The very high shares of net expenditure from people with gambling problems are most evident for sports betting, EGMs and races. The current report demonstrated that people with gambling problems account for a large proportion of money lost gambling, regardless of whether their gambling is done over the internet or via other (non-internet) means. Internet losses were disproportionately derived from men and people aged 25 to 44. These groups accounted for a greater proportion of money lost over the internet than losses on non-internet activities. Finally, we have provided evidence that the age profile of gambling expenditure is changing over time; larger amounts were lost by the oldest age group in 2014 than in 2009.

The findings of this study need to be replicated for other parts of Australia and in areas that provide a different mix of gambling products. The methodology of future research can also be enhanced by including other approaches for assessing the gambling expenditure of individuals in a range of settings. Continued advances in methodology are fundamental to healthy, developing fields of research. There has been a notable trend in Australia to minimise the collection of self-report data on gambling expenditure and it is essential to reverse this trend.

Chapter 2: Introduction

2.0 Background

This document comprises a second report exploring *Gambling expenditure in the ACT (2009): by level of problem gambling, type of gambling activity, and socioeconomic and demographic characteristics* (Rodgers *et al.,* 2015). The first report used data from the 2009 ACT Survey on Gambling Health and Wellbeing. In 2014 another Survey was undertaken (Davidson *et al.,* 2015). The Australian Capital Territory (ACT) Gambling and Racing Commission (GRC) subsequently contracted the Centre for Gambling Research (CGR) to replicate the 2009 analyses using the 2014 ACT Survey data. This report presents findings pertaining to the 2014 Survey.

The overarching finding of the first report was that money lost gambling is not equally drawn from different sections of the population[2]. A fundamental approach of the 2009 report was to estimate *problem gambling expenditure shares* (PGES), or the proportion of expenditure derived from people with gambling problems, for individual activities and across all activities combined. Individuals with gambling problems spent disproportionately large amounts of money on gambling compared with gamblers who did not have problems. The first report also explored socioeconomic and demographic expenditure shares, or the proportion of expenditure derived from different socioeconomic and demographic population subgroups. Overall, men, people with lower levels of education, and younger age groups accounted for a disproportionately large amount of money lost on gambling. Substantial differences in expenditure shares were also evident for individual gambling activities. For instance, a much larger proportion of money lost on EGMs and sportsbetting came from people with gambling problems than money lost on lotteries and scratch tickets. Further, men accounted for a much larger proportion of losses on certain activities (e.g. sportsbetting and races) than others (e.g. scratch tickets).

First and foremost, replicating the 2009 analyses with data collected in 2014 provides an opportunity to validate the findings from the first report. However, it is important to note that gambling participation and expenditure have both dropped significantly since the 2009 Survey was conducted. This has been documented both in the first report from the 2014 Survey on Health Gambling and Wellbeing (Davidson *et al.,* 2015) and in industry data reported by Australian Gambling Statistics (2015). Figure 2.1 shows real per capita expenditure in ACT venues summed across all products and for individual products, covering the years of the two ACT Surveys (Gambling and Racing Commission, 2015). Note that the dollar amounts take into account the increase in the CPI from 2008-09 to 2014-15 and reflect 2014-15 AUD.

2. See the first report (2009) for a comprehensive literature review (up-to-date as at the end of 2015).

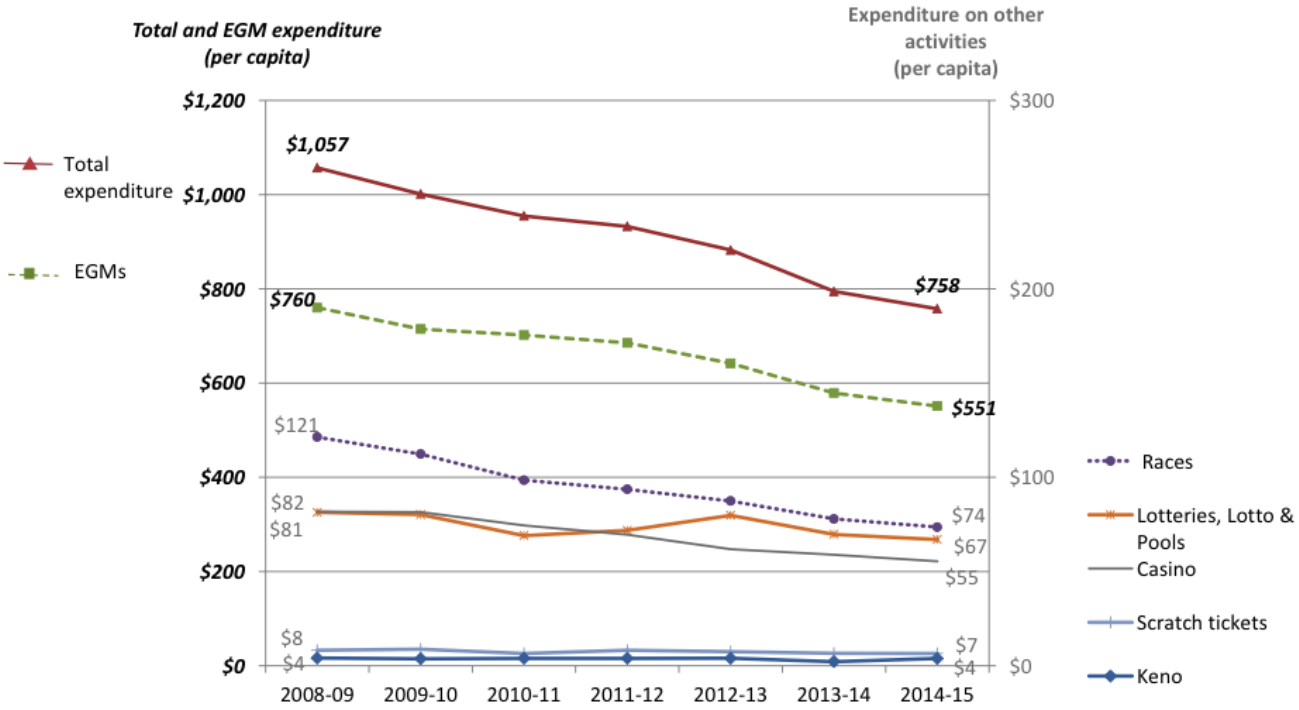

Figure 2.1: Real per capita expenditure by gambling product and summed across all products in the ACT from 2008-09 to 2014-15 (in 2014/15 AUD).
Source: ACT Gambling and Racing Commission (2015).

The top line in Figure 2.1 shows per capita gambling expenditure summed across all products over time. Per capita losses on gambling in the ACT have dropped by 28.3% (from $1,057 to $758) since the 2009 Survey was conducted. This Figure also shows that the reduction in gambling expenditure was not uniform across gambling products. The largest reductions were evident for races (39.4%) and at the ACT casino (32.2%), followed by EGMs (27.5%), scratch tickets (20.7%) and lotteries (17.7%). There was a comparatively small reduction in expenditure on Keno from 2008-09 to 2014-15 (4.9%).

Figure 2.2 shows the amount of money lost in the ACT (in millions) by gambling products and summed across all products, from 2008-09 to 2014-15. The reduction in money lost necessarily parallels the drop in per-capita expenditure shown in the previous figure. Figure 2.2 shows the absolute amounts of money involved. The current report provides the opportunity to determine whether or not problem gambling expenditure shares and socioeconomic and demographic expenditure shares have changed along with the decline in total ACT gambling expenditure and reductions for specific products.

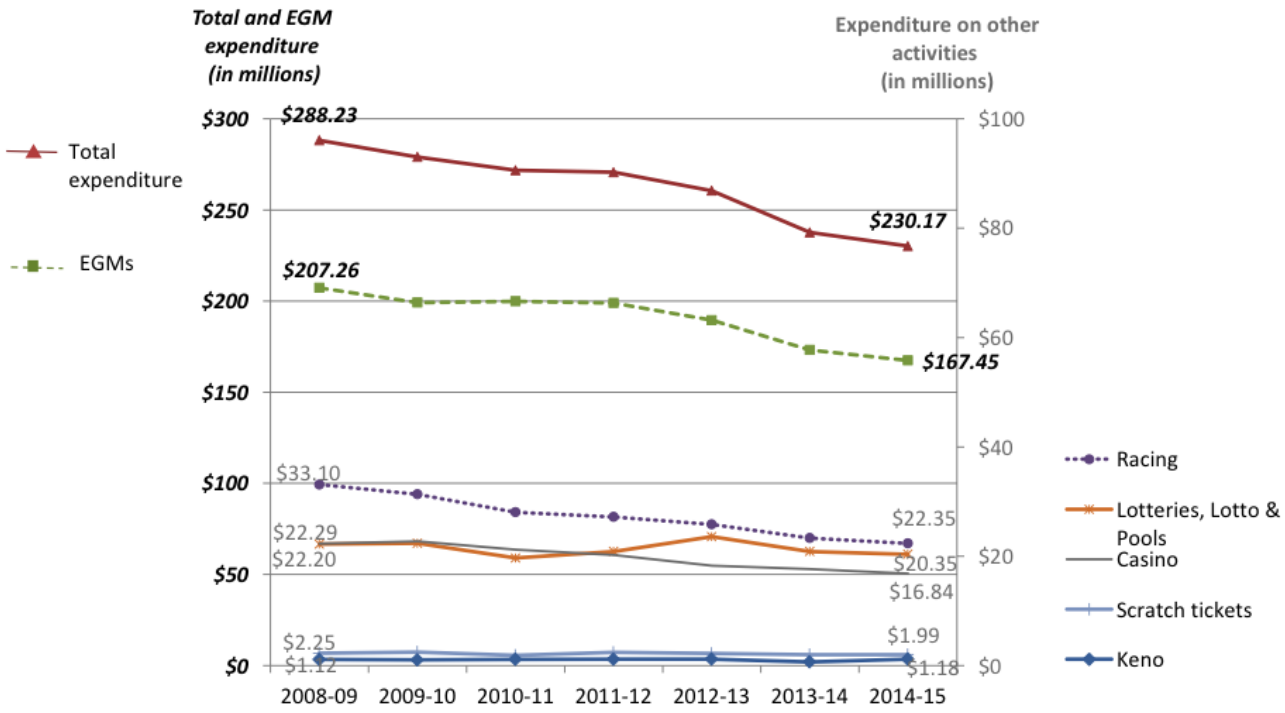

Figure 2.2: Real expenditure (in millions) by gambling product and summed across all products in the ACT from 2008-09 to 2014-15 (in 2014/15 AUD).
Source: ACT Gambling and Racing Commission (2015).

In 2010, the Productivity Commission highlighted increasing opportunities to gamble over the internet as an area of concern in terms of problem gambling (Productivity Commission, 2010). International and Australian research document higher rates of problem gambling and total gambling expenditure amongst people gambling using the internet compared to people who do not gamble on the internet (eg. ACIL Allen Consulting, 2014; Hing *et al.,* 2014; Wood and Williams, 2011). For instance, in 2013 Tasmanians who gambled online lost significantly more gambling ($2,433 per year) and had higher rates of moderate risk/problem gambling (30.5%) than gamblers not using the internet: $738 per year and 13.1% respectively (ACIL Allen Consulting, 2014: p107). Research also suggests that internet gamblers have a different socioeconomic and demographic profile than non-internet gamblers. Men consistently have higher rates of internet gambling than women, and the oldest adults (usually being over 65) has the lower rates of internet gambling than younger age groups. However, findings regarding other socioeconomic and demographic characteristics of internet gambling are more mixed. For instance, some research suggests higher rates of internet participation amongst people with degrees than those with lower qualifications (Hing *et al.,* 2014). In contrast, other studies report no differences in rates of internet gambling across different levels of education (ACIL Allen Consulting, 2014; Wood and Williams, 2011). Overall, research profiling people who gamble using the internet and those who do not is gradually emerging. However, to our knowledge expenditure shares have not previously been estimated for money lost over the internet and via other, non-internet, means.

It is important to note that internet gambling is not a product rather it reflects a means of gambling on different products. For instance, in 2014 8.4% of the ACT adult population reported having gambled on at least one product using the internet in the last 12 months (Davidson *et al.,* 2015). Breaking this down into products, 4.4% had bet on sports or special events, 3.9% had bet on races and 2.9% had bought lottery tickets over

the internet (note people could report gambling on more than one product). Other internet gambling activities were also reported but were not common, including playing virtual EGMs (0.7%) and table games (0.4%). These findings demonstrate the array of activities and products that constitute internet gambling. While the 2014 data allow PGES and socioeconomic and demographic expenditure shares to be estimated for internet gambling, they necessarily reflect a mix of activities.

Overall, this second report provides an updated description of expenditure shares in the ACT, as described in the first (2009) report. However, additional chapters are included investigating: (1) consistency and change in PGES over surveys; (2) consistency and change in socioeconomic and demographic expenditure shares over surveys; and (3) expenditure shares for money lost gambling using the internet compared to gambling via other means.

2.1 The project aims

As in 2009, there are two overarching objectives for this report.

The first involves estimating net expenditure shares for different subgroups in the population using the 2014 ACT Prevalence Survey. More specific aims are as follows:

- to disaggregate net expenditure (i.e. losses) across (a) level of problem gambling; (b) type of activity; (c) socioeconomic and demographic subgroups; and (d) internet and other means of gambling;
- to report aggregate expenditure for subgroups representative of the ACT population as well as average and proportional expenditure; and
- to compare findings across 2009 and 2014 data.

The second objective involves comparing the self-reported 2014 Survey data with Industry expenditure figures for the approximate same period of time, i.e. 2014-15. More specifically we will:

- compare the 2014 ACT Survey and AGS industry data on specific activities and across all activities for the ACT population;
- explore whether the prevalence survey can be compensated to match industry data; and
- evaluate the impact of such compensation.

The methods and results for each of the overarching objectives are addressed in separate sections of this report.

Chapter 3: Methods of the 2014 ACT Prevalence Survey

This chapter describes the methods of the *2014 ACT Survey on Gambling Health and Wellbeing in the ACT.* Findings on gambling participation and problems in the Territory were reported in detail in a final report (Davidson *et al.,* 2015).

3.0 Procedure

The procedures and content of the 2014 ACT Survey were largely based on the previous gambling prevalence survey undertaken in the ACT in 2009 (Davidson and Rodgers, 2010). These Surveys evolved from prevalence surveys undertaken by the Productivity Commission in 1999 (Productivity Commission, 1999) and in the ACT in 2001 (The ACT Gambling and Racing Commission, 2001). All data were collected using Computer Assisted Telephone Interviewing (CATI) by an accredited market and social research company. Data collection commenced on the 18th November 2014 and was completed on 11th February 2015. Interviews were suspended from 21st December through 28th January because of the Christmas school holiday period. Interviews were conducted both on weekdays (excluding public holidays) and weekends. The majority of contacts were made between 5pm and 8pm on weekdays or between 10am and 5pm on weekends.

3.1 Sample selection

Random digit dialling was used to contact 7,068 ACT residents. This involves the ongoing random dialling of telephone numbers from a list (sample pages) of numbers linked to their postcode. The list is updated on a monthly basis. Sample pages incorporate all landline numbers in the ACT (not including Jervis Bay), including listed and unlisted numbers. There is currently no way of drawing a random sample from mobile phone numbers of all ACT residents because the only existing comprehensive list is national and it does not link the numbers with area of residence. Because the ACT has a small population, too many calls would be required to identify ACT residents randomly calling people using the national mobile phone list. Consequently, the advisory group decided not to include mobile phone numbers in the sampling frame of the current survey.

Upon establishing contact with a household, the interviewers asked to speak 'to the adult resident with the last birthday'. However, it became evident during the data collection that older adults (40+) were overrepresented in the sample and so a two stage selection process was introduced. On the 4th December the introductory script was amended to specifically target households with residents aged 18 through 39. The interviewer said 'We're speaking to households that have residents aged 18-39. Would that be your household?' Then if the household had residents aged 18-39 the interviewer asked to speak to 'the person aged 18 years or over in the household who had the last birthday, regardless of their age'. This meant that individuals were still randomly selected within households but households were screened depending on the above household age structure. This increased the number of younger participants in the final sample. A total of 7,068 interviews were conducted with 5,167 (73.1%) taking place before implementing the screen for household age structure and 1,901 (26.9%) taking place after the screen had been introduced.

If the appropriate person identified by the most recent birthday method was not available, the interviewer arranged an appropriate time to call back. Interviewers also made appointments to call back if it was not a convenient time to undertake the interview. On average, 2.2 calls were required per complete interview. However, the majority of interviews were completed upon the first (48%) or second (23%) contact with a household.

3.2 Survey design

All 7,068 people initially identified to do the interview were asked whether they had participated in a range of gambling activities in the last 12 months. They were then asked how often they had participated in each undertaken activity (if any), and could answer per week, month or year. This information was used to determine total gambling frequency across all activities, and across all activities except lottery and scratch tickets. A global net expenditure question was also asked of everyone.

A subsample was then selected to proceed to a more detailed interview. Probability of selection was determined by people's frequency of gambling and net expenditure as shown in Table 3.1. The oversampling methods described below were designed to ensure that groups would be large enough to undertake analyses and maximised the probability that people with current gambling problems would complete the detailed interview. Table 3.1 shows that everyone who either (i) gambled 48 times a year across all activities except lottery or scratch tickets or (ii) had spent $2,000 or more in the last 12 months was selected to undertake the detailed interview. One in four people who reported gambling 1-47 times in the last 12 months (and who had spent less than $2,000 on all 12 activities) proceeded to the more detailed interview. Initially 40% of non-gamblers were randomly selected, however on the 28th November 2014 this proportion was revised down to 25% because it was already apparent that the relative proportion of non-gamblers in the population had increased since 2009. Over the entire data collection period, one third (33.5%) of non-gamblers were randomly selected to be given the detailed interview. The method of selecting the subsample was designed to oversample people who had lost large amounts on gambling, high frequency gamblers and non-gamblers.

Table 3.1: Criteria used to select the subsample undertaking the detailed interview.

SELECTION CRITERIA			SUBSAMPLE
Total gambling frequency, last 12 months	**Activities included in total frequency**	**Total out of pocket expenditure (all activities)**	**Population selected for detailed interview**
48 or more	All except lottery and scratch tickets	Any	100%
1-47	All except lottery and scratch tickets	Less than $2,000	25%
1 or more	People who only buy scratch tickets or play lottery	Less than $2,000	25%
1 or more	All activities	$2,000 or more	100%
0	All activities	-	40% then 25%*

*The proportion of non-gamblers randomly sampled was reduced on the 28 November 2014. Over the entire data collection period, one third (33.5%) of non-gamblers were randomly selected.

3.3 The sample

Table 3.2 shows the number of people interviewed for each of the criteria used to identify the subsample who proceeded to complete the detailed interview. For instance, this table shows that 43 of the people initially interviewed had a total gambling frequency less than 48, but had spent $2,000 or more in the last 12 months. The proportion and number of people selected to undertake the detailed interview is also described in Table 3.2. Everyone in the above example was selected for the detailed interview.

Table 3.2: Sample size for each of the criteria used to select the subsample undertaking the detailed interview.

SELECTION CRITERIA			ACHIEVED SAMPLE		
Total gambling frequency, last 12 months	**Activities included in total frequency†**	**Total out of pocket expenditure (all activities)**	**Initial sample (n)**	**Subsample completing detailed interview (n)**	**Proportion selected for detailed interview**
48 or more	All except lottery and scratch tickets	Any	319	319	100%
1-47	All except lottery and scratch tickets	Less than $2,000	1,930	484	25%
1 or more	People who only do scratch tickets or lottery	Less than $2,000	1,580	378	25%
1 or more	All activities	$2,000 or more	43	43	100%
0	All activities	-	3,196	1,070	40% then 25%
Total			*7,068*	*2,294*	

†At least some lottery or scratch tickets were purchased for themselves.
*The proportion of non-gamblers randomly sampled was reduced on the 28 November 2014. Over the entire data collection period, one third (33.5%) of non-gamblers were randomly selected.

There was a good spread of ages amongst the achieved sample, but when compared with the adult population of the ACT, those under 50 years of age were underrepresented, with a corresponding over-representation of older people. People who were not married were somewhat under-represented in the achieved sample. To compare the age, sex and marital status of those people who were interviewed with the same characteristics in the adult population of the ACT, please see Davidson *et al.* (2015: p16). These comparison tables provided the basis for weighting the sample in order to provide estimates that reflect the age and sex distribution of the ACT population.

3.4 The questionnaire

The questionnaire used in 2014 was based on the 2009 Survey, to maximise comparability of findings over time. The few exceptions relevant to this report are detailed below. A summary of the types of measures included in this report, and the people who received them, is given in Table 3.3. In brief, in 2014 everyone selected to do the detailed interview was asked about their net expenditure on gambling, and also asked the socioeconomic and demographic questions. Furthermore, problem gambling was assessed among everyone who had gambled in the last 12 months or who reported spending $2,000 or more (regardless of activity). The full questionnaire is available on the ACT Gambling and Racing Commission web site‡.

Table 3.3: Summary of questionnaire items.

Measures	Interview†	People assessed
Gambling frequency, for each activity	Initial	All
Global net expenditure screen, across all activities	Initial	All
Questions about specific activities (eg net expenditure)	Detailed	If undertook activity in last 12 months
PGSI	Detailed	If gambled on any activity in last 12 months
Socioeconomic and demographic	Detailed	All

†Initial interview=all 7,068 people; Detailed interview=2,294 selected people.

The questionnaire was pilot tested on the 11th and 12th of November 2014 and included both members of the community and the ANU research team. These interviews tested the CATI technical procedure and the questionnaire. The research team were included in the pilot so that they could role play less common but important scenarios. This ensured that the majority of pathways through the questionnaire were tested. A total of 40 pilot interviews were conducted.

‡ http://www.gamblingandracing.act.gov.au/community/research

Measuring gambling expenditure

As in 2009, everyone who proceeded to the detailed interview was asked about their net expenditure on each gambling activity they reported having undertaken in the last 12 months. The format of the question was the same for all activities. First, participants were reminded that they had indicated having undertaken that activity and how often they had done so. For instance, for EGMs 'You mentioned earlier that you played poker and gaming machines about' INSERT [frequency of play and 'times per (a) *week*, (b) *month* or (c) *year'*]. A tailored item was used to measure expenditure for each activity; 'Subtracting any winnings, how much money did you spend on poker and gaming machines in' INSERT ['an average (a) *week*, (b) *month* or (c) *in the last 12 months'*]. For racing and sports betting, expenditure was assessed for a range of different gambling venues and methods, including gambling using the internet.

In 2014, the questionnaire was expanded and net internet gambling expenditure was assessed for each gambling activity undertaken. Using the above example, people were asked how often in the last 12 months they had played poker or gaming machines for money over the internet using computers, mobile phones, televisions or other devices. Those who had done so were asked 'Subtracting any winnings, how much money did you spend on poker and gaming machines over the internet in' INSERT ['an average (a) *week*, (b) *month* or (c) *in the last 12 months'*].

If people could not say, they were given a probe 'Can you give me an approximate amount?' Interviewers were also instructed to use the phrase 'Would you say you were out of pocket……' if people queried the question. When participants reported having won, interviewers were instructed to record the amount won as a negative number.

A more detailed breakdown of the items assessing expenditure on individual activities is provided in Chapter 9.

Measurement and definition of problem gambling

The main measure of problem gambling used in both the 2009 and 2014 ACT Surveys was the Problem Gambling Severity Index (PGSI) from the Canadian Problem Gambling Index (Ferris and Wynne, 2001). In 2014 all gamblers were given the PGSI. In 2009 everyone who reported gambling at least once a month across activities other than scratch tickets or lottery tickets, or who had spent $2,000 or more across all activities in the last 12 months was asked all of the questions in the PGSI (n=494).

The PGSI (see Box 3.1) comprises nine items asking how often gamblers experience a range of problems from their gambling, including betting more than they can afford, needing to gamble with larger amounts to get the same feeling of excitement, trying to win back the money they have lost and having financial problems. Response options range from 0 ('never') to 4 ('almost always'). People's responses to the nine items are summed, creating the PGSI total score (range 0-27). The PGSI total score reflects the continuum of increasing symptom severity underlying problem gambling. The total score is traditionally grouped into bands that define 'non-problem gambling' (0 score), 'low risk gambling' (1-2), 'moderate risk gambling' (3-7), and 'problem gambling' (8+).

The original definition of low risk gambling was having 'a low level of problems with few or no identified negative consequences'. However, recent research has found that low risk gamblers are distinctly different to non-problem gamblers and are more like moderate risk gamblers across a wide range of measures. Compared to non-problem gamblers, the low risk and moderate risk groups both have higher levels of gambling expenditure, gambling frequency, stress, and mental health and substance use disorders (Currie *et al.,* 2013). Moderate risk and low risk gamblers were similar in terms of their types of gambling activity and socioeconomic and

demographic characteristics, and both were significantly different from non-problem gamblers. For this reason, PGES were also estimated in the present study for people reporting 'any symptom' (1+), reflecting the expenditure derived from people who report that they experience at least one of the nine PGSI symptoms (see Box 3.1).

Only a small number of people were classified as meeting the criteria for problem gambling (n=25). Consequently, at times, moderate risk and problem gambling were combined reflecting a 'moderate risk/ problem gambling' (3+) group.

Box 3.1: Problem Gambling Severity Index

In the past 12 months…

…have you bet more than you could really afford to lose?

…have you needed to gamble with larger amounts of money to get the same feeling of excitement?

…when you gambled, did you go back another day to try to win back the money you lost?

…have you borrowed money or sold anything to get money to gamble?

…have you felt that you might have a problem with gambling?

…has gambling caused you any health problems, including stress or anxiety?

…have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?

…has your gambling caused any financial problems for you or your household?

…have you felt guilty about the way you gamble or what happens when you gamble?

Would you say…

0 Never. 1 Sometimes. 2 Most of the time. 3 Almost always.

TOTAL SCORE

Score of 0 = Non-problem gambling.
Score of 1 or 2 = Low level of problems with few or no identified negative consequences.
Score of 3 to 7 = Moderate level of problems leadings to some negative consequences.
Score of 8 or more = Problem gambling with negative consequences and a possible loss of control.

Source: Ferris and Wynne (2001).

Socioeconomic and demographic measures

This report includes analysis of four socioeconomic and demographic measures: (i) sex; (ii) age; (iii) marital status; and (iv) highest completed qualification. Participants were asked, 'What is your current marital status?' We report net gambling expenditure amongst people who were currently married or in a de facto relationship and those who were not (including those who were separated, divorced, widowed or never married).

Participants were also asked 'What is the highest level of education you have completed?' A wide range of responses was possible (see Davidson *et al.,* 2015). Qualifications were combined and net gambling expenditure is reported for four groups, those with (1) less than Year 12, (2) Year 12, (3) a trade certificate or diploma, and (4) a bachelor degree or higher.

3.5 Ethics approval

The Australian National University human research ethics committee approved the *2014 Survey on Gambling, Health and Wellbeing* (protocol 2014/580).

3.6 Statistical analysis

A three-stage approach to the analysis was used. First, we estimated net expenditure shares across levels of problem gambling, for all activities combined and for each type of activity (Chapter 4). A comparison of these shares over 2009 and 2014 Surveys can be found in Chapter 5.

Second, we estimated net expenditure shares across socioeconomic and demographic characteristics, for all activities combined and for specific activities (Chapter 6). A comparison of these shares over 2009 and 2014 Surveys can be found in Chapter 7.

Third, we summed (i) money lost gambling on activities using the internet and (ii) money lost gambling via other means. Problem gambling and socioeconomic expenditure shares were estimated for these two measures (Chapter 8).

For the first two stages, separate analyses are reported for the more common gambling activities (lottery, EGMs, horse and greyhound races, scratch tickets and sports and special events). The number of adults gambling on each of table games, keno, bingo, and informal games like cards was too small to enable separate analyses for these activities. Similarly for the third stage, the number of adults gambling using the internet was too small to enable separate analyses for individual internet activities.

In total, 2,294 adults completed the detailed interview. Amongst these individuals 2,289 had complete data on gambling frequency. Further to this, missing data on the individual socioeconomic and demographic measures used in this report were minimal (see Table 13.1 in the Appendix for a comprehensive list). In total 2,264 people had complete data across all socioeconomic and demographic measures. Missing data were also minimal on individual gambling measures (e.g. only three people had missing data on the PGSI). However, missing data on overall net expenditure were more substantial (n=68). The sample for all analyses comprised 2,191 individuals with complete information on all measures used in this report. Mean (reflecting per capita), total ACT population and proportional net expenditure are reported across PGSI and socioeconomic and demographic measures, summed across all activities and separately for each type of activity.

Two parallel analyses of the 2014 ACT Survey were conducted. The first utilised raw data as reported by participants. The impact of extreme and potentially unreliable answers (i.e. outliers) regarding losses or wins from gambling using this raw data was explored. All analyses were re-run using a Winsorised technique where extreme answers are capped. For this report all net expenditure measures (where feasible) were capped at the top and bottom 1% for the parallel analyses. Some findings varied across the analyses using the capped

and raw data. For instance, extreme wins (recorded as negative losses) in a handful of non-problem gamblers resulted in negative expenditure shares for non-problem gamblers and extremely large confidence intervals. Winsorising the measures reduces the impact of extreme values on the findings. For this reason, the Winsorised analyses (hereafter referred to as 'Capped' analyses) are described in the main body of this report and the raw data analyses (hereafter referred to as 'Uncapped' analyses) are included in the appendix of this report.

For some activities, the 1% threshold did not capture any responses and, therefore, net expenditure measures could not be capped. Typically this occurred only when very few people participated in an activity. Net expenditure could not be capped for (i) betting on sports and special events in person and by phone (ii) betting on races by phone, (iii) bingo, (iv) table games over the internet and (v) Keno. An overall capped net expenditure measure was then calculated by summing across the net expenditure measures for individual activities after these had been capped.

Confidence intervals for expenditure shares were estimated using a non-parametric bootstrap with ordinary sampling and the percentile method of estimating confidence intervals (Davison and Hinkley, 1997). Expenditure shares for gambling activities, problem gambler categories and sociodemographic categories were compared between 2009 and 2014. Confidence intervals for the difference in expenditure shares were estimated using a non-parametric bootstrap with ordinary sampling and the percentile method of estimating confidence intervals (Davison and Hinkley, 1997). Five thousand bootstrap replications were used when estimating confidence intervals. Bootstrap methods were selected because the extremely right-skewed distribution of the expenditure data violated the assumptions required for standard Wald-style confidence intervals. P-values are reported estimating the significance of between group differences in (i) mean expenditure for the PGSI and socioeconomic and demographic measures and (ii) the 2009 and 2014 expenditure shares. P-values were approximated by direct calculation from bootstrap estimates and by bootstrapping the F-statistic. Twenty-five thousand bootstrap replications were used when estimating p-values. When estimating p-values, non-gamblers were excluded from problem gambling expenditure share analyses, but they were included in socioeconomic and demographic expenditure share analyses.

3.7 Weighting the 2014 ACT Survey

In order to generalise findings from the sample to the ACT adult population it was important to ensure that the survey sample represented the ACT population as much as possible. Therefore potential sources of sample bias needed to be identified and addressed. First, only one adult had been selected for interview from each household, so the number of adults *not interviewed* in each household needed to be taken into account. Second, the oversampling of non-gamblers, high frequency gamblers and people losing large amounts on gambling needed to be taken into account in all analyses using the subsample who completed the detailed interview. Third, people who answered the 'phone and agreed to do the survey might have differed from those who did not. Simple statistical weights were derived and used to compensate for the under- or over-representation of particular people (or characteristics) in the sample. All analyses for this report were weighted (defined below).

Weight 1: The population weight

Everyone who agreed to complete the interview was asked the number of adults aged 18 or over who normally live in their household. This information was used to compensate for the probability of an individual being selected in the household. The population weight also addressed the oversampling of non-gamblers, high

frequency gamblers and people losing large amounts on gambling (detailed in Table 3.1), so that levels of gambling were proportionately represented. The weight also ensured that the sample proportionately reflected registered marital status, age, and sex of the ACT adult population. Finally, the weight was rescaled so that the ACT Survey participants reflected the number of adults in the ACT at that time (as discussed above). This means that population estimates based on the survey data represent the ACT adult population at the time of the survey.

Weight 2: Compensating for potential bias arising from missing data

Missing data are an important source of potential bias. For instance, people who gamble more frequently or who have gambling problems may be less able (or less willing) than people who gamble less often or who do not have problems to answer questions about how much they lose gambling. Chi-square tests were used to explore the potential impact of missing data on the results (see Table 13.2 in the Appendix). Missing data on overall net expenditure were not related to any of the socioeconomic or demographic measures. That is, missing data on overall net expenditure were evenly distributed across age, current partner status, education and the PGSI, and therefore not likely to influence the results. In contrast, missing data on overall net expenditure were significantly related to both sex ($p=.002$) and frequency of gambling ($p=.004$). Male gamblers and people who gambled more frequently were more likely to have missing net expenditure data. Therefore a failure to address missing data on overall net expenditure would result in underestimating net expenditure amongst men and more frequent gamblers.

Multiple logistic regression analysis was used to explore missing expenditure data across overall gambling frequency and level of problem gambling (independent variables). Missing net expenditure data amongst the more frequent gamblers accounted for the statistical association between missing financial data and sex, indicating that addressing missing data across frequency of gambling would also address any potential bias arising from men having more missing data than women. A final single weight was therefore used to address missing data on net expenditure across frequency of gambling. Logistic regression was used to estimate the probability of having missing data on total net expenditure for each of the gambling frequency categories (non-gamblers could not have missing data and so their probability was determined to be 1). This probability was multiplied by the population weight (above) to derive a final weight that was used in all analyses. In summary, this final weight was used to ensure that the sample proportionately reflected the ACT adult population at the time of the survey and to compensate for potential bias arising from missing data.

Chapter 4: Problem gambling expenditure shares

The main aims for this chapter are to describe:

1. net expenditure by type of activity;
2. problem gambling expenditure shares across all activities combined; and
3. problem gambling expenditure shares for specific activities.

Finally, we compare problem gambling expenditure shares across different activities. Parallel analyses using the raw expenditure measures are presented in the Appendix (Tables 13.3 through 13.9).

4.0 Expenditure by type of activity in the ACT

Table 4.1 describes participation on gambling activities, mean net expenditure and total gambling losses for the ACT adult population. The second column shows the proportion of total net expenditure attributed to each type of activity. Lottery was the most commonly undertaken activity followed by EGMs, and horse and greyhound races. The most and, therefore, greatest proportion of money was lost on EGMs, followed by lottery and then horse and greyhound races.

This table also shows an estimate of the total amount of money lost gambling amongst ACT adults ($99m) based on self-report.

Table 4.1: Capped net expenditure (in dollars) and proportion of total losses by type of activity in the ACT.

Activity	Participation†	Proportion of total losses (95% CIs)	Mean losses	ACT population losses
Lottery	33.4%	33.8% (28.9-39.3%)	$111	$33,491,945
EGMs	19.9%	37.8% (30.4-46.3%)	$124	$37,481,460
Horse and greyhound races	17.6%	16.3% (10.8-21.4%)	$54	$16,209,940
Scratch tickets	15.1%	3.3% (2.4-4.3%)	$11	$3,247,067
Sports and special events	6.9%	4.1% (1.2-7.0%)	$14	$4,107,387
Table games	5.8%	3.9% (1.6-6.4%)	$13	$3,886,666
Keno	2.9%	0.4% (0.3-0.6%)	$1	$413,681
Other activities*	5.8%	0.4% (-3.6-3.0%)	$1	$364,237
Sum across activities	55.1%	-	$328	$99,202,384

†Source: The 2014 ACT Survey (Davidson *et al.,* 2015: p22).
*Other activities include bingo, and informal games like cards for money.

4.1 Problem gambling expenditure shares across all activities

Table 4.2 shows the problem gambling expenditure share (PGES) for all activities combined. The first and second columns show the number and proportion of people for each level of problem gambling in the ACT adult population. The third column shows the proportion of gamblers for each level of problem gambling. The fourth column shows the proportion of net expenditure attributable to each PGSI category along with their 95% confidence intervals. The fifth column shows estimates of the mean expenditure for each of the PGSI categories along with the statistical significance of differences between the mean for non-problem gamblers and each of the means for other groups. The sixth column shows net expenditure for each of the PGSI categories estimated for the ACT population. Subsequent tables in this chapter follow the same format.

Non-problem gamblers lost the least money on average, but because they are the biggest group of gamblers (89.5%) they lost the most money in total (more than $55m). Overall, 55.9% of all money lost gambling came from non-problem gamblers. A large proportion of money lost came from people with at least some symptoms [PGSI 1+: 44.1%, (95% CI 35.6-55.4%)] and 20.5% (95% CI 15.2-28.8%) was accounted for by moderate risk/ problem gamblers (PGSI 3+).

Table 4.2: Capped net expenditure (in dollars) on all activities in the last 12 months by level of problem gambling.

PGSI category	N ACT population	Proportion adult population	Proportion of gamblers	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Non-gambler	137,398	45.5%	-	-	-	-
Non-problem	147,448	48.8%	89.5%	55.9% (47.8-65.4%)	$376[r]	$55,480,938
Low risk	12,653	4.2%	7.7%	23.5% (17.4-31.6%)	$1,845 (<.001)	$23,343,384
Moderate risk	3,410	1.1%	2.1%	9.5% (6.2-14.7%)	$2,752 (<.001)	$9,382,992
Problem	1,331	0.4%	0.8%	11.1% (7.5-17.6%)	$8,259 (<.001)	$10,995,071

a. Overall significance: differences between means across PGSI categories excluding non-gamblers (p<.001, df =3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

The following tables show problem gambling expenditure shares for specific types of gambling activity, from the most to the least commonly undertaken activity.

4.2 Problem gambling expenditure shares for lottery

Table 4.3 shows expenditure on lottery by PGSI categories. Non-problem gamblers lost, on average, $186 on lotteries in the last 12 months. On average, low risk ($289) and moderate risk ($445) gamblers lost more than non-problem gamblers, but not as much as problem gamblers ($626). Table 4.3 shows that 82.1% of net expenditure on lottery came from non-problem gamblers who represent 89.5% of all gamblers. Summing across the other PGSI groups, 17.9% (95% CI 13.3-23.3%) of money lost on lotteries came from people who had at least some problem gambling symptoms (PGSI 1+) and 7.0% (95% CI 4.9-9.8%) came from moderate risk/ problem gamblers (PGSI 3+).

Table 4.3: Net expenditure (in dollars) on lottery in the last 12 months by level of problem gambling using capped measures.

PGSI category	N ACT population	Proportion adult population	Proportion of gamblers	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Non-gambler	137,398	45.5%	-	-	-	-
Non-problem	147,448	48.8%	89.5%	82.1% (72.6-92.5%)	$186[r]	$27,485,831
Low risk	12,653	4.2%	7.7%	10.9% (6.9-15.3%)	$289 (.124)	$3,656,064
Moderate risk	3,410	1.1%	2.1%	4.5% (2.9-6.9%)	$445 (.005)	$1,517,279
Problem	1,331	0.4%	0.8%	2.5% (1.0-3.6%)	$626 (.030)	$832,771

a. Overall significance: differences between means across PGSI categories excluding non-gamblers (p=.010, df =3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

4.3 Problem gambling expenditure shares for EGMs

Table 4.4 shows that mean net expenditure on EGMs increased across levels of problem gambling, from non-problem (mean $94) to problem (mean $4,406). On average, low risk (mean $1,033) and moderate risk (mean $1,386) lost a similar amount per person on EGMs. However total losses were greater amongst the former (13.1 million compared to 4.7 million), largely because there is a greater number of low risk gamblers than moderate risk gamblers in the population (12,653 persons compared to 3,410 persons). This table also shows that non-problem gamblers accounted for 36.9% of all money lost on EGMs. In contrast, 63.1% (95% CI 47.6-85.4%) of money lost came from people with at least some problem gambling symptoms (PGSI 1+) and 28.2% (95% CI 18.7-42.7%) came from moderate risk or problem gamblers (PGSI 3+).

Table 4.4: Capped net expenditure (in dollars) on EGMs in the last 12 months by level of problem gambling.

PGSI category	N ACT population	Proportion adult population	Proportion of gamblers	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Non-gambler	137,398	45.5%	-	-	-	-
Non-problem	147,448	48.8%	89.5%	36.9% (25.7-50.0%)	$94[r]	$13,821,882
Low risk	12,653	4.2%	7.7%	34.9% (20.3-51.9%)	$1,033 (<.001)	$13,066,976
Moderate risk	3,410	1.1%	2.1%	12.6% (7.5-21.0%)	$1,386 (<.001)	$4,727,087
Problem	1,331	0.4%	0.8%	15.6% (9.3-27.0%)	$4,406 (<.001)	$5,865,515

a. Overall significance: differences between means across PGSI categories excluding non-gamblers (p<.001, df =3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

4.4 Problem gambling expenditure shares for horse and greyhound races

Table 4.5 shows net expenditure on horse and greyhound races. On average problem gamblers lost the most money (mean $1,941), however the most money in total came from low risk gamblers ($6.8m). This table also shows that 41.7% of money lost was accounted for by non-problem gamblers. People with at least some symptoms (PGSI 1+) accounted for a substantial proportion of net expenditure on horse or greyhound races [58.3% (95% CI 39.8-92.0%)]. Moderate risk/problem gamblers (PGSI 3+) accounted for almost a quarter of all losses [23.9% (95% CI 11.7-43.4%)].

Table 4.5: Capped net expenditure (in dollars) on horse or greyhound races in the last 12 months by level of problem gambling.

PGSI category	N ACT population	Proportion adult population	Proportion of gamblers	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Non-gambler	137,398	45.5%	-	-	-	-
Non-problem	147,448	48.8%	89.5%	41.7% (25.4-62.9%)	$46[r]	$6,752,149
Low risk	12,653	4.2%	7.7%	34.4% (18.9-58.4%)	$441 (<.001)	$5,576,900
Moderate risk	3,410	1.1%	2.1%	8.0% (2.6-17.0%)	$380 (.016)	$1,296,623
Problem	1,331	0.4%	0.8%	15.9% (4.7-35.9%)	$1,941 (.002)	$2,584,268

a. Overall significance: differences between means across PGSI categories excluding non-gamblers (p<.001, df=3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

4.5 Problem gambling expenditure shares for scratch tickets

Table 4.6 shows net expenditure on scratch tickets in the last 12 months for each of the PGSI categories. Similar to lotteries, non-problem gamblers lost less on average on scratch tickets than other PGSI groups but because they represent a larger proportion of the ACT adult population, they accounted for the greatest amount and proportion of money lost (79.4%) on scratch tickets. In total 20.6% (95% CI 13.3-30.8%) of money lost on scratch tickets came from people who had at least some problem gambling symptoms (PGSI 1+) with 11.0% (95% CI 5.8-18.0%) coming from moderate risk/problem gamblers (PGSI 3+).

Table 4.6: Capped net expenditure (in dollars) on scratch tickets in the last 12 months by level of problem gambling.

PGSI category	N ACT population	Proportion adult population	Proportion of gamblers	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Non-gambler	137,398	45.5%	-	-	-	-
Non-problem	147,448	48.8%	89.5%	79.4% (64.1-97.3%)	$17[r]	$2,578,000
Low risk	12,653	4.2%	7.7%	9.6% (4.9-15.8%)	$25 (.399)	$312,750
Moderate risk	3,410	1.1%	2.1%	6.3% (2.6-11.6%)	$60 (.036)	$204,802
Problem	1,331	0.4%	0.8%	4.7% (0.8-10.3%)	$114 (.045)	$151,516

a. Overall significance: differences between means across PGSI categories excluding non-gamblers (p=.033, df=3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

4.6 Problem gambling expenditure shares for sports and special events

Table 4.7 shows net expenditure on sports or special events across PGSI categories. On average, problem gamblers lost the most money (mean $367) but, in total, they accounted for the least money lost on sports or special events across the population ($488.8k). Non-problem gamblers accounted for 27.9% of money lost on sports or special events but represent 89.5% of all gamblers. Conversely, people with at least some symptoms (PGSI 1+) accounted for 72.1% (95% CI 38.3-194.0%) of expenditure but comprised just 10.5% of gamblers. Moderate risk/problem gamblers (PGSI 3+) accounted for 42.2% (95% CI 12.6-117.2%) of all money lost on sports or special events.

Table 4.7: Capped net expenditure (in dollars) on sports or special events in the last 12 months by level of problem gambling.

PGSI category	N ACT population	Proportion adult population	Proportion of gamblers	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Non-gambler	137,398	45.5%	-	-	-	-
Non-problem	147,448	48.8%	89.5%	27.9% (20.8-72.5%)	$8[r]	$1,147,656
Low risk	12,653	4.2%	7.7%	29.8% (5.9-34.7%)	$97 (.005)	$1,225,467
Moderate risk	3,410	1.1%	2.1%	30.3% (3.2-56.3%)	$365 (.013)	$1,245,457
Problem	1,331	0.4%	0.8%	11.9% (0.0-31.2%)	$367 (.020)	$488,806

a. Overall significance: differences between means across PGSI categories excluding non-gamblers (p<.001, df=3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

4.7 Comparing problem gambling expenditure shares across different types of activity

Figure 4.1 summarises the findings regarding problem gambling expenditure shares for each of the gambling activities, and then for net expenditure summed across all activities. This figure provides an easy means of comparing the profile of different activities. Essentially, the darker the column the higher the expenditure shares derived from people with problem gambling symptoms. The final column in this figure shows the distribution of problem gambling groups as a proportion of all gamblers in the ACT population. It is immediately apparent that the PGES is lower for lottery and for scratch tickets than for other activities although gamblers with some level of problem still contribute disproportionately to losses on these activities. For other activities, the proportionate contribution from those with gambling problems is substantially greater.

Comparing across activities, the greatest proportions of losses derived from people with problem gambling symptoms was seen for net expenditure on sports or special events (72.1%) followed by EGMs (63.1%) and horse or greyhound racing (58.3%, as indicated by the darker areas of the column). By contrast, the smallest proportions of losses coming from people with symptoms were seen for lottery (17.9%) and scratch tickets (20.6%).

Focussing on the losses of moderate risk and problem gamblers combined (PGSI 3+, the threshold most commonly used in international studies) the largest problem gambling expenditure share was evident for betting on sports and special events (42.2%), followed by EGMs (28.2%), and horse and greyhound races (23.9%). The PGES estimate for overall gambling expenditure in the ACT based on the same threshold is 20.6%.

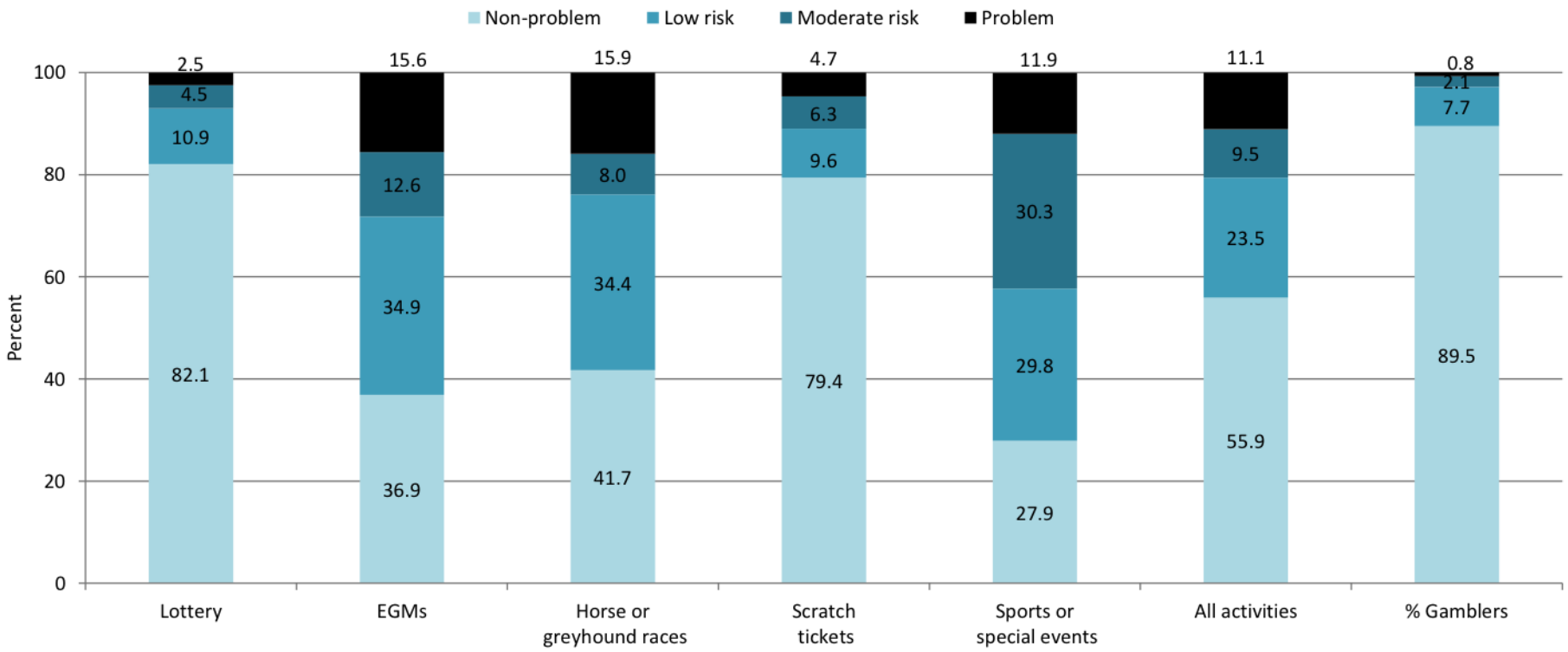

Figure 4.1: A summary of gambling expenditure shares (%) by level of problem gambling, type of activity and across all activities using capped measures.

4.8 Comparing findings from the uncapped and capped analysis

The Appendix presents comparable findings for expenditure shares across PGSI categories using the raw (uncapped) expenditure measures. Tables 13.3 through 13.9 can be compared with Tables 4.1 to 4.7 in the present chapter. In general, the uncapped mean losses and corresponding ACT population losses were lower, and the confidence intervals tighter, in the capped than the uncapped analyses. There were no occasions where the uncapped analyses indicated a significant difference that was not also evident in the capped analyses. There was one instance where the capped analysis indicated a significant difference that was not evident in the uncapped analyses. For lottery, moderate risk gamblers had higher mean expenditures on lottery than non-problem gamblers in the capped analyses.

Tables 13.8 and 13.9 show the uncapped problem gambling expenditure shares for scratch tickets and sports and special events. These tables clearly demonstrate the effect of leaving extreme values uncapped in the analyses. The confidence intervals around some proportions are extreme. For example, for scratch tickets, the confidence interval around the expenditure share for non-problem gamblers (27.0%) ranged from -407.7% to 131.0%. For sports and special events, the confidence interval for the expenditure shares of non-problem gamblers was also extreme (-0.4%, 95% CI -213.0-190.4%). Overall, the capped analyses minimised the influence of extreme wins and losses, resulting in tighter confidence intervals and more valid estimates.

Key Findings of Chapter 4

1. Based on self-report, total gambling losses for ACT residents in 2009 is estimated at around $99m. Self-reports are likely to underestimate actual losses.
2. The three activities that accounted for the large majority of total losses were betting on EGMs ($37m), lotteries ($33m), and horse and greyhound races ($16m).
3. People with problem gambling scores (Problem Gambling Severity Index) of three or more accounted for 20.6% of reported losses summed across all activities.
4. Amongst gamblers with any problems (PGSI scores of one or more), 44.1% of all losses are attributable to this relatively small group (5.7% of the ACT population).
5. Betting on sports or other special events is the activity where net expenditure is most concentrated in those with problem gambling symptoms. 72.1% of losses are derived from people with PGSI scores of 1 or more, who represent just 5.7% of the ACT adult population
6. Other activities where a large share of expenditure comes from people with problem gambling symptoms are EGMs (63.1%), and horse and greyhound races (58.3%).
7. Using the threshold for problem gambling which is most common in the international literature (PGSI of 3 or more), the largest problem gambling expenditure shares were found for sports betting (42.2%), EGMs (28.2%) and horse and greyhound races (23.9%).
8. The proportion of losses derived from gamblers with problems is comparatively low for some activities. Just 7.0% of lottery and 11.0% of scratch ticket expenditure is from moderate risk/problem gambling individuals.

Chapter 5: Participation, expenditure and problem gambling expenditure shares, 2009 to 2014

This chapter directly compares data from the 2009 and 2014 ACT Surveys. In the following sections we contrast (i) participation rates and mean expenditure, (ii) proportion of total losses accounted for by individual activities and (iii) problem gambling expenditure shares, over the two ACT Surveys.

5.0 Gambling participation rates and mean expenditure, 2009 to 2014

Table 5.1 shows the participation rates for each activity and across all activities in the 2009 and 2014 ACT Surveys. This table demonstrates significant reductions in participation rates across surveys for all activities other than sports and special events as described in the first 2014 ACT Survey report (Davidson *et al.,* 2015).

Table 5.1: Participation rates for individual gambling activities and across all activities in 2009 and 2014.

Activity	PARTICIPATION		
	2009	2014	p-value[a]
Lottery	46.1%	33.4%	(<.001)
EGMs	30.2%	19.9%	(<.001)
Horse and greyhound races	24.5%	17.6%	(<.001)
Scratch tickets	22.8%	15.1%	(<.001)
Sports and special events	7.9%	6.9%	(.158)
Table games	8.3%	5.8%	(<.001)
Keno	5.8%	2.9%	(<.001)
Other activities*	10.8%	5.8%	n/a
Sum across activities	*69.8%*	*55.1%*	(<.001)

Source: Davidson *et al.* (2015: p43).
a. Significance of difference in the participation rates from 2009 to 2014.
*In 2009 other activities included bingo, private games like cards for money, casino type games on the internet and two-up. In 2014 other activities include bingo, and informal games like cards for money.

Table 5.2 shows mean losses in 2009 (the first column) and 2014 (the second column) for individual activities and summed across all activities. The 2009 Survey data is adjusted for the CPI, so the mean dollar amounts reflect 2014/15 AUD. It is also important to keep in mind that these data reflect self-reported losses. The third column shows the proportionate reduction in mean losses over surveys. The Survey data indicate a 42.5% reduction in mean gambling expenditure over time. Reductions in mean gambling losses were evident across all individual activities, including reductions of 60.2% on horse and greyhound races, 49.2% on table games, 37.1% on EGMs and 31.6% on scratch tickets. For some activities, mean losses were small and the proportionate reduction over time large (e.g. Keno). Proportionate reductions are influenced by the absolute value of the mean losses. For this reason we calculated the absolute difference between mean dollars lost in the two surveys (column 4). In absolute terms, the largest reductions in mean losses were evident for horse and greyhound races ($82) and EGMs ($74). Overall, this table demonstrates a large reduction in self-reported gambling losses using the 2009 and 2014 ACT Survey data.

Table 5.2: Mean losses for individual gambling activities and across all activities in 2009 and 2014 survey data.

Activity	2009 SURVEY DATA*	2014 SURVEY DATA	% reduction in mean losses	Absolute reduction in mean losses
	Mean losses	Mean losses		
Lottery	$136	$111	18.1%	$25
EGMs	$198	$124	37.2%	$74
Horse and greyhound races	$136	$54	60.2%	$82
Scratch tickets	$16	$11	31.6%	$5
Table games	$28	$14	49.2%	$14
Sports and special events	$39	$13	66.7%	$26
Keno	$13	$1	92.1%	$12
Total losses	*$571*	*$328*	*42.5%*	*$243*

*Adjusted for CPI (reflecting 2014/15 AUD)

5.1 Proportion of total losses by type of activity, 2009 to 2014

Table 5.3 shows the distribution of total gambling losses across activities in 2009 and 2014. The proportion of money lost did not change significantly for most activities over surveys. For instance, in 2009 35.1% of total gambling losses came from EGMs. The comparable estimate was not significantly different in 2014 (37.8%). The exceptions were lotteries and Keno. The proportion of losses on lotteries increased (from 24.4% to 33.8%), but for keno decreased significantly (from 2.1% to 0.4%) from 2009 to 2014.

Table 5.3: Proportion of total losses by type of activity, 2009 to 2014.

Activity	2009 Proportion of total losses (95% CI)	2014 Proportion of total losses (95% CI)	p-value[a]
Lottery	24.4% (20.4-29.8%)	33.8% (28.9-39.3%)	.018
EGMs	35.1% (29.4-41.7%)	37.8% (30.4-46.3%)	.832
Horse and greyhound races	21.3% (13.0-27.8%)	16.3% (10.8-21.4%)	.226
Scratch tickets	3.0% (2.4-3.7%)	3.3% (2.4-4.3%)	.617
Sports and special events	7.1% (4.2-10.2%)	4.1% (1.2-7.0%)	.818
Table games	4.9% (2.8-7.4%)	3.9% (1.6-6.4%)	.912
Keno	2.1% (1.2-3.1%)	0.4% (0.3-0.6%)	.001
Other activities*	2.2% (-5.1-6.9%)	0.4% (-3.6-3.0%)	.755

a. Significance of difference in the proportion of losses coming from individual activities, 2009 to 2014.
*In 2009 other activities included bingo, private games like cards for money, casino type games on the internet and two-up. In 2014 other activities include bingo, and informal games like cards for money.

5.2 Problem gambling expenditure shares, 2009 to 2014

This section compares problem gambling expenditure shares by type of activity and across all activities using the 2009 and 2014 survey data. It is possible that different methodologies across surveys might influence the findings. For instance, in 2009 only people gambling 12 times a year or more often across all activities (excluding lottery or scratch tickets), or who had a net expenditure on gambling of $2,000 or more, were given the PGSI questions. All other gamblers were assumed to have PGSI scores of zero. In 2014, all gamblers were given the PGSI, regardless of their gambling expenditure or frequency. It is possible that any change over surveys might be due to having given the PGSI items to a broader range of gamblers in the 2014 ACT Survey.

In order to make comparisons between 2009 and 2014, the assumptions made in 2009 were applied to the 2014 data and people who were asked the PGSI questions in 2014 but would not have been in 2009 were given PGSI scores of zero regardless of their responses. Table 5.4 shows the prevalence of problem gambling across the two surveys. The first column shows the prevalence rates for 2009 and the second column the 2014 rates (adjusted as described above). The final column shows the unadjusted prevalence rates for 2014, used throughout the previous chapter. This table demonstrates that applying the 2009 PGSI sampling assumptions to the 2014 data resulted in lower prevalence rates for low risk (2.1% compared with 4.2%) and moderate risk (0.8% compared with 1.1%) gamblers. The proportion of non-problem gamblers in 2014 was correspondingly higher (50.9% compared with 48.8%) after adjusting the 2014 data to match the PGSI sampling methods used in 2009.

Table 5.4: Distribution of PGSI categories in the adult population in the 2009 and 2014 Surveys.

PGSI category	PREVALENCE IN THE ADULT POPULATION		
	2009† % n=2,059	2014† Adjusted* % n=2,273	2014 Unadjusted* % n=2,191
Non-gambler	32.6%	45.8%	45.5%
Non-problem	62.1%	50.9%	48.8%
Low risk	3.4%	2.1%	4.2%
Moderate risk	1.5%	0.8%	1.1%
Problem	0.5%	0.4%	0.4%

†Source: Davidson (2015: p65).
*The 2014 adjusted estimates reflect the sampling used in 2009 and therefore under-represent the prevalence in the population shown throughout chapter four. The unadjusted estimates are those reported throughout chapter four of this report.

The results in the remainder of this chapter report findings applying the PGSI sampling assumptions of the 2009 Survey to the 2014 analyses. The PGES therefore differ from those reported in the previous chapter. Figure 5.1 summarises the problem gambling expenditure shares across all activities and for individual activities in 2009 and 2014. None of the expenditure shares in this figure were significantly different across surveys ($p>.05$). We also tested the significance of differences in expenditure shares combining people scoring 1+ and 3+ over surveys. The proportion of money coming from people scoring 1+ and 3+ did not differ significantly across all activities or on any individual activity ($p>.05$).

Section 13.3 of the Appendix contains the detailed tables for the adjusted 2014 PGES.

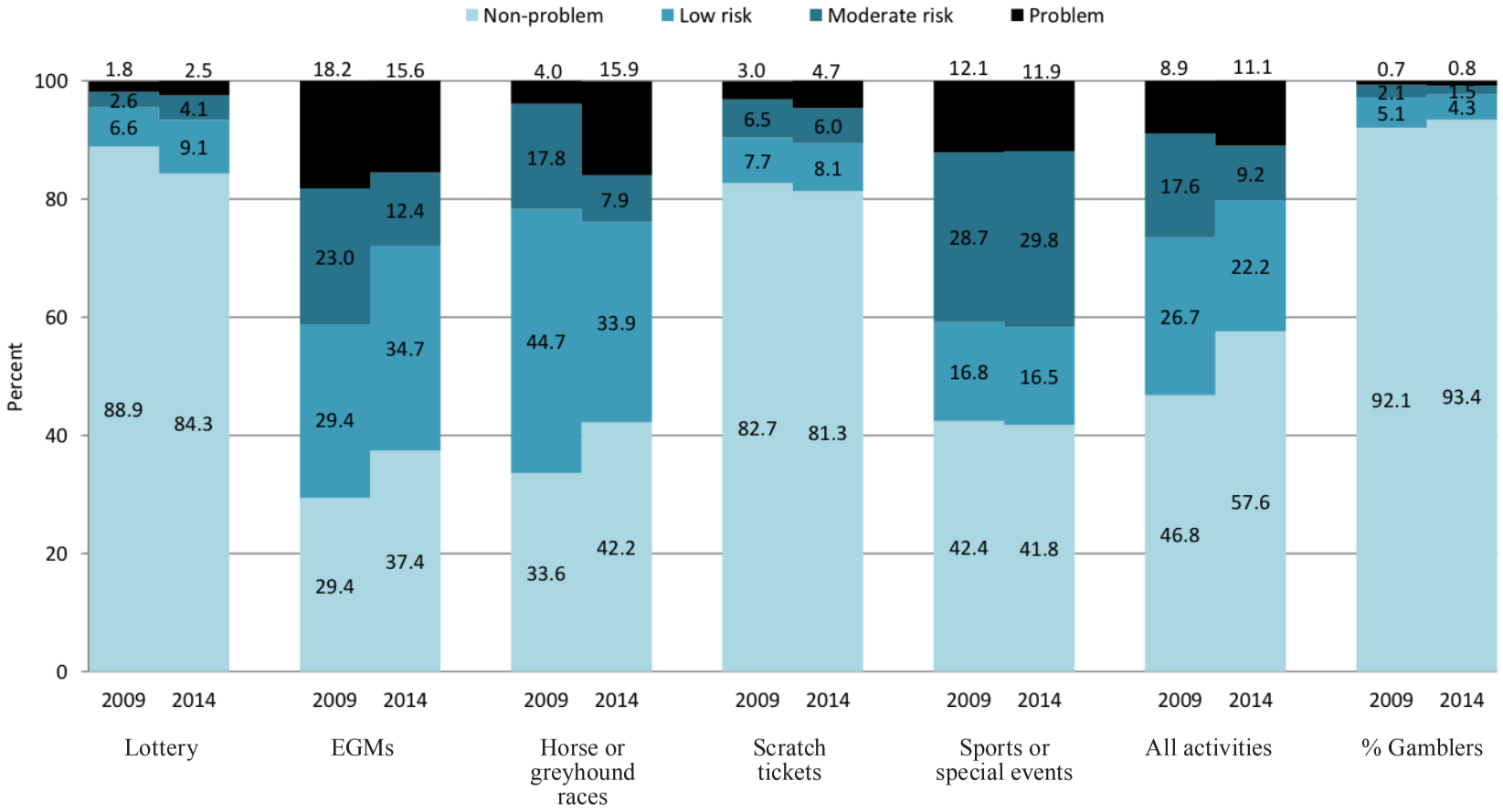

Figure 5.1: Summary of problem gambling expenditure shares (%) in 2009 and 2014 by level of problem gambling, type of activity and across all activities using capped measures.

Note: the 2014 PGES have been adjusted to reflect the PGSI sampling methods used in 2009.

Key Findings of Chapter 5

1. The proportion of people gambling on any activity fell by 15% from 2009 to 2014, reflecting a reduction in gambling participation rates for all individual activities, except for betting on sports and special events and bingo (which remained stable over time).
2. Mean gambling expenditure fell by 42.5% from 2009 to 2014.
3. Reductions in mean losses were not uniform across gambling activities. In absolute terms the largest reductions were evident for races and EGMs.
4. Individual activities accounted for a similar proportion of total gambling losses in 2009 and 2014. The only exceptions were lotteries and Keno. Lotteries accounted for a greater proportion of total losses and Keno a smaller proportion in 2014 than 2009.
5. Problem gambling expenditure shares did not change significantly from 2009 to 2014, whether across all activities or for any individual activity.

Chapter 6: Socioeconomic and demographic expenditure shares

The general aim of this chapter is to disaggregate net gambling expenditure in terms of socioeconomic and demographic characteristics. First, we describe overall gambling expenditure shares (using expenditure summed across all activities) for particular socioeconomic and demographic groups. Then we describe socioeconomic and demographic expenditure shares shares for the five main gambling activities analysed for this report. Finally, we contrast the estimates of specific socioeconomic and demographic expenditure shares across different activities.

The tables in this chapter show net expenditure by sex, age, marital status and highest completed qualification. The format of each table is the same as those presented in Chapter 4. Results of parallel analyses, using uncapped financial loss measures, can be found in the Appendix (Section 13.4).

6.0 Socioeconomic and demographic expenditure shares for all activities

Table 6.1 details net expenditure summed across all activities. Beginning with the rows for women and men at the top of the table, the mean losses (fourth column) show that men, on average, spent significantly more on gambling than women ($456 in the last 12 months compared with $208). In keeping with this difference, the percentages in column 3 show that men accounted for two-thirds (67.4%) of the total amount spent across the ACT and women contributed 32.6%. A comparison with the percentages in column 2 (the proportions of the ACT adult population who are women and men), indicates that the expenditure share for men (67.4%) is greater than their representation in the ACT adult population (48.5%) and so they contribute disproportionately more to the total amount spent. Women (expenditure share of 32.6%), correspondingly, contribute disproportionately less to ACT losses on gambling.

Table 6.1: Capped net expenditure (in dollars) on all activities in the last 12 months by socioeconomic and demographic characteristics.

Measure	N ACT population	Proportion adult population	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Sex					
Women	155,578	51.5%	32.6% (26.1-39.8%)	$208 (<.001)	$32,386,377
Men	146,662	48.5%	67.4% (58.2-77.2%)	$456[r]	$66,816,008
Age					
18-24	55,100	18.2%	8.0% (3.2-12.1%)	$143 (.003)	$7,896,692
25-44	103,858	34.4%	30.8% (23.9-38.2%)	$294 (.161)	$30,545,369
45-64	98,946	32.7%	38.6% (32.0-46.1%)	$387[r]	$38,264,477
65+	44,337	14.7%	22.7% (17.4-28.4%)	$507 (.160)	$22,495,846
Married or de facto					
Yes	185,105	61.2%	64.2% (55.4-74.2%)	$344[r]	$63,722,229
No	117,135	38.8%	35.8% (28.7-43.1%)	$303 (.452)	$35,480,155

Table 6.1 continued					
Highest completed qualification					
< Year 12	20,424	6.8%	15.2% (10.6-20.3%)	$739 (.002)	$15,084,448
Year 12	74,391	24.6%	28.0% (21.6-35.1%)	$373 (.024)	$27,768,585
Trade certificate or diploma	58,287	19.3%	23.6% (18.4-29.4%)	$402 (.004)	$23,433,270
Bachelor degree or higher	149,138	49.3%	33.2% (26.4-40.6%)	$221[r]	$32,916,081

a. Overall significance: differences between means across socioeconomic and demographic measures including non-gamblers (age p=.002, df=3; highest completed qualification p<.001, df=3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

The youngest age group (those aged 18 to 24) lost significantly less on all activities both on average and in total. They had the smallest expenditure share of any age group. For marital status, those living with a partner spent a similar amount on average than those who did not have a partner ($344 and $303 respectively). The expenditure shares for these groups (64.2% and 35.8%) reflected their prevalence in the population (61.2% and 38.8%) respectively.

There was a strong association between mean losses across different educational groups. People without Year 12 education qualifications lost more than three times the mean for those with degrees ($739 and $221). Those with no post school qualifications or with a trade certificate or diploma also lost significantly more than those with degrees. Overall, people without degrees, contributed disproportionately more to the total ACT spend and people with degrees substantially less (expenditure shares in column 3).

6.1 Socioeconomic and demographic expenditure shares for lottery

Table 6.2 shows net expenditure on lottery tickets for different socioeconomic and demographic groups. Significantly higher average losses are seen for men ($137) compared with women ($86), and their greater expenditure share (59.9%) is shown in column 3. Younger age groups (18-24 and 25-44) had lower average losses than the 45-64 age group and their expenditure shares (1.0% and 24.9%) were consequently below their representation in the ACT population (18.2% and 34.4%). People who lived with a partner spent more on average on lottery tickets and had a correspondingly high expenditure share. Mean expenditure on lottery tickets was higher for those with lower levels of education. People without Year 12 education spent more than three times the amount spent by people with degrees. Those with degree-level qualifications therefore accounted for a disproportionately small share (37.5%) of net lottery expenditure, given that they represent 49.3% of the adult population. In contrast, those without Year 12 education showed a greater expenditure share on lotteries (15.8%) relative to their prevalence in the population (6.8%).

Table 6.2: Capped net expenditure (in dollars) on lottery tickets in the last 12 months by socioeconomic and demographic characteristics.

Measure	N ACT population	Proportion adult population	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Sex					
Women	155,578	51.5%	40.1% (33.4-47.3%)	$86 (.004)	$13,421,595
Men	146,662	48.5%	59.9% (51.9-68.5%)	$137[r]	$20,070,349
Age					
18-24	55,100	18.2%	1.0% (0.2-1.6%)	$6 (<.001)	$331,668
25-44	103,858	34.4%	24.9% (18.5-31.1%)	$80 (<.001)	$8,337,549
45-64	98,946	32.7%	48.6% (41.4-56.8%)	$165[r]	$16,290,880
65+	44,337	14.7%	25.5% (19.6-31.5%)	$192 (.446)	$8,531,847
Married or de facto					
Yes	185,105	61.2%	69.6% (60.7-80.0%)	$126[r]	$23,316,839
No	117,135	38.8%	30.4% (23.2-37.5%)	$87 (.033)	$10,175,105
Highest completed qualification					
< Year 12	20,424	6.8%	15.8% (12.4-19.9%)	$260 (<.001)	$5,305,681
Year 12	74,391	24.6%	27.3% (19.8-34.2%)	$123 (.122)	$9,157,361
Trade certificate or diploma	58,287	19.3%	19.3% (14.9-24.3%)	$111 (.168)	$6,475,830
Bachelor degree or higher	149,138	49.3%	37.5% (31.0-44.6%)	$84[r]	$12,553,073

a. Overall significance: differences between means across socioeconomic and demographic measures including non-gamblers (age p<.001, df=3; highest completed qualification p<.001, df=3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

6.2 Socioeconomic and demographic expenditure shares for EGMs

Table 6.3 shows the breakdown of net expenditure on EGMs by socioeconomic and demographic groups. Mean losses were significantly higher for men than women, with men spending on average about twice as much on EGMs. Consequently, about two thirds of all money lost on EGMs came from men (66.8%). Mean expenditure on EGMs was significantly lower amongst the 18-24 ($31) than the 45-64 ($136) age group, with the former group contributing disproportionately less to money lost on EGMs (4.6%) given their prevalence in the population (18.2%). Mean losses did not differ significantly across marital status and so their expenditure shares were in keeping with their prevalence in the population. Differences between educational groups were highly significant. People who did not have Year 12 education and those who had a trade certificate or diploma on average lost 6.5 and 3.5 times more on EGMs than those with degrees, respectively. Those with degrees

accounted for 25.2% of expenditure on EGMs; less than expected given they represent 49.3% of the ACT adult population. In contrast, those with less than Year 12 accounted for 18.9% of all losses on EGMs even though they represent only about 6.8% of the adult population.

Table 6.3: Capped net expenditure (in dollars) on EGMs in the last 12 months by socioeconomic and demographic characteristics.

Measure	N ACT population	Proportion adult population	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Sex					
Women	155,578	51.5%	33.2% (22.1-46.3%)	$80 (.010)	$12,429,193
Men	146,662	48.5%	66.8% (51.8-84.6%)	$171[r]	$25,052,268
Age					
18-24	55,100	18.2%	4.6% (2.0-7.6%)	$31 (<.001)	$1,728,420
25-44	103,858	34.4%	34.4% (19.9-49.2%)	$124 (.766)	$12,911,759
45-64	98,946	32.7%	35.9% (24.8-49.4%)	$136[r]	$13,450,140
65+	44,337	14.7%	25.1% (15.6-36.5%)	$212 (.188)	$9,391,142
Married or de facto					
Yes	185,105	61.2%	57.3% (43.1-75.3%)	$116[r]	$21,481,077
No	117,135	38.8%	42.7% (28.3-58.1%)	$137 (.667)	$16,000,383
Highest completed qualification					
<Year 12	20,424	6.8%	18.9% (11.2-28.4%)	$347 (<.001)	$7,087,753
Year 12	74,391	24.6%	21.0% (11.2-31.8%)	$106 (<.247)	$7,862,648
Trade certificate or diploma	58,287	19.3%	34.9% (21.3-49.4%)	$225 (<.002)	$13,090,721
Bachelor degree or higher	149,138	49.3%	25.2% (16.0-36.1%)	$63[r]	$9,440,339

a. Overall significance: differences between means across socioeconomic and demographic measures including non-gamblers (age p=.056, df=3; highest completed qualification p<.001, df=3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

6.3 Socioeconomic and demographic expenditure shares for horse and greyhound races

Table 6.4 presents the socioeconomic and demographic breakdown of net expenditure on horse and greyhound races. Men, on average, lost nearly 5 times more than women and therefore accounted for a large majority of the ACT population losses (80.7%). In contrast, mean losses did not vary significantly across age, marital status and education groups. Consequently, the expenditure shares for these groups reflected their prevalence in the population.

Table 6.4: Capped net expenditure (in dollars) on horse or greyhound races in the last 12 months by socioeconomic and demographic characteristics.

Measure	N ACT population	Proportion adult population	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Sex					
Women	155,578	51.5%	19.3% (8.8-33.4%)	$20 (.002)	$3,134,187
Men	146,662	48.5%	80.7% (61.3-110.0%)	$89[r]	$13,075,753
Age					
18-24	55,100	18.2%	19.8% (6.2-35.9%)	$58 (.774)	$3,215,317
25-44	103,858	34.4%	33.3% (19.3-53.6%)	$52 (.834)	$5,401,372
45-64	98,946	32.7%	27.9% (11.6-45.6%)	$46[r]	$4,523,280
65+	44,337	14.7%	18.9% (10.8-31.7%)	$69 (.424)	$3,069,971
Married or de facto					
Yes	185,105	61.2%	67.9% (49.0-95.5%)	$44[r]	$11,002,528
No	117,135	38.8%	32.1% (18.2-52.4%)	$59 (.448)	$5,207,412
Highest completed qualification					
<Year 12	20,424	6.8%	5.3% (-13.1-21.3%)	$42 (.959)	$862,281
Year 12	74,391	24.6%	36.2% (21.0-58.6%)	$79 (.152)	$5,874,945
Trade certificate or diploma	58,287	19.3%	17.8% (9.6-30.2%)	$49 (.761)	$2,882,407
Bachelor degree or higher	149,138	49.3%	40.7% (26.4-63.4%)	$44[r]	$6,590,307

a. Overall significance: differences between means across socioeconomic and demographic measures including non-gamblers (age p=.896, df=3; highest completed qualification p=.575, df=3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

6.4 Socioeconomic and demographic expenditure shares for scratch tickets

Net expenditure on scratch tickets did not show the pattern across population subgroups as many other types of gambling (Table 6.5) in that mean losses were similar for men and women. Losses also did not differ significantly between those who lived with partners and those who did not or across age groups. However, people without Year 12, those with no post-school qualifications, and those with trade certificate or diploma lost two to three times as much on average as those with degrees. In total, people without degrees contributed to a disproportionately large proportion of losses on scratch tickets (73.5%) considering they represent 50.7% of the adult population.

Table 6.5: Capped net expenditure (in dollars) on scratch tickets in the last 12 months by socioeconomic and demographic characteristics.

Measure	N ACT population	Proportion adult population	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Sex					
Women	155,578	51.5%	50.1% (36.4-66.2%)	$10 (.895)	$1,627,617
Men	146,662	48.5%	49.9% (35.6-65.5%)	$11[r]	$1,619,450
Age					
18-24	55,100	18.2%	11.1% (3.9-18.5%)	$7 (.082)	$360,566
25-44	103,858	34.4%	33.8% (19.4-48.3%)	$11 (.406)	$1,097,502
45-64	98,946	32.7%	43.0% (30.9-58.7%)	$14[r]	$1,395,095
65+	44,337	14.7%	12.1% (8.0-17.8%)	$9 (.088)	$393,904
Married or de facto					
Yes	185,105	61.2%	55.4% (41.1-72.9%)	$10	$1,798,305
No	117,135	38.8%	44.6% (31.6-59.9%)	$12 (.423)	$1,448,762
Highest completed qualification					
<Year 12	20,424	6.8%	9.0% (4.2-14.4%)	$14 (.048)	$291,236
Year 12	74,391	24.6%	40.9% (25.1-56.1%)	$18 (.007)	$1,329,135
Trade certificate or diploma	58,287	19.3%	23.6% (15.1-34.5%)	$13 (.012)	$765,011
Bachelor degree or higher	149,138	49.3%	26.5% (18.3-37.3%)	$6[r]	$861,685

a. Overall significance: differences between means across socioeconomic and demographic measures including non-gamblers (age p=.416, df=3; highest completed qualification p=.019, df=3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

6.5 Socioeconomic and demographic expenditure shares for betting on sports or special events

Table 6.6 presents expenditure shares for betting on sports and special events. Betting by women was so rarely reported and expenditure so variable amongst those who did so, that it was impossible to estimate their net expenditure with any accuracy. This table demonstrates that losses came predominantly from men. Losses did not vary significantly across age, marital status or education groups. Table 6.6 shows that the expenditure shares for these groups reflects their prevalence in the population

Table 6.6: Capped net expenditure (in dollars) on sports or special events in the last 12 months by socioeconomic and demographic characteristics.

Measure	N ACT population	Proportion adult population	Expenditure shares (95% CIs)	Mean losses [a] (p-value[b])	ACT population losses
Sex					
Women	155,578	51.5%	-0.13% (-91.3-14.5%)	$-3 (<.001)	-$532,492
Men	146,662	48.5%	113% (72.6-136.5%)	$32[r]	$4,639,879
Age					
18-24	55,100	18.2%	6.4% (-39.5-37.6%)	$5 (.893)	$263,369
25-44	103,858	34.4%	65.2% (32.1-185%)	$26 (.106)	$2,677,068
45-64	98,946	32.7%	22.2% (6.8-70.2%)	$9[r]	$911,615
65+	44,337	14.7%	6.2% (1.4-22.2%)	$6 (.532)	$255,335
Married or de facto					
Yes	185,105	61.2%	69.4% (36.1-186.3%)	$15[r]	$2,848,520
No	117,135	38.8%	30.6% (-0.3-69.2%)	$11 (.720)	$1,258,867
Highest completed qualification					
<Year 12	20,424	6.8%	5.8% (0.6-22.9%)	$12 (.861)	$238,619
Year 12	74,391	24.6%	34.0% (16.5-107.4%)	$19 (.341)	$1,394,899
Trade certificate or diploma	58,287	19.3%	27.6% (9.6-92.9%)	$19 (.392)	$1,134,165
Bachelor degree or higher	149,138	49.3%	32.6% (-34.3-70.6%)	$9[r]	$1,339,705

a. Overall significance: differences between means across socioeconomic and demographic measures including non-gamblers (age p=.403, df=3; highest completed qualification p=.741, df=3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

6.6 Comparing socioeconomic and demographic expenditure shares across different types of activity

Figures 6.1 through 6.4 summarise the proportions of losses contributed by the several socioeconomic and demographic groups included in the previous tables (sex, age, marital status, and education). These figures provide a convenient means for comparing expenditure shares across different types of gambling activity. The first five columns show the expenditure shares for the main activities covered in the present report, and the sixth column shows the expenditure shares for losses across all these activities combined. The final column of each figure shows the distribution of the relevant subgroups in the ACT population.

Sex

Figure 6.1 shows that, for all activities except scratch tickets (where expenditure was fairly evenly split between men and women), disproportionately large losses were attributable to men, and this was found most strikingly for betting on sports and special events and horse and greyhound races.

Age

Figure 6.2 shows that the youngest age group (the darkest band in the columns) contributed less to losses on lottery and EGMs. While the 25-44 age group visually dominates the expenditure column for betting on sports and special events, it is important to note that age was not significantly associated with expenditure betting on sports and special events, nor was it related to expenditure on horse or greyhound racing or scratch tickets.

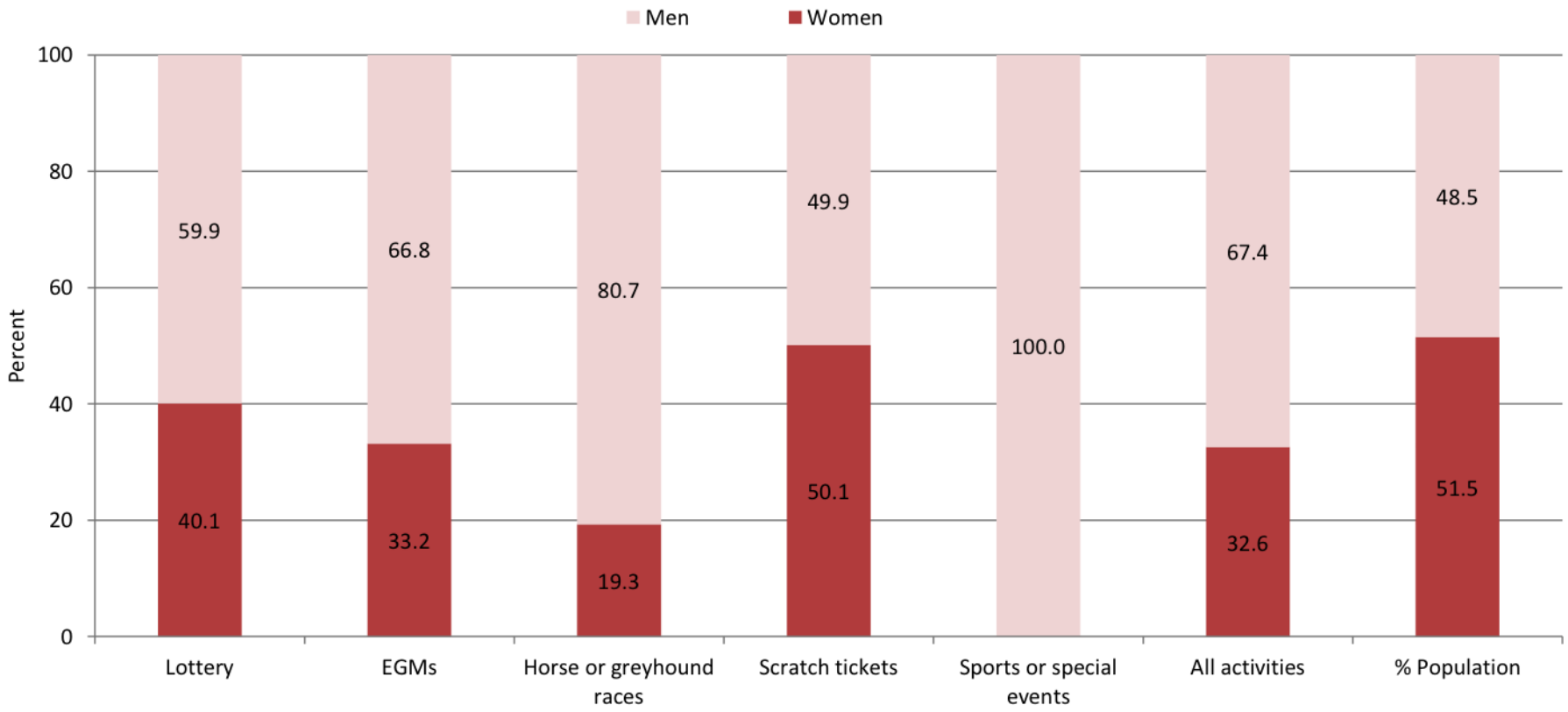

Figure 6.1: A summary of gambling expenditure shares (%) by type of activity amongst men and women using capped measures.

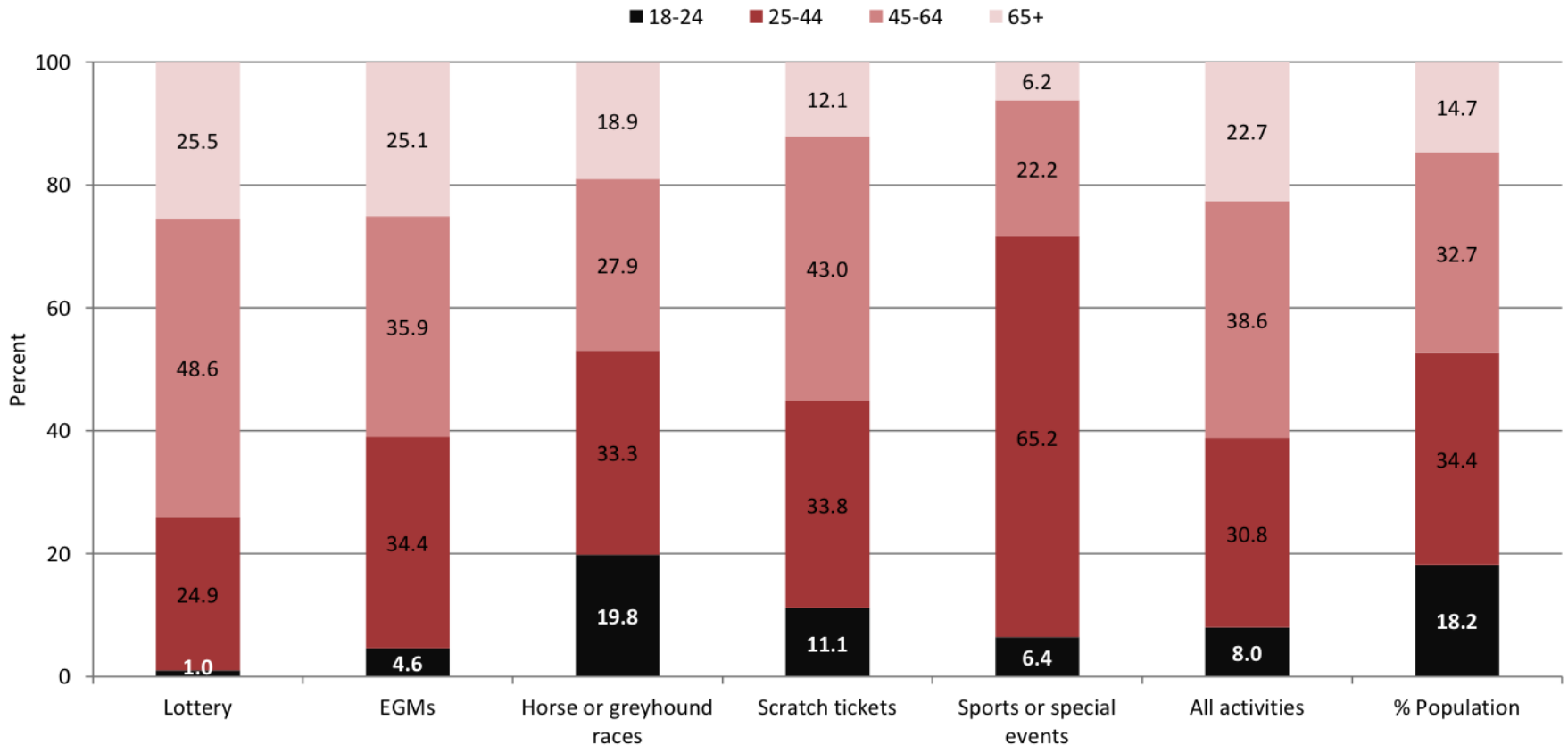

Figure 6.2: A summary of gambling expenditure shares (%) by type of activity amongst different age groups using capped measures.

Marital status

The relative contributions to net expenditure of those with partners (married or de facto) and those without partners did not vary much across types of gambling activity (Figure 6.3). The only significant difference was that those with a current partner contributed disproportionately more to population losses on lottery than those without a current partner.

Education

Although there was an overall trend where those with lower education contributed more to gambling losses across all activities, there was considerable variation in the pattern between different activities (Figure 6.4). Those who have less than Year 12 education contributed a disproportionately high amount to EGM losses (18.9%) given that they represent less than 10% of the ACT population. They also lost two to three times as much on scratch tickets and lotteries than people with degrees, contributing to 9.0% and 15.8% of losses on these activities respectively. People with Year 12 education (but no post-school qualifications) were substantial contributors to losses on scratch tickets. The group with trade certificates or diplomas disproportionately contributed to EGMs and scratch tickets. Figure 6.4 also shows variability for people with degree-level qualifications who contributed only 25.2% to losses on EGMs but about 40.7% to losses on horse or greyhound races. For people with degrees, disproportionately low expenditures were evident for EGMs and scratch tickets. Overall, there were no activities where disproportionately high gambling losses are derived from people with degree-level qualifications.

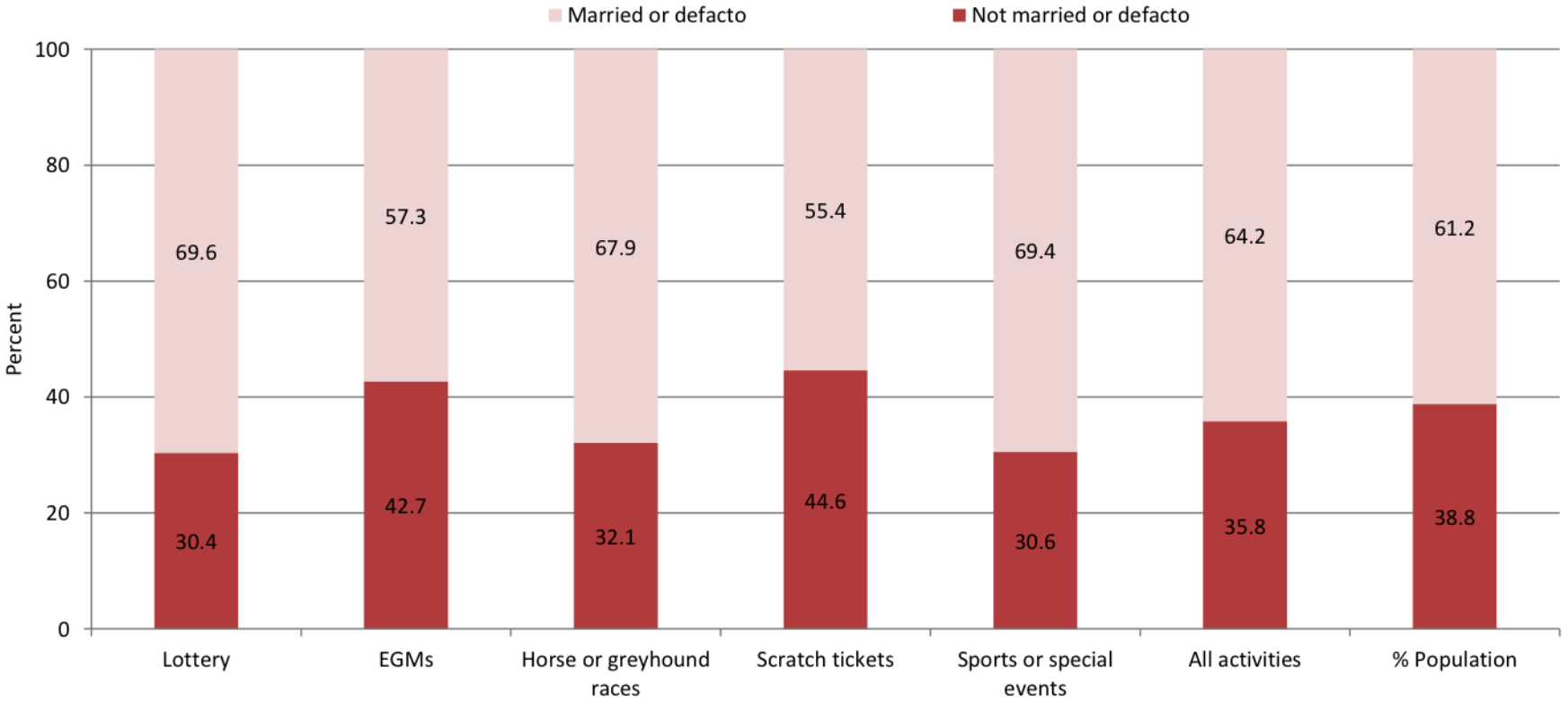

Figure 6.3: A summary of gambling expenditure shares (%) by type of activity amongst marital status groups using capped measures.

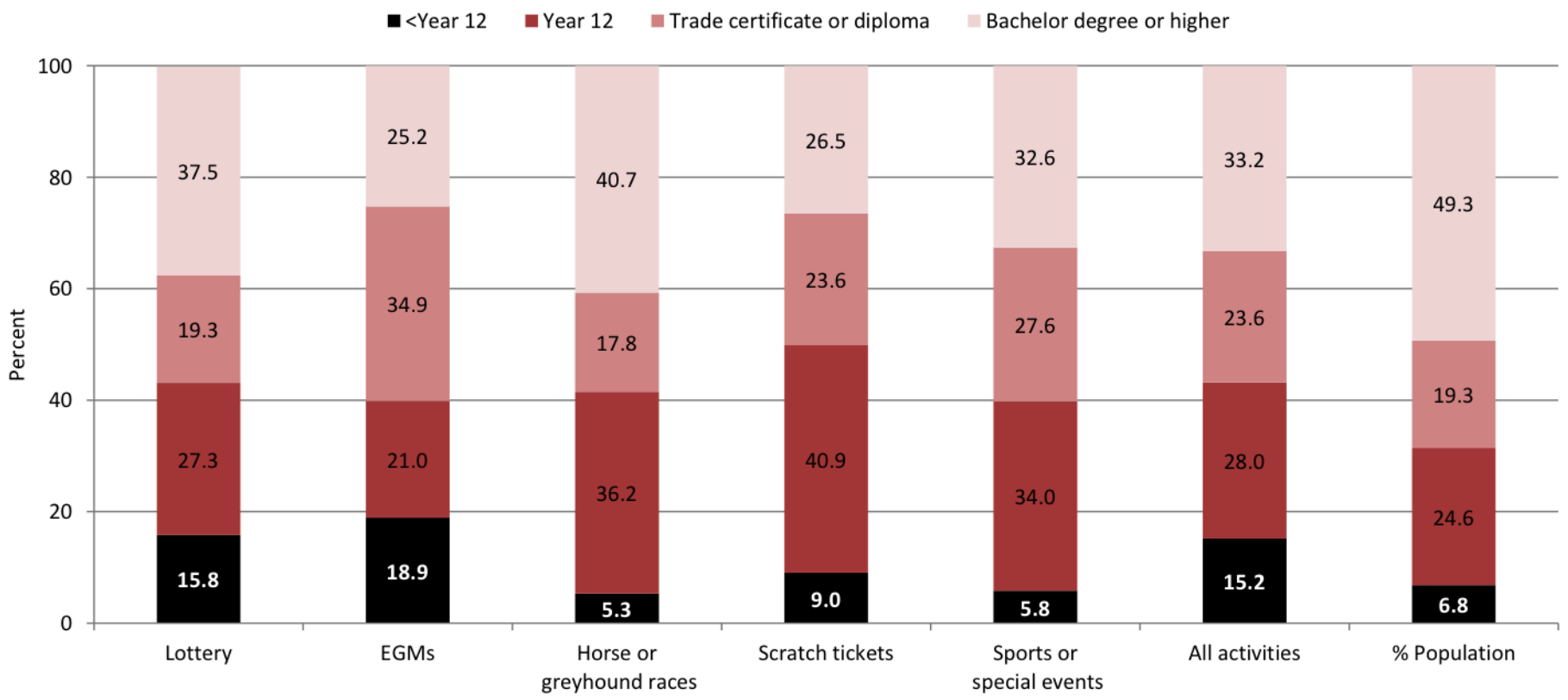

Figure 6.4: A summary of gambling expenditure shares (%) by type of activity amongst highest completed qualification groups using capped data.

6.7 Comparing findings from the uncapped and capped analysis

The Appendix presents comparable findings for expenditure shares across socioeconomic and demographic categories using the uncapped measures of expenditure. Tables 13.16 through 13.21 can be compared with Tables 6.1 to 6.6 in the present chapter. As with the uncapped analyses for the problem gambling expenditure shares, the uncapped analyses for the socioeconomic and demographic expenditure shares was influenced by extreme values. The confidence intervals around the expenditure shares were tighter for the capped than the uncapped analyses. There were no occasions where the uncapped analyses indicated a significant difference that was not also evident in the capped analyses. However, on five occasions the capped analyses found significant differences in mean expenditure when the uncapped analyses did not. In all instances this was a function the tighter confidence intervals around the mean expenditure estimates. In the uncapped analyses some confidence intervals ranged across extremely negative and positive values. For instance, for scratch tickets the uncapped mean (-$25) and expenditure share [-132.9% (95% CI -711.6-462.4%)] for people with trade certificate or diploma qualifications were negative and the confidence intervals massive. After capping the scratch ticket expenditure measure the corresponding mean ($13) was significantly greater than that of people with degrees ($6) and expenditure share estimates were [23.6% (95% CI 15.1–34.5%)]. This again demonstrates the importance of capping the 2014 Survey expenditure measures, which in this instance, minimised the influence of an extreme win on the findings. For this reason, only the capped analyses are reported for the remaining chapters of this report.

Key Findings of Chapter 6

1. Disproportionately high losses were from men.
2. Buying scratch tickets was the only major gambling activity where women and men in the ACT spent similar amounts, whereas men accounted for over 80% of losses on sports betting and races.
3. Losses were fairly evenly spread across age groups when spending was considered for all types of gambling combined. However, the pattern of losses varied considerably across different types of activity.
4. The youngest age group (18 to 24) contributed disproportionately small amounts for lottery (1.0%) and EGMs (4.6%), with the oldest age group (65+) disproportionately accounting for losses on these activities (25.5% and 25.1% respectively). The 25-44 age group accounted for the greater part of expenditure on sports and special events (65.2%).
5. Expenditure amongst people who were partnered was generally in keeping with their prevalence in the population.
6. Disproportionately high losses came from people with lower levels of education. Net expenditure across all activities by people without either year 12 education or post-school qualifications was more than three times that of people with degrees.
7. Net expenditure on EGMs by people without year 12 education was 6 times that of people with degrees.

Chapter 7: Socioeconomic and demographic expenditure shares, 2009 to 2014

This chapter directly compares data from the 2009 and 2014 ACT Surveys. The main aim is to determine whether socioeconomic and demographic expenditure shares have remained constant or differ significantly over this time period. The four figures juxtapose the socioeconomic and demographic findings from the previous chapter (Figures 6.1 through 6.4) with those reported in 2009 (Figures 5.1 through 5.4 in the 2009 report). Asterisks denote the socioeconomic and demographic expenditure shares that are significantly different in 2014 compared to 2009. The detection of statistically significant differences depends upon the number of people participating in activities. The opportunity to detect change over time in the socioeconomic and demographic profile of gambling activities is therefore limited for the less common activities, particularly scratch tickets and sports and special event betting.

7.0 Expenditure shares for men and women, 2009 to 2014

Figure 7.1 shows expenditure shares by type of activity, and summed across all activities, for men and women in the 2009 and 2014 ACT Surveys. None of the 2014 expenditure shares were significantly different to those reported in 2009. The figure demonstrates the same patterns over surveys. Men account for the majority of losses on all activities except for scratch tickets where expenditure is equally distributed amongst men and women. This figure also shows consistency in the striking dominance of losses on sports and special event betting, and horse and greyhound races by men.

7.1 Expenditure shares amongst age groups, 2009 to 2014

Figure 7.2 shows the expenditure shares by type of activity amongst different age groups over the two surveys. It also shows expenditure shares summed across all activities. The second last column shows that the oldest age group (65+) accounted for a significantly larger proportion of losses (summed across all activities) in 2014 (22.7%) than 2009 (8.1%). The expenditure shares for the oldest age group were also larger in 2014 than 2009 for lottery, EGMs and horse or greyhound races. For EGMs, the youngest age group (those aged 18 to 24) accounted for a smaller proportion of money lost in 2014 (4.6%) than 2009 (13.5%). For scratch tickets and sports or special event betting, the age group expenditure shares were not significantly different in 2014 compared with 2009.

Figure 7.1: A summary of gambling expenditure shares (%) by type of activity amongst men and women in 2009 and 2014 using capped measures.

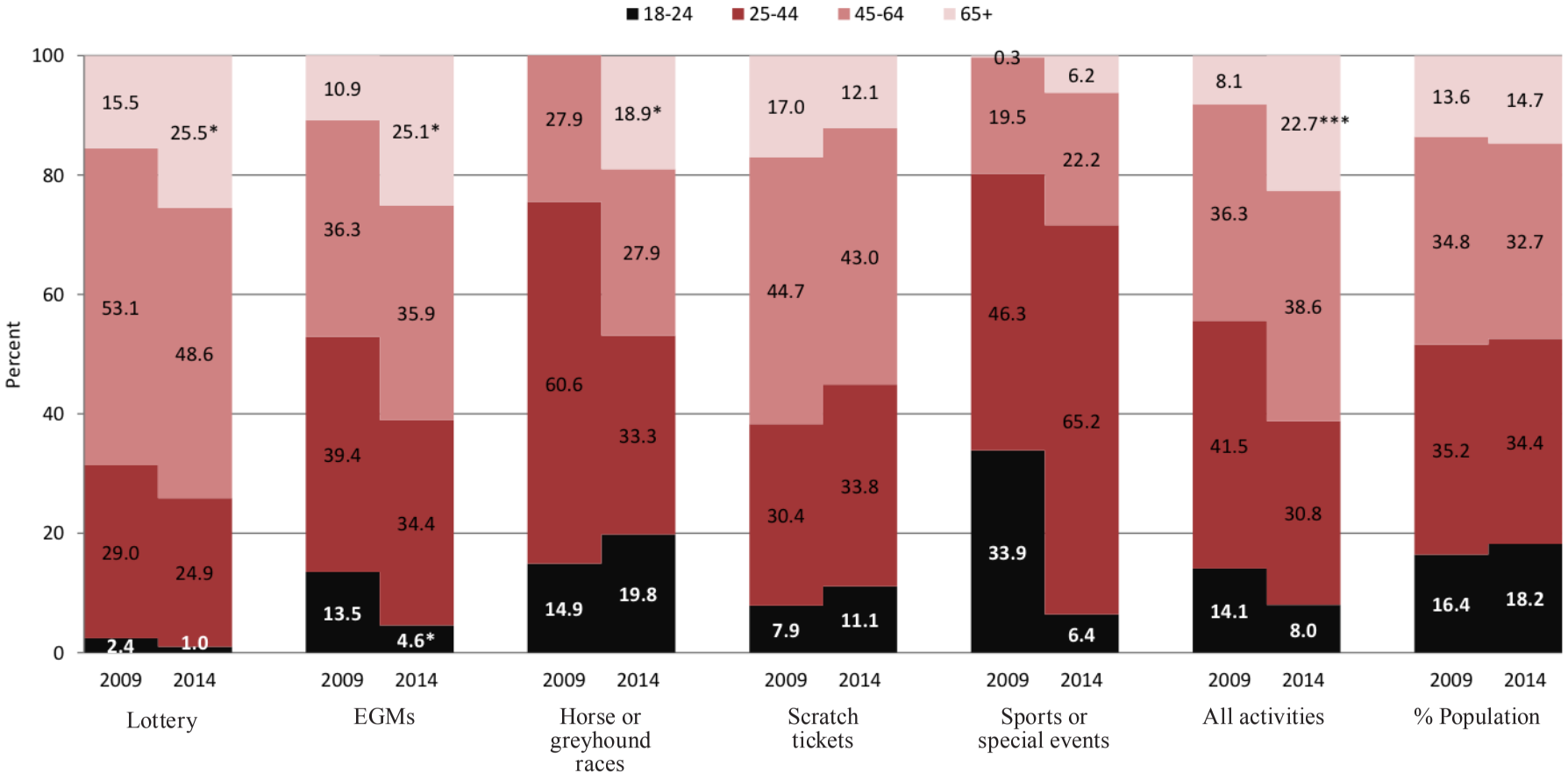

Figure 7.2: A summary of gambling expenditure shares (%) by type of activity amongst different age groups in 2009 and 2014 using capped measures: *p<.05, ***p<.001.

7.2 Expenditure shares and marital status, 2009 to 2014

Figure 7.3 shows the expenditure shares for people who were married or in a de facto relationship compared to those who were not, in 2009 and 2014. The second last column shows that the proportion of money accounted for by people who were in a current relationship was significantly greater in 2014 (64.2%) than 2009 (51.0%). However, the first five bars show that marital status expenditure shares were not significantly different over time for any specific activity.

7.3 Expenditure shares and education, 2009 to 2014

Figure 7.4 shows the expenditure shares for the education groups as reported in 2009 and 2014. The proportion of money lost across all activities by people with bachelor degrees was larger in 2014 (33.2%) than 2009 (18.3%). Otherwise the expenditure shares for the various education groups were not significantly different in 2014.

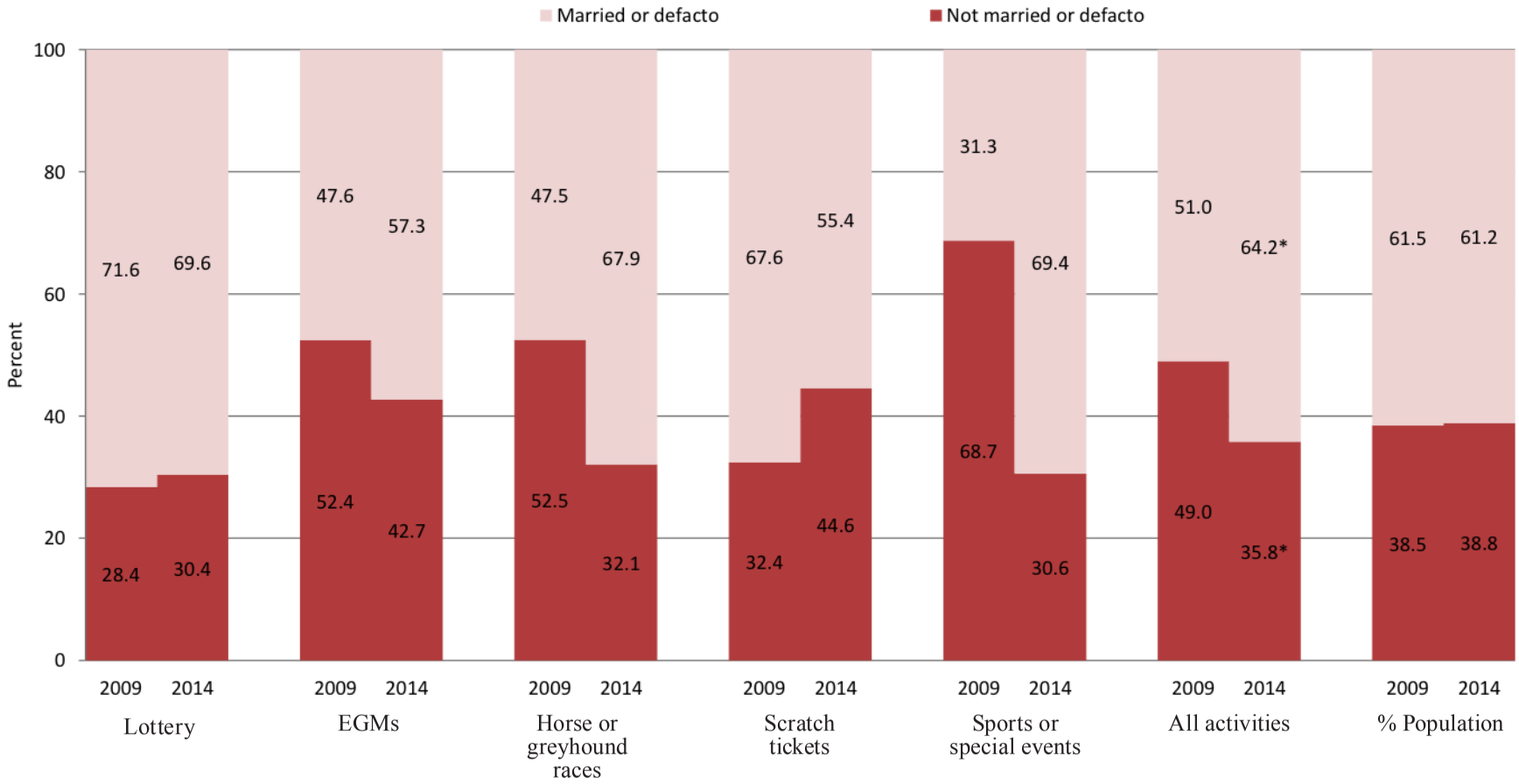

Figure 7.3: A summary of gambling expenditure shares (%) by type of activity amongst marital status groups in 2009 and 2014 using capped measures: *p<.05.

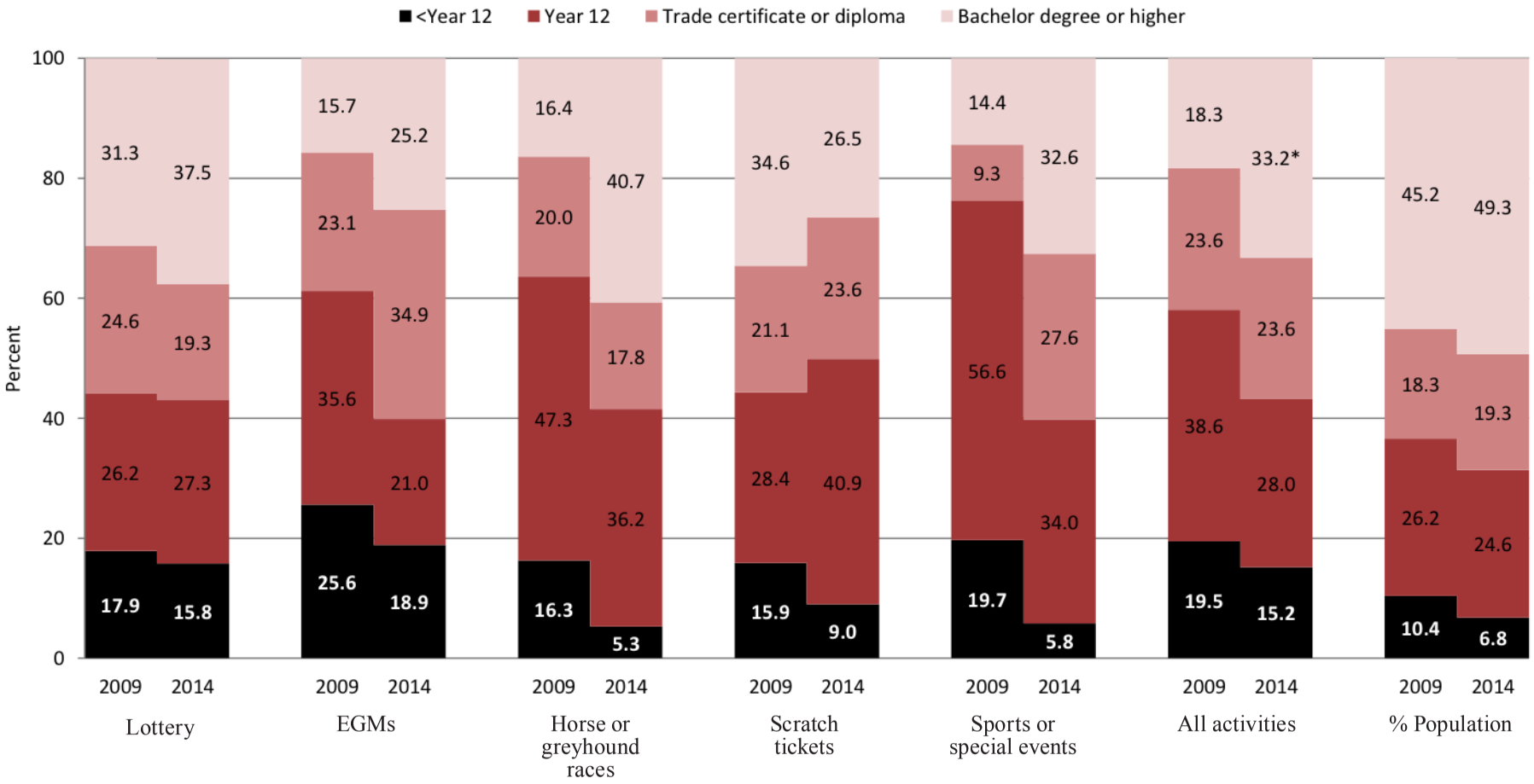

Figure 7.4: A summary of gambling expenditure shares (%) by type of activity amongst highest completed qualification groups in 2009 and 2014 using capped measures: *p<.05.

Key Findings of Chapter 7

1. The proportion of money lost by men and women was remarkably similar in the two ACT Surveys for individual activities and gambling losses summed across all activities.
2. Older people (those aged 65+) accounted for a greater proportion of total money lost in 2014 than 2009. More specifically, they accounted for a larger share of losses on EGMs, lottery and races over this time period.
3. The proportion of total gambling losses accounted for by people who were in a relationship was greater in 2014 (64.2%) than 2009 (51.0%). However, the expenditure shares for this group were not significantly different in 2014 for any specific activity.
4. The proportion of total gambling losses accounted for by people with bachelor degrees was larger in 2014 (33.2%) than 2009 (18.3%). Otherwise, the expenditure shares for education groups did not differ significantly across surveys.

Chapter 8: Expenditure shares and means of gambling (internet and non-internet)

The previous chapters have reported expenditure shares for different types of activity. People gamble on activities using a wide range of means, including gambling (i) in person at venues, (ii) by making a phone call and (iii) over the internet using computers and mobile devices such as ipads and mobile phones. The internet now provides a means of gambling across a wide range of products and for the first time, the 2014 ACT Survey assessed gambling using the internet separately for each activity. This chapter first describes the proportion of total money lost gambling via the internet and other means. The subsequent sections show problem gambling expenditure shares, and socioeconomic and demographic expenditure shares for gambling using the internet and via other means.

8.0 Proportion of total losses gambling using the internet

Table 8.1 shows participation rates for gambling using the internet and gambling using other means. Of the adult population 8.4% reported having gambled using the internet in the last 12 months. In comparison, 51.2% of adults had gambled using other means. This latter proportion is very similar to the proportion of people gambling on any activity, regardless of means (55.1%). This is because the vast majority (84%) of people gambling using the internet also gamble via other (non-internet) means (Davidson *et al.,* 2015: p39).

Table 8.1: Capped net expenditure (in dollars) in the last 12 months by means of gambling in the ACT.

Means of gambling	N ACT population	Participation†	Proportion of total losses (95% CIs)	Mean losses	ACT population losses
Via the internet	25,388	8.4%	15.0% (9.0-24.7%)	$48	$14,451,603
Via other means	157467	52.1%	85.0% (75.6-101.8%)	$271	$82,013,686

†Source: Davidson *et al.* (2015)

Table 8.1 also shows that on average ACT adults lost $48 gambling on the internet. Average losses gambling via other means ($271) were substantially higher. Of all money gambled by ACT adults 15.0% was gambled using the internet. From another perspective, the majority of gambling losses (85.0%) are attributed to non-internet activities.

8.1 Problem gambling expenditure shares and gambling using the internet

Table 8.2 shows the problem gambling expenditure shares for money lost using the internet and via other means (see Table 13.22 for tests of statistical significance). Mean losses were greater across all of the PGSI categories for money gambled using other (non-internet) means. This reflects the fact that less money is lost over the internet than via other means.

Table 8.2: Capped net expenditure (in dollars) gambling using (i) the internet and (ii) other means in the last 12 months by level of problem gambling.

Means of gambling & PGSI category	N ACT population	Proportion adult population	Proportion of Gamblers	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Using the internet						
Non-gambler	137,398	45.5%	-	-	-	-
Non-problem	147,448	48.8%	89.5%	43.4% (24.8-73.4%)	$43[r]	$6,269,104
Low risk	12,653	4.2%	7.7%	38.9% (12.5-68.5%)	$453 (.005)	$5,622,153
Moderate risk	3,410	1.1%	2.1%	7.6% (1.1-18.3%)	$320 (.065)	$1,091,625
Problem	1,331	0.4%	0.8%	10.2% (1.4-26.8%)	$1,101 (.032)	$1,468,722
Using other means						
Non-gambler	137,398	45.5%	-	-	-	-
Non-problem	147,448	48.8%	89.5%	59.7% (50.6-70.5%)	$332[r]	$48,923,117
Low risk	12,653	4.2%	7.7%	19.0% (12.0-27.2%)	$1,255 (.002)	$15,561,105
Moderate risk	3,410	1.1%	2.1%	10.0% (6.7-15.5%)	$2,407 (<.001)	$8,225,259
Problem	1,331	0.4%	0.8%	11.3% (7.9-17.2%)	$6,975 (<.001)	$9,304,205

a. Overall significance: differences between means across PGSI categories excluding non-gamblers (using the internet p=.010, df=3; using other means p<.001, df=3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

For ease of comparison, the expenditure shares in Table 8.2 are provided in Figure 8.1, alongside the PGES for all activities. The first column in Figure 8.1 shows that 43.4% of money lost over the internet came from non-problem gamblers. That is, the majority of money lost gambling over the internet [56.6% (95% CI 30.2-89.3%)] came from people with at least some problem gambling symptoms (PGSI scores of 1+). Nearly one dollar in five lost over the internet [17.8% (95% CI 6.0-37.5)] came from moderate risk/problem gamblers (PGSI scores of 3+). In contrast, the second column in this figure shows that 59.7% of money lost using other (non-internet) means came from people with no gambling problems, 40.3% (95% CI 31.5-51.6%) came from people reporting at least some symptoms and 21.3% (95% CI 15.8-29.7%) from moderate risk/problem gamblers. The PGES for gambling using the internet were not significantly different from those for gambling using other means (see Table 13.22).

This figure shows that the moderate risk/problem gambling expenditure shares were similar for money lost over the internet, via other means and across all activities. While low-risk gamblers (38.9%: PGSI scores of 1+) accounted for a greater proportion of the money lost over the internet compared to money lost gambling using other means (19.0%), this difference was not statistically significant (p = 0.432).

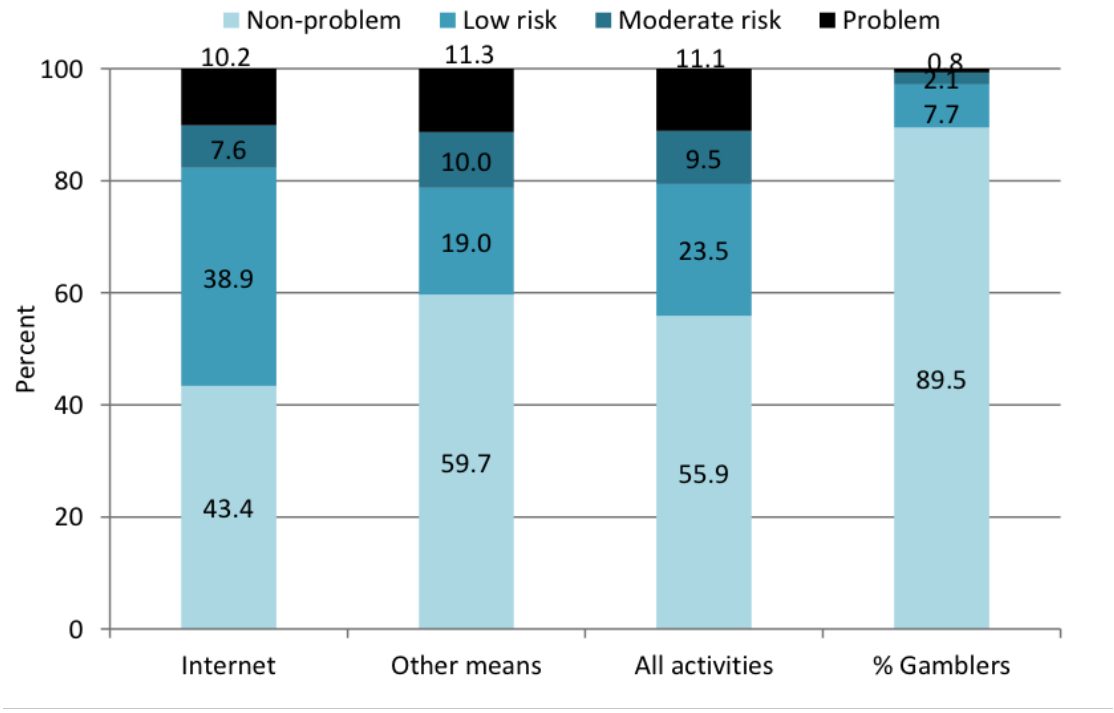

Figure 8.1: A summary of problem gambling expenditure shares for money lost gambling (i) using the internet, (ii) via other means and (iii) across all activities in the last 12 months.

8.2 Socioeconomic and demographic expenditure shares and gambling using the internet

We next profiled the socioeconomic and demographic expenditure shares for money lost using the internet (Table 8.3) and using other means (Table 8.4; see Table 13.23 in the Appendix for tests of statistical significance). Similar to the above, the detailed tables are provided in the main body of this report and a series of summary graphs are provided to facilitate comparison of socioeconomic and demographic shares by means of gambling. Tables 8.3 and 8.4 show that mean losses gambling using the internet were lower than losses gambling via other means across all socioeconomic and demographic groups.

Table 8.3: Capped net expenditure (in dollars) on gambling using the internet in the last 12 months by socioeconomic and demographic characteristics.

Measure	N ACT population	Proportion adult population	Expenditure shares (95% CIs)	Mean losses [a] (p-value[b])	ACT population losses
Sex					
Women	155,578	51.5%	14.3% (0.5-31.2%)	$13 (<.001)	$2,061,370
Men	146,662	48.5%	85.7% (59.6-122.8%)	$84[r]	$12,390,232
Age					
18-24	55,100	18.2%	-0.4% (-9.6-9.5%)	-$1 (<.001)	-$52,463
25-44	103,858	34.4%	57.4% (31.6-87.3%)	$80 (.578)	$8,292,318
45-64	98,946	32.7%	37.7% (21.9-67.5%)	$55[r]	$5,442,078
65+	44,337	14.7%	5.3% (2.3-10.9%)	$17 (.001)	$769,669
Married or de facto					
Yes	185,105	61.2%	62.4% (37.6-104.2%)	$49[r]	$9,022,226
No	117,135	38.8%	37.6% (8.1-62.9%)	$46 (.861)	$5,429,377
Highest completed qualification					
<Year 12	20,424	6.8%	4.7% (1.2-10.2%)	$33 (.933)	$5,429,377
Year 12	74,391	24.6%	18.4% (9.6-34.2%)	$36 (.873)	$672,397
Trade certificate or diploma	58,287	19.3%	42.4% (17.0-70.5%)	$105 (.172)	$2,662,128
Bachelor degree or higher	149,138	49.3%	34.5% (17.8-60.0%)	$33[r]	$6,124,805

a. Overall significance: differences between means across socioeconomic and demographic measures including non-gamblers (age p=.116, df=3; highest completed qualification p=.226, df=3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

Table 8.5: Capped net expenditure (in dollars) on gambling using other means in the last 12 months by socioeconomic and demographic characteristics.

Measure	N ACT population	Proportion adult population	Expenditure shares (95% CIs)	Mean losses [a] (p-value[b])	ACT population losses
Sex					
Women	155,578	51.5%	36.0% (29.0-43.8%)	$190 (<.001)	$29,533,050
Men	146,662	48.5%	64.0% (54.8-74.0%)	$358[r]	$52,480,636
Age					
18-24	55,100	18.2%	7.8% (3.5-11.6%)	$116 (.002)	$6,360,174
25-44	103,858	34.4%	27.1% (19.9-34.5%)	$214 (.059)	$22,245,634
45-64	98,946	32.7%	39.6% (42.5-47.8%)	$328[r]	$32,483,694
65+	44,337	14.7%	25.5% (17.4-32.3%)	$473 (.068)	$20,924,184
Married or de facto					
Yes	185,105	61.2%	66.4% (57.1-77.5%)	$294[r]	$54,460,690
No	117,135	38.8%	33.6% (26.2-41.3%)	$235 (.239)	$27,552,996
Highest completed qualification					
<Year 12	20,424	6.8%	17.2% (11.9-23.2%)	$691 (.001)	$14,088,336
Year 12	74,391	24.6%	28.7% (21.9-36.0%)	$316 (.032)	$23,518,676
Trade certificate or diploma	58,287	19.3%	20.1% (14.9-26.2%)	$284 (.100)	$16,500,355
Bachelor degree or higher	149,138	49.3%	34.0% (26.8-42.3%)	$187[r]	$27,906,319

a. Overall significance: differences between means across socioeconomic and demographic measures including non-gamblers (age p<.001, df=3; highest completed qualification p<.001, df=3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

Figure 8.2 shows expenditure shares by means of gambling for men and women. The second last column shows findings previously presented demonstrating that men accounted for a disproportionately large proportion of gambling losses than women (67.4% compared to 32.6%). The first column shows that an even larger proportion of internet expenditure (85.7%) came from men. In contrast, 64.4% of losses gambling via other means came from men. The difference in the male expenditure shares for gambling using the internet and gambling using other means was statistically significant ($p = 0.028$).

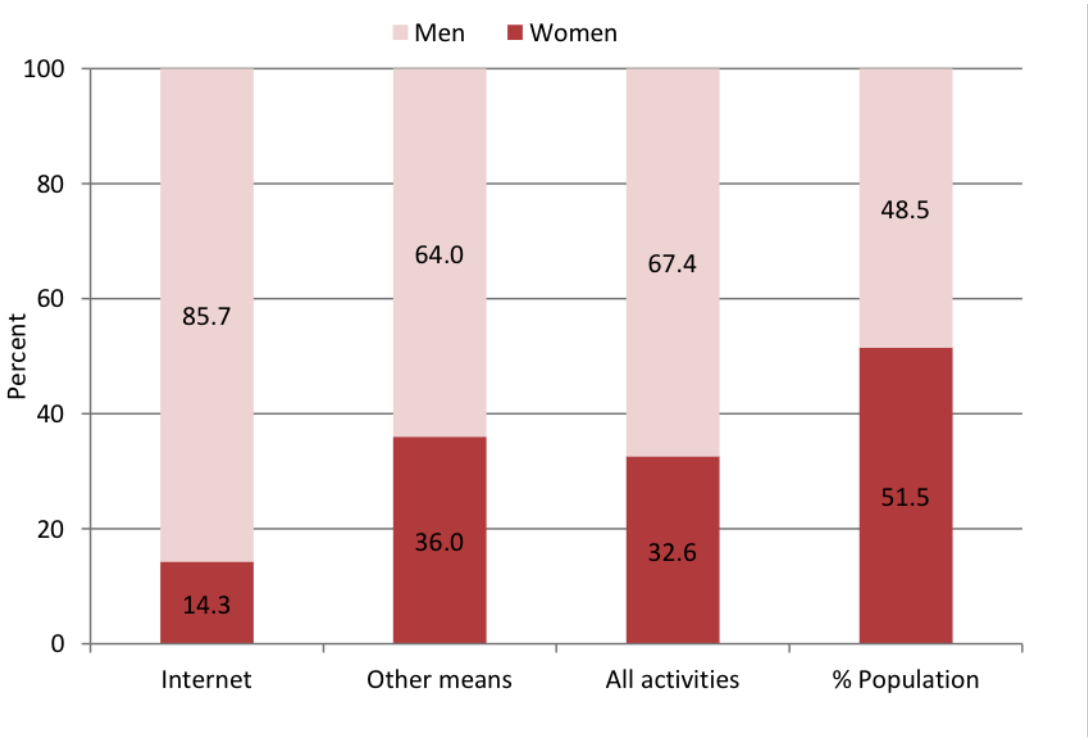

Figure 8.2: A summary of expenditure shares gambling (i) via the internet, (ii) via other means and (iii) across all activities amongst men and women in the last 12 months.

Figure 8.3 shows expenditure shares by means of gambling amongst different age groups. This figure shows that losses using the internet predominantly come from the 25-44 year age group (57.4%). In contrast only 27.1% of losses on non-internet activities was accounted for by the 25-44 age group, who represent 34.4% of the adult population. This difference was statistically significant ($p = 0.025$). Only a small proportion of internet losses came from the youngest (0.0%) and oldest (5.3%) age groups. The parallel proportions for losses gambling on non-internet activities were comparatively larger (7.8% and 25.5% respectively), although the differences were statistically significant only for the oldest age group ($p < 0.001$).

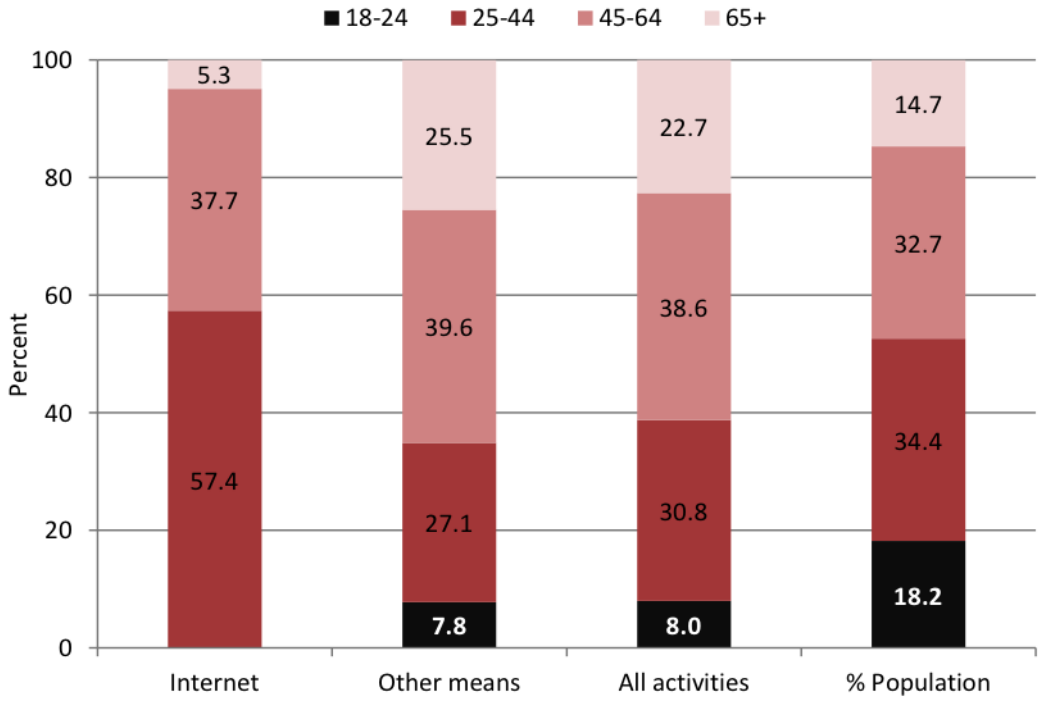

Figure 8.3: A summary of expenditure shares gambling (i) via the internet, (ii) via other means and (iii) across all activities amongst different age groups in the last 12 months.

Figure 8.4 shows expenditure shares for money lost over the internet and via other means for the marital status groups. The marital status expenditure shares were remarkably consistent across means of gambling. Just over a third of losses came from people who were not married or in a de facto relationship regardless of whether the losses were over the internet or from gambling via other means (p = 0.926).

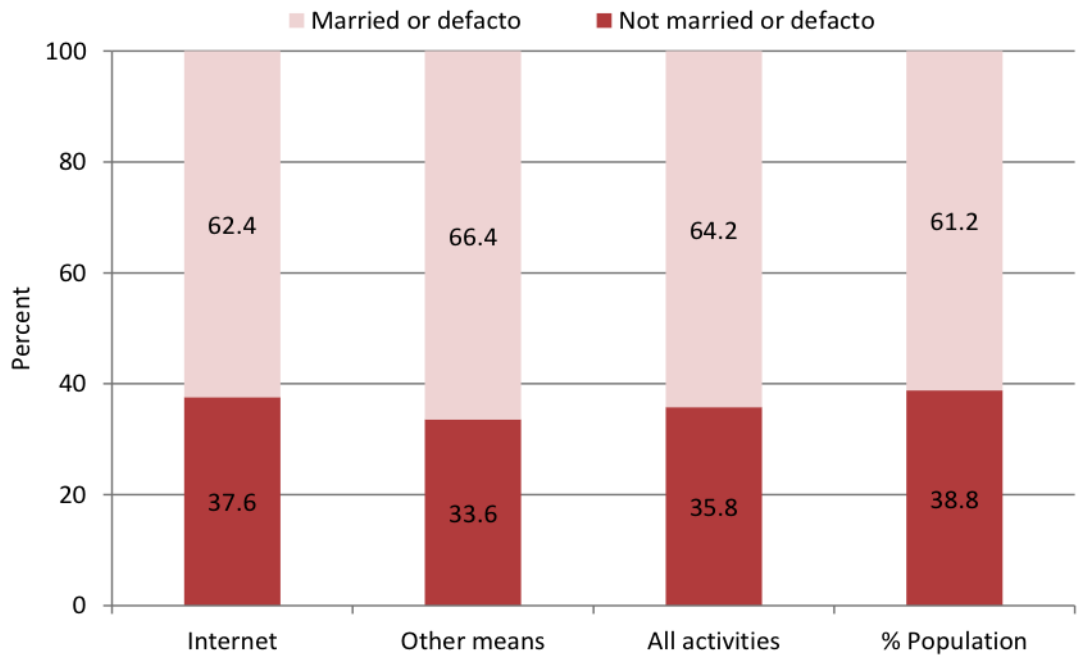

Figure 8.4: A summary of expenditure shares gambling (i) via the internet, (ii) via other means and (iii) across all activities amongst marital status groups in the last 12 months.

Finally, Figure 8.5 shows internet and non-internet expenditure shares across different levels of education. This figure shows that a disproportionately small amount of money lost over the internet (4.7%) was attributed to people who have not completed Year 12. This group represent 6.8% of the adult population. In contrast, 17.2% of losses gambling via other means came from this population group, a difference that was statistically significant (p = 0.013).

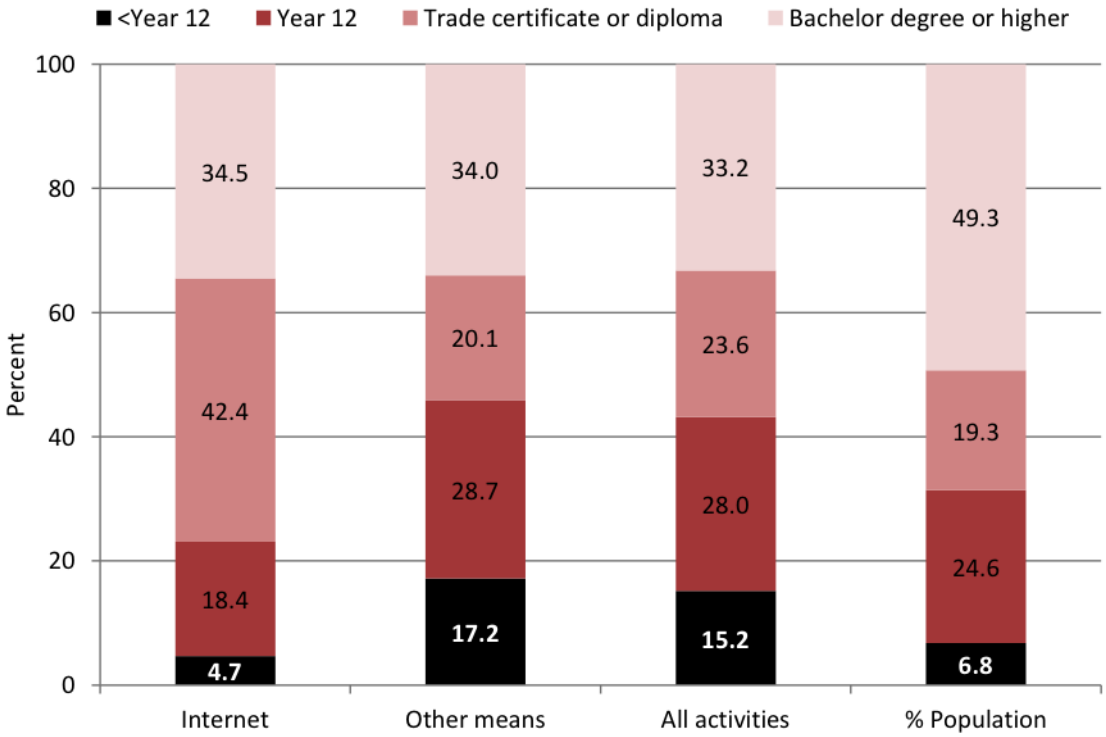

Figure 8.5: A summary of expenditure shares gambling (i) via the internet, (ii) via other means and (iii) across all activities amongst levels of education in the last 12 months.

Key Findings of Chapter 8

1. Only 15.0% of gambling losses came from gambling over the internet. The majority of losses (85.0%) are due to gambling using other (non-internet) means.
2. People with at least some gambling problems (PGSI scores of 1+) accounted for a large proportion of expenditure gambling over the internet (56.6%). This PGES was not statistically different to that found for people who gamble using other means (40.3%).
3. The gambling expenditure shares for moderate risk/problem gamblers were similar for money lost over the internet (17.7%) and money lost gambling via other means (21.4%).
4. Money lost over the internet was disproportionately attributed to men (85.7%) and those aged 25-44 (57.4%).
5. Money lost using other means was disproportionately attributed to those aged 65 or more (25.5%) and those who haven't completed Year 12 (17.2%).
6. Just over a third of gambling losses came from people who were neither married nor in a de facto relationship, regardless of whether the losses were from using the internet or from gambling via another means.

Chapter 9: Methods used for comparisons with industry data

This chapter describes industry data as reported by the ACT Gambling and Racing Commission (GRC) for Australian Gambling Statistics (AGS) (Australian Gambling Statistics, 2015). AGS had not published industry data for 2014/15 during the analytic period of this report. The ACT GRC provided the data for this period (ACT Gambling and Racing Commission, 2015). This chapter details the methods used to compare the industry figures with net expenditure estimates obtained from the 2014 ACT Prevalence Survey data.

9.0 Australian Gambling Statistics (AGS) items and survey measures

In this section, net expenditure information reported by the ACT Gambling and Racing Commission for AGS is compared to the 2014 ACT Survey questions. The purpose and scope of these two data sources differ substantially. The AGS expenditure data aim to track turnover and net expenditure within defined geographical areas but the ACT Survey data aim to investigate net expenditure linked to characteristics of individuals. AGS data include money lost in ACT venues by people who do not reside in the ACT. On the other hand the ACT Survey data include money that has been lost gambling by ACT residents when outside the territory. These are overarching limitations in the comparability of all AGS and survey data.

AGS includes data about a range of gambling activities including: (i) racing, (ii) the ACT Casino, (iii) EGMs, (iv) instant lottery (scratch tickets), (v) Keno, (vi) lotteries, lotto games and pools, (vii) minor gaming, and (viii) sports betting.

Racing: Gambling on races can be done through a large number of venues, both on and off course. AGS data for races includes net expenditure from betting on horse and greyhound races via on-course and off-course bookmakers, on-course totalisers and the TAB. However, there are only limited data available regarding losses via off-course bookmakers. In the ACT (and some other jurisdictions) there are no such data available. In contrast, the 2014 ACT Survey contained four items covering net expenditure on horse or greyhound races: (i) at a race track; (ii) at an off course venue (defined as a TAB, club, hotel or casino); (iii) by 'phone; and (iv) via the internet. Consequently, the AGS and ACT Survey data are not directly comparable.

Table games at a casino: In the ACT there is only one casino and there are no EGMs in this venue. Data on keno (see below) is reported separately from table games. The 2014 ACT Survey included a question specifically covering net expenditure on 'table games at a casino'. As such AGS net expenditure data from the casino is comparable with the survey item.

Electronic gaming machines: As mentioned above, there are no EGMs in the ACT Casino. EGMs are only located in clubs and hotels/pubs (with the vast majority in the former). AGS notes that "gaming machines accurately record the amount of wagers played on the machines" so turnover and expenditure reflect actual figures for each jurisdiction (Australian Gambling Statistics, 2015: p3). The 2014 ACT Survey questions directly covered net expenditure on 'poker and gaming machines'. The AGS and 2014 ACT Survey data were considered comparable.

Scratch tickets (instant lottery): AGS notes that prizes in the instant lottery are paid on a set return to player and are based on the number of tickets in a set, the cost to purchase the tickets, and a set percentage retained by the operator for costs (Australian Gambling Statistics, 2015: p4). AGS data reflect all expenditure on scratch tickets sold within the ACT. In contrast, the 2014 ACT Survey only asked people who reported purchasing at least some instant scratch tickets for themselves about their net expenditure. Otherwise the data sources were considered comparable.

Keno: In the ACT, only the TAB runs Keno. The 2014 ACT Survey included an item assessing net expenditure on Keno and, as such, the data sources were considered comparable.

Lotteries, lotto and the Pools: AGS defines *lotteries* as involving 'three main components, the purchase of a ticket, a draw and a prize (Australian Gambling Statistics, 2015: p4). A person whose ticket is selected in a lottery wins a prize. There are a wide range of *Lotto* games including Tattslotto, Lotto and Powerball. AGS defines *Lotto* as games where a player selects eight numbers from 1 to 45 in anticipation that those numbers will be among those, randomly drawn from these 45 balls. 'A player wins if their selected numbers match those randomly drawn in a set combination' (p5). *Pools* is defined as 'a numbers game of chance where the winning numbers are based on the results of the United Kingdom or Australian soccer matches. Each week 38 soccer matches are selected to form a 'match list'. Each match is assigned a number from 1 to 38. Players select six numbers from the 38. If the selected numbers are the same as the official results numbers, the player wins one of five prize divisions' (Australian Gambling Statistics, 2014: p3). The same operators may conduct lotto, pools, and instant lottery and data for these three types of games were combined for the purposes of this report.

The 2014 ACT Survey asked people whether they had played 'Lotto or any other lottery game like Tattslotto, Powerball, the Pools or $2 jackpot lottery' in the last 12 months. People who reported doing so for themselves were read a more detailed list of such games and were asked about their net expenditure on 'lotto or any other lottery game'. These games are referred to as Lottery in the current report and data sources are considered comparable.

Sports betting: In AGS, sports betting is defined as 'wagering on approved types of local, national or international sporting activities (other than the established forms of horse and greyhound racing), whether on or off-course, in person, by telephone, or via the internet' (Australian Gambling Statistics, 2015: p6). Industry expenditure data is not available for sports betting in the ACT. In contrast the 2014 ACT Prevalence Survey asked items assessing net expenditure betting on 'sporting or special events like football, cricket, tennis, a TV show or election' (i) in person, (ii) by phone, and (iii) via the internet. The data sources were not comparable.

Minor gaming: The AGS defines minor gaming as a collective name given to raffles, bingo, lucky envelopes and the like (Australian Gambling Statistics, 2015: p5). It was not possible to get a break down of individual activities, such as bingo, in the ACT. Therefore items included in the 2014 ACT Survey, including bingo, were not comparable to AGS industry data.

9.1 Statistical methods

Population estimates

To maximise comparability of industry and survey data, the methods used in this report replicate the AGS reporting methods. Given that AGS is largely collated for taxation purposes, the estimates pertain to financial years. To estimate the total ACT adult population during the period of a financial year AGS reports annual per capita expenditure based on the adult population averaged over adjacent years.

The ACT Survey interviews were undertaken from November 2014 through February 2015 and asked about gambling behaviour during the last 12 months. The questions on net gambling expenditure therefore spanned both the 2013-14 and 2014-15 financial years. In order to ensure that the population size reflected the time period of survey items the adult population size for both financial years was calculated by averaging the

adjacent calendar years (Australian Bureau of Statistics, 2014). In the financial 2013-14 year the adult population was estimated at 300,699. During the analytic period for this report the ABS had not yet released the population estimates for 2014/15. Assuming the population increase from 2012/13 to 2013/14 (1.03%) was applicable for the following 12 month period, we estimated the 2014/15 population as 303,781 adults. The average of the 2013-14 and 2014-15 population estimates was then calculated (i.e. 302,240 adults). All survey estimates of net expenditure for the total adult ACT population were scaled to reflect 302,240 adults. For the purposes of the current report, the average of the 2013-14 and 2014-15 GRC expenditure figures was used and, consequently, the industry data also represent net expenditure for 302,204 adults. Per capita and ACT adult population losses are reported for each activity (where feasible) from both the 2014 ACT Survey and GRC industry data.

In the following chapter all survey data analysis were weighted to compensate for potential bias arising from the finding that higher frequency gamblers were more likely to have missing data on total expenditure than lower frequency gamblers (see section 3.7 of Chapter 3).

Chapter 10: Comparing industry and survey data

The main aims of this chapter are to:

1. report AGS industry gambling expenditure data alongside findings from the 2014 ACT Prevalence Survey;
2. adjust the ACT prevalence survey data to match the AGS industry data on specific gambling activities; and
3. evaluate the impact of compensating the ACT Survey data to better match AGS industry data.

10.0 Per capita and aggregate expenditure: comparing industry and survey data

Table 10.1 shows net expenditure by type of activity (A) averaged over 2013/14 and 2014/15 financial years from industry data supplied by the GRC and (B) during the last 12 months as reported in the 2014 ACT Survey. For GRC industry data, per capita and ACT population estimates are given. For survey data, mean net expenditure was estimated and these figures were multiplied by the number of ACT adults to reflect ACT population losses. As discussed in the previous chapter, GRC industry data on expenditure were not available for some activities (e.g. sports betting) or was not comparable to the 2014 ACT Survey data (e.g. for races). However, several activities were comparable and the differentials between the industry and 2014 ACT Survey data were estimated for these activities, by dividing the industry by the ACT Survey estimates (ratios in last column). In this column, a value of 1 would indicate that the ACT Survey estimates and GRC industry data provided exactly the same figures. Values greater than 1 indicate that the industry figures are larger than the ACT Survey estimates. Values less than 1 indicate that the survey estimates are larger than the industry figures. Table 10.1 only includes activities that were assessed as comparable.

In terms of individual activities, GRC industry data indicate that more than $20 million was lost on lottery in the ACT ($68 per capita). In contrast, the ACT Survey data indicate that ACT adults lost more than $33m on lottery ($111 per adult). In this instance, net expenditure as determined by survey data was substantially greater (more than 60% greater) than that reported in industry data. Similarly, for scratch tickets the amount of money lost was substantially greater in the 2014 ACT Survey than the GRC industry data. In contrast, for EGMs, table games at a casino and Keno, the GRC industry data on net expenditure for the ACT were 4.51, 4.56 and 2.21 times greater (respectively) than indicated by self-reports in the ACT Survey.

Table 10.1: Per capita and ACT population gambling losses by activity: derived from GRC industry data and the ACT Prevalence Survey.

Activity	(A) GRC INDUSTRY DATA*		(B) ACT SURVEY DATA**		Ratio of industry to survey data (A/B)
	Per capita expenditure	ACT population losses	Mean expenditure	ACT population losses	
Lottery	$68	$20,451,529	$111	$33,491,945	0.61
Scratch tickets	$7	$1,979,995	$11	$3,247,067	0.60
EGMs	$559	$169,048,462	$124	$37,481,460	4.51
Table games at Casino	$57	$17,110,817	$12†	$3,756,069	4.56
Keno	$3	$914,667	$1	$413,681	2.21

*Source: ACT Gambling and Racing Commission (2015).
**Source: Table 4.1, p21
†This estimate is marginally lower than that in Table 4.1 because it only reflects expenditure on table games at a casino. In contrast, table 4.1 reflects expenditure on table games regardless of where the money was lost.

10.1 Expenditure by type of activity using compensated survey data

This section presents a hypothetical scenario, but has the aim of deriving a concrete outcome. As discussed in the introduction, there are instances where the advantages of industry and survey data have been acknowledged and estimates have been combined. For instance, the Productivity Commission applied the problem gambling expenditure share proportions (as estimated in self report surveys) to the baseline expenditure figures reported by industry, in order to estimate the total amount of money lost by moderate risk/problem gamblers in Australia (Productivity Commission, 2010). It is possible to adjust survey data to compensate for lower estimates of gambling losses compared to those indicated by industry data. This adjustment was specifically designed to take into account any 'underreporting' of expenditure common to self-report surveys. The purpose of this section is to test the feasibility of adjusting survey data in this manner, and to assess the consequences of compensation. Underreporting was not evident for lottery or scratch tickets as net expenditure for these activities was higher in the ACT survey data than the GRC industry data. In contrast, net expenditure on EGMs, table games and Keno were lower in the ACT survey data compared with AGS industry data. We therefore adjusted the ACT survey data for these three activities, using the ratios obtained in Table 10.1.

Figure 10.1a shows the distribution of net expenditure across different types of activity. Figure 10.1b shows net expenditure after applying the compensation ratios for EGMs, table games at a casino and Keno. The proportion of losses attributed to these activities necessarily increases after compensation.

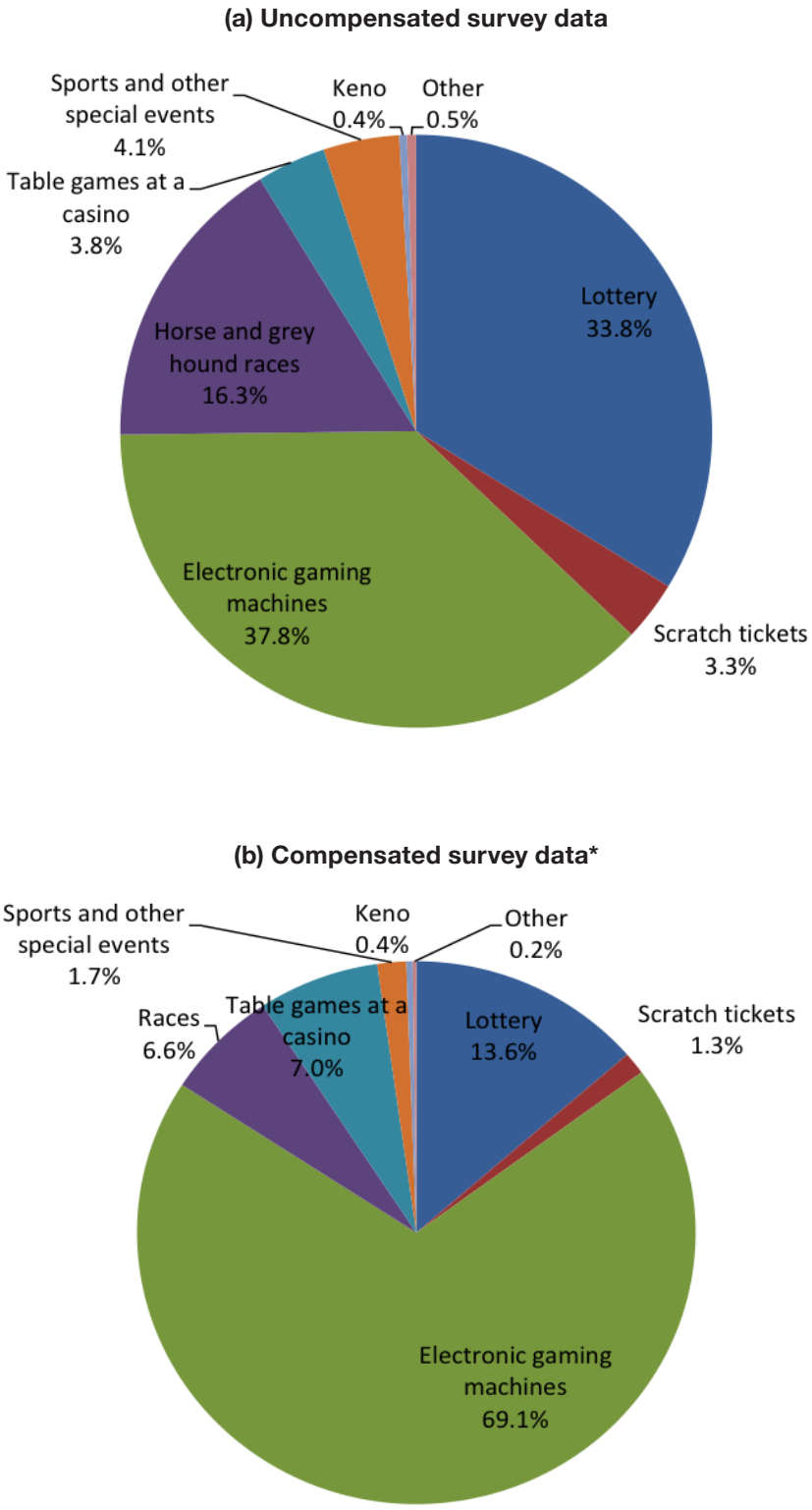

Figure 10.1: Total net expenditure by type of activity across all survey participants.
*Compensated so that EGMs, table games at a casino and Keno reflect industry-reported expenditure.

Figure 10.2 shows the distribution of net expenditure across different types of activity taken from industry data only. Comparing across figures, the compensated survey data (Figure 10.1b) more closely resemble the industry data than do the uncompensated survey data (Figure 10.1a). This is to some extent inevitable as the proportions in Figure 10.1b were calculated by forcing dollar expenditure on EGMs, casino table games and Keno from the ACT Survey to equal the figures reported by the GRC. Compensation therefore has the effect of reducing the proportions of expenditure on other activities, notably races and lottery, bringing them more into line with industry estimates.

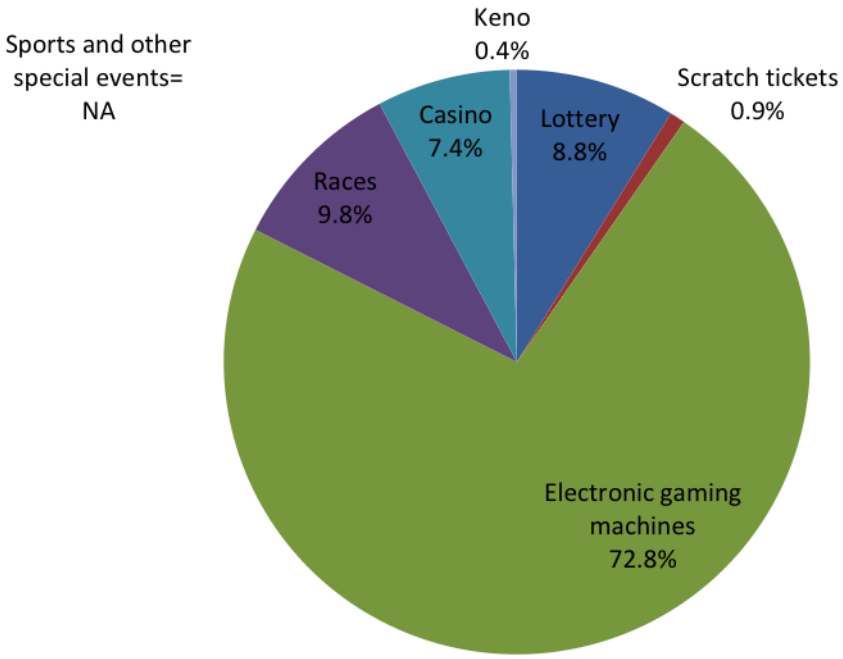

Figure 10.2: Total net expenditure in 2014/15 by type of activity using industry data.
Source: ACT Gambling and Racing Commission (2015).

10.2 Problem gambling expenditure shares for all activities using compensated survey data

It is possible that 'underreporting' might have biased the estimation of problem gambling expenditure shares presented in Chapter 4. We therefore assessed the impact of adjusting the ACT Survey data on EGM, casino table game, and Keno losses by repeating the estimates of net expenditure across PGSI categories using compensated data. Table 10.2 shows net expenditure on all activities across PGSI categories using the compensated data. This table shows that the compensation necessarily increases the estimate of total net expenditure (relative to uncompensated findings shown in Table 4.2) to over $246M, i.e. more than doubling the original estimate.

Table 10.2: Expenditure on all activities in the last 12 months using compensated survey data† by the PGSI.

PGSI category	N ACT population	Proportion adult population	Proportion of gamblers	Expenditure shares (95% CIs)	Mean losses (p-value[b])	ACT population losses
Non-gambler	137,398	45.5%	-	-	-	-
Non-problem	147,448	48.8%	89.5%	46.3% (36.9-57.5%)	$774[r]	$114,104,632
Low risk	12,653	4.2%	7.7%	29.1% (19.4-40.5%)	$5,672 (<.001)	$71,766,197
Moderate risk	3,410	1.1%	2.1%	10.7% (6.9-17.3%)	$7,766 (<.001)	$26,481,181
Problem	1,331	0.4%	0.8%	13.8% (8.9-22.7%)	$25,593 (<.001)	$34,071,978

†Compensated so that EGMs, table games at a casino and Keno reflect industry-reported expenditure.
b. Significance of the difference between the mean and the reference group mean.
r. Reference group mean.

Figure 10.3 depicts the distribution of net expenditure on all activities by level of problem gambling. The left-hand side of the graph (labelled 'a') is exactly as presented in Chapter 4. Column (a) of Figure 10.3 indicates that 44.1% of net expenditure on gambling came from people with gambling symptoms (PGSI 1+) based on uncompensated data and that 20.6% was accounted for by moderate risk/problem gamblers (PGSI 3+). The middle section of the graph (labelled 'b') compensates for the lower survey-reported net expenditure on EGMs, table games at a casino and Keno relative to AGS industry data. After compensation, 53.7% (95% CI 42.1-69.2%) of net expenditure was attributable to people with some gambling symptoms, and 24.5% (95% CI 17.5-35.5%) was accounted for by moderate risk/ problem gamblers (PGSI 3+). The right-hand side of the graph presents the distribution of problem gambling in the adult gambling population. Overall, this figure shows that compensating survey data, so that they better reflect industry data on the two activities, increases estimates of the proportion of expenditure coming from people with gambling problems.

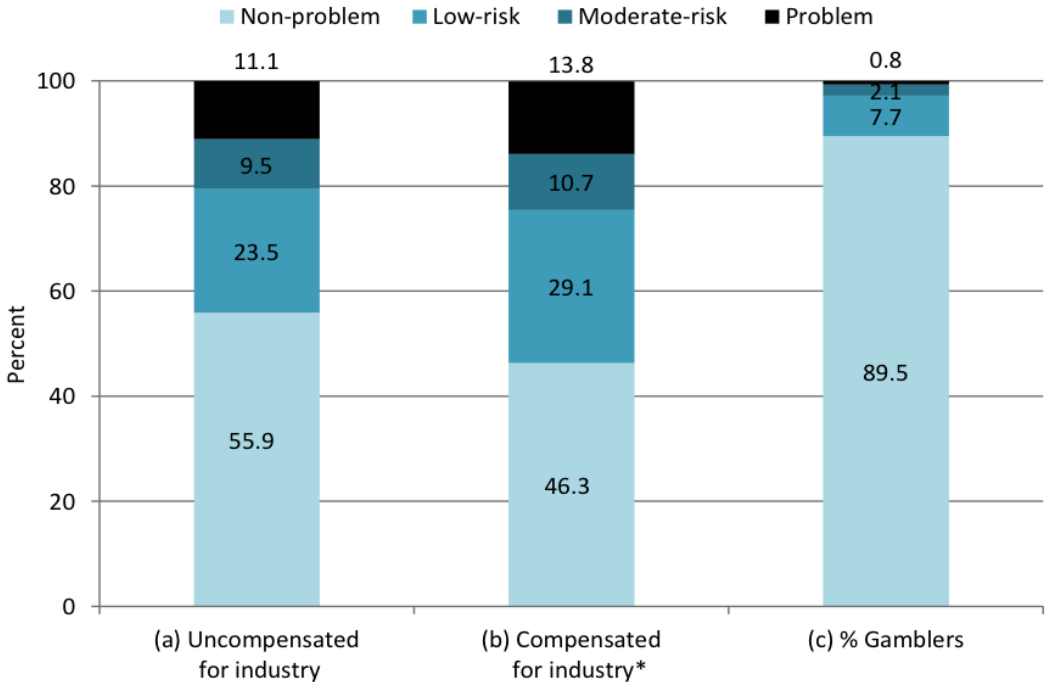

Figure 10.3: Proportion of expenditure on all activities by level of problem gambling.
*Compensated so that EGM, table games at a casino and Keno reflect industry data.

10.3 Socioeconomic and demographic gambling expenditure shares for all activities using compensated survey data

We also investigated the impact of compensation on estimates of socioeconomic and demographic expenditure shares for all activities combined. The third column in Table 10.3 shows the proportion of net expenditure for socioeconomic and demographic subgroups based on uncompensated data, as presented in Chapter 6 (see p40). Columns 4 to 6 of the table are based on the ACT Survey data compensated for potential underreporting of expenditure on EGMs, table games at a casino and Keno. In most instances the expenditure shares differed by less than two percent across compensated and uncompensated analyses, and all differed by less than 5%. These additional analyses demonstrate that compensation makes little difference to the estimation of expenditure shares across sex, age, marital status and qualification groups. Overall, the findings suggest that socioeconomic and demographic expenditure shares estimates are robust and little influenced by the underreporting of gambling losses in self-report surveys.

Table 10.3: Net expenditure (in dollars) on all activities in the last 12 months by socioeconomic and demographic characteristics using compensated survey data†.

Measure	N ACT population	Proportion adult population	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Sex					
Women	155,578	51.5%	32.5% (24.2-41.0%)	$515 (.001)	$80,119,159
Men	146,662	48.5%	67.5% (55.9-80.6%)	$1,134[r]	$166,304,830
Age					
18-24	55,100	18.2%	8.4% (3.6-13.2%)	$376 (.019)	$20,709,207
25-44	103,858	34.4%	32.2% (22.2-42.2%)	$764 (.508)	$79,303,187
45-64	98,946	32.7%	36.4% (28.2-46.1%)	$907[r]	$89,780,184
65+	44,337	14.7%	23.0% (15.8-30.5%)	$1,277 (.192)	$56,631,411
Married or de facto					
Yes	185,105	61.2%	59.9% (48.9-73.0%)	$798[r]	$147,724,267
No	117,135	38.8%	40.1% (29.9-50.5%)	$843 (.864)	$98,699,722
Highest completed qualification					
< Year 12	20,424	6.8%	16.9% (11.3-23.6%)	$2,043 (<.001)	$41,732,053
Year 12	74,391	24.6%	25.0% (17.3-33.5%)	$827 (.085)	$61,501,561
Trade certificate or diploma	58,287	19.3%	28.5% (19.9-37.8%)	$1,204 (.003)	$70,154,153
Bachelor degree or higher	149,138	49.3%	29.6% (21.1-38.6%)	$490[r]	$73,036,222

† Compensated so that net expenditure on EGMs, table games at a casino and Keno reflected industry data
a. Overall significance: differences between means across socioeconomic and demographic measures including non-gamblers (age p=.037, df=3; highest completed qualification p<.001, df=3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

Key Findings of Chapter 10

1. Industry and self-report survey data have different purposes, advantages and disadvantages.
2. For some activities, self-reported expenditure estimates were greater than industry figures (lottery and scratch tickets), but for other activities (EGMs, table games at a casino and Keno) self-report estimates were substantially less than industry figures.
3. Self-reported survey data for some activities can be compensated so that they more closely reflect industry figures.
4. Estimates of gambling expenditure share presented in previous chapters were robust in that they changed little after compensating the survey data. Problem gambling expenditure share is slightly increased by compensation.

Chapter 11: Discussion

This report replicates analyses from a 2009 study of gambling expenditure shares in the ACT, using 2014 data. The first objective was to describe problem gambling expenditure shares for different subgroups in the population including problem gambling expenditure shares and socioeconomic and demographic expenditure shares. Findings were also compared across 2009 and 2014 Surveys. The 2014 data allowed additional analyses to be conducted investigating internet expenditure shares. The second objective of this report was to explore the effect of compensating analyses so that survey expenditure measures better matched industry data.

11.0 Summary of findings using the 2014 ACT Survey

Problem gambling expenditure share (PGES) for all activities combined

The PGES for overall net gambling expenditure (without the compensation adjustment) was estimated at 21% based on the cut-point of a PGSI score of three or more (Figure 4.1). That is, 21% of gambling revenue in the ACT is derived from the 3% of gamblers (and just 2% of the adult population) who were assessed as being moderate risk or problem gamblers. These estimates changed a little when the compensation adjustment was applied to self-reported net expenditure on EGMs, casino games, and Keno which increased the PGES to 25%.

The present study looked beyond the use of the threshold of a PGSI score of three or more. If a lower threshold is applied so that any reported PGSI symptoms is used, then the estimate of PGES would be 44% based on non-compensated self-reports and 54% using compensated data. Given that 6% of ACT adults report at least one PGSI symptom, a disproportionately large proportion of gambling revenue in the ACT is clearly derived from people that report some degree of problem gambling.

Problem gambling expenditure share for different activities

Estimates of PGES vary considerably across different types of gambling in the ACT. Using the threshold of three or more on the PGSI, the highest PGES estimates were found for sports/special events betting (42%), EGMs (28%) and horse and greyhound racing (24%). Much lower estimates of PGES were found for scratch tickets (10%) and for lotteries (5%). Again, higher estimates are obtained if any PGSI symptom is used to identify those with a degree of gambling problem. With the lower threshold, estimates of PGES were: sports/special events betting (72%), EGMs (63%), horse and greyhound racing (54%), scratch tickets (21%) and lotteries (18%). Other than betting on scratch tickets and lotteries, the majority of net expenditure on the main gambling activities in the ACT is by people with some degree of problem gambling.

Male gambling expenditure share (MGES)

The MGES for overall net gambling expenditure (without the compensation adjustment) was estimated at 67% (Figure 6.1), i.e. about two-thirds of gambling revenue in the ACT is derived from men. This estimate was little changed when the compensation adjustment was applied to self-reported net expenditure on EGMs, casino table games and Keno (68%).

The MGES varies across different types of gambling activity. The highest estimates were 100% for sports/special events, 81% for horse and greyhound races, and 67% for EGMs. For lotteries, men accounted for 60% of expenditure in the ACT, but only 50% of revenue on scratch tickets was derived from men.

Young people gambling expenditure share (YPGES)

The YPGES for overall net gambling expenditure (without the compensation adjustment) was estimated at 8% (Figure 6.2), i.e. just under one-eighth of gambling revenue in the ACT is derived from adults aged 18 to 24 years. This group represents 18% of the adult population who are significantly below average contributors to ACT gambling revenue. The estimate was not changed when the compensation adjustment was applied to self-reported net expenditure on EGMs, casino games and Keno (YPGES 8%, Table 10.3).

YPGESs were low for most types of gambling activity. The highest estimate was 20% of revenue from horse and greyhound races, 11% of revenue came from scratch tickets, 7% for sports/special events. For EGMs, young people accounted for 5% of expenditure in the ACT. Only 1% of revenue from lottery gambling was derived from young people. In other words, apart from races the youngest adults in the ACT contribute less than average to betting for gambling activities.

Older people gambling expenditure share (OPGES)

The OPGES for overall net gambling expenditure (without the compensation adjustment) was estimated at about 23% (Figure 6.2), i.e. one in four dollars in gambling revenue in the ACT is derived from adults aged 65 years or older. This group represents 15% of the adult population so they are above average contributors to overall ACT gambling revenue. The estimate little changed when the compensation adjustment was applied to self-reported net expenditure on EGMs, casino games and Keno (Table 10.3).

The OPGES varies across different types of gambling activity. The highest estimates were 26% for lottery and 25% for EGMs. The proportion of revenue derived from older people for horse and greyhound races (19%) and scratch tickets (12%) was in keeping with the prevalence of this group in the population (15%). However, the OPGES for betting on sports and special events was comparatively lower (6%). So, older people in the ACT contribute more than the average to spending on lotteries and EGMs. In contrast they contribute average amount for races and scratch tickets but less than average to sports betting.

Single people gambling expenditure share (SPGES)

The SPGES is an estimate based on adults who were not living with a spouse or partner at the time of their 2009 Survey interview, and includes people who were never married, divorced or separated, or widowed. The SPGES for overall net gambling expenditure (without the compensation adjustment) was estimated at 36% (Figure 6.3), i.e. one-third of gambling revenue in the ACT is derived from adults who are not living with a spouse or partner. This group represents about 39% of the adult population so they are average contributors to ACT gambling revenue. The estimate was little changed when the compensation adjustment was applied to self-reported net expenditure on EGMs, casino games and Keno.

SPGES varied minimally across different types of gambling activity. The highest estimates (scratch tickets: 45% and EGMs: 43%) were in keeping with the prevalence of this group in the population (36%). Single people accounted for about a third of net expenditure for each of sports/special events (31%) and horse and greyhound races (32%) in the ACT. Single people, therefore, contribute average amounts to expenditure across types of betting in the ACT.

Low education gambling expenditure share (LEGES)

The LEGES for overall net gambling expenditure (without the compensation adjustment) was estimated at 15% (Figure 6.4), i.e. 15% of gambling revenue in the ACT is derived from adults who have not reached Year 12 education. This group represents 7% of the adult population so they are above average contributors to overall ACT gambling revenue. The LEGES estimate was only slightly increased when the compensation adjustment was applied to self-reported net expenditure on EGMs, casino games and Keno (17%).

LEGES varies considerably across different types of gambling activity. The highest estimates were found for 19% for EGMs and 16% for lotteries. The proportions of revenue derived from people with lower education were lower and more in keeping with the prevalence of this group in the population (7%) for scratch tickets (9%), horse and greyhound racing (6%) and sports or special events (6%). In other words, people with lower education in the ACT contribute more than average to net expenditure on EGMs and lottery but average amounts for other activities. At the other end of the qualification spectrum, people with degree-level qualifications spend less on average across every type of gambling activity analysed here compared with those who do not have degrees. Their lower than average net expenditure was most marked for scratch tickets, EGMs and betting on sports and special events (Figure 6.4).

Means of gambling (internet and other non-internet means)

The 2014 Survey provided the first opportunity to explore gambling expenditure shares by means of gambling. More specifically, we compared expenditure shares for money gambled over the internet with money lost gambling using other, non-internet, means. Only a small proportion of money (15%) gambled by ACT adults was lost using the internet. The share of internet losses derived from moderate risk/problem gamblers was similar across internet and non-internet expenditure (18% compared to 21%). The expenditure shares for people reporting some degree of problem gambling (PGSI scores of 1+) was also not significantly different across internet and other gambling losses (56% and 40% respectively). Overall the findings suggest that a disproportionately large amount of gambling expenditure comes from people experiencing gambling problems regardless of whether money is lost over the internet or gambling via other means.

This report has also provided a socioeconomic profile of money lost using the internet and compared this profile with money lost via other means. People who were married or in a de facto relationship accounted for a similar proportion of money lost over the internet (62%) and using other means (66%). However, disproportionately large amounts of internet losses were derived from men (86%) and those aged 25 to 44 (57%). The comparable estimates for other (non-internet) gambling losses were much smaller (64% and 27%). In contrast, people who had not completed Year 12 and aged 65+ accounted for a disproportionately small amount of money lost over the internet (5% each) and a greater proportion of money using other means (26% and 17% respectively). Overall, the findings suggest that internet losses are less equally distributed across population subgroups than other gambling expenditure, with 25-44 year olds and men dominating internet expenditure.

Comparison of self-report and industry reported expenditure data

For many types of gambling activity, it was not possible to make a direct comparison between ACT industry figures (as reported for AGS) and the self-reported expenditure in the 2014 Survey. However, self-reported net expenditure for both casino table games, EGMs and Keno were considerably less than might be expected from the industry data. The self-reported figures for EGMs are highly likely to reflect under-reporting by participants although there could also be a contribution from bias due to non-responding. That is, people who spend more money than average on EGMs, casino table games and Keno may have been less likely to participate in

the interviews, either because they could not be contacted by 'phone or because they refused to participate if contacted.

Crucially, however, the use of compensation factors to weight self-reported expenditure, so as to bring up the total reported spending on EGMs, casino table games and Keno to match the industry data, made very little difference to the important analyses presented throughout this report, either for PGES and for other estimates of gambling expenditure shares. This demonstrates that general concerns about the validity of self-reported expenditure data are of little relevance to the aims of the present study or the particular analyses carried out.

11.1 Change and consistency in gambling expenditure and expenditure shares, 2009 to 2014

Change in gambling expenditure in the ACT

A major aim of this report is to compare expenditure shares across the 2009 and the 2014 ACT Surveys. Before doing so, it is necessary to consider the ACT gambling landscape over time. AGS industry data indicate that gambling expenditure has been declining in the ACT over the past 15 years. For instance, real per capita expenditure dropped by 42% from 2001 to 2014 (Davidson *et al.,* 2015: p47). More specifically, real per capita gambling expenditure in the ACT declined by about 28% over the time period covered by the two surveys. The drop in gambling expenditure has not been consistent across activities. The largest reductions were evident for races (39.4%) and at the ACT casino (32.2%), followed by EGMs (28%), Scratch tickets (21%) and lotteries (18%). There was a comparatively small reduction in expenditure on Keno from 2008-09 to 2014-15 (4.9%).

The ACT Survey data also showed marked reduction in gambling participation and expenditure over time. For instance, the proportion of people gambling on at least one activity fell by about 15%. Average expenditure summed across all activities declined by about 42%. In terms of individual activities, the survey data showed large reductions in mean expenditure for horse and greyhound races (60%), EGMs (37%) scratch tickets (32%), and lottery (18%). (Note that it is difficult to comment on change over time in the survey expenditure estimates for the remaining activities because the mean losses and participation rates were small). Both the AGS industry and ACT Survey data demonstrate large reductions in gambling expenditure from 2009 to 2014. While the Survey data reductions are larger (except for lottery), they broadly parallel those reported by industry.

It is important to note that the decline in gambling expenditure is particularly marked in the ACT. For instance, Australia as a whole only experienced a 4% decline in total gambling expenditure from 2009 to 2014. The large shifts in the ACT gambling landscape highlight the possibility that the expenditure shares found in 2009 may not pertain to 2014. This would be the case if reductions in expenditure were concentrated in specific population subgroups, such as men or people with low levels of education. On the other hand, if reductions in gambling expenditure have occurred to the same degree across population subgroups, no change in expenditure shares would be evident.

The relative contribution of some activities to gambling losses as a whole changed somewhat from 2009 to 2014 (Chapter 5). This is not surprising given that the reductions in expenditure varied greatly across activities. In 2014, lottery accounted for a significantly greater share of losses (an additional 10%) and Keno a smaller share (about 2% less) of gambling losses, otherwise the relative contribution of the individual activities to gambling losses remained constant, despite the varying reductions in expenditure over time. There was also very little change in expenditure shares over time. After adjusting the 2014 analyses to reflect the PGSI sampling methods

used in 2009, the problem gambling expenditure shares were not significantly different in 2014 than 2009 either for expenditure summed across all activities or for individual activities (Chapter 5).

While there were some changes in the socioeconomic and demographic profile of gambling expenditure, there was also a great deal of consistency in findings over time (Chapter 6). The male gambling expenditure share did not change significantly over surveys for gambling expenditure summed across all activities or for any individual activity. In contrast, the age profile of gambling expenditure changed over surveys. The OPGES significantly increased from 8% to 23% for expenditure summed across all activities. The increase in the expenditure accounted for by the oldest age group was evident for the three most prevalent activities, lottery (16% to 26%), EGMs (11% to 25%) and horse and greyhound races (0% to 19%). The young people gambling expenditure share also significantly decreased over surveys, but this change was only evident for EGMs (14% to 5%). The findings reflect an ageing profile for gambling losses for lottery, races and EGMs across the 2009 and 2014 ACT surveys.

For marital status and education, the only changes pertained to gambling losses summed across all activities. The expenditure shares for people who were married or in a de facto relationship (51% to 64%) and people with bachelor degrees (18% to 33%) increased over surveys. The changes in the socioeconomic and demographic profile for gambling losses summed across all activities simply reflect the greater contribution of lottery expenditure to total gambling losses in the 2014 than the 2009 surveys. Consequently, the expenditure shares for total losses more closely resembled those for lottery in 2014 than 2009. These changes reflect the changing gambling landscape in the ACT, that is, the increasing dominance of activities more frequently undertaken by older, partnered adults with degrees.

11.2 Placing the ACT findings in context

Problem gambling expenditure share (PGES)

Our estimates of PGES are very similar to estimates from a number of previous studies. The only Australian estimates using the PGSI are from the two most recent Tasmanian surveys (ACIL Allen Consulting, 2014; The Allen Consulting Group *et al.,* 2011). The PGES from data collected in 2011 (23%) and 2013 (21%) are remarkably similar to the ACT (21%) Other Australian studies reporting PGES have used the South Oaks Gambling Screen (SOGS) as a measure for problem gambling and are not directly comparable with the current study (Productivity Commission, 1999; Young *et al.,* 2006). Estimates of PGES in Canada using the PGSI cut of three or more have ranged from a low of 19% in Manitoba to a high of 38% in Ontario (Williams and Wood, 2004). These surveys were conducted more than 10 years ago and may not reflect current gambling behaviours. Regardless, the problem gambling estimates in the ACT are in the lower range of those reported in Canada.

A clear implication from finding that over a fifth of gambling revenue comes from 3% of gamblers (and just 2% of the adult population) is that people with problems are not just spending more than other gamblers, they are spending a great deal more. On average, moderate risk and problem gamblers are spending 7 and 20 times as much as non-problem gamblers (Table 4.2). The group considered to be low-risk gamblers (PGSI scores of 1 or 2), who account for 28% of gambling revenue in the ACT are spending five times as much, on average, as gamblers who consider themselves as problem-free (Table 4.2). Clearly, they are spending less on average compared with the moderate risk and problem gambling group but they are spending substantially more than reported by those that are altogether free of gambling problems. This reinforces recent findings that so-called

"low risk" gamblers are distinctly different to non-problem gamblers and are more similar to moderate risk gamblers (Currie *et al.,* 2013).

Estimates of PGES across all types of gambling combined will necessarily be closer to the values for specific forms of gambling that represent a bigger proportion of industry totals. EGMs account for a major share across Australian states and territories with the exception of WA. Our estimate for the PGES relating specifically to EGMs (28%) is somewhat lower than the estimate of 36% from the 2013 Tasmanian Survey (ACIL Allen Consulting, 2014) regardless it is a form of gambling in the ACT where a large proportion of revenue is derived from people who are identified with moderate risk or problem gambling. However, if the criterion of reporting any gambling-related problems is used (PGSI scores of one or more) then the combined group encompassing low-risk, moderate-risk, and problem gambling accounts for over 63% of net expenditure on EGMs by the ACT adult population (Figure 4.1). This is similar to the comparable estimate (59%) from the 2013 Tasmanian Survey (ACIL Allen Consulting, 2014: p90).

Other estimates of PGES were similar between the ACT and Tasmania, including for lottery (7% and 5% respectively), scratch tickets (11% and 6%), horse and greyhound races (24% and 20% respectively). The PGES for sports betting was higher in the ACT than Tasmania in 2011 (42% compared with 26%). Generally, however, similar findings were obtained from the two jurisdictions.

Expenditure shares for socioeconomic and demographic subgroups

We have not identified any other attempts to estimate expenditure shares for socioeconomic and demographic subgroups of the general population, so there are no direct points of comparison for the ACT figures derived for men (and women), younger and older people, people without partners, or low (and high) education groups. However, the findings are broadly what might be expected from what is known about levels of gambling participation and levels of problem gambling in different sections of the population. Most significantly, across both ACT Surveys men and people with low education spent more than the population average on gambling. This is without making any form of adjustment for differences in income between these groups. The clearest examples of groups contributing relatively less to net gambling expenditure were women and people with higher qualifications. Women spent less than men on every gambling activity except buying scratch tickets (Figure 6.1). Those with degree-level qualifications are consistently low spenders across all forms of gambling (Figure 6.4), indicative of the regressivity of the consequent tax revenue.

Moving beyond the above generalisations, there are notable differences in patterns of socioeconomic and demographic expenditure shares across different gambling activities (Figures 6.1 to 6.4) and these patterns were described more fully in Chapter 6. Differences in net expenditure between men and women (Figure 6.1) reflect the greater levels of participation of men in particular types of betting. Patterns for different age groups should be interpreted keeping in mind that age differences can reflect gambling preferences of different birth cohorts (older people were obviously born long before younger people) and/or they could reflect developmental age differences. If the latter is the case, younger age groups would become more like their older counterparts, and the age structure of gambling expenditure would be constant over time. This study's findings demonstrated an increase in the gambling expenditure accounted for by the oldest age group over a five year period. The 45 to 64 age group accounted for a larger share of gambling expenditure than the 65+ age group in both surveys. If the former retain their gambling behaviour over time the expenditure share of the 65+ age group would be expected to increase as per our findings. This pattern of change is therefore more indicative of cohort than developmental differences. Longitudinal data covering a longer time period and from more time points are needed to clarify the influence of cohort effects on gambling expenditure. Regardless, if younger groups continue to retain their patterns of expenditure as they age the profile of ACT gambling losses will be very different in the future.

Internet and non-internet expenditure shares

We also know of no studies reporting expenditure shares for money lost over the internet and money lost using other means. It is therefore not possible to determine whether (i) the disproportionately large internet losses amongst people with gambling problems, men and younger adults (aged 24 to 44), and (ii) the disproportionately small internet losses amongst the oldest age group (65+) and people who had not completed Year 12, is evident in other jurisdictions. Regardless, the proportion of adults gambling using the internet is similar in the ACT to that found for Australia as a whole (8%: Hing *et al.,* 2014). The findings are also in line with other research documenting that men and younger adults are more likely to gamble using the internet than women and people aged 65+ (ACIL Allen Consulting, 2014; Hing *et al.,* 2014; Wood and Williams, 2011). Findings for education are more mixed, with some research indicating that people with degrees are more likely to gamble using the internet (Hing et al., 2014) and other research finding no differences in internet gambling rates (ACIL Allen Consulting, 2014; Wood and Williams, 2011) across different levels of education. Higher internet participation rates could cautiously be used to support the argument that these groups account for larger proportion of internet losses.

Comparison between self-reported expenditure and industry data

Not all types of gambling could be compared directly between the ACT Survey self-reports and industry figures as reported to AGS. Where these were most comparable, instances were found where the ACT Survey data yielded higher estimates of net expenditure for the ACT and other instances yielded lower estimates (Table 10.1). It is possible that over- and under-reporting contributed to these differences but there are other sources of variability to consider. It could also be that some part of the low estimation of net EGM and casino table game expenditure in the 2009 prevalence survey is a consequence of people who play these activities being less likely to participate in the survey. Another source of variation is that the survey records losses by ACT residents regardless of where their gambling takes place whereas the industry data include net expenditure by non-residents.

Nevertheless, the losses reported both for EGMs, casino table games and Keno in the survey are substantially less that the industry data and it is highly likely (given similar findings from other studies) that many individuals under-report their spending on these activities. This is the primary justification for utilising the method of compensation when estimating PGES (and other shares for demographic and socio-economic groups) for total net gambling expenditure. This technique, does not (and cannot) deal with over-reporting or under-reporting by individuals. What it does is to adjust the relative importance of different gambling activities when estimating PGES across all activities.

11.3 Limitations and strengths

Limitations

There are a number of limitations that should be considered when assessing and interpreting the findings of the present study. First, the survey was conducted in a confined geographical region with a particular demographic profile (atypical even for Australia), at a particular point in time with a specific range of available gambling products, so the results may not generalise to other locations and contexts. That said, the similarity of most of the findings on PGES to the 2009 ACT analyses and for Tasmania (ACIL Allen Consulting, 2014) suggest that there is some degree of consistency of results across time and location.

A second limitation applies to the nature of the data collected in the 2014 Prevalence Survey, including the likely under-reporting (and over-reporting) of net expenditure, especially on certain activities. Our response to this has been to compensate the survey data so that the mix of activities representing overall gambling expenditure better reflects the known mix of revenue as reported in AGS industry data. At the same time, we acknowledge that it is impossible to compensate the survey data for potential biases in self-reported expenditure at the individual level. Our best guess would be that people with gambling problems are likely to under-report their spending more than other gamblers, but even this generalisation (however plausible) is difficult to establish and quantify. So, our estimates of PGES may be under-estimates but they are unlikely to be over-estimates. There is even less evidence on which to make judgements about our estimates of other gambling shares based on demographic and socio-economic characteristics. The robustness of the reported findings will be shown by replication in other studies, especially studies that employ different methodologies.

A third limitation is that all analyses are constrained by sample size and statistical power. We have focussed on the five particular gambling activities that represented greater spending in the ACT (and were similarly more prevalent forms of betting) as well as overall net gambling expenditure across all activities. Even with this restricted set of activities, there are instances where other limitations impact on the reliability of findings. For example, the expenditure shares for problem gamblers with a PGSI score of 8 or more cannot be estimated with precision because of their small number in the survey. For that reason, we have utilised other thresholds to define gambling problems, including the commonly used level of a PGSI score of 3 or more. There are other instances where limitations of statistical power apply to our analyses, especially where participation in a particular gambling activity is uncommon for a particular demographic group. This does, of course, imply that their aggregate expenditure must be low but it also indicates uncertainty of the estimates obtained.

Strengths

The most obvious strength of the present study was conducting the analyses in different ways, including multiple datasets, in order to see whether the findings would be significantly changed by the variety of approaches. This included exploring the impact of extreme values (large wins and losses) on findings. In 2014, mean scores for net expenditure were influenced by a handful of large wins. This was not the case in 2009. It is difficult to determine why extreme wins were more influential in 2014 than 2009. At a basic level it is possible that by chance we sampled a few people who had large wins in 2014. Regardless, winsorised values for net expenditure were analysed, where extreme values are capped. This approach minimised the impact of atypical or unusual net expenditure on population means and totals and is a strength of the study.

Finally, comparing the expenditure shares across the 2009 and 2014 Surveys provides an invaluable test of the validity of the findings. The consistency in findings across datasets is a major strength of this study.

11.4 Conclusions

The conclusions and implications of the present study fall under three main headings of substantive findings, methodological developments, and future research priorities.

Substantive findings

The overriding and fundamental conclusion of both the 2009 and 2014 reports is that gambling revenue is not drawn evenly from different groups in the community. Different types of people contribute very different amounts. The diversity is not trivial and sometimes it is huge. Some of these differences, relating to the characteristics of individual gamblers, raise issues of appropriateness and fairness, given that patterns of expenditure do not correspond to any obvious indicators of affordability or obligation to the community. The greater amount spent on gambling by people with the least education is striking. People without either Year 12 education or post-school qualifications spend more than three times the average seen for those with degree qualifications. The differences are even greater for some particular types of gambling, increasing to six-fold for losses on EGMs. This form of gambling shows a very large proportion of revenue being derived from the least educated section of the community.

The greatest differentials apply to symptoms of problem gambling and are most prominent for particular types of gambling, notably betting on sports and special events, EGMs and horse and greyhound races. When the losses of gamblers labelled as “low-risk” are included along with the losses attributable to those with moderate-risk and problem gambling, then the majority of net expenditure on the three activities listed is derived from people with some level of gambling problem, even though they constitute less than 11% of all gamblers in the population. A striking finding of this report was that PGES were robust, they did not change significantly over time, despite large declines in gambling expenditure in the ACT.

Methodological developments

The collection of self-report data on gambling expenditure is feasible and, whilst the appropriate analysis of these data presents significant challenges, valuable results can be obtained. The reliability of the findings and their interpretation rests on the adoption of multiple approaches to analysis. Gambling expenditure data have been under-collected and under-utilised because of expressed fears about the underreporting of expenditure at the individual level. However, this circumstance is no different from many fields of research, including expenditure on other areas of personal or household budgets, or from comparable investigations of risks to health and wellbeing such as alcohol consumption, where underreporting is commonplace. The point is that valuable findings can be obtained, using appropriate techniques, in spite of evident underreporting at the individual level. Monetary expenditure is fundamental to gambling in all its forms and its place in gambling research is a necessity, however challenging.

Future research

This report suggests that expenditure is increasingly being derived from older adults. This was particularly the case for lottery, races and EGMs. It is of considerable interest for future research to determine whether this reflects cohort differences, that is people maintaining their gambling preferences and behaviour as they age. It is also important that the findings in these reports are replicated in other studies, including surveys conducted in other parts of Australia and in jurisdictions with a different mix of available gambling products. There is, however, a need to refine the methodology employed in such studies and this would require different types of data collection to help identify weaknesses in existing survey methodology and help develop better measures of expenditure for use across a range of settings. Such measures could be used as replacements for existing survey questionnaire items or they could supplement existing items in ways that might allow validation, adjustment or inclusion of sensitivity analyses. The continuous development of measures is fundamental to healthy progress across many fields of research. A trend in gambling research, most notable in Australia, has been to minimise the collection and use of self-report data on expenditure. Reversing this trend is essential.

In conclusion, the 2009 and 2014 reports demonstrate that gambling expenditure is not drawn equally from the ACT population. It is disproportionately derived from people with gambling problems, men, younger age groups and people without degree qualifications. The profile of problem gambling expenditure was robust, changing very little across two large general population surveys spanning a five year time interval. There is some indication that gambling expenditure is increasingly derived from older adults, and that people are spending proportionately more on lottery than other activities. Regardless, there was remarkable consistency in expenditure shares from 2009 to 2014. This consistency is striking given the major reductions in gambling expenditure and participation during this period.

Chapter 12: References

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Chapter 13: Appendices

13.0 Missing data analysis

Table 13.1: Valid responses and missing data amongst people with valid data on gambling frequency (n=2,289) for other measures used in the report.

Measure	N valid responses	N missing data	% missing
Socioeconomic and demographic measures			
Household size	2284	5	0.2
Sex	2289	0	0
Age	2289	0	0
Current partner status	2277	12	0.5
Highest completed qualification	2276	13	0.6
All above socioeconomic and demographic measures	2264	25	1.1
Gambling measures			
PGSI	2286	3	<0.1
Expenditure on:			
Lottery	2277	12	0.5
EGMs	2279	10	0.4
Horse or greyhound races	2254	35	1.5
Scratch tickets	2287	2	<0.1
Table games*	2285	4	0.2
Sports betting	2271	18	0.3
Total expenditure	2221	68	3.0
All above measures	*2191*	*98*	*4.3*
Expenditure on gambling using the internet	2250	39	1.7

*At a casino or online

Table 13.2 shows a list-wise analysis of each measure against a dichotomous measure identifying people with valid age, sex and marital status data who were missing data on total expenditure (n=59). The percentages and p-values were estimated using a chi-square analysis (weighted). Non-gamblers were excluded from this analysis because they cannot be missing data on expenditure.

Table 13.2: The proportion of gamblers with missing data on total expenditure by socioeconomic, demographic and gambling measures.

Measure	Unweighted n	Weighted %	p-value
Sex, n=1215			
Women	20	1.8	.005
Men	39	6.2	
Age, n=1215			
18-24	5	6.8	.216
25-44	14	5.1	
45-64	16	1.8	
65+	24	3.5	
Married or de facto, n=1215			
Yes	33	3.2	.329
No	26	5.2	
Highest completed qualification, n=1209			
< Year 12	13	5.1	.631
Year 12	12	5.6	
Trade certificate or diploma	14	3.4	
Bachelor degree or higher	20	3.1	
PGSI, n=1211			
Non-problem	47	4.0	.091
Low-risk	6	2.1	
Moderate-risk	4	12.1	
Problem	2	7.8	
Frequency of gambling in the last 12 months (all activities), n=1215			
1-11	9	1.1	.006
12-47	8	7.3	
48+	42	6.7	

13.1 Net expenditure by type of activity using uncapped measures

Table 13.3: Net expenditure by type of activity in the ACT using uncapped measures.

Activity	Participation†	Proportion of total losses (95% CIs)	Mean losses	ACT population losses
Lottery	33.4%	34.4% (27.8-43.2%)	$110	$33,193,096
EGMs	19.9%	35.8% (25.2-46.8%)	$114	$34,570,117
Horse and greyhound races	17.6%	17.2% (10.8-23.8%)	$55	$16,565,151
Scratch tickets	15.1%	1.1% (-4.9-4.3%)	$4	$1,102,831
Sports and special events	6.9%	6.0% (-1.9-14.8%)	$19	$5,761,221
Table games	5.8%	4.7% (1.8-7.9%)	$15	$4,491,027
Keno	2.9%	0.4% (0.3-0.6%)	$1	$413,681
Other activities*	5.8%	0.4% (-3.8-3.2%)	$1	$364,237
Sum across activities	*55.1%*	-	*$319*	*$99,202,384*

†Source: The 2014 ACT Survey (Davidson *et al.,* 2015: p22).
*Other activities include bingo, and informal games like cards for money.

13.2 Problem gambling expenditure shares using uncapped measures

Table 13.4: Net expenditure (in dollars) on all activities in the last 12 months by level of problem gambling using uncapped measures.

PGSI category	N ACT population	Proportion of adult population	Proportion of gamblers	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Non-gambler	137,398	45.5%	-	-	-	-
Non-problem	147,448	48.8%	89.5%	49.5% (39.1-61.6%)	$324[r]	$47,751,530
Low risk	12,653	4.2%	7.7%	25.0% (17.4-35.0%)	$1,905 (<.001)	$24,105,639
Moderate risk	3,410	1.1%	2.1%	12.5% (6.3-21.6%)	$3,532 (<.001)	$12,042,429
Problem	1,331	0.4%	0.8%	13.0% (8.1-21.6%)	$9,436 (<.001)	$12,561,764

a. Overall significance: differences between means across PGSI categories excluding non-gamblers (p<.001, df =3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

Table 13.5: Net expenditure (in dollars) on lottery in the last 12 months by level of problem gambling using uncapped measures.

PGSI category	N ACT population	Proportion of adult population	Proportion of gamblers	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Non-gambler	137,398	45.5%	-	-	-	-
Non-problem	147,448	48.8%	89.5%	81.3% (70.5-93.9%)	$183[r]	$26,988,111
Low risk	12,653	4.2%	7.7%	12.8% (7.3-19.0%)	$335 (.066)	$4,238,223
Moderate risk	3,410	1.1%	2.1%	3.3% (0.7-7.0%)	$326 (.444)	$1,110,829
Problem	1,331	0.4%	0.8%	2.6% (1.0-3.8%)	$643 (.029)	$855,932

a. Overall significance: differences between means across PGSI categories excluding non-gamblers (p=.024, df =3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

Table 13.6: Net expenditure (in dollars) on EGMs in the last 12 months by level of problem gambling using uncapped measures.

PGSI category	N ACT population	Proportion of adult population	Proportion of gamblers	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Non-gambler	137,398	45.5%	-	-	-	-
Non-problem	147,448	48.8%	89.5%	29.7% (13.1-48.3%)	$70[r]	$10,257,729
Low risk	12,653	4.2%	7.7%	37.8% (21.0-62.2%)	$1,033 (<.001)	$13,066,976
Moderate risk	3,410	1.1%	2.1%	13.9% (7.8-26.3%)	$1,412 (<.001)	$4,814,641
Problem	1,331	0.4%	0.8%	18.6% (9.6-36.1%)	$4,830 (<.001)	$6,430,770

a. Overall significance: differences between means across categories (p<.001, df=3).
b. Significance of differences between means using paired contrasts.
r. Reference group mean.

Table 13.7: Net expenditure (in dollars) on horse or greyhound races in the last 12 months by level of problem gambling, using uncapped measures.

PGSI category	N ACT population	Proportion of adult population	Proportion of gamblers	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Non-gambler	137,398	45.5%	-	-	-	-
Non-problem	147,448	48.8%	89.5%	39.8% (23.1-63.9%)	$45[r]	$6,595,667
Low risk	12,653	4.2%	7.7%	30.5% (14.2-55.2%)	$399 (.005)	$5,046,054
Moderate risk	3,410	1.1%	2.1%	8.3% (2.7-17.9%)	$404 (.015)	$1,377,923
Problem	1,331	0.4%	0.8%	21.4% (5.4-49.6%)	$2,663 (.002)	$3,545,506

a. Overall significance: differences between means across categories (p<.001, df=3).
b. Significance of differences between means using paired contrasts.
r. Reference group mean.

Table 13.8: Net expenditure (in dollars) on scratch tickets in the last 12 months by level of problem gambling using uncapped measures.

PGSI category	N ACT population	Proportion of adult population	Proportion of gamblers	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Non-gambler	137,398	45.5%	-	-	-	-
Non-problem	147,448	48.8%	89.5%	27.0% (-407.7-131.0%)	$2[r]	$297,678
Low risk	12,653	4.2%	7.7%	32.6% (-61.4-90.6%)	$28 (.102)	$359,404
Moderate risk	3,410	1.1%	2.1%	25.9% (-56.3-76.6%)	$84 (.014)	$286,102
Problem	1,331	0.4%	0.8%	14.5% (-32.2-44.5%)	$120 (.017)	$159,646

a. Overall significance: differences between means across categories (p=.178, df=3).
b. Significance of differences between means using paired contrasts.
r. Reference group mean.

Table 13.9: Net expenditure (in dollars) on sports and special events in the last 12 months by level of problem gambling using uncapped measures.

PGSI category	N ACT population	Proportion of adult population	Proportion of gamblers	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Non-gambler	137,398	45.5%	-	-	-	-
Non-problem	147,448	48.8%	89.5%	-0.4% (-213.0-190.4%)	$0[r]	-$23,150
Low risk	12,653	4.2%	7.7%	21.3% (-200.1-183.3%)	$97 (.003)	$1,225,467
Moderate risk	3,410	1.1%	2.1%	70.5% (-58.7-302.1%)	$1,191 (.010)	$4,061,188
Problem	1,331	0.4%	0.8%	8.6% (-80.9-72.9%)	$374 (.012)	$497,715

a. Overall significance: differences between means across categories (p=.009, df=3).
b. Significance of differences between means using paired contrasts.
r. Reference group mean.

13.3 2014 Problem gambling expenditure shares adjusted to reflect 2009 PGSI sampling methods

Table 13.10: Capped net expenditure (in dollars) on all activities in the last 12 months by level of problem gambling, adjusted to reflect PGSI sampling method used in 2009.

PGSI category	N ACT population	Proportion of adult population	Proportion of gamblers	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Non-gambler	137,398	45.5%	-	-	-	-
Non-problem	153,998	51.0%	93.4%	57.6% (49.0-67.3%)	$371[r]	$57,150,001
Low risk	7,170	2.4%	4.3%	22.2% (16.8-28.2%)	$3,066 (<.001)	$21,978,628
Moderate risk	2,433	0.8%	1.5%	9.2% (6.0-15.2%)	$3,741 (<.001)	$9,101,882
Problem	1,242	0.4%	0.8%	11.1% (7.4-17.7%))	$8,833 (<.001)	$10,971,874

a. Overall significance: differences between means across PGSI categories excluding non-gamblers (p<.001, df =3).
b. Significance of differences between means using paired contrasts.
r. Reference group mean.

Table 13.11: Capped net expenditure (in dollars) on lottery in the last 12 months by level of problem gambling, adjusted to reflect PGSI sampling method used in 2009.

PGSI category	N ACT population	Proportion of adult population	Proportion of gamblers	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Non-gambler	137,398	45.5%	-	-	-	-
Non-problem	153,998	51.0%	93.4%	84.3% (74.4-94.5%)	$183[r]	$28,230,977
Low risk	7,170	2.4%	4.3%	9.1% (5.4-13.0%)	$426 (.005)	$3,054,781
Moderate risk	2,433	0.8%	1.5%	4.1% (2.5-6.6%)	$564 (.002)	$1,373,415
Problem	1,242	0.4%	0.8%	2.5% (1.0-3.5%)	$670 (.020)	$832,771

a. Overall significance: differences between means across PGSI categories excluding non-gamblers (p=.001, df =3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

Table 13.12: Capped bet expenditure (in dollars) on EGMs in the last 12 months by level of problem gambling, adjusted to reflect PGSI sampling method used in 2009.

PGSI category	N ACT population	Proportion of adult population	Proportion of gamblers	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Non-gambler	137,398	45.5%	-	-	-	-
Non-problem	153,998	51.0%	93.4%	37.4% (26.5-51.2%)	$91[r]	$10,257,729
Low risk	7,170	2.4%	4.3%	34.7% (20.8-49.7%)	$1,812 (<.001)	$13,066,976
Moderate risk	2,433	0.8%	1.5%	12.4% (7.5-22.1%)	$1,904 (<.001)	$4,814,641
Problem	1,242	0.4%	0.8%	15.6% (9.5-27.1%)	$4,704 (<.001)	$6,430,770

a. Overall significance: differences between means across categories (p<.001, df=3).
b. Significance of differences between means using paired contrasts.
r. Reference group mean.

Table 13.13: Capped net expenditure (in dollars) on horse or greyhound races in the last 12 months by level of problem gambling, adjusted to reflect PGSI sampling method used in 2009.

PGSI category	N ACT population	Proportion of adult population	Proportion of gamblers	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Non-gambler	137,398	45.5%	-	-	-	-
Non-problem	153,998	51.0%	93.4%	42.2% (26.0-64.4%)	$44[r]	$6,848,087
Low risk	7,170	2.4%	4.3%	33.9% (19.0-57.3%)	$767 (<.001)	$5,496,427
Moderate risk	2,433	0.8%	1.5%	7.9% (2.5-17.3%)	$527 (.008)	$1,281,159
Problem	1,242	0.4%	0.8%	15.9% (4.9-35.8%)	$2,081 (.001)	$2,584,268

a. Overall significance: differences between means across categories (p<.001, df=3).
b. Significance of differences between means using paired contrasts.
r. Reference group mean.

Table 13.14: Capped net expenditure (in dollars) on scratch tickets in the last 12 months by level of problem gambling, adjusted to reflect PGSI sampling method used in 2009.

PGSI category	N ACT population	Proportion of adult population	Proportion of gamblers	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Non-gambler	137,398	45.5%	-	-	-	-
Non-problem	153,998	51.0%	93.4%	81.3% (65.6-99.5%)	$17[r]	$2,638,417
Low risk	7,170	2.4%	4.3%	8.1% (4.0-13.0%)	$36 (.080)	$261,624
Moderate risk	2,433	0.8%	1.5%	6.0% (2.4-11.6%)	$80 (.024)	$195,509
Problem	1,242	0.4%	0.8%	4.7% (0.9-10.4%)	$122 (.040)	$151,516

a. Overall significance: differences between means across categories (p=..022, df=3).
b. Significance of differences between means using paired contrasts.
r. Reference group mean.

Table 13.15: Capped net expenditure (in dollars) on sports and special events in the last 12 months by level of problem gambling, adjusted to reflect PGSI sampling method used in 2009.

PGSI category	N ACT population	Proportion of adult population	Proportion of gamblers	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Non-gambler	137,398	45.5%	-	-	-	-
Non-problem	153,998	51.0%	93.4%	41.8% (7.1-91.3%)	$11[r]	$1,716,799
Low risk	7,170	2.4%	4.3%	16.5% (3.8-58.3%)	$94 (.048)	$676,959
Moderate risk	2,433	0.8%	1.5%	29.8% (3.1-100.1%)	$503 (.018)	$1,224,823
Problem	1,242	0.4%	0.8%	11.9% (2.6-42.3%)	$394 (.024)	$488,806

a. Overall significance: differences between means across categories (p<.001, df=3).
b. Significance of differences between means using paired contrasts.
r. Reference group mean.

13.4 Socioeconomic and demographic expenditure shares using uncapped measures

Table 13.16: Net expenditure (in dollars) on all activities in the last 12 months by socioeconomic and demographic characteristics using uncapped measures.

Measure	N ACT population	Proportion of adult population	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Sex					
Women	155,578	51.5%	30.7% (22.4-40.5%)	$190 (<.001)	$29,582,210
Men	146,662	48.5%	69.3% (57.8-83.5%)	$456[r]	$66,879,152
Age					
18-24	55,100	18.2%	6.6% (0.8-12.4%)	$116 (.005)	$6,397,390
25-44	103,858	34.4%	35.3% (25.7-45.8%)	$328 (.538)	$34,095,229
45-64	98,946	32.7%	39.1% (30.6-49.8%)	$381[r]	$37,705,592
65+	44,337	14.7%	18.9% (12.2-26.5%)	$412 (.806)	$18,263,150
Married or de facto					
Yes	185,105	61.2%	65.9% (54.5-79.7%)	$343[r]	$63,533,527
No	117,135	38.8%	34.1% (25.2-44.7%)	$281 (.406)	$32,927,835
Highest completed qualification					
< Year 12	20,424	6.8%	17.5% (11.7-24.6%)	$825 (<.001)	$16,840,993
Year 12	74,391	24.6%	26.8% (18.9-36.2%)	$348 (<.138)	$25,880,882
Trade certificate or diploma	58,287	19.3%	22.8% (16.1-30.7%)	$378 (<.064)	$22,030,932
Bachelor degree or higher	149,138	49.3%	32.9% (23.3-43.0%)	$213[r]	$31,708,555

a. Overall significance: differences between means across socioeconomic and demographic measures including non-gamblers (age p=.050, df=3; highest completed qualification p<.001, df=3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

Table 13.17: Net expenditure (in dollars) on lottery in the last 12 months by socioeconomic and demographic characteristics using uncapped measures.

Measure	N ACT population	Proportion of adult population	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Sex					
Women	155,578	51.5%	39.6% (32.3-48.5%)	$84 (.009)	$13,142,924
Men	146,662	48.5%	60.4% (51.2-70.4%)	$137[r]	$20,050,172
Age					
18-24	55,100	18.2%	1.0% (0.2-1.7%)	$6 (<.001)	$331,668
25-44	103,858	34.4%	25.1% (18.8-32.2%)	$80 (<.001)	$8,337,033
45-64	98,946	32.7%	49.3% (41.0-58.6%)	$165[r]	$16,364,406
65+	44,337	14.7%	24.6% (17.9-31.1%)	$184 (.664)	$8,159,989
Married or de facto					
Yes	117,135	38.8%	68.0% (58.4-78.9%)	$122 (.147)	$22,576,892
No	185,105	61.2%	32.0% (23.5-40.1%)	$91[r]	$10,616,204
Highest completed qualification					
< Year 12	20,424	6.8%	16.0% (12.3-20.5%)	$260 (<.001)	$5,304,214
Year 12	74,391	24.6%	28.5% (20.7-36.5%)	$127 (.058)	$9,460,250
Trade certificate or diploma	58,287	19.3%	21.0% (15.3-27.4%)	$120 (.073)	$6,984,855
Bachelor degree or higher	149,138	49.3%	34.5% (26.9-42.4%)	$77[r]	$11,443,776

a. Overall significance: differences between means across socioeconomic and demographic measures including non-gamblers (age p<.001, df=3; highest completed qualification p<.001, df=3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

Table 13.18: Net expenditure (in dollars) on EGMs in the last 12 months by socioeconomic and demographic characteristics using uncapped measures.

Measure	N ACT population	Proportion of adult population	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Sex					
Women	155,578	51.5%	38.6% (24.5-61.4%)	$86 (.204)	$13,332,158
Men	146,662	48.5%	61.4% (41.3-86.0%)	$145[r]	$21,237,960
Age					
18-24	55,100	18.2%	5.0% (2.2-9.3%)	$31 (.057)	$1,728,420
25-44	103,858	34.4%	37.3% (20.4-59.5%)	$124 (.974)	$12,911,759
45-64	98,946	32.7%	35.1% (19.1-54.8%)	$123[r]	$12,140,687
65+	44,337	14.7%	22.5% (10.7-38.6%)	$176 (.513)	$7,789,251
Married or de facto					
Yes	117,135	38.8%	51.4% (33.2-75.1%)	$96 (.337)	$17,766,308
No	185,105	61.2%	48.6% (31.5-74.7%)	$143[r]	$16,803,809
Highest completed qualification					
< Year 12	20,424	6.8%	22.8% (12.4-39.2%)	$386 (<.001)	$7,884,526
Year 12	74,391	24.6%	15.4% (-0.1-31.1%)	$72 (.693)	$5,322,498
Trade certificate or diploma	58,287	19.3%	39.4% (23.5-62.9%)	$234 (<.001)	$13,637,737
Bachelor degree or higher	149,138	49.3%	22.3% (10.4-38.6%)	$52[r]	$7,725,356

a. Overall significance: differences between means across socioeconomic and demographic measures including non-gamblers (age p=.328, df=3; highest completed qualification p<.001, df=3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

Table 13.19: Net expenditure (in dollars) on horse or greyhound races in the last 12 months by socioeconomic and demographic characteristics using uncapped measures.

Measure	N ACT population	Proportion of adult population	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Sex					
Women	155,578	51.5%	18.9% (8.8-34.0%)	$20 (.003)	$3,134,187
Men	146,662	48.5%	81.1% (59.3-113.9%)	$92[r]	$13,430,964
Age					
18-24	55,100	18.2%	17.0% (2.2-33.7%)	$51 (.950)	$2,822,074
25-44	103,858	34.4%	33.0% (18.8-55.2%)	$53 (.997)	$5,463,893
45-64	98,946	32.7%	31.4% (9.8-53.4%)	$53[r]	$5,209,213
65+	44,337	14.7%	18.5% (10.0-32.9%)	$69 (.608)	$3,069,971
Married or de facto					
Yes	185,105	61.2%	70.9% (48.8-102.2%)	$63[r]	$11,750,982
No	117,135	38.8%	29.1% (14.1-49.5%)	$41 (.324)	$4,814,169
Highest completed qualification					
< Year 12	20,424	6.8%	11.0% (-13.5-30.5%)	$89 (.706)	$1,823,520
Year 12	74,391	24.6%	33.0% (17.3-57.4%)	$74 (.274)	$5,469,043
Trade certificate or diploma	58,287	19.3%	16.2% (8.1-29.8%)	$46 (.904)	$2,682,282
Bachelor degree or higher	149,138	49.3%	39.8% (25.0-66.4%)	$44[r]	$6,590,307

a. Overall significance: differences between means across socioeconomic and demographic measures including non-gamblers (age p=..967, df=3; highest completed qualification p<.642, df=3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

Table 13.20: Net expenditure (in dollars) on scratch tickets in the last 12 months by socioeconomic and demographic characteristics using uncapped measures.

Measure	N ACT population	Proportion of adult population	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Sex					
Women	155,578	51.5%	-54.8% (-575.8-292.0%)	-$4 (.305)	-$603,924
Men	146,662	48.5%	154.8% (-313.2-395.5%	$12[r]	$1,706,756
Age					
18-24	55,100	18.2%	40.1% (-81.5-107.0%)	$8 (.200)	$441,867
25-44	103,858	34.4%	100.3% (-205.7-226.3%)	$11 (.421)	$1,105,632
45-64	98,946	32.7%	126.3% (-245.2-341.0%)	$14[r]	$1,392,970
65+	44,337	14.7%	-166.6% (-895.4-481.1%)	-$41 (.089)	-$1,837,637
Married or de facto					
Yes	185,105	61.2%	163.5% (-309.3-415.1%)	$10[r]	$1,803,619
No	117,135	38.8%	-63.5% (-620.3-30.57%)	-$6 (.630)	-$700,788
Highest completed qualification					
< Year 12	20,424	6.8%	26.4% (-49.6-76.0%)	$14 (.045)	$291,236
Year 12	74,391	24.6%	128.6% (-278.6-462.4%)	$19 (.004)	$1,417,875
Trade certificate or diploma	58,287	19.3%	-132.9% (-711.6-462.4%)	-$25 (.737)	-$1,465,839
Bachelor degree or higher	149,138	49.3%	77.9% (-143.1-213.7%)	$6[r]	$859,560

a. Overall significance: differences between means across socioeconomic and demographic measures including non-gamblers (age p=.070, df=3; highest completed qualification p=.342, df=3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

Table 13.21: Net expenditure (in dollars) betting on sports and special events in the last 12 months by socioeconomic and demographic characteristics using uncapped measures.

Measure	N ACT population	Proportion of adult population	Expenditure shares (95% CIs)	Mean losses[a] (p-value[b])	ACT population losses
Sex					
Women	155,578	51.5%	-30.0% (-467.4-460.2%)	-$11 (<.001)	-$1,729,411
Men	146,662	48.5%	130.0% (-647.4-729.0%)	$51[r]	$7,490,632
Age					
18-24	55,100	18.2%	-16.0% (-325.0-276.3%)	-$17 (.697)	-$923,991
25-44	103,858	34.4%	95.3% (-236.1-501.5%)	$53 (.095)	$5,492,507
45-64	98,946	32.7%	15.7% (-112.1-143.3%)	$9[r]	$904,849
65+	44,337	14.7%	5.0% (-39.0-48.8%)	$6 (.661)	$287,856
Married or de facto					
Yes	185,105	61.2%	98.9% (-332.5-524.3%)	$31[r]	$5,696,480
No	117,135	38.8%	1.1% (-183.8-206.1%)	$1 (.263)	$64,741
Highest completed qualification					
< Year 12	20,424	6.8%	4.1% (-36.9-36.4%)	$12 (.834)	$238,619
Year 12	74,391	24.6%	24.3% (-200.9-187.9%)	$19 (.952)	$1,397,332
Trade certificate or diploma	58,287	19.3%	20.3% (-152.2-196.7%)	$20 (.926)	$1,166,685
Bachelor degree or higher	149,138	49.3%	51.4% (-366.6-414.4%)	$20[r]	$2,958,584

a. Overall significance: differences between means across socioeconomic and demographic measures including non-gamblers (age p=.373, df=3; highest completed qualification p=.998, df=3).
b. Significance of difference between the mean and the reference group mean.
r. Reference group mean.

13.5 Comparison of capped expenditure shares for gambling using the internet and gambling using other means

Table 13.22: Comparison of capped net expenditure (in dollars) on gambling using the internet and capped net expenditure (in dollars) on gambling using other means in the last 12 months by socioeconomic and demographic characteristics.

Means of gambling & PGSI category	Expenditure share of gambling using the internet (95% CIs)	Expenditure share of gambling using other means (95% CIs)	p-value[a]
Non-gambler	-	-	-
Non-problem	43.4% (24.8-73.4%)	59.7% (50.6-70.5%)	.346
Low risk	38.9% (12.5-68.5%)	19.0% (12.0-27.2%)	.432
Moderate risk	7.6% (1.1-18.3%)	10.0% (6.7-15.5%)	.562
Problem	10.2% (1.4-26.8%)	11.3% (7.9-17.2%)	.801

a. Significance of difference between the expenditure share of gambling using the internet and the expenditure share of gambling using other means.

Table 13.23: Comparison of capped net expenditure (in dollars) on gambling using the internet and capped net expenditure (in dollars) on gambling using other means in the last 12 months by socioeconomic and demographic characteristics.

Measure	Expenditure share of gambling using the internet (95% CIs)	Expenditure share of gambling using other means (95% CIs)	p-value[a]
Sex			
Women	14.3% (0.5-31.2%)	36.0% (29.0-43.8%)	.029
Men	85.7% (59.6-122.8%)	64.0% (54.8-74.0%)	.028
Age			
18-24	-0.4% (-9.6-9.5%)	7.8% (3.5-11.6%)	.231
25-44	57.4% (31.6-87.3%)	27.1% (19.9-34.5%)	.025
45-64	37.7% (21.9-67.5%)	39.6% (42.5-47.8%)	.964
65+	5.3% (2.3-10.9%)	25.5% (17.4-32.3%)	< .001
Married or de facto			
Yes	62.4% (37.6-104.2%)	66.4% (57.1-77.5%)	.926
No	37.6% (8.1-62.9%)	33.6% (26.2-41.3%)	.922
Highest completed qualification			
<Year 12	4.7% (1.2-10.2%)	17.2% (11.9-23.2%)	.013
Year 12	18.4% (9.6-34.2%)	28.7% (21.9-36.0%)	.262
Trade certificate or diploma	42.4% (17.0-70.5%)	20.1% (14.9-26.2%)	.266
Bachelor degree or higher	34.5% (17.8-60.0%)	34.0% (26.8-42.3%)	.905

a. Significance of difference between the expenditure share of gambling using the internet and the expenditure share of gambling using other means.

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