RESEARCH REPORT

NSW Youth Gambling Study 2020

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NSW Youth Gambling Study 2020

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1. Acknowledgements

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2. Executive summary

Conclusions

A weighted survey found that young people in NSW tend to commence simulated gambling and monetary gambling at much the same age (11-12 years). However, more young people engaged in simulated gambling and purchased loot boxes in the past year than engaged in traditional forms of gambling. All individual forms of simulated gambling were more popular than most forms of gambling, except for private betting. Reflecting a convergence of gambling and gaming, those who participated in simulated gambling were more likely to gamble. Problematic gaming was more prevalent than problem/at-risk gambling. Based on multivariate analyses, problematic gamers were more likely to participate in gambling but were not statistically significantly more likely to be problem/at-risk gamblers. Numerous personal, parental, peer and environmental factors were associated with gambling and gaming participation and problems. Parental factors were particularly influential, with parents being the greatest facilitators of youth gambling. Gambling with parents while growing up, parental approval of the young person's gambling, growing up with an adult/s with a gambling problem, and not setting rules for online use predicted gambling participation, intentions and problems. Lack of parental rules for online use was also linked to simulated gambling participation and problematic gaming, but lower wellbeing and higher impulsiveness were stronger predictors.

The NSW Office of Responsible Gambling (ORG) commissioned this study into gambling and simulated gambling amongst young people aged 12-17 years in NSW. The study aims to increase understanding of gambling engaged in by young people in NSW in order to prevent and reduce gambling-related harm. The research questions (RQs) were:

1. What is the nature and prevalence of gambling amongst young people aged 12-17 years old in NSW?
2. What is the nature and prevalence of simulated gambling amongst young people aged 12-17 years old in NSW?
3. What are the factors that influence youth gambling attitudes and behaviours?
4. What is the nature and extent of the convergence of gaming and gambling?

Gambling is defined as the risking of something of value on a chance outcome in the hope of winning a more valuable prize than the original stake. Simulated gambling is defined as games which imitate many core characteristics of gambling (e.g., the look, sound and actions) but which do not provide an opportunity for a cash payout.[1]

[1] In this report, gambling refers to spending real money on poker machines, race betting, sports betting, scratchies/lotteries, keno, bingo, poker, other casino games, esports betting, fantasy sports betting, and informal private betting. Simulated gambling refers to playing video games with 'mini' gambling components, gambling-themed apps from an app store, free demo or practice games on real gambling websites or apps, and games with gambling components on social networking websites, as well as purchasing loot boxes and betting with in-game items.

Methods

A literature review informed the design of two empirical stages conducted with young people in NSW aged 12-17 years. Subsequently, 16 focus groups with 104 participants were conducted in September 2019 and held in eight diverse locations, including two with Indigenous participants and one each with Chinese and Vietnamese participants.

A survey of young people was then conducted from 28 March to 11 May 2020 (N = 2,220) and administered to three samples. A supplier was contracted to deliver recruitment flyers to most households in NSW but attained less coverage than planned, so the sample (n = 551) may be subject to response bias. To improve its representativeness, results were weighted for age, gender and location based on ABS population projections for 2020. Only results from the weighted letterbox sample were used to address RQ1, RQ2 and RQ4, as this sample was the most representative, although may still be biased due to the low response and the generalisability of the results are unknown. Two additional samples were recruited through a Qualtrics panel (n = 826) and online and email advertising (n = 843). As these were convenience samples, they were not used to address RQ1, RQ2 and RQ4. However, they provided the advantage of relatively large numbers of problem/at-risk gamblers and problematic gamers, so only these two samples were used to conduct the multivariate analyses to address RQ3. The literature review and focus groups also helped to address all RQs.

Key findings

- In the past year, 29.8 per cent of the letterbox sample participated in gambling, and 21 per cent in commercial gambling (excluding private betting).
- The past-year problem gambling rate in the letterbox sample was 1.5 per cent, and 2.2 per cent were at-risk gamblers.
- Letterbox survey respondents reported that their gambling usually occurred with parents/guardians (53.7%), followed by friends aged 17 or less (26.8%), relatives aged 18 years or over (20.7%), relatives under 18 years (20.1%), and grandparents (19.5%). Relatively few young people (9.1%) gambled alone.
- In the past year, 40.1 per cent of the letterbox sample had played games with gambling components (simulated gambling).
- Nearly half (46.1%) of young people reported noticing gambling advertising on television during sports and racing events at least weekly.

RQ1. The nature and prevalence of gambling amongst young people

Gambling participation

Based on the letterbox sample, the past-year gambling participation rate was 29.8 per cent (95% CI: 26%-33.8%), within the estimates of 25-37 per cent in recent Australian school-based studies (King et al., 2016; King & Delfabbro, 2016). Past-year participation in commercial gambling activities (excluding private betting) was 21 per cent (95% CI: 17.7% - 24.7%). Older respondents were statistically significantly more likely to gamble, with no gender differences.

Nature of gambling

Consistent with the literature review and focus groups, the most popular gambling activities in the past year in the letterbox sample were private betting (17.1%), scratchies/lotteries (11%), bingo (6%) and keno (5.1%). Amongst respondents who had gambled in the past year, 17 per cent had gambled in the last month and 16.5 per cent in the past week. Amongst past-year gamblers, 24.9 per cent had bet online. Online gambling was statistically significantly more likely amongst males and older respondents. Respondents mostly used pocket money (60.4%) for gambling.

Underage access to commercial gambling

About three quarters of letterbox survey respondents who had tried to gamble reported not being stopped. They reported most commonly accessing online gambling by using a parent's account with permission, by paying someone else to gamble for them, or having someone else set up an account for them. Over one-third of those who had gambled online reported they had set up an account in their own name. These results are based on small numbers so should be interpreted with caution. Focus group participants also reported accessing land-based venues by using other people's ID or going to venues that did not check ID. The average age that letterbox survey respondents reported they had first gambled on any activity was 11.6 years, and 11.3 years for any commercial gambling activity.

Gambling attitudes and intentions

Letterbox survey respondents were highly aware that gambling could lead to harm, especially if done frequently. Most respondents (93%) considered that at-least weekly gamblers were at moderate or great risk of harm. Nearly half (46.3%) felt less frequent gamblers were at moderate or great risk of harm. Focus group participants discussed that gambling could have harmful impacts including 'addiction'. One-half of respondents did not intend to gamble in the future. Highest intention was for scratchies/lotteries (49.5%) and private betting (36.8%), with 15-20 per cent intending to gamble on most other forms. However, many focus group participants said they would try gambling once 18 as a novelty experience with friends.

Gambling problems

Based on the DSM-IV-MR-J (Fisher, 2000), 1.5 per cent (95% CI: 0.7%-2.8%) of letterbox survey respondents were classified as problem gamblers (males 1.8%, 0.8% females) and a further 2.2 per cent (95% CI: 1.3%-3.8%) as at-risk gamblers (males 1.1%, females 2.3%), with no statistically significant age or gender differences for either group, possibly because of small numbers of respondents in each group. The overall problem gambling rate is similar to those found in the most representative youth studies in Australia (1.4%; Freund et al., 2019) and the UK (1.7%; UK Gambling Commission, 2018, 2019).

RQ2. The nature and prevalence of simulated gambling amongst young people

Participation in playing games with gambling components

As well as loot boxes (discussed later), games with gambling components include 1) video games with 'mini' gambling components, 2) gambling-themed apps from an app store, 3) free demo games on real gambling websites or apps, and 4) games with gambling components on social networking sites. In the letterbox sample, 40.1 per cent played at least one of these games in the past year. This was statistically significantly higher for males and older respondents. Past-year simulated gambling (40.1%) was more common than past-year gambling (29.8%). 'Gambling-style

games' (types 2-4) were played by 24 per cent; also statistically significantly higher for older respondents but with no gender differences. Notwithstanding differences in measures and sampling, comparison with the literature suggests that simulated gambling amongst young people has increased substantially in recent years.

The nature of playing games with gambling components

Of the four game-types, video games with 'mini' gambling components were the most played (by 31.7% of the letterbox sample in the past year). Focus group participants noted these games have grown substantially, with players participating to progress in games, gain lives, earn in-game currency and obtain free items. Past-year participation was 14.2 per cent for gambling-themed apps, 14.2 per cent for free demo games, and 11.8 per cent for gambling-style games on social networking sites. The most played simulated gambling components were wheel spinning, pokies and casino games. Average age of first playing these games was 11.9 years. There was no statistically significant difference between age of first participating in gambling and simulated gambling. One-third of the letterbox sample had spent money on microtransactions (excluding loot boxes) averaging $10 per month (maximum $200).

Participation in and the nature of engagement with loot boxes

In the past year, 72.2 per cent of the letterbox sample had opened or purchased a loot box. This was statistically significantly higher amongst males but with no differences by age. Consistent with a representative survey of Australian youth (Office of the eSafety Commissioner, 2018), one-third (36.5%) had spent money on loot boxes, averaging $10 per month – although focus group participants noted that some youth spend amounts in excess of $100. Consistent with the literature review and focus group findings, respondents most often bought loot boxes to get in-game items or 'skins' (79.1%), virtual in-game currency (63.8%), or for in-game progress or competitive advantage (61.8%). In the past 12 months, more respondents spent money on loot boxes (36.5%) than participated in gambling (29.8%).

Betting with in-game items

Aligned with the literature review and focus groups, 14.5 per cent of the letterbox sample used in-game items for gambling – 7.9 per cent to bet privately with friends, 6.2 per cent to bet on esports, 5.8 per cent to bet on another site ('skin betting'), and 4.8 per cent to bet on the outcome of other competitive events. Males were statistically significantly more likely to bet with in-game items, with no differences by age. In the past year, fewer respondents had bet with in-game items (14.5%) than had participated in the most popular gambling activity of informal private betting (17.1%), but betting with in-game items was more prevalent than the next most popular gambling activity (buying scratchies/lotteries, 11%).

Attitudes to simulated gambling

Most focus group participants felt that simulated gambling did not enhance the gaming experience. They valued in-game skills and strategies over progress based on chance. They were aware that simulated gambling was designed to lure players with free games, and then offer in-game purchases to enable continued play or to level up. Many were sceptical about paying for loot boxes due to the low odds of getting desirable items and because advertised odds could be deceptive. They recognised that loot box purchasing could be expensive, risky and addictive. Most thought purchasing loot boxes and betting with in-game items constituted gambling as they involved risking something of value on unknown outcomes with low odds.

Internet gaming disorder

Based on the Internet Gaming Disorder Scale (Petry et al., 2014), 5.2 per cent (95% CI: 3.6%-7.5%) of the letterbox sample were problematic gamers. This was statistically significantly higher amongst males but with no age differences. A meta-analysis found the global prevalence of gaming disorder to be 3.1 per cent and was statistically significantly higher amongst males (Stevens et al., in press).

RQ3. Factors that influence youth gambling attitudes and behaviours

Personal factors

Multivariate analyses of the Qualtrics and email/ads samples found that older respondents were more likely to gamble. Gambling participation, intentions and problems did not differ by gender. Males were more likely to engage in simulated gambling, but were not more likely to be problematic gamers. Lower wellbeing was linked to gambling participation, and lower wellbeing and higher impulsiveness to problem/at-risk gambling. Consistent with the literature, higher impulsiveness distinguished those with gambling problems. Participation in simulated gambling and problematic gaming were both linked to lower wellbeing and higher impulsiveness.

Parents/guardians

The literature review, focus groups and survey found that parents were the greatest facilitators of adolescents' gambling, in venues and through use of parents' online gambling accounts. Letterbox respondents reported that their gambling usually occurred with parents (53.7%), other adults (20.7%) and grandparents (19.5%). Nevertheless, most (76.9%) reported that their parents would disapprove of them gambling. Many respondents were also exposed to parental gambling. Over half the letterbox sample (58.3%) reported being present when adults in their household gambled. Amongst the whole sample (N = 551), 10.4 per cent of respondents reported growing up in a household where they thought an adult had gambling problems (5.4% 'minor gambling problems'; 2.3% 'moderate gambling problems'; 2.8% 'severe gambling problems'). Multivariate analysis indicated that respondents were less likely to gamble, intend to gamble or have a gambling problem if their parents disapproved of their gambling. Respondents were more likely to be a problem/at-risk gambler if adults in the household gambled with them, did not set limits on their online use, or had gambling problems themselves. Supported by the literature review, a problem gambling adult in the household when growing up uniquely predicted problem/at-risk gambling amongst youth survey respondents.

Peers

The multivariate analyses found that associating with peers who gamble and having a greater sense of belonging to an online community were linked to gambling participation, intentions and problems. The literature review indicated that online gambling communities can elevate the risk of problem gambling by normalising gambling. Survey respondents engaging in simulated gambling and those who were problematic gamers also felt stronger attachment to an online community, reflecting that these games are played online and have online social features.

Gambling advertising

Consistent with the literature review, letterbox respondents reported frequent exposure to gambling advertising. On a weekly basis, young people most commonly noticed this advertising on television during sports and racing events (46.1%), on television except during sports and racing events (42.9%), and in online and social

media (34.8%). Also, consistent with previous studies, most young people in the letterbox sample reported negative responses to gambling advertising (e.g., annoyed, bored), but one-third reported it had increased their knowledge of gambling options. Nearly one-third considered betting on sports to be normal, and more than one in six felt that knowing the betting odds was part of following sport and also makes watching sport more exciting. Most focus group participants were indifferent to or annoyed by gambling advertising, but nonetheless considered that it normalised and increased knowledge about gambling, thereby increasing young people's propensity to gamble now and in the future. The literature review also found that young people report this normalising effect. In alignment with the literature review, the multivariate analyses indicated that exposure to gambling advertising in both traditional and digital media, and thinking more positively about gambling due to seeing gambling advertisements, were associated with gambling participation, intentions and problems. Positive attitudes towards gambling nurtured by gambling advertisements increased the likelihood of gambling problems amongst respondents.

Access to internet-connected devices

Over 90 per cent of the letterbox sample had access to online devices, including their own smartphone. While parents typically set some rules about time spent online, online content and use of devices in bedrooms, they rarely actively monitored this media use. Given that access to devices was nearly ubiquitous, no relationship was found with gambling attitudes and behaviours. However, having no rules set by parents about online use was linked to gambling participation, intentions and problems, and to participation in simulated gambling and problematic gaming. Focus group participants noted frequency and duration of simulated gambling was linked to how accessible their device was and whether it was in sight of parental monitoring.

RQ4. The convergence of gaming and gambling

Gaming and gambling are converging within products, with many games simulating gambling without money necessarily being involved. These range from games with gambling components, to games that replicate gambling products but use virtual credits. Games have become increasingly monetised. Players can spend real money to purchase virtual credits to engage in the game's gambling components, buy skins or open loot boxes. Items acquired in games can be used on third-party sites to bet with others, on esports and online games. Betting products are also offered for esports competitions. Gaming and gambling promotions are shared and accessible from the one device, including in online games, social media and esports events. Simulated gambling and online gambling can be accessed from the same device. Letterbox respondents who engaged in simulated gambling apps, demo games, simulated gambling on social networking sites, or betting with in-game items were more likely to gamble on all monetary forms. Those who bought loot boxes and played video games with gambling components were more likely to gamble on some monetary forms. Problematic gamers were more likely to gamble, but problem/at risk gambling and problematic gaming were not statistically significantly associated.

The convergence of gaming and gambling, the proliferation of simulated gambling products, and their popularity amongst young people suggest that several issues warrant particular attention. Sizeable proportions of young people appear to purchase loot boxes (36.5% of the letterbox sample) and bet with in-game items (14.5%). These activities share several characteristics with gambling and may be particularly harmful for young people. Watching esports events is also a popular

activity (40.8% of the letterbox sample). While only 1.4 per cent of the letterbox sample reported esports betting with money, 6.2 per cent reported esports betting with in-game items. Further, 15.1 per cent of respondents intended to bet on esports in the future, much higher than the current prevalence of 3.3 per cent of esports betting (for money) amongst NSW adults aged 18-24 years (Browne et al., 2019). Browne et al. (2019) also found that esports betting was strongly associated with problem gambling. These findings suggest that betting on esports with money and in-game items has potential to increase gambling-related harm to adolescents and young adults.

Limitations of the study

As explained earlier, the recruitment flyer was not delivered to all in-scope households so the sample may be subject to response bias. Nevertheless, the weighted results have strong alignment with previous representative studies which improves confidence in the results. We used other methods to recruit additional samples to ensure the rigour of the multivariate analyses, specifically through obtaining much larger sub-samples of at-risk/problem gamblers and problematic gamers than even a large representative sample would have obtained. Another limitation was the cross-sectional design based on self-reported data, which are subject to recall and other biases. Prospective and experimental studies are needed to examine causal relationships between simulated gambling and gambling amongst young people. As explained earlier, the survey also coincided with the start of the COVID-19 lockdown which may have affected some results. To limit survey length, the study examined only problem/at-risk gambling and not broader gambling-related harms. Young people may experience more harms than are captured by the DSM screening instrument. Despite these limitations, this is one of the few studies to provide very detailed information on gambling and simulated gambling amongst young people and to disaggregate the many different types of simulated gambling. The study also had much larger samples of at-risk/problem gamblers than have previously been obtained, which enabled between-variable comparisons.

Implications

Parents were the strongest influence on youth gambling and should be targeted for education and awareness. They should be advised against gambling with or in the presence of youth, or facilitating their gambling. Parents should be encouraged to monitor their children's engagement in gambling and simulated gambling and online use more generally, and discourage their use of social casino and demo games, purchasing loot boxes, and betting with in-game items. Youth education should emphasise that gambling is an adult activity and that underage gambling is illegal. Strategies could encourage appropriate peer gambling norms, for peers to discourage their friends from gambling, and encourage youth with lower wellbeing to engage in more positive coping strategies. Young people could be educated on the potential for simulated gambling to lead to gambling and gambling problems, and the importance of keeping their gaming in balance with other activities in their life. Youth services, gambling help and mental health services may also benefit from education about the risks of simulated gambling and gambling for young people.

Improved age and ID verification by operators should reduce underage access to gambling in land-based venues and when young people try to open online accounts. Strategies, including regulation and changes to industry practices, are needed to

reduce youth exposure to gambling advertising, especially on television and in online and social media, and its normalising effects. Purchasing loot boxes and betting with in-game items have similar characteristics to monetary gambling, and are linked to gambling participation and problems, so their regulation should be considered. Regulators should examine ways to reduce gambling components in online games and impose age restrictions for simulated gambling. Given the popularity of simulated gambling amongst young people, game developers and gaming operators should examine ways to reduce gambling components in online games, impose age restrictions for simulated gambling, ensure their marketing is responsible, and implement responsible gaming measures such as self-limiting features, self-exclusion and links to sources of help for gaming and gambling problems. Regulation of the gaming industry may be needed to achieve these outcomes.

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5. Introduction

The NSW Office of Responsible Gambling (ORG) commissioned this study on young people and gambling to address its priority areas of 1) emerging technologies and new trends, and 2) attitudes and behaviours towards gambling in vulnerable or target groups. This research has been prompted by concern regarding young people and gambling, and gaps in the existing literature.

How young people are engaging with gambling is changing. This change is being driven by rapid technological changes, the high-level of engagement of young people with mobile technology and video gaming, the increase in traditional and online gambling advertising, and the expanding scope and variety of games with monetary gambling opportunities.

The funding body requested the research to include qualitative developmental research and a population-based survey, where the target population for both was young people aged 12-17 years (inclusive) residing in NSW, to examine:

- youth gambling participation, behaviours and attitudes;
- the impact of advertising and normalisation (especially in sport) on young people; and
- the convergence of gaming and gambling.

Findings from the research can inform future youth-focused intervention and support by the ORG, including the development and delivery of education and awareness initiatives and the delivery of gambling support and counselling services. It can also inform policy development in relation to children and young people.

5.1. Research objective

The primary objective of this research was to increase understanding of gambling engaged in by young people in NSW in order to prevent and reduce gambling related harm.

5.2. Research questions

1. What is the nature and prevalence of gambling amongst young people aged 12-17 years old in NSW?
2. What is the nature and prevalence of simulated gambling amongst young people aged 12-17 years old in NSW?
3. What are the factors that influence youth gambling attitudes and behaviours?
4. What is the nature and extent of the convergence of gaming and gambling?

5.3. Overall study design

The overall design of the study was decided upon by ORG as comprising three sources of information – a literature review, focus groups and a survey. All of these

elements contributed to answering all four research questions. This had the advantage of being able to triangulate the results from each stage in order to provide confidence in the study's findings. While the results of preceding stages helped to inform subsequent stages, the stages were not interdependent as is the case in truly sequential studies where each stage addresses different research questions to drive the focus and design of subsequent stages.

5.4. Literature review

This review summarises current knowledge about adolescents' exposure to, and participation in, gambling activities, including emerging technological forms of gambling and simulated gambling. The scope of the review includes literature from Australian and international studies. Technological innovations have affected the nature of gambling and gaming products and thus the comparability of research on these products over time. Survey approaches differ across studies and over time, and in some regions different tools and reporting standards have been used which affect direct comparison of prevalence rates. Further, some products change because of new regulation and corporate strategies that affect the availability, access, and functionality of certain activities. Thus, this review should be considered a snapshot of the research on a range of different gambling behaviours, and an effort toward developing a more complete understanding of the complexities of youth gambling.

5.4.1. Methodology

This review was designed to gather relevant documentation and other source material on the broad topic of adolescent gambling in Australia and other regions. Source material was not limited to peer-reviewed studies and also included government-funded independent research studies in technical reports (i.e., grey literature). This review also includes research studies of young people from other important overseas jurisdictions that may be considered comparable to Australia on the basis of being primarily English-speaking industrialised countries with similar digital media habits (e.g., Canada, United Kingdom, and USA). Some large studies of young people in Germany, Finland and Italy were also included for comparison. We included Australian studies from 2003 to 2019, and international studies from 2015 to 2020.

Searches were conducted on bibliographic databases using the keywords and logic, including '[Adolescent]' AND [Gambling; Internet OR online gambling; Internet OR online gaming; social media AND gambling; skin AND gambling; gambling-like AND gaming; simulated gambling AND game; social gaming AND gambling problems; gambling AND virtual good; gambling AND gaming consoles']. Reference lists of identified major publications were also searched to identify further relevant publications. Further, the review was drawn from sources, including: (1) government websites and state gambling regulatory bodies; (2) industry reports, such as reports published by SuperData and Newzoo and other companies that specialise in gaming-related market research, and (3) review of media articles.

5.4.2. The nature and prevalence of youth gambling and simulated gambling

5.4.2.1. Background

Research interest in youth gambling, including young people's exposure to and active participation in gambling, has grown substantially over the last two decades. Gambling products and promotions may be found across websites, television, radio and social media, which has enabled a strong presence and level of accessibility. Gambling activities have also become much more accessible over the last decade, via smartphone and other portable online-enabled devices. These environmental and structural changes to gambling have enabled gambling activities to be a highly visible, socially-connected and acceptable.

Many adult gamblers report having developed a familiarity and interest in gambling prior to adulthood. However, there has been debate for years on the extent to which young people are actively involved in gambling and experience problems as a result (Derevensky et al., 2003). Young people often report relatively higher rates of problem gambling than adults and also lower insight into these behaviours (Cronce et al., 2007). This raises some questions as to the nature and extent of harm or distress experienced by this subgroup. This section will provide a summary of survey research on young people's involvement across various forms of gambling. Attention is directed to Australian studies conducted over the last two decades, followed by an examination of recent youth gambling across other regions, including comparable jurisdictions including the UK, US, and Canada.

Table 1. Summary of Australian studies of adolescent gambling (n=14), in order of publication date (2003-2016)

Author	Sample	Probability sample?	PG tool	Prev. of PG (% problem only)	Prev. (past year gambling: any activity)	Past year prevalence: Online/simulated gambling? Video gaming?
Delfabbro & Thrupp (2003)	N=505 Aged 15 to 17	No	DSM-IV-J	3.5	60% (highest for scratch tickets)	Internet gambling (2.4%, n=12)
Delfabbro et al. (2005)	N=926 Grades 7 to 12	No	DSM-IV-J	4.4 to 5.4	70.4% (highest for sports betting)	-
Lambos et al. (2007)	N=2669 Aged 12 to 17	No	DSM-IV-J	2.4	56.3% (highest for card games, scratch tickets, sports)	Internet gambling (4%, n=106) Regular video gaming (majority)
Jackson et al. (2008)	N=2788 Grade 8 students	Yes	-	-	41% (highest for lottery and racing/sports)	Internet gambling (4%, n=100) 'Poker machines or video games' (13%, n=357)
Kassulke et al. (2009)	N=114 Aged 15 to 19	No	SOGS-RA	5.3	75.6% for <18 years (highest for scratch lotto, raffles, poker machines)	Internet gambling (3.7%, n=14)
Dowling et al. (2010)	N=612 Aged 12 to 18	Yes	DSM-IV-MR-J	0.7	67.5% (highest for card games)	Internet gambling (4.1%, n=36)
Splevins et al. (2010)	N=252 Aged 12 to 18	No	DSM-IV-MR-J	6.7	81% (highest for coin-tossing, sports, lottery)	Internet gambling (0.3%, n=1)
Purdie et al. (2011)	N=1,253 Aged 10-14 N=1551	No	DSM-IV-MR-J	3.6 (10-14) 2.7 (15-17)	64%	Internet gambling (13-16%)

	Aged 15 to 17				(highest for scratch cards, private card games)	
Nitschke et al. (2013)	N=182 Grade 9 and 10	No	-	-	51% (highest for dare or challenge, scratch tickets)	Internet gambling (2%) Free computer gambling games (3%) Computer gambling games for money (1%)
King et al. (2014)	N=1287 Aged 12-17	No	DSM-IV-MR-J	1.0	At least 15.3% (highest for scratch tickets)	Simulated gambling (13%)
Gainsbury et al. (2015)	N=561 Aged 12-17	Yes	Modified PGSI	Unclear	18% (highest for lottery products, sports betting)	Social casino games (23%)
King & Delfabbro (2016)	N=824 Aged 12 to 17	No	5-item screener	Unclear	At least 25.1% (highest for scratch tickets)	Internet gambling (>2.1%) Simulated gambling (14.2%)
King et al. (2016)	N=555 Aged 12 to 17	Yes	PGSI	Unclear	At least 37% (highest for sports betting and lottery games)	Social casino games (23.4%)
Freund et al. (2019)	N=4269 Aged 12 to 17	Yes	DSM-IV-MR-J	1.4	Not measured (6% for last 30 days)	Not measured (3.6% had gambled online in past month)

DSM-IV-J: Diagnostic Statistical Manual-IV-Juveniles. DSM-IV-MR-J: Diagnostic Statistical Manual-IV-MR-J (Adapted-Multiple Response format for Juveniles). PG: Problem gambling. PGSI: Problem Gambling Severity Index. Prev: Prevalence. SOGS-RA: South Oaks Gambling Screen – Revised for Adolescents.

5.4.2.2. Australian studies of youth gambling

The Australian research evidence on youth gambling over the past two decades indicates that, in most samples, most young people (>50%) were involved in at least one gambling activity in the past year. Gambling frequency estimates appear to vary based on methodological approach. Some adolescents may have difficulty in determining whether certain activities constitute gambling (e.g., raffles, dares/challenges, card games with mock chips). Certain activities that blur boundaries (e.g., appear similar to gambling without involving any meaningful stakes) may affect the accuracy or confidence of reporting. At the same time, some surveys may compound this issue of blurred boundaries by not clearly articulating the definition of gambling, or the conditions that determine 'active' involvement (as opposing to simply observing or accompanying someone to a venue). Overall, the literature suggests that most young people aged 12 to 17 years have had some recent experience with gambling activities, usually in the form of scratch tickets or lottery products, and that 1% to 4% report symptoms that may indicate problem gambling.

Table 1 summarises 13 studies of adolescent gambling conducted in Australia since 2000. These studies have primarily been conducted via recruitment from secondary schools and targeting young people aged between 12 and 17 years. Measurement approaches to assessing gambling participation have generally asked young people to report which gambling activities they had engaged in over the past year and to what extent (i.e., frequency, and less commonly, expenditure on the activity). It is not always clear from these studies how the gambling activity might be facilitated and whether it occurs in the company of an adult (e.g., observing or sharing a scratch card). The two most common approaches to measurement have been the South Oaks Gambling Screen-Revised for Adolescents (SOGS-RA) and the Diagnostic Statistical Manual-IV-Multiple Response Format for Juveniles (DSM-IV-MR-J). Many of these studies are not nationally representative and thus reported figures should not be considered prevalence rates.

Delfabbro and Thrupp (2003) surveyed 505 adolescents (aged 15–17 years) from a secondary school in South Australia. Their survey examined: cards, slot-machines, racing, sports, lotteries, bingo and scratch cards, and any gambling on the Internet. They reported that 62% of adolescents had gambled in the past year, which included 14.7% who gambled on a weekly basis. Lotteries, scratch tickets and sports betting were the most popular activities with between 5% and 7% of participants having weekly involvement in these forms. Overall, 3.5% of the sample scored in the problematic range on the DSM-IV-J. Another study in South Australia by Lambos et al. (2007) involved 2,669 students aged 12 to 17 years from six co-ed government schools. Overall, most respondents (56.3%) had gambled in the last 12 months. In total, 2.4% of respondents were classified as problem gamblers.

Another schools-based study (Delfabbro et al., 2005) surveyed 926 adolescent gamblers across several schools in the ACT. It reported that 70% of the sample had gambled in the previous 12-months. About 10% reported weekly involvement in gambling, however, this figure was higher (35.5%) for Aboriginal students. The most popular forms of gambling among all adolescents were private card games (39.8%) and bingo/scratch tickets (40.5%). Betting on racing and sporting events was also popular (32% and 26%, respectively). Commercial gambling activities such as casino

card games, poker machines and Internet gambling attracted the least participants (12% and 5%, respectively). Card games were predominantly played with friends, whereas poker machine and Internet gambling was most commonly undertaken alone. Racing, lottery gambling and scratch tickets were more likely to be played with parents. Overall, 41 (4.4%) participants were classified as problem gamblers using the DSM-IV-J.

Another study of secondary school students (N=2,788, Grade 8 only) by Jackson et al. (2008) was conducted across four randomly selected schools in Melbourne, Victoria. Participants were asked if they gambled in the past year with money or possessions (where relevant) on: card games; lottery tickets (e.g., scratch cards, lotto tickets, keno); racing or sports; poker machines or video games; or on the Internet. Respondents were also asked whether they agreed with the following statements: Gambling (with money or possessions): *is good entertainment; is a waste of time; is a way to make money; makes you feel better; is OK as long as you don't overdo it*. Overall, 41% of adolescents had gambled on at least one activity in the past year, and 8% reportedly had engaged in three or more activities. Although involvement in gambling was lower than in previous Australian studies, the rate of Internet gambling (4.4%) was similar or higher.

Kassalke et al. (2009) surveyed 395 young people aged 15 to 25 years in Queensland (Brisbane, Sunshine Coast, Bundaberg, and Hervey Bay). This sample included 114 participants aged 15 to 19 years. Among this subgroup, 75.6% reported past year involvement in gambling activities, including 53% who used scratch tickets. Participation rates in other gambling activities were considerably lower, ranging from 2% to 8%. About one-quarter (24.4%) of adolescent respondents reported practice play on the Internet (24.3%). Of those who gambled, 86.5% indicated that they usually used their own money, and 8.3% indicated that when gambling they were most likely to use chips or mock money; however, the authors did not provide a breakdown of figures applied to adolescent versus adult gamblers. According to SOGS-RA scores, 5.3% of adolescents aged 15 to 17 years were considered problematic, with an additional 15.9% considered at-risk.

Dowling et al. (2010) surveyed 612 high school students from Victoria. This study is notable for its examination of family history of gambling involvement and problems, and other related risk factors. Overall, 67.5% of participants reported that they had gambled at least once in the previous 12 months. The most frequent gambling activity was scratch cards (48.4%), followed by playing card games at home or school (41.7%) and sports betting (18.6%). Participants most often gambled with their parents on several gambling activities: scratch cards/lotteries (59.8%), horse or dog racing at the TAB (62.2%), and horse or dog racing at the racetrack (55.4%). Overall, 0.7% were classified as problem gamblers (i.e., a much lower rate than other studies) and 4.4% as at-risk gamblers. Further analyses indicated that youth with a family history of problem gambling (parents or siblings) were 3.5 times more likely to report at-risk gambling and 4.5 times more likely to report problem gambling than their peers.

Splevins et al. (2010) surveyed 252 students, aged 12 to 18 years, recruited from private schools in Sydney. The survey assessed the frequency of gambling on commercial and non-commercial forms, net expenditure, changes in expenditure over time, and an estimate of income. The majority (81%, n=205) of the sample

reported gambling within the past year, with slightly less than half (n=109; 43%) having commenced prior to age 11. The median age for onset of gambling was 13 years. Coin tossing, sports betting, and lotteries were the three most frequent forms of gambling. A total of 17 participants (6.7%), all male, met the criteria for problem gambling. However, only 1.2% (n=3) of the sample reported personally recognising having a gambling problem, including only 1 of the 17 identified problem gamblers.

Purdie et al. (2011) conducted a national survey of youth gambling, including respondents aged 10 to 24 years, with the sampling approach involving distinct methodologies across three age groups. School-based sampling recruited 10−17-year-olds, including 1,253 participants aged 10 to 14 years, and 1,551 participants aged 15 to 17 years. Overall, 64% of the 15 to 17 age-group had participated in at least one gambling activity in the past year. The most common activities were instant prize-tickets or scratch cards, and lottery tickets, and playing cards games at home or in the homes of friends or relatives. Very few participants reported participating in any of the gambling activities on a daily or even weekly basis. Based on DSM-IV-MR-J scores, 3.6% of participants aged 10 to 14 years, and 2.7% of participants aged 15 to 17 years, were considered problematic gamblers.

Nitschke (2013) surveyed 182 students in Grades 9 and 10 in Ballarat, Victoria. In total, 51% of students had reportedly participated in at least one form of gambling in the past 12 months. The most frequently reported activity was ‘a dare or a challenge’ in which one third of students had participated, followed by scratch tickets and horse racing. Overall, only 2% of students had participated in Internet gambling or gambling through Facebook, 3% in free computer gambling games and 1% in computer gambling games for money.

King et al. (2014) surveyed 1,287 students aged 12 to 17 years in schools in South Australia. Adolescents reported their involvement in the following gambling activities in the previous 12 months: card games (e.g., blackjack, poker, etc.), electronic gaming machines, wagering on races or sports, lotteries, scratch cards, or ‘‘other’’. For each activity, participants indicated whether they had: (1) played with money (i.e., financial gambling), (2) played without money involved (i.e., simulated gambling), and (3) for relevant activities (e.g., cards, gaming machines) whether they gambled via the Internet. The most commonly reported past year activity was card games (11.9%). Based on DSM-IV-MR-J scores, the overall prevalence of problem gambling was 1%. Additional studies by King and colleagues (Gainsbury et al., 2015; King & Delfabbro, 2016; King et al., 2016), have recruited modest samples of young people (i.e., N = 500 to 800) and reported comparable figures for past-year gambling involvement, including participation in online gambling and gambling-like activities. The most popular gambling activities in these studies were similar to those reported previously, including scratch cards, lottery and sports betting. In general, these studies reported lower rates of past-year gambling involvement. A recent study by Freund et al. (2019) reported that 6% of young people had gambled in the past month, and 3.6% had specifically gambled online in the past month.

5.4.2.3. International studies of youth gambling

Table 2 presents a selective summary of studies of adolescent gambling conducted in international jurisdictions since 2015. These are studies from countries that are often compared to Australia (i.e., UK, US, Canada) despite some differences in gambling opportunities and legal gambling age (i.e., 19 years to gamble legally in Canada; 16 years for the National Lottery in the UK). Overall, rates of problem gambling in jurisdictions are mostly consistent (albeit with some higher rates, e.g., Italy) with Australian data. Overall, these available recent international studies provide estimates that between 40% to 70% of young people report past-year involvement in gambling activities and around 1% to 6% meet the criteria for problem gambling. These findings are also consistent with Australian data with respect to the findings that Internet gambling is accessed by about 5% to 15% of young people, although these activities have not been consistently measured across studies.

Table 2. Summary of selected international studies (n=27) of adolescent gambling, arranged by region and publication date (2015 to 2019)

Author	Sample	PG tool	Prev. of PG (% problem only)	Prev. (past year gambling: any activity)	Past year prevalence: Online/simulated gambling? Video gaming?
CANADA					
St. Pierre et al. (2015)	N=419 Aged 14 to 17	DSM-IV-MR-J	1.4	50% (last 3 months) (highest for scratch cards, dare/challenge)	Internet poker (7.3%)
Taylor et al. (2015)	N=2004 Aged 14 to 18	DSM-IV-J	Unclear	-	-
Cook et al. (2015)	N=4851 Grade 7 to 12	SOGSRA (6 items)	2.0 to 2.8	-	-
Carbonneau et al. (2015a, 2015b)	N=1882 Age of 15	SOGSRA	1.1	-	Internet gambling (NR)
Elton-Marshall et al. (2016)	N=10035 Grades 9 to 12	Gambling Problem Severity Subscale (GPSS) of the CAGI	1.2 (land-based) 17.4 (online)	41.6% (last 3 months) (highest for sports pools, slot machines, cards)	Internet poker (9.1%), Internet slots (4.9%, Facebook simulated gambling (9%), Gambling on video game outcomes (14.5)
McBride & Derevensky (2017)	N=1229 Aged 16 to 17	DSM-IV-MR-J	.48	52.2% (no activities reported)	-
Turner et al. (2018)	N=3369 Aged 13 to 20	GPSS/CAGI	1	At least 11% (highest for sports pool, lottery tickets, card games)	Internet gambling (4.2%)

UNITED STATES					
Weinberger et al. (2015)	N=1591 Grade 9 to 12	MAGS	33.8 (ARPG)	At least 78% (highest for gift scratch cards, card games, social bet)	Internet gambling (19.7%)
Foster et al. (2015)	N=1988 Grade 9 to 12	DSM-IV criteria	15.4 (ARPG)	At least 40% (activities not reported)	Internet gambling (14.4)
Simmons et al. (2016)	N=1076 Aged 13 to 20	SOGS-RA	13.0	65% (activities not reported)	-
Richard & Derevensky (2017)	N=6818 Aged 10 to 19	NODS-CLiP	6.7	31% (highest for card games, sports betting)	Mobile phone gambling (5%)
Zhai et al. (2017)	N=4523 Aged 14 to 18	MAGS	10.4	60.8% (activities not reported)	-
Grande-Gosend et al. (2019)	N=7045 Grade 7 to 12	NODS-CLiP	2.7	30% (activities not reported)	-
Rider et al. (2019)	N=2168 Grade 9 to 11	BAGS	1.7	31.7% (highest for card games, sports betting)	Internet gambling (3.1%)
UNITED KINGDOM					
Calado et al. (2017)	N=988	DSM-IV-MR-J	6.2	79.4% (highest for sports betting, scratch cards)	Gambling in social media sites (7.2%)
UK Gambling Commission (2019)	N=2943 Aged 11 to 16	DSM-IV-MR-J	1.7	11% (past week) (highest for private bets, fruit machines)	Internet gambling (3%) Online gambling-style games (12%)
ITALY					
Donati et al. (2015)	N=1656 Aged 13 to 24	SOGS-RA	-	74% (highest for scratch cards, sports betting)	Internet gambling (NR)

Gori et al. (2015)	N=14910 Aged 15 to 19	SOGS-RA	3.7	46.8% (activities not reported)	-
Cosenza & Nigro (2015)	N=1039 Aged 15 to 19	SOGS-RA	7.1	-	-
Canale et al. (2016)	N=14778 Aged 15 to 19	SOGS-RA	6.5	84.7% (activities not reported)	Internet gambling (15.6%)
Canale et al. (2017a)	N=10063 Aged 15 to 19	SOGS-RA	4.3	-	-
Canale et al. (2017b, 2017c)	N=20791 Age of 15 (inc. immigrants)	SOGS-RA	6.0	-	-
De Luigi et al. (2017)	N=10959 Aged 14 to 18	SOGS-RA	5.0	50.6% (highest for sports betting, scratch cards)	Online betting, poker, casino, skill games (NR)
Nigro et al. (2017)	N=1010 Aged 12 to 19	SOGS-RA	7.9	At least 72% (highest for cards and sports betting)	-
Buja et al. (2018)	N=34746 Aged 15 to 17	SOGS-RA	2.7	48.2% (activities not reported)	-
FINLAND					
Castren et al. (2015)	N=988 Aged 12 to 15	DSM-IV-MR-J	3.0	51.6% (activities not reported)	Internet gambling (NR)
Räsänen et al. (2015)	N=101,167	-	-	62.2% (activities not reported)	-

ARPG: At Risk or Problem Gambling. BAGS: Brief Adolescent Gambling Screen. CAGI: Canadian Adolescent Gambling Index (CAGI). DSM-IV-J: Diagnostic Statistical Manual-IV-Juveniles. DSM-IV-MR-J: Diagnostic Statistical Manual-IV-MR-J (Adapted-Multiple Response format for Juveniles). GPSS: Gambling Problem Severity Subscale (of the CAGI). PG: Problem gambling. PGSI: Problem Gambling Severity Index. Prev: Prevalence. MAGS: Massachusetts Gambling Screen. NODS-CLiP: NORC Diagnostic Screen for Gambling Disorders-Loss of Control, Lying, Preoccupation. SOGS-RA: South Oaks Gambling Screen – Revised for Adolescents.

5.4.2.4. Australian studies of youth simulated gambling

The available Australian literature on youth simulated gambling suggests that a minority of adolescents, usually between 10% and 33%, have had some exposure or experience of playing simulated gambling activities in their lifetime. This generally occurs via video games or games on social media apps. The evidence suggests that total financial expenditure on these activities is quite low, which is likely due to the 'free to play' nature of the activities.

In Australia, some of the first studies to examine simulated gambling were conducted in the early 2010s. King et al. (2014) surveyed 1,287 adolescents aged 12 to 17 years in South Australia. They reported that 13% had been involved in past-year simulated gambling, and 32% reporting engaging in at least one simulated gambling activity in their life. The most popular types were casino card games, electronic gaming machines, and sports betting. Exposure to simulated gambling usually occurred via gambling mechanics (e.g., 'mini-games') in video games. About 1 in 10 reported to have tried social casino apps on Facebook (e.g., Zynga Poker), and 1 in 20 adolescents had tried gambling smartphone apps (e.g., Slotomania). Nitschke et al. (2013) reported lower rates of participation in free gambling-like games (3%), albeit in a smaller sample.

A 2014-2015 national project examined social casino game play among adolescents (Gainsbury et al., 2015). A survey of 555 adolescents identified that 130 adolescents were social casino game players, including 52 adolescents who reported spending money on these games. Those who spent money to play these 'free-play' activities tended to be male and played more frequently. The self-reported median weekly expenditure among spending adolescents was $3.58 (King et al., 2016).

King and Delfabbro (2016) surveyed 824 adolescents from secondary schools to examine simulated and financial gambling. The most prevalent simulated gambling activities were unsupervised video gaming (7.9%) and mobile apps (5.7%). For most simulated gambling activities, adolescents reported to play, on average, about once per month, with comparable frequencies irrespective of whether parents supervised the activity. Gambling with real money was usually facilitated by a parent, particularly for scratch tickets and sports betting, consistent with the requirement of money and age restrictions.

5.4.2.5. International studies on youth simulated gambling

Simulated gambling activities have received stronger regulatory and research attention in international jurisdictions, particularly in the UK, Canada and Germany. The international evidence appears to be quite consistent with Australian studies, highlighting that there are a group of young people (usually 10-30%) who have some level of experience in these activities. In particular, studies conducted in the UK, Germany and Canada have provided more specific estimates of engagement with skins and loot boxes.

Elton-Marshall et al. (2016) reported the findings of the *2012–2013 Youth Gambling Survey (YGS)*, which surveyed 10,035 students in grades 9 to 12. The study reported that adolescents had engaged in online simulated gambling including free online poker (9.1%), free online slots (4.9%), and simulated gambling on *Facebook* (9%). The most prevalent form of simulated gambling was free play online poker among male adolescents (14.6%).

Dussault et al. (2017) reported on a longitudinal study (2012-2014) among young people in Canada. Among the 1,220 participants, 9% had played simulated poker, and 5.3% had played a simulated version of at least one other (non-poker) game. Wijesingha et al. (2017) presented findings from the *2012–2013 Youth Gambling Survey* conducted in three Canadian provinces with 10,035 students in Grades 9 to 12. Adolescents who played free games on gambling websites and Facebook were significantly more likely to gamble online.

Hayer et al. (2018) conducted a representative longitudinal (i.e., 12-month) survey with 1,178 German school students (M = 13.6 years; 47.5% male). There were 202 (38%) adolescents who reported involvement in simulated gambling on the first survey. Another study by Hayer and colleagues (2019) involved a cross-sectional survey of 1,905 students in grades 6 to 10 in Northern Germany. About half of all respondents had engaged in simulated gambling activities within the past 12 months. Simulated gambling embedded in video games represented the most prevalent activity (40%), followed by simulated gambling activities via apps (almost 20%).

Parent Zone commissioned an Ipsos MORI survey of 1,001 children aged 13 to 18 years to investigate underage skin gambling. The survey involved a nationally representative quota sample of children in the United Kingdom and was conducted between 25 May and 4 June 2018. The report stated that 27% of children aged 13-18 years were familiar with the term ‘skin gambling’ and 10% had reportedly gambled using skins at least once. A greater proportion of males than females (about 6:1 ratio) were involved in skins gambling. Young people reported using pocket money or gift money to purchase skins, or paying for skins using a direct debit from their personal bank account.

The UK Gambling Commission (2019) conducted a study of gambling among 2,943 11-16 year olds. The research involved a representative survey of school students in England, Wales, and Scotland. It was found that the proportion of 11-16 year olds who have ever played online gambling-style games was 12%. The most popular gambling-style game ever played was slot/fruit machine games (30%), followed by casino games (26%), poker (24%), and bingo (21%). The most common way of playing an online gambling-style game was using an app on a smartphone or tablet (26%). Social networking sites were the second most common method of play (18%), followed by free demo games on gambling websites (17%).

Wardle (2019) examined the cross-over of activities and their influence on risk of problem gambling using the 2017 *British Youth Gambling Survey* data. The survey included questions about gambling across 14 different activities. Wardle reported that betting on skins and other forms of gambling increased with age and skin betting was greatest for those who also gambled online. Among gamblers, those who had bet on skins had higher rates of at-risk and problem gambling than those who had not (23% vs. 8%), though they had a greater breath of gambling involvement, which may have been a common feature of both characteristics. Skin gambling alone was not significantly associated with at-risk gambling when other forms of gambling activity were taken into account. Skin betting and gambling on other activities cluster together, especially where the medium underpinning the behaviours is the same.

5.4.3. Factors that influence adolescent gambling

5.4.3.1. Personal characteristics

As discussed below, some adolescents are more prone to engage in gambling due to aspects of their personality profile, decision-making tendencies, and general psychological well-being (depression, low self-esteem). These factors can influence how an adolescent tends to perceive and respond in gaming and gambling situations, including their perception of the costs and benefits of the activity. In addition, many of the known risk and protective variables are interrelated (e.g., Dussault et al., 2017).

Recent studies suggest that there may be multiple different risk groups based on clusters of personal characteristics. For example, a study by Reardon et al. (2019) indicated several risk groups with varying profiles on Big Five personality traits but that sensation-seeking was a major risk factor across these profiles of gamblers. Other risk factors for youth gambling behaviour include: non-binary gender (Rider et al., 2019); low self-esteem (Jeong & Kim, 2011); depression and anxiety (Dussault et al., 2017; Laconi et al., 2017); substance use (Blinn-Pike et al., 2010); higher risk-taking tendencies (Jackson et al., 2008); inability to delay gratification (Seay & Kraut, 2007; Schiebener & Brand, 2017); less future-oriented thinking (Cosenza & Nigro, 2015); poor coping (Blinn-Pike et al., 2010); low emotion regulation skills (Liau et al., 2015); accepting attitudes toward gambling (Rossen et al., 2016a, 2016b); and higher impulsivity and lower conscientiousness (Müller et al., 2014; Walther et al., 2012).

5.4.3.2. Social influences

Family and parental influences

Parents can have a major influence on young people's opportunities for exposure to, and participation in, gambling activities. The nature of the parent-adolescent relationship can affect adolescents' capacities to cope with stressful life events and influence their level of interest and participation in risky activities. Children of problem gambling parents are more at risk of problem gambling due to the influence of genes, parent modelling, and having more opportunities to gamble themselves (Jacobs et al., 1989; McComb & Sabiston, 2010; Vitaro et al., 2014). Adolescents with an older sibling who gambles (Canale et al., 2017c), or another relative who gambles or has a gambling problem (Gonzalez-Roz et al., 2017), tend to be more at risk of becoming a gambler and developing gambling problems. Several other important parent-related variables, such as parental restriction and monitoring (Magoon & Ingersoll, 2006), and parents' marital and socioeconomic status (Dowling et al., 2017a), are known to affect youth gambling rates.

Peer influences

Peer relationships and a sense of peer group belonging are centrally important to adolescents. Although some adolescents may engage in gambling activities alone (Potenza et al., 2011), peers are an important influence on an adolescent's interest and decision-making in gaming and gambling (Dowling et al., 2017; Savolainen et al., 2019). This peer influence may be especially impactful when adolescents lack real world friendships, which may lead to forming an association with online strangers of varying ages and backgrounds in similar socially isolated circumstances. Gambling and simulated gambling may become rationalised by adolescents as 'normal' given that their friends are playing in the same way. Being a

member of a social group that provides social incentives to gamble (e.g., recognition of wins and group status) may be just as appealing for young people as the perceived financial incentives to gamble (Savolainen et al., 2019). Another important social influence on young people in relation to gambling is bullying victimisation (Grande-Gosende et al. 2019). Exposure to maltreatment by peers may disrupt the development of foundational self-regulation skills which may in turn result in maladaptive coping strategies, including gambling.

5.4.3.3. Environmental influences

Access to gambling and simulated gambling

Gambling cannot occur without access to these activities, and greater accessibility is often associated with higher levels of use (Shead et al., 2010). Accessibility is particularly relevant to youth gambling given the presence of devices in the family home, including bedrooms (King et al., 2014), as well as portable devices (e.g., smartphones). Environments that enable earlier age of gambling may be a risk factor for problem gambling (Reith & Dobbie, 2011).

Advertising of gambling and simulated gambling

An important potential influence on youth gambling attitudes and behaviours is advertising of gambling products, given the strong presence of gambling in media and domains that young people have a known interest in, such as sport (Pitt et al., 2016), television (Derevensky et al., 2010) and social media (Gainsbury et al., 2015). The UK Gambling Commission (2017) reported that 80% of 2881 young people aged 11-16 years had seen gambling advertising on TV, 70% on social media and 66% on other websites at least once. A sizeable minority reported seeing advertising more often than weekly on social media (27%) and websites (21%), and 10% followed gambling companies on social media, including Facebook, YouTube and Instagram. Among those who followed gambling companies, 30% had spent money on gambling in the last seven days, making them more than three times as likely to have done so compared to those not following gambling companies. Another study in the UK found evidence that young people aged under 16 years are actively engaging in gambling material on Twitter, especially in relation to esports (Ipsos MORI, 2019). The only available prospective study of digital gambling advertising (including advertising for gambling-like games) and its influence on young people was conducted in Germany. Hayer et al. (2018) conducted a representative longitudinal (i.e., 12-month) survey with 1,178 school pupils (M=13.6 years; 47.5% male). The onset of financial gambling was predicted by two gambling-related factors: (1) participation from home in simulated gambling on social networks (e.g., Facebook); and (2) significant exposure to advertising (relating to both simulated and monetary gambling). Hayer et al. (2018) concluded that unregulated product marketing of simulated online gambling increases adolescent demand for gambling. Studies conducted in Australia indicate that young people are frequently exposed to gambling advertising. However, these studies were conducted prior to the curtailment of televised gambling advertisements during sports matches prior to 8.30pm (Hing et al., 2014a; O'Brien & Iqbal, 2019; Sproston et al., 2015).

Sports betting advertising

Sports betting advertising has become pervasive in Australia, particularly commercial advertising in traditional media, sponsored advertising during sporting events, digital and direct advertising, and sales promotions with wagering inducements (Hing et al.,

2018a, 2018b; O'Brien & Iqbal, 2019). Research suggests a relationship between exposure to this advertising and increased normalisation of gambling amongst youth, finding strong brand association between gambling sponsors and sport amongst young people in Australia (Bestman et al., 2015; Pettigrew et al., 2012; Pitt et al., 2017; Sproston et al., 2015). In one study, 848 Australian participants aged 14-17 years completed an implicit association test based on an online experiment, and post-experiment survey (Li et al., 2018). The results supported an implicit association between gambling and sport, which was stronger when participants saw sport-relevant (vs. sport-irrelevant) gambling logos, or gambling-relevant (vs. gambling-irrelevant) sport names. This implicit association was positively related to the amount of sport viewing, but only among participants with more favourable gambling attitudes. Gambling attitudes and advertising knowledge, rather than the implicit association, were significant predictors of gambling intention.

Exposure to sports betting advertising may influence gambling intentions. In a survey of 519 participants aged 13-17 years, males, those who agreed that sports betting advertising had affected social norms (of family and friends), and those with positive cognitive responses to this advertising were more likely to intend to bet on sports when they transitioned to adulthood (Sproston et al., 2015). There was also an 'exposure-response' effect, with intention to bet increasing with increased exposure to this advertising. Similarly, a survey of 131 adolescents in Queensland (Hing et al., 2014a) found that intention to bet on sports once 18 years of age was predicted by male gender and more positive attitudes to gambling sponsors and their promotion during sport. More positive subjective norms about sports betting from friends and family also partially predicted participants' intentions to gamble.

5.4.4. Factors that determine engagement with high-risk products

Research suggests that many people are exposed to, or first develop an interest in, gambling activities during adolescence; however it is not entirely clear why some of these individuals continue to participate in gambling upon reaching adult age whereas many others do not. Many who gamble in adolescence do not become problem gamblers in adulthood. There may be multiple prototypical trajectories of gambling behaviour in the transition from adolescence to adulthood. Although gambling participation in general tends to decline over the period of young adulthood, some individuals who are more psychologically vulnerable, and those who report other co-occurring addictive behaviours (i.e., alcohol consumption), tend to report higher levels of gambling problems at this stage of life. Male gender, greater participation in more gambling activities, risk-taking tendencies and comorbidities, also increase risk of problem gambling. Risk factors for transitioning to gambling and problem gambling in young adulthood can only be ascertained through a longitudinal prospective cohort study.

5.4.4.1. Australian longitudinal studies of adolescent to adult gambling

Gambling as an adolescent has been found to have a relatively limited relationship to adult gambling. A recent Australian longitudinal study highlights the relative instability of youth gambling as a predictor of adult gambling. Delfabbro et al. (2014) reported the results of a 4-wave longitudinal investigation of gambling behaviour in a probability sample of 256 young people (50% male). Participants were interviewed in 2005 at the age of 16–18 years and then followed through to the age of 20–21 years. The results indicated that young people showed a high degree of variability in their

gambling participation over time. Participation rates increased rapidly during the transition from adolescence to adulthood and then were generally more stable.

Another longitudinal study in Australia was undertaken by Scholes-Balog et al. (2014), who recruited 2,328 adolescents from Victorian high schools. Participants were Grade 9 students (14 to 16 years) who were followed over a 10-year period. The study examined risk and protective factors across the domains of the community, family, school, peer group and individual. The researchers reported that only two predictors were statistically significant in their fully adjusted multivariate model. Gender (female) was associated with a reduced risk of young adult problem gambling, while family rewards for prosocial involvement moderated the risk relationship between adolescent alcohol use and young adult problem gambling.

Finally, Yucel et al. (2015) surveyed 156 adolescents (mean age of 12 years) with no history of problem gambling and followed them into late adolescence (mean age 18 years) to investigate the role of sex, risk-taking, and changes in temperament and psychiatric symptoms in the development of risky gambling behaviour. There were sex-independent effects of temperament and risk-taking behaviour, with greater developmental increases in temperamental frustration (i.e., negative affectivity), greater developmental decreases in temperamental attention (i.e., effortful control) and greater involvement in risky behaviours, such as alcohol use, predicting greater likelihood of becoming risky gamblers. In addition, there were sex-dependent effects whereby higher levels of baseline aggression in females and lower levels of the same in males were more predictive of risky gambling.

5.4.4.2. International longitudinal studies of adolescent to adult gambling

Studies of the transition from adolescent to adult gambling have been conducted in other countries (Carbonneau et al., 2015a, 2015b; Dussault, 2011; Edgerton et al., 2015; Goudriaan et al., 2009). These data appear to be consistent with studies conducted in Australia, highlighting that there are different subgroups of adolescents based on likelihood of adult gaming. Those adolescents who report certain vulnerabilities, including impulsivity engagement in other risk-taking activities, are more likely to report adult gambling.

In the US, Bray et al. (2014) surveyed 515 men and women from the age of 17 years to 23 years. Past-year gambling declined from 51% prevalence at the age of 17 years to 21% prevalence at the age of 22 years. Participants who reported no past-year gambling at a particular annual assessment had more than an 80% probability of also reporting no past-year gambling at the following assessment. Co-occurring addictive behaviours increased engagement with gambling activities.

Another similar study by Edgerton et al. (2015), also conducted in the US, involved a survey of 517 adults as part of the *Manitoba Longitudinal Study of Young Adults (MLSYA)*. Using latent growth curve modelling, the researchers examined how initial level of problem gambling severity and the rate of change were affected by 11 time-invariant predictors: gender, age of onset of gambling, experiencing a big win early in a gambling career, experiencing a big loss early in a gambling career, alcohol dependence, drug dependence, anxiety, depression, perceived social support, illusion of control, and impulsiveness. Five of the eleven predictors affected initial levels of problem gambling severity; however only impulsiveness affected the rate of change across time.

Carbonneau et al. (2015a, 2015b) conducted a large longitudinal study of 1,882 (Wave 1) individuals from the age of 15, with follow up measurement at 22 and 30 years. Two distinct gambling trajectories were identified: the first trajectory included males and females who were unlikely to have experienced gambling problems across the 15-year period, and the second trajectory including participants (mostly males) likely to have experienced at least 1 problem over the last 12 months at each time of assessment. Participants following a high trajectory participated frequently in 3 to 4 different gambling activities, and were more likely to report substance use and problems related to their alcohol and drug consumption at age 30. The authors concluded that gambling problems in the general population appear to be observable at age 15 in a small group of individuals (<10%), who maintain some level of these problems through early adulthood, before moderately but significantly desisting by age 30, while also experiencing other addictive behaviours and related problems.

5.4.5. The nature and extent of the convergence of gaming and gambling

According to King (2018), gaming and gambling are converging in the following main ways.

5.4.5.1. Access via shared platforms, devices, and streaming

This type of convergence refers to the ability to access both video game products and gambling services via the same device; for example, using an online-enabled personal computer, laptop, or smartphone (or similar device) to access a video game and a gambling application or website on this same device. The user can switch between each activity with minimal input required (e.g., single command 'one-button' entry) and without having to exit or close the application to access the other activity. For gambling activities, the user's financial details are linked to a personal credit card or other electronic payment system. In relation to streaming, gambling promotions on social media platforms may include video content that provides a direct link to access the gambling product (e.g., a sports betting app).

5.4.5.2. Games with gambling themes and elements

Some games include gambling themes and elements, which can take a range of different forms. In some games, this may be a non-monetary simulation of traditional land-based gambling activities, such as casino card games and slot machines. Some games adapt these gambling activities and redesign them with new elements to match the aesthetic and design of the game (e.g., a futuristic sci-fi theme). Many of these games have been changing over time, particularly in regard to different monetisation features (Zendle et al., 2020).

5.4.5.3. Virtual goods as currency for betting

With the advent of shared player worlds in online games that involve tradeable virtual goods and currency, in-game items have become a form of monetised currency. The stable, persistent, and open economy of the game platform enables players and/or the game developer to assign an enduring monetary value to virtual items. Recent games have enabled players to access and manipulate in-game inventories from external online platforms (i.e., access via an open application programming interface (API) design architecture that enables others to programmatically access the proprietary software or service).

This design innovation has led to linked software platforms, sometimes developed by a third party developer who is not affiliated with the game or developer, that enable players to access and use their virtual goods from their accounts across games (i.e., a type of access akin to logging into an online banking platform with access to multiple accounts). On this unified platform, players can buy, trade, or sell their virtual goods with other players or to the platform operator (who will receive a fee for handling these transactions). In effect, these various technologies enable players to obtain monetised currency from within a game and then use these currencies on external platforms, including third-party gambling sites.

5.4.5.4. Social casino games and gambling operators

Social casino games refer to a type of online game that has prominent gambling mechanics and is usually free-to-play on a mobile device. These games are designed to replicate the experience of playing the real-world counterpart (e.g., roulette). While social casino games tend to operate in a closed-loop economy where the player can purchase virtual credits with real money but cannot receive cash prizes for participation, some games have employed hybrid reward systems that reward loyalty points or discounts redeemable at a casino venue in the US.

5.4.5.5. Presence of gambling in competitive video gaming events (esports)

The mass popularity of esports leagues around the world, particularly in East Asia but increasingly within Australia with its advent of a national esports league, has led to online gambling operators offering betting on these matches. This includes existing online gambling operators adding esports betting options, as well as new dedicated esports betting sites (Schneider, 2015).

About a third (32%) of the global esports audience is aged between 16-24 years (www.statista.com), with another third (33%) who are aged 25-35 years. The esports competitors themselves tend to be slightly younger than the average esports viewer, with some data that suggest that players' age tends to range between 21 to 25 years. The standard age requirement across leagues is 18 years or over. There are viewers and competitors who, in some jurisdictions (e.g., US), are not legally able to gamble but who are exposed to, or are the subject of, gambling promotions. This situation is comparable to some other professional sports leagues, including the AFL and NRL. Viewing esports is also increasing in Australia, particularly amongst people who are younger (aged 18-34 years), male, and play video games (Brand et al., 2017; Brand et al., 2019; You.Gov, 2018). However, little is known about esports viewing and betting amongst adolescents in Australia.

5.4.5.6. Gambling promotions and advertising on social media

Gambling promotions and advertising are present on social media (Abarbanel et al., 2017; Gainsbury et al., 2015) and are known to be viewed and interacted with by underage users. This includes the official social media pages of betting operators, who produce material and engage with users (e.g., respond to messages) to advertise their brand. Social media content is propagated by paid or sponsored content, and then shared by individuals on the social network (i.e., viral distribution). Promotions and advertising for gambling products are promoted on sites with video-streaming and social functionalities that do not feature age-restrictions.

5.4.5.7. Classification of gaming and gambling activities

Gaming and gambling activities may be distinguished according to the following characteristics: (1) the type of monetisation involved in the activity, including whether money is involved as a cost of entry, or for the purchase of currency or related means of participation, and whether money can be won as a consequence of play; (2) whether the activity involves betting or wagering mechanics, including interactivity and the presence of chance-based outcomes; (3) whether the activity has visual and structural resemblance or parity with established gambling activities; and (4) the context and positioning of the activity, including the centrality of the gambling experience. Acknowledging that there can be great variations in activities within each type, the following activities may be delineated in addition to traditional forms of gambling:

Simulated non-financial gambling: These are gambling simulations that may closely resemble or otherwise appear similar to gambling activities (e.g., blackjack, or slot machines) but no money is involved in the state of play.

Monetised simulated gambling: These are gambling simulations that have monetisation features to enable players to spend money on virtual currency. However, this currency is positioned within a closed-loop economy where it cannot be redeemed for money or traded among players (Balakrishnan & Griffiths, 2018).

Monetised gaming: These are video games with payment options, including in-game purchasing. These games may include options to use the currency earned or purchased on activities within the game, which may be entirely optional. Money is spent but not won or lost. Some of these monetisation schemes may look very similar to gambling mechanics, given the presence of chance-based elements.

Unregulated online gambling using virtual goods: These are online gambling activities that essentially use virtual goods obtained from games as the stake in gambling activities, which often include roulette-style draws. Skin gambling is the most popular example of this type. Game ‘skins’ are first either purchased in certain games by buying keys to open random virtual reward containers (e.g., crates or boxes) or skins may be purchased from other players.

Fantasy sports and *daily fantasy sports:* These may be considered a separate class of online game where participants compete by assembling a virtual team of players of a professional sport. Each player’s team competes in imagined or theoretical rounds of play where the outcomes are determined by the statistical performance of each player’s team members that corresponds to their real-world individual performances. Fantasy sports may involve money by requiring players to deposit money into a pot that is awarded to the winner of the competition.

Esports gambling: This refers to gambling activities that involve betting on the outcomes of professional video gaming matches. This is delineated from other online gambling in this discussion because it involves video games and may be more appealing to individuals with a strong interest in the competitive gaming scene.

5.4.5.8. Types of gambling-like content in online games

Games are constantly changing and updating as a result of industry innovations in product design and advancements in gaming hardware and online infrastructure.

Games have changed significantly in the last 15 years due to increasing uptake of service-based business models, online connection requirements, hardware mobility and increase in smartphone games, and new monetisation features.

Loot box features in games

A loot box refers to an in-game reward system that can be purchased with real money, usually repeatedly, to obtain a random selection of virtual items. The low probability of obtaining certain items means that the player will have to purchase an indeterminate number of loot boxes to obtain the item. Essentially, some implementations of loot boxes can resemble gambling activities (Drummond & Sauer, 2018). Loot boxes differ in terms of their mechanics and implementation across games. A study by Rockloff et al. (2020) of NSW young people (12-24 years) reported that about a third (32.9%) of the sample who had played games with loot boxes within the last 12 months had also purchased a loot box, and their median monthly spend was $50 for adolescents and $72 for young adults. Further, adults who more recently first purchased loot boxes were more likely to have gambling problems.

Social casino games

Social casino games are some of the most popular gambling-themed games that are widely accessible in Australia (Gainsbury et al., 2015a). Social casino games refer to online gambling-themed games that do not require payment to play or provide a direct payout or monetary prizes (Gainsbury et al., 2014). They are hosted on or interact with a social media site (e.g., Facebook), including through mobile apps. Their central theme is a simulation of an established gambling activity (e.g., poker, slots, roulette, bingo, keno, betting). The basic game is free (i.e., no 'cost of entry'), but the game provides options to pay for upgrades and increase game time by purchasing in-game virtual currency. This currency can then be spent for ongoing game play, to unlock additional levels or features, to personalise or decorate game assets, and to give virtual gifts to online friends. Despite these features, some social games can be played with no or very limited social interaction, depending on the user's preferences.

Games with gambling themes and optional gambling content

Similarly, there some games that may feature a gambling-themed game as an optional feature (i.e., not the primary game), such as an optional casino level within a large city environment or an incidental gambling element in gameplay (e.g., Diamond Casino in Grand Theft Auto Online).

5.4.6. Chapter conclusion

This review of the Australian and international literature has shown that a large proportion of young people have access to, and engage in, a diverse range of gambling activities. Large survey studies suggest that many adolescents report at least some degree of involvement in gambling activities in the past year, particularly scratch cards, lottery, card games, and sports betting. A small subset (around 5%) of young people report past year experiences with Internet gambling activities but these activities are less well defined. Simulated gambling involvement appears to be much more prevalent but its relationship to monetary gambling and problem gambling risk requires further research.

Estimates of problem gambling among adolescents vary across regions, with Australian figures tending to fall within 1% to 4%. The extent to which these estimates reflect the presence of genuine harm has been debated, with attention paid to the methodological limitations of self-report measures for this demographic. It bears noting that brief screening tools are not diagnostic and thus high prevalence rates should be regarded with caution. Some measures may be overly sensitive to low-level problems. These behaviours may reflect some emerging difficulties with gambling but are not necessarily indicative of an addictive disorder and may not have life-changing psychological or health consequences.

Some young people report interest and involvement in simulated gambling activities, however their links to monetary gambling are not well understood. Alongside concerns about these activities, excessive involvement in gaming in general is becoming a growing concern internationally, particularly with gaming disorder recognised in the ICD-11 following tentative recognition in the DSM-5. Excessive spending on games (e.g., microtransactions) has entered this discussion and some studies have drawn comparisons between in-game spending on virtual items (particularly those purchases involving chance-based outcomes) and problem gambling symptoms.

Young people at risk of problem gambling are more likely to be male; have greater opportunities to gamble; be more impulsive and emotionally vulnerable (i.e., report comorbid depression and anxiety); have poorer coping skills and less social support; and have parents and other relatives who gamble and report other addictive behaviours (e.g., alcohol use).

The Australian and international gambling literature suggests that youth gambling is a global phenomenon that warrants continuing research attention. Adolescent problem gamblers appear to be more psychologically complex (i.e., report comorbidities, more risk-taking, difficult family circumstances) than their non-gambling counterparts. Youth gambling is particularly relevant as new digital technology-based gambling activities and promotions become more prevalent and available to young people with the means to access them.

5.4.7. Implications for survey design

This review informed the design of the survey for the current study to optimise measurement validity and the insights gained into gambling and simulated gambling amongst adolescents.

5.4.7.1. Measuring problem gambling

The measurement of problem gambling among young people has been strongly influenced by the approaches used to assess adult problem gambling, including those aligned with the DSM-IV-TR conceptualisation of gambling disorder. However, there have been some necessary modifications to reflect that gambling-related conflict for young people will tend to relate to disrupted parental relationships and school interference, and less severe financial consequences, including those implicated in delinquent activities (stealing).

Globally, the most frequently used measure of problem gambling across our identified studies (N = 92) of young people was the SOGS-RA (Winters et al., 1993).

This measure has been used in almost half (46%) of the reviewed international literature (including Australia). However, in the Australian context, the DSM-IV-MR-J (Fisher, 2000) has been much more commonly used and, in this respect, it may be considered the 'standard' tool for this region. For this reason, the DSM-IV-MR-J was used in the survey for the current study.

5.4.7.2. Measuring monetary gambling

Survey approaches to measure gambling behaviour among young people often present a list of gambling activities (i.e., in a checklist format) and ask young people to indicate which of these activities they have engaged in during the last 12 months (e.g., Delfabbro et al., 2003; Jackson et al., 2008). Sometimes these checklists combine several types of gambling into one item, for parsimony or space constraints, as well as to limit participant fatigue or boredom (e.g., Jackson et al., 2008). Typical checklist approaches provide frequency options, with options such as 'never' or '1-2 times' for ease of coding or reduced completion time.

A common issue that arises with these checklists is the extent to which the questions capture the young person's *active* participation in the gambling activity and the extent to which the young person's *own money* was involved. For example, a basic checklist may not always differentiate between a child living in a household where a parent who engages in gambling also involves the young person in the activity as a 'passive' observer (e.g., observing a parent's lottery ticket) or a participant in limited aspects of the gambling activity (e.g., helping scratch off a scratch ticket). Asking questions about 'who else is present' when gambling (see Purdie et al., 2011) may not necessarily address this issue because it does not distinguish the issue of participation versus exposure. In such cases, too, the young person who is 'participating' may not have used their own money but may be engaging in some of the relevant actions (e.g., contributing a lottery number) without staking money. Another issue affecting these checklists is the wording of some items (e.g., 'card games') may be interpreted as card games among friends, where a surrogate currency of no financial worth is used.

5.4.7.3. Measuring simulated gambling

Survey questions about non-monetary gambling or 'simulated' gambling are less straight-forward because many of these activities are constantly changing due to technological advances. These are often activities that have different implementations (e.g., across different games or platforms), and their relevance to the participant is likely to change as activities become less popular. These issues mean that measuring involvement in these activities can be challenging due to the need to properly differentiate the type and context of each activity, and to differentiate these activities from actual gambling products. Some gambling studies have therefore kept simulated gambling questions separate from questions about monetary gambling. Demarcating monetary and simulated gambling items is important to avoid confusion. Providing clear definitions and visual aids (pictures/logos) should assist comprehension.

In light of the issues above, the survey for the current study carefully defined both gambling and simulated gambling in the relevant sections, had separate sections for gambling and simulated gambling, presented images to distinguish these activities, contained periodic reminders throughout the survey of what these activities entailed, and conducted cognitive testing of the survey with young people.

5.4.7.4. Measuring factors associated with gambling and simulated gambling

The literature review provided excellent guidance for the selection of factors to measure that potentially influence youth gambling and simulated gambling. However, not all potential predictors could be included because the survey needed to be limited to 15 minutes to avoid participant fatigue. Additionally, we did not include a measure of psychological distress because of concerns that this might impact negatively on young people's mental health if they were feeling distressed due to COVID-19. Our ethics committee also advised against including measures of substance use because, with families in lockdown, there was the potential for parents to see respondents' answers which could lead to under-reporting of these behaviours. Nonetheless, a wide range of pertinent demographic, psychological, parental, peer and environmental factors were included in the survey, as explained in the Methods chapter.

6. Methodology

This chapter details the methodology for the two empirical stages of this study – the focus groups and survey. All protocols and research materials were approved by CQUniversity Human Research Ethics Committee (Approval no: 22067).

6.1. Youth focus groups

ENGINE was sub-contracted to conduct 16 focus groups and analyse the data, in collaboration with the CQUniversity researchers. This stage of the study aimed to explore gambling participation, behaviours and attitudes amongst youth, to create an understanding of:

- how adolescents distinguish between simulated gambling and gambling;
- what draws adolescents to use these products;
- what controls their parents, or others, impose on their access to these products;
- how other factors such as access, peer pressure, parental controls, and advertising influence their current and intended use of these products; and
- how use of these products may influence their attitudes and intentions to gamble as adults.

6.1.1. Recruitment of participants

The following recruitment criteria were specified. In addition to living in NSW and being aged between 12 and 17 years, participants must have done at least one of the following:

1. Played games with gambling-like elements, e.g. video games with gambling themes or elements; gambling-themed games on social media; games with loot boxes; skins collecting, trading or betting; practice games for online gambling.
2. Purchased loot boxes or made other micro-transactions when playing video games.
3. Seen advertisements or promotions for gambling, e.g. on TV, social media or during sports broadcasts.

To avoid a sample dominated by adolescents whose only experience with gambling and simulated gambling was seeing gambling advertising (criterion 3, which would be nearly all adolescents), potential participants who met the first two criteria were prioritised. To ensure diversity in the sample, 12 groups were conducted with young people from the general population, two groups with Indigenous youth, and one group each with Chinese and Vietnamese participants. For all focus groups, parents were paid $20 to cover transport costs for bringing their child to the event, and each participant was paid $60 to compensate them for their time. All focus groups were audio-recorded and recordings were transcribed by a professional transcription service.

6.1.1.1. Recruiting the general population groups

All focus groups from the general population were recruited via ENGINE's recruitment partner Stable Research. Stable Research has a panel (Stable Soapbox) of over 110,000 panellists registered for the purpose of participating in market research. Approximately 35 per cent of the panel resides in NSW. Panellists are well profiled to ensure that specific respondents can be targeted for research participation. The adolescent participants, aged 12-17 years, were recruited via parent members of the panel. Parents with children in the specified age range were contacted, the study was explained to them, and parents' written consent was obtained as well as that of the adolescents.

6.1.1.2. Recruiting the CALD and Indigenous groups

ENGINE has worked on multiple projects involving focus groups with participants from Indigenous communities throughout Australia (including metropolitan, regional, rural and remote locations). The CALD groups and Indigenous group were recruited via community organisations. ENGINE took advice from the community leaders regarding how best to run and incentivise the groups (e.g. whether to provide cash or shopping vouchers) and a donation of $300 was given to the community organisation to thank them for their help. Age segregation was not implemented in the Indigenous and CALD groups, since recruitment of these groups was more challenging.

6.1.2. Key characteristics of participants

Sixteen focus groups involving 104 participants were conducted in eight locations in NSW during September 2019. Table 3 summarises the age group, specification, location and gender distribution of the focus groups. Six groups were conducted with adolescents aged 12-14 years, and six with those aged 15-17 years. The four culturally-specific groups were held with participants aged 12-17 years. While the intention was to gain reasonably balanced numbers of males and females across the groups, recruitment challenges resulted in a larger proportion of males (64.4%) which reflects that male adolescents in Australia are more likely to engage in both simulated gambling and gambling (King & Delfabbro, 2016). The groups comprised: six in Sydney (two of which were in Parramatta); two in Newcastle; two in Coffs Harbour; two in Dubbo; two CALD groups in Cabramatta (one Chinese and one Vietnamese); and two Aboriginal groups in Sydney (one in Redfern and one in Blacktown).

Table 3. Focus groups by age group, specification, location and gender breakdown

Age	Specification	Location	Males	Females	Total
12 to 14	General population	North Sydney	4	1	5
15 to 17	General population	North Sydney	4	2	6
12 to 14	General population	Newcastle	6	2	8
15 to 17	General population	Newcastle	4	4	8
12 to 14	General population	Dubbo	4	0	4
15 to 17	General population	Dubbo	3	4	7
12 to 14	General population	Coffs Harbour	2	3	5
15 to 17	General population	Coffs Harbour	5	4	9
12 to 14	General population	North Sydney	5	2	7
15 to 17	General population	North Sydney	4	3	7
12 to 14	General population	Parramatta	4	2	6
15 to 17	General population	Parramatta	3	4	7
12 to 17	Chinese CALD	Cabramatta	4	1	5
12 to 17	Vietnamese CALD	Cabramatta	5	1	6
12 to 17	Indigenous	Redfern	6	1	7
12 to 17	Indigenous	Blacktown	4	3	7
Totals			67	37	104

6.1.3. Discussion guide

A discussion guide (Appendix C) was developed by CQUniversity researchers to ensure consistency of coverage across focus groups and facilitators. The discussion guide covered the following broad topics:

Gambling:

1. Online gambling
2. Land-based gambling activities
3. Gambling on esports
4. Betting on fantasy sports and daily fantasy sports

Simulated gambling:

1. Video games with gambling themes and elements
2. Gambling-themed games on social media
3. Loot boxes and other microtransactions
4. Skins collecting, trading and betting
5. Practice games for online gambling

6.1.4. Data analysis

The focus group data were analysed thematically to draw out major themes and sub-themes that appeared across focus groups. Adhering to a best practice approach for thematic analysis (Braun & Clarke, 2006), an iterative process of coding was used to inductively extract themes from the data. These initial themes were then grouped into major themes and sub-themes in a meaningful way to create an understanding of:

- youth gambling, including the nature of youth participation in gambling, youth exposure to gambling, and factors reported to influence youth gambling attitudes and behaviours;
- youth simulated gambling, including the nature of youth participation in simulated gambling; youth attitudes towards simulated gambling; youth attitudes and behaviours relating to skins, and to loot boxes; and factors reported to influence simulated gambling amongst youth; and
- the convergence of gaming and gambling, including the perceived blurring of boundaries between gaming and gambling activities within games; in-game items that could be used to gamble outside of the games; and exposure to gambling advertisements when playing online games.

Trustworthiness of the interpretation was enhanced by the ENGINE researchers and the lead CQU researcher reviewing all themes and sub-themes to ensure they had been faithfully captured, and that no important themes or sub-themes had been overlooked. Validity was enhanced by using a range of participants' quotes to support the interpretation.

6.2. Youth survey

This section explains the conduct of the youth survey, including the survey materials, cognitive testing, measures, survey administration, participants, data weighting and approach to data analysis.

6.2.1. Development of the survey materials

6.2.1.1. Recruitment flyer

The recruitment text was supplied to a graphic design company which produced three initial designs, followed by three further revisions to the preferred design, selected in consultation with ORG. Appendix D contains the final version.

6.2.1.2. Development of the survey instrument

The survey instrument was informed by the literature review and focus group findings, as well as previous youth gambling and gaming surveys, and refined in consultation with the ORG. It was then further refined through a process of cognitive testing (Appendix B), and shortened to adhere to a maximum of 15 minutes completion time. The survey instrument is included in Appendix E.

6.2.1.3. Cognitive testing

The cognitive testing was conducted with 12 young people aged 12-17 years who had engaged in simulated gambling, had purchased loot boxes or made other microtransactions in video games, and/or had encountered gambling advertisements

on social media or other related media channels (e.g., esports channels). Six cognitive interviews were conducted with general population participants, and two with Chinese, two with Vietnamese and two with Indigenous participants. Tables 4 and 5 show the profile of participants. Changes resulting from the cognitive testing included minor re-arrangement of some elements on the recruitment flyer. In the questionnaire, some terminology was altered; additional responses options were added to some questions; and minor changes were made to improve the phrasing of some questions and to improve the survey flow. No changes were made to standard scales.

Table 4. Profile of general population participants in the cognitive testing

General population	Sydney	Regional NSW	Total
Aged 12-14	2	1	3
Aged 15-17	1	2	3
Total	3	3	6

Table 5. Profile of CALD and Indigenous participants in the cognitive testing

CALD and Indigenous	Chinese	Vietnamese	Indigenous	Total
Aged 12-14	2	0	1	3
Aged 15-17	0	2	1	3
Total	2	2	2	6

6.2.1.4. Survey measures

Several outcome (dependent) variables were measured. These included participation in gambling, future gambling intentions, problem gambling severity, participation in simulated gambling, and problematic gaming. The survey also measured several predictors (independent variables) to understand the factors that influence youth gambling attitudes and behaviours in relation to gambling and simulated gambling. Measures were informed by the literature review and previous youth surveys on gambling and gaming, as explained below, as well as the cognitive testing. Please see Appendix E for survey items and response options. Where possible, validated measures were used, for example to measure problem gambling severity, problematic gaming, wellbeing and impulsiveness. Validated measures do not exist for many of the variables measured, or were too long for inclusion in the survey. We therefore drew on measures used in previous youth surveys where possible as these had been tested with youth. We particularly drew on measures from previous youth gambling and gaming surveys, as explained below.

Demographics

Respondents were asked their age, gender, residential postcode, main language spoken at home, Aboriginal or Torres Strait Islander Status, parents' living situation, whether they are currently enrolled at school and, if so, which year they are in, or if not, which year they left, whether they currently have a paid job and, if so, whether the job is full-time or part-time/casual.

Gambling

Gambling behaviour. Questions about monetary gambling were based on the UK Gambling Commission (UKGC; 2019), with the forms of gambling based on the NSW Gambling Survey 2019 (Browne et al., 2019). Respondents were asked: when they had last engaged in each of 11 gambling activities for money: pokies, race betting, scratchies/lotteries, keno, bingo, poker, casino games, sports betting, esports betting, fantasy sports betting, and informal private betting; and which they participated in most frequently and how often. Respondents were also asked how old they were when they first participated in each activity, and whether they mostly played each form in venues, online, or both. For informal private betting, response options included a range of potential locations (home, schools, etc.). Respondents were asked how much money they had spent during the last 12 months on each activity, and their sources of money for gambling. They were asked to indicate who they usually gambled with; if they had tried to gamble for real money and been stopped because they were too young; and if and how they had gained access to an online gambling account.

Attitudes about gambling. Adapted from Canale et al. (2016), respondents were asked how much they approved or disapproved of people who gambled once a week or more often, and people who gambled less often than once a week. They were also asked how much they thought people risked harming themselves if they gambled once a week or more often, and less often than once a week.

Gambling intentions. Respondents were asked whether they intended to gamble on each of the 11 monetary forms of gambling surveyed before and after turning 18 years of age.

Problematic gambling. Problematic gambling was assessed using the DSM-IV-MR-J (Fisher, 2000). This scale has been validated amongst youth. It consists of nine questions. Respondents who endorsed 4 or more items were classified as experiencing gambling problems, 2 to 3 items were classified as at-risk, and 0 to 1 items as not experiencing problems.

Childhood exposure to gambling. Questions were asked about gambling by adults in their household when the young person was growing up. These included how often these adults gambled, how often the young person was present when they gambled, how often they participated in gambling with these adults, and if any adults in their household experienced gambling problems (no, minor, moderate or serious gambling problems).

Parental approval of gambling. This was assessed via a single question (Leeman et al., 2014) which asked how respondents thought their parents/guardians would feel if they gambled, even once or twice in the next year. Respondents were also asked about rules that their parents set about gambling (adapted from the UKGC, 2019).

Peer gambling. This was assessed by asking respondents if none, some, or most of their friends gamble, and respondents could also report that they did not know (Dowling et al., 2010). Respondents were also asked if their friends approved of someone their age gambling, and whether they had any close friends who strongly approved of gambling (Wickwire et al., 2007).

Peer belonging. This was assessed by asking how strongly they felt that they belonged to a friendship group, and to an online community (Savolainen et al., 2019).

Exposure and attitudes to gambling advertising. Respondents were asked how often they had noticed gambling advertising during the last 12 months in each of eight forms of media (adapted from the UKGC, 2019). They were also asked their emotional responses to gambling advertising (e.g., excited, bored and annoyed; Sproston et al., 2015). They were asked how strongly they agreed with eight statements about gambling advertising (e.g., 'I am more likely to gamble after seeing a gambling advertisement'). These items were based on Hanss et al. (2015), with additional items suggested by the ORG.

Simulated gambling

Simulated gambling behaviour. Most of these items were adapted from the UKGC (2019). Respondents were asked about frequency of playing games with gambling components (video games with 'mini' gambling components, gambling-themed apps from an app store, free demo or practice games on real gambling websites, and games with gambling components on social networking websites). They were also asked which gambling components they had played in games (e.g., wheel spinning, pokies). All respondents who had played these games were asked how old they were when they first did so; where they played them; and hours per week/month they spent playing these games.

Loot boxes. Respondents were asked when, if ever, they last obtained a loot box: for free during a game, paid for with real money, and paid for with virtual currency; and how old they were when they first opened a loot box. Respondents who had purchased loot boxes were asked why they did so; how much they spent on loot boxes in a typical month; and how much they spent on other in-game items through microtransactions (adapted from Rockloff et al., 2020).

Betting with in-game items. Questions in this section were adapted from the UKGC (2019). Respondents were asked when they had last used in-game items for: betting on esports, betting on other sports or events, betting on another site (skin betting), or betting privately with friends. Respondents who had bet using in-game items were asked how old they were when they first did so.

Other gaming

Participation. Respondents were asked when they had last done each of five activities related to gaming: played a video game other than an esport, played a video game that is an esport, watched esports events, competed in professional esports competitions, and entered into a free fantasy sports or daily fantasy sports competition (Russell et al., 2020). They were asked how many hours per week (or month) they usually spent on gaming.

Problematic gaming. This was measured with the Internet Gaming Disorder scale (Petry et al., 2014), which consists of nine items (e.g., 'did you spend a lot of time thinking about games even when you were not playing, or planning when you could play next?'). The scale asks about gaming in the last 12 months, with no/yes response options. The survey instructions noted that the questions referred to all types of gaming, not just games with gambling components. A score of 5 or more

indicates problematic gaming, as long as one of the endorsed items is the last item: 'did you risk or lose significant relationships, or job, educational or career opportunities because of gaming?'.

Access to devices
Respondents were asked about their access to a desktop computer, laptop computer, smartphone, games console, and tablet in their household. Based on Smith et al. (2015), they were asked which of these devices were available for their use, their sole use, and use in their bedroom. Also based on Smith et al. (2015), respondents were asked whether their parents had talked to them about online safety, and the rules and limits parents set for online media use.

Psychological characteristics
Wellbeing was captured using the single item from the Personal Wellbeing Index – School Children, which has been validated amongst young people (Cummins & Lau, 2005). This item asks people to rate how happy they are with their life as a whole (0 = very sad to 10 = very happy).

Impulsiveness was captured with the Barratt Impulsiveness Scale – Brief (Steinberg et al., 2013). The longer form of this scale has been validated amongst youth. The short form was used here to reduce survey length. The BIS-Brief consists of eight items (e.g., 'I plan tasks carefully' and 'I do things without thinking'). Appropriate items are reverse-coded, and items are summed for a total score on a continuous scale.

6.2.2. Consideration of sampling techniques for the survey

A critical consideration for the survey was the sampling technique, with the sample frame being the population of NSW adolescents aged 12-17 years. Because the survey intended to derive prevalence estimates on key variables with respect to use of gambling and simulated gambling products, it was important to ensure that the sample was as population-representative as possible, and not simply a convenience sample. The study therefore needed to employ a relatively unbiased means of surveying adolescents. Several options were considered, but deemed inappropriate to meet the survey's needs, timeframe and budget:

Schools. The key reasons for not using a school sampling approach were 1) sampling bias because some adolescents leave school prior to turning 18 years of age and would be left out of school-based sampling; 2) slow and cumbersome processes to gain school-based access to students which was not achievable within the specified project timeframe of 12 months; and 3) selection bias and risk of a small sample because previous youth research indicates that only a small minority of schools would give permission for contact with students (Dowling et al., 2010).

The internet. While the vast majority of adolescents use the internet frequently, there was no scope for unbiased sampling using online or social media methods alone, because search terms that are unbiased with respect to selection of adolescents do not exist. Pre-existing internet panels of adolescents also provide no assurance that they resemble the broader group of adolescents in NSW.

Mobile phone. Most, but not all, adolescents aged 12-17 years have a mobile phone. However, the incidence rate of this population in NSW is about 2 per cent making

RDD calling impractically inefficient and unaffordable within the project budget. Further, gaining parental consent if an adolescent answers the mobile phone, or getting hold of the adolescent to answer the survey if a parent answers the mobile phone, would require numerous call-backs. For these reasons, reaching adolescents by phone was not considered achievable.

Home. The most direct and unbiased way of recruiting adolescents aged 12-17 years is approaching them where they live. A gold-standard for such recruitment would be a door-knock survey conducted in a manner similar to the Census. However, sampling would need to be made for randomly selected households, and re-contact at some households would be needed to capture adolescents who are away from the house. However, the project budget was insufficient to cover interviewer and travel costs for this method.

6.2.3. Survey recruitment and administration: Letterbox drop

In contrast to the alternative sampling methods discussed above, a practical means of contacting adolescents in NSW households was considered to be through a mail-out recruitment flyer that linked people to an online survey. This recruitment method was selected as it allowed a relatively unbiased means of reaching adolescents, to enhance the sample's representativeness to enable prevalence estimates to be made on key variables. The intention was to send the recruitment flyer that linked people to an online survey to all households in NSW that can be reached by a letterbox drop. This amounts to ~2.1 million households or 82 per cent of all households in NSW; with the remaining 18 per cent excluded mainly due to 'no junk mail' signs. The vast majority (91%) of Australian households have a home internet connection (ACMA, 2020), and adolescents can also access the internet via mobile phones and in public facilities such as libraries. Therefore, very few adolescents would be unable to access the online survey using this recruitment method. To incentivise participation, respondents could enter a prize draw to win one of 200 gift vouchers each valued at $100.

Because this recruitment method was untested, the plan was to conduct a soft launch of the survey in three Local Government Areas of NSW to test whether the letterbox drop and subsequent response rate were adequate, before proceeding to a full launch. However, with the onset of the COVID-19 pandemic and the closure of gambling venues and suspension of professional sporting events on 23 March 2020, the decision was made in consultation with the ORG to rapidly proceed directly to the full launch of the survey. This was to minimise any distortions in the data due to the lockdown, and because a letterbox drop may have become untenable had business restrictions tightened further. A supplier, Independent Letterbox, distributed the recruitment flyers from 28 March to 3 April 2020.

A total of 551 responses were received, which was lower than expected. While a certain number of responses was never guaranteed using this method, we estimated we would receive 1,000-2,000 responses. Although Independent Letterbox assured us that flyers had been delivered to all in-scope households, we were advised by several contacts in NSW that their household had not received one. Nevertheless, the survey gained a good coverage of NSW postcodes, and there were sufficient responses to be weighted against population data. Nevertheless, the data may be subject to response bias and, as such, may not be generalisable. For this reason, we

present the results as applying only to the sample obtained, and do not generalise to the broader population in NSW youth. Nonetheless, as is evident later in this report, the strong alignment of the results to those in previous representative studies provides confidence that this method yielded a broadly representative sample. We note that a letterbox drop recruitment method may still have merit in the future as long as a reliable supplier is used to distribute flyers.

6.2.4. Additional survey recruitment and administration

After consultation with ORG, two additional recruitment methods were used to obtain additional samples. Importantly, these non-probability samples were expected to include a higher proportion of respondents classified as being problem/at-risk gamblers and problematic gamers, substantially reducing the bias in multivariate analyses that occurs when based on small numbers of respondents in these groups. These analyses test the relationships between variables, and as such do not necessarily require representative samples.

6.2.4.1. Qualtrics panel

We purchased a panel of respondents through Qualtrics. Qualtrics sources respondents from multiple panels and has rigorous processes for checking data quality. These respondents were not eligible to enter the survey prize draw, but were instead compensated by Qualtrics based on their internal points-accumulation system. The Qualtrics survey ran from 16 April to 5 May 2020. A total of 826 respondents were recruited from Qualtrics. Online samples are not expected to be representative of the population, as they consist of people who have signed up to take part in market research for rewards.

6.2.4.2. Emails and advertising

All NSW residents who had participated in our previous research studies and had consented to be invited into future research were emailed so they could ask any adolescents in their household if would like to complete the survey. The survey was also advertised for two weeks on Facebook, Instagram and Twitter, and via the ORG's communications channels (Facebook, Twitter, electronic newsletter). These respondents were also eligible to enter the survey prize draw. A total of 843 respondents were recruited in these ways from 23 April to 11 May 2020. We note that respondents from our previous research studies, and those on gambling-related mailouts or who might have been targeted by social media advertising, are likely to be more engaged gamblers. Since previous research demonstrates a strong link between parental gambling and youth gambling, it was expected that this sample would not be representative and would have the highest prevalence rates for gambling activities.

One concern with multiple samples was possible duplication of responses. This was assessed in two ways. First, for respondents who provided email addresses and unique codes for follow-up, we looked for duplication amongst these responses. Second, we looked at IP addresses across the samples, noting that respondents from the same household could complete the survey, and that some IP duplication was therefore possible. We found no evidence of any widescale duplication.

6.2.5. Total responses and agreement to follow-up

In total, the survey achieved 2,220 responses from 439 unique postcodes in NSW (from the total of 634 postcodes), with 1,538 respondents providing their contact details for a follow-up study (Table 6). The response rate for the letterbox drop sample was 551 responses from 580,053 NSW residents within the age range (0.095%).

Table 6. Number of survey responses and contact details for follow-up

Respondents	Letterbox drop	Qualtrics	Emails & advertising	Totals
Survey completions	551	826	843	2,220
Contact details for follow-up	379	418	741	1,538

6.2.6. Key characteristics of participants

The total sample was mostly male (62.7%, *n* = 1,393), with 817 females (36.8%) and 10 people identifying as a gender other than male or female (0.5%). Ages were fairly evenly represented, with older respondents (15-17) slightly overrepresented (Table 7). In terms of location, 1,238 (55.8%) respondents were from Greater Sydney and 982 (44.2%) from the Rest of NSW. Other demographic characteristics of each sample are included in Appendix G.

Table 7. Number (and percentage) of respondents by gender, age and location, by sampling method

Variable	Weighted letterbox drop (N = 551)	Unweighted letterbox drop (N = 551)	Unweighted Qualtrics (n = 826)	Unweighted emails and advertising (N = 843)
	n (%)	n (%)	n (%)	n (%)
Gender				
Male	282 (51.2)	354 (64.2)	455 (55.1)	584 (69.3)
Female	262 (47.5)	189 (34.3)	370 (44.8)	258 (30.6)
Other	7 (1.3)	8 (1.5)	1 (0.1)	1 (0.1)
Age				
12	100 (18.1)	90 (16.3)	109 (13.2)	118 (14.0)
13	93 (16.8)	81 (14.7)	95 (11.5)	129 (15.3)
14	88 (15.9)	87 (15.8)	117 (14.2)	146 (17.3)
15	93 (17.0)	92 (16.7)	178 (21.5)	167 (19.8)
16	91 (16.5)	107 (19.4)	181 (21.9)	137 (16.3)
17	86 (15.7)	94 (17.1)	146 (17.7)	146 (17.3)
Location				
Greater Sydney	355 (64.4)	233 (42.3)	628 (76.0)	377 (44.7)
Rest of NSW	196 (35.6)	318 (57.7)	198 (24.0)	466 (55.3)

6.2.7. Data cleaning

In line with standard practice, all data were cleaned prior to analyses. This involves screening for spurious responses (e.g., gibberish or non-serious responses in open-ended text boxes, or impossible values for expenditure) as well as straight-lining through the survey. For the Qualtrics sample, these were screened by Qualtrics during recruitment and all removals were approved by the research team. For the other samples, two such responses were identified and removed prior to analysis.

6.2.8. Data weighting

Data weighting was applied only for the letterbox drop sample, as it was the only representative sampling technique of the three employed. Weighting the Qualtrics sample and the emails and advertising samples would require data that showed norms for each of these populations, and these were not available.

To improve the representativeness of the letterbox drop sample, weights were calculated based on the ABS 3222.0 Population Projections from 2017 to 2066, using the data for 2020 and the 'Series B' projection. This projection is based on moderate (rather than high or low) assumptions of fertility, mortality, net overseas migration and net interstate migration. Weights were applied for age (12-13, 14-15 and 16-17 years), gender and location (Greater Sydney or Rest of NSW). Location could not be further dissected into smaller areas due to small cell sizes.

No normative data are available for genders other than male or female, presenting a weighting issue for the eight respondents who reported a gender other than male or female. If these respondents were not given weights, they would not be included in weighted calculations. Thus, these eight respondents were randomly allocated to either male or female purely for the purpose of weighting. We emphasise that this does not mean that they were treated as male or female for analyses, and that this approach was only used to calculate a non-specific weight so that they could be included in analyses unrelated to sex.

The weight for each age x gender x location cell was calculated based on the following formula, and calculated weights are shown in Table 8:

$$Age\ x\ gender\ x\ location\ weight = \frac{(\frac{size\ of\ population\ cell}{population\ size})}{(\frac{size\ of\ sample\ cell}{sample\ size})}$$

Table 8. Weighting calculations by age, gender and location (letterbox drop sample only)

Age	Gender	Region	Size of population cell	Size of sample cell	Weight
12-13	Male	Greater Sydney	66842	49	1.29579792
14-15	Male	Greater Sydney	63188	49	1.22496153
16-17	Male	Greater Sydney	62477	62	0.9572214
12-13	Female	Greater Sydney	63144	18	3.3322955
14-15	Female	Greater Sydney	59027	26	2.1565587
16-17	Female	Greater Sydney	58780	29	1.92537578
12-13	Male	Rest of NSW	37084	57	0.61801019
14-15	Male	Rest of NSW	35047	71	0.46889589
16-17	Male	Rest of NSW	33768	68	0.47171572
12-13	Female	Rest of NSW	35469	47	0.71686109
14-15	Female	Rest of NSW	33408	33	0.96165758
16-17	Female	Rest of NSW	31819	42	0.71964972

Table 9 shows the population figures (based on ABS 3222.0 for age, gender and location, and on the ABS Census 2016 for Aboriginal and Torres Strait Islander status amongst 12-17 year olds). The raw sample overrepresented males and people living outside Greater Sydney, as well as Indigenous people. The weighting corrected all variables to be reasonably representative of the population, with the caveat that perfectly representative samples are not possible outside of a Census.

Table 9. Population, unweighted and weighted demographics data (letterbox drop sample only)

Variable	Level	Population %	Unweighted sample %	Weighted sample %
Age	12-13	34.9	28.0	34.9
Age	14-15	32.9	35.5	32.9
Age	16-17	32.2	36.5	32.2
Gender	Male	51.4	62.7	51.2
Gender	Female	48.6	36.8	47.5
Gender	Other	*	0.5	1.3
Location	Greater Sydney	64.4	55.8	64.4
Location	Rest of NSW	35.6	44.2	35.6
ATSI status	Non-ATSI	93.7	76.3	92.4
ATSI status	ATSI	6.3	23.7	7.6

Note; * No data available for gender other than male or female in the population. ATSI = Aboriginal and Torres Strait Islander descent.

The weights were reasonable with respect to only modestly affecting the results. Weights that are too large or too small can lead to an issue with analyses if a particular cell is effectively removed or amplified due to weighting. The present weights do not raise any concerns. The weights do not change the overall sample size, and therefore do not change statistical power.

6.2.9. Data analysis

The letterbox drop sample was designed to be a representative sampling method in that most members of the population had an equal chance of being selected. However, the Qualtrics and email/advertising samples were not expected to be representative. Thus we did not combine the samples for data analysis. We also could not weight the Qualtrics and email/advertising samples, because no normative data were available for those populations. We therefore opted to report the data in four ways for each analysis:

- Weighted letterbox drop
- Unweighted letterbox drop
- Unweighted Qualtrics
- Unweighted emails and advertising.

Addressing Research Questions 1, 2 and 4 required estimating various prevalence rates in the youth population in NSW, along with other descriptive data (Chapter 4). The weighted letterbox drop sample provided the most appropriate estimates for these results given it was most representative of the population. However, as noted earlier, problems with the delivery of the recruitment flyers and the small sample size may have affected generalisability, so results are presented as applicable only to the sample. Results from the other samples are included in Appendix G in the interests of transparency. Where confidence intervals are reported for classification of problem/at-risk gambling or problematic gaming, Wilson 95 per cent confidence intervals were employed.

Addressing Research Question 3 required multivariate analyses (Chapter 5). As explained earlier, the Qualtrics and emails/ads samples were used for these analyses because they had sufficient numbers of problem/at-risk gamblers and problematic gamers, and because relationships between variables, and not prevalence, were of interest. Five dependent variables were examined in the multivariate analyses:

- Gambling participation the last 12 months (reference group = no)
- Future gambling intention (reference group = no)
- Problem/at-risk gambling, based on the DSM-IV-MR-J (reference group = non-problem)[2]
- Participating in simulated gambling products within the last 12 months (reference group = no)
- Problematic gaming, based on the IGD scale (reference group = no).

All dependent variables were binary variables, and thus binary logistic regressions were conducted with a range of independent variables that were theoretically expected to be predictors of each dependent variable. These pertained to personal, parental, peer and environmental factors, as well as gambling and gaming variables.

[2] We also conducted this analysis with problem gambling as the dependent variable (reference group = non-problem and at-risk gambling). These results are in Appendix I.

Further details on the multivariate analyses are contained in the relevant section of Chapter 5, with more detailed analyses in Appendices H-L.

There were no missing data beyond data that were missing by design, because all questions were forced response throughout the survey – that is, respondents could not move to the next page in the survey without completing the questions on that page. There were missing data for some questions because the questions were not relevant to certain respondents. For example, questions relating to detail on how respondents gambled were not asked of people who did not gamble. The number of respondents in each analysis is outlined in the results. The only other instance of missing data was for people who indicated that they were a gender other than male or female. While we created weights for these respondents so that we could include them in all other analyses, any analyses that included gender could not include these respondents, due to their low number, causing issues with statistical assumptions. Thus, any analyses specifically relating to gender only include respondents who explicitly identified as male or female. Any respondents who completed part of the survey but did not complete the survey were removed from analysis, as they were deemed to have withdrawn from the study. Any other potentially sensitive questions included a “prefer not to say” response, although these variables were not included in multivariate analyses, reducing concerns about missing data.

7. Results from the focus groups

This chapter presents key findings from the analysis of the 16 focus groups, which were conducted to explore gambling participation, behaviours and attitudes amongst young people in NSW. The analysis is structured into three main areas: youth gambling, youth simulated gambling, and the convergence of gaming and gambling. Within each of these areas, several themes and sub-themes are identified and supported by participants' quotes. Only the most indicative quotes have been included in this chapter. Appendix F contains a comprehensive table of themes, sub-themes and quotes.

7.1. Youth gambling

Three main themes were identified relating to youth gambling: the nature of youth participation in gambling, youth exposure to gambling, and factors reported to influence youth gambling attitudes and behaviours. Within each of these themes, several sub-themes were identified and discussed.

7.1.1. The nature of youth participation in gambling

The nature of youth participation in gambling was discussed in terms of their participation in online gambling, in land-based gambling, and in private gambling among friends and family.

7.1.1.1. Youth participation in online gambling

Participation in online gambling was relatively uncommon amongst youth but not rare. Participants shared their own and their friends' experiences in participating in online gambling, mainly in relation to sports betting. Circumventing age restrictions was reported to be easily done. Reputable sites require verification, but the person may still be able to gamble until verification fails. However, some unregulated sites may have lax verification procedures which do not effectively prevent underage gambling:

> '*If you want to get on that website, you can falsify your age so easily. They just ask you for your age, and you scroll down until you're 18.*' – Male, aged 15 to 17, North Sydney.

> '*I had one (online sports betting account) that I set up…in five minutes…I already had an email account on there, and the wrong date of birth...*' – Male, Indigenous group.

Apart from faking age, it was reported that youth can access online sports betting with help from adults. For example, one participant mentioned that young people had paid adults to place bets on footy games on their behalf:

> '*I know a couple of kids at school that like pay 18 year olds, or people they know that are above the legal age, so they'll bet for them…*' – Male, aged 12 to 14, Paramatta.

7.1.1.2. Youth participation in land-based gambling

Youth participation in land-based gambling was rare among participants given the imposed age restrictions and better monitoring of minimum age requirements. However, a few exceptions were reported, which included youth-only participation and youth co-participation with adults.

Youth-only participation in land-based gambling was discussed among some Indigenous participants. One participant shared the story of how his friends circumvented age restrictions for land-based gambling by using another person's ID which some venues failed to check:

> '*They probably just use their brother's ID…All my mates are bogans, they just go down to the local pub. They don't bother to check*.' – Male, Indigenous group.

Another participant said that his friend played pokies at venues where no ID was required, and suggested that ID-checking was not always implemented in venues:

> '*He went into the ones at Circular Quay…There's pokies everywhere…No places care about ID*.' – Male, Indigenous group.

Youth co-participation in land-based gambling was reported more often than youth-only participation. Land-based gambling activities that participants had co-participated in included Keno, scratchies, lotteries and race betting. Usually, young people were asked to pick a number or place the bet with adults present. Sometimes, youth involvement in gambling occurred in venues. For example, one participant played Keno at family events at a club:

> '*Normally if our family is like at the club or something like that for dinner and we'll get like a sheet of Keno or something for everyone, or mum normally gets it so my little brother can be occupied and focus on something and he doesn't go and cause panic somewhere else*.' – Female, aged 15-17, Coffs Harbour.

Other adults facilitated young people's involvement in gambling by asking them to pick horses and greyhounds to bet on and by informing them whether their selections had won or lost. For example:

> '*Dad put a bet on for like, for horses in the Melbourne Cup. We'd like, pick our horse or whatever, and we won about 600 bucks the other year*.' – Female, aged 12 to 14, Newcastle.

7.1.1.3. Youth participation in private gambling among friends and family

Private betting on sports among friends appeared to be relatively common among participants, especially amongst those who had an interest in sports. Private gambling among friends or family usually involved small wagers on a sporting event of interest. One participant explained that her friends bet with each other on netball, while another gambled with friends on fantasy sports:

> '*Some of my friends are big netballers, so if they were like really pumped about the grand final or something… I might - and they were betting with each other, I might put in, you know, a dollar or whatever.*' – Female, aged 12-14, Coffs Harbour.

'*In NFL fantasy football, you just get points. Me and my friends put down group money, so this season we were putting down 25 bucks, and there's six of us; so whoever wins at the end of this season gets all that money.*' – Male, aged 12-14, Newcastle.

Private betting among young people appeared to serve leisure and socialisation purposes, and it was usually done with friends. One participant said private betting was for fun and called it a 'social thing':

'*It's just for fun, most of the time. It's like, social things…once a month we can actually see each other in person. Then we go out for dinner afterwards, and whoever wins, pays for the dinner*.' – Male, aged 15 to 17, North Sydney.

Another interesting finding was that private betting amongst participants in the CALD groups could be tied to particular cultural events when the extended family gathered together. An example was a Chinese participant betting with members of the extended family at Chinese New Year gatherings:

'*Basically, my family gets together for Chinese New Year…and we hoard coins, like gold coins or whatever, and... We play cards, or any other game, and we just bet money. It's only like an annual thing…it's a family thing… Probably per round, we'll probably bet around 50 cents*.' – Male, Chinese Group, Cabramatta.

7.1.2. Youth exposure to gambling

In addition to direct participation or co-participation in gambling, young people reported being exposed to gambling through hearing anecdotal stories about gambling and witnessing adults gambling.

7.1.2.1. Hearing anecdotal stories about gambling

Most exposure to gambling-related experiences was by word-of-mouth from friends, family and schools; these anecdotes largely concerned the potential negative consequences of gambling. For example, one participant told a story he heard from his teacher about a man who developed an addiction to gambling, chased his losses, had irrational thoughts about being able to win back his losses, and eventually lost his house:

'*He kept going because he was still addicted to it. He started losing more and more money, and he said 'I need to win it back because it's such a bad feeling in your head. I've lost this amount of money, which I could have saved, I need to win it back somehow, the easiest way to do that is through gambling.' Slowly he started losing more, and more money and eventually he lost his house*.' – Male, Chinese group, Cabramatta.

7.1.2.2. Witnessing adults gambling

More direct exposure to gambling was from adult family members and friends aged over 18, who engaged in gambling themselves. Some participants who had witnessed gambling emphasised addiction and the large amounts of money involved in gambling. One participant described her cousin's addiction to online gambling, while another participant said her boyfriend played pokies and she thought that winning at gambling could potentially contribute to more participation:

'*He got like really addicted to it and spent like heaps of money on his computer, gambling with real money. He got so carried away, he just wouldn't stop…He just started getting his own money and stuff like that and he just uses it on gambling*.' – Female, aged 15-17, Coffs Harbour.

'*I know my boyfriend sometimes goes to the pokies, but he's 18…Sometimes even on his lunchbreak, he'll put in 20 dollars, and then win 200…I think there's another sort of mental tally, where you think, 'Oh, well if I won the 200, I can still put in more, because that's my winning money*.'' – Female, aged 15-17, North Sydney.

Other participants described more occasional gambling by family members and the role of gambling in their social life. For example:

'Our uncle does do sports gambling and my dad does do lotto and stuff but only when he can, when he feels like it. It's not all the time. Our family, especially the younger ones, they're in their 20's and stuff, they go to the pokies and gamble, have a beer and stuff with their mates, that's like socialising basically with them.' - Male, Indigenous group in Blacktown.

7.1.3. Factors reported to influence youth gambling attitudes and behaviours

Participants reported the following factors as influencing young peoples' attitudes and behaviours relating to gambling: simulated gambling and private betting, media and advertising, friends and peer pressure, family, and psychological factors.

7.1.3.1. Influence of simulated gambling and private betting

Simulated gambling was discussed as a factor that could influence young people's attitudes and behaviours in relation to gambling, but participants had mixed views on the direction of influence. On one hand, simulated gambling was considered to increase the propensity of young people to gamble, as it might teach, normalise and potentially entice them to gamble, especially as the odds of winning are elevated in simulated gambling compared to monetary gambling. One participant explained:

'*If you grow up with playing games and being on your phone you are probably more likely to gamble or if you don't understand what happens and what gambling is and stuff*.'- Female, aged 15-17, Coffs Harbour.

Furthermore, participants explained how simulated gambling may entice young people to gamble because they are used to winning in games. This may lead them to consider themselves lucky, especially if they are unaware that the winning odds in simulated gambling are much more favourable than those in real gambling:

'Because they're used to winning in-game and they maybe don't know what it's actually like playing in real life…They might think they're lucky.' – Male, aged 15-17, North Sydney.

However, another participant thought that young people's awareness of the potential negative consequences of gambling deterred them from gambling, even though simulated gambling acted to encourage gambling:

'*…because we know so much about the bad side effects that you see like heaps of things about like what can happen if you do get into that…it makes you not want to do it as much. The games, they do what they are meant to do…like make people want to do it, but I think everyone is a bit smarter with it now, or I hope so*.' – Female, aged 15-17, North Sydney.

Conversely, some participants claimed that simulated gambling might reduce players' likelihood of participating in real forms of gambling, as they could see how much money they can potentially lose from gambling. One participant explained how simulated gambling in games may have 'counter' effects. Because he had experienced '*losing'* and had '*no luck'* in games, he was not likely to gamble in real life:

'When I gambled with in-game currency, which you earn by playing the game, in a game like Mario on DS or something like that; because I could never win, that sort of put me off from gambling in general.' – Male, aged 15-17, Dubbo.

Similar to views on simulated gambling, engagement with private betting was considered to increase the likelihood for young people to gamble, as private betting might teach and entice them to gamble. For example, one participant thought his friend was likely to gamble because he practised gambling with informal private betting and frequently won:

'*We play cards…Because one of my mates, he` always wins, for some reason. I can tell he definitely wants to…he wants to go into a casino and actually try. So I guess if you prove that you can actually do it, then you'd be like, 'Hey, this is fun. Maybe I can actually make it big*.'' – Male, aged 15-17, North Sydney.

7.1.3.2. Influence of media and advertising

Even though most participants were indifferent to advertising and found some advertisements '*annoying'* and '*dumb*', advertising was considered to normalise gambling, and thereby increase young people's propensity to gamble:

'I think probably seeing the ads for it, and your parents being heavy gamblers and stuff would probably…that contributes, and normalises it for you' – Female, aged 15-17, North Sydney.

Similarly, gambling representations in the media were said to increase knowledge and the appeal of gambling, thereby increasing the likelihood of young people gambling in the future. One participant expressed his intention to gamble as a result of seeing glamorised and extensive depictions of casinos in movies:

'I think I definitely will… probably just the casino and that, because you see it everywhere in movies and stuff, and it just looks really cool…it would depend on how much money I have. Because I'm notoriously bad with it…I don't really know what to spend it on, so I'm just sort of like, 'Oh, well, I'm not going to buy anything else; I might as well just bet it, and see if I win anything.'' – Male, aged 15-17, North Sydney.

7.1.3.3. Influence of friends and peer pressure

When asked about their intention to gamble when they turned 18, most participants expressed a willingness to try gambling with friends. Friends and peer pressure were thought likely to influence their attitudes and behaviour relating to gambling, as young people needed a sense of peer group belonging and some of them experienced peer pressure to gamble. Being with friends who gamble may rationalise the behaviour. This participant explained how a sense of peer group belonging might increase the likelihood for young people to gamble:

> '*I feel like when you're in a group, especially if like your mates are going to play something on the pokies or stuff like that, you kind of like go along with them anyway. Whether you do something or not, you're in the environment and it's like 'oh well I might just put that on, I've got a couple of dollars in my pocket…I might just put that in', which then can lead to a lot more stuff*.' – Female, aged 15-17, Coffs Harbour.

7.1.3.4. Influence of family

Their family's participation or non-participation in gambling was discussed as a relevant factor in forming young people's attitudes and behaviours relating to gambling. Participants had mixed views on the influence of family participation in gambling on the likelihood of youth to gamble. On one hand, family participation in gambling was perceived to normalise gambling for young people, and thus increase their propensity to gamble:

> '*Genetics. Like, if your parents gamble, like heavy gamblers, you would be more inclined to gamble, because it's just the norm for you*.' – Male, aged 15-17, North Sydney.

On the other hand, exposure to gambling from family might reduce the likelihood of young people gambling, as they had seen or heard about the negative consequences from gambling:

> '*Since my sister worked here, she worked in gaming, she just said how sad some people were, and all the stuff they were going through. So, I think I understand why people do it, but also I wouldn't do it*.' – Male, aged 15-17, Dubbo.

Family's non-participation and opposition to gambling seemed to influence youth attitudes towards gambling. If their family was against gambling, participants were more likely to have negative attitudes towards gambling. One participant was against gambling due to family influence, while her boyfriend was the opposite and engaged in pokies with his family. She noted the role of these different family influences in creating family norms around gambling:

> *'I think parents play a big role in it…my mum especially is against any kind of gambling at all; but then my boyfriend, his family is very much like, every Saturday night, they'll go to the physical pokies, and they'll do that, and put heaps of money in. And that's just their…stupid world, but like, culture, I guess.'* - Female, aged 15 to 17, North Sydney.

7.1.3.5. Psychological influences

Psychological influences on youth attitudes to gambling and gambling behaviour were discussed in terms of self-control, vulnerability to addiction, and experience-seeking.

Self-control and vulnerability were considered to influence intentions to gamble. Participants did not intend to gamble if they thought they had low self-control and were vulnerable to addiction. One participant explained that he recognised this vulnerability in himself and had therefore been warned about the dangers of gambling by his parents:

> '*I have no self-control…I've had to come to the realisation that if I even sort of step foot in a casino and, you know, the first bit of money I put in, I just know I don't have that restraint that a lot of people do sort of, to pull them back. I'd just get sucked into it so easily and I've been warned especially by my parents because they know I have an addictive personality, to stay away from all gambling...'* – Male, aged 15-17, North Sydney.

Sensation-seeking also appeared to play a role in the attitudes of young people towards gambling. When asked whether they intended to gamble in the future, many participants said they would gamble *'just to have the experience*'. One participant explained:

> '*I reckon I will. It's kind of like driving. Once you turn 16, you want to drive. It's like, something that you want to do at least once. It's like an experience thing…Everyone's going to do it once in their life, at least*.' – Male, aged 15-17, North Sydney.

7.2. Youth simulated gambling

Five main themes were identified in relation to youth simulated gambling: the nature of youth participation in simulated gambling; youth attitudes towards simulated gambling; youth attitudes and behaviours relating to skins, and to loot boxes; and factors reported to influence simulated gambling amongst youth. Several sub-themes within each of these themes were identified and discussed.

7.2.1. The nature of youth participation in simulated gambling

The nature of youth participation in simulated gambling was discussed in terms of easy access to gambling-like activities, frequent engagement with simulated gambling, and the ease of getting around age verification for gaming and online payment.

7.2.1.1. Easy access to gambling-like activities

Most participants had played video games, including those that involved opportunities to purchase loot boxes and skins. Most participants had access to at least one digital device, including a PC, gaming console, tablet or smartphone. Participants mainly played games on consoles. Perhaps not surprisingly, the more accessible their device was, and the more out of sight from parental monitoring (i.e., in their bedroom), the longer and more frequently participants played video games.

One of the main motivations for gaming was socialisation, and participants mostly played games with friends. These friends were predominantly friends from a real-life setting, rather than friends they had met online. One participant explained the friendship and socialisation aspects of gaming:

> '*It's like this whole like, friendship thing…I used to be in a friend group where every afternoon from school, you'd go online and play with your friends…it was like your life, I guess. Because that was your friendships, and that's just what you would do*.' – Female, aged 15-17, North Sydney.

Through playing the video games, youth were likely to have easy access to gambling-like activities, including simulated gambling. For example, one participant described his experience with simulated gambling elements in games from his early childhood:

> '*Looking back at childhood games, a lot of them had very gambling-based mini games and stuff. It's kind of scary, because it's getting kids hooked in at a young age*.'- Male, aged 15-17, Dubbo.

7.2.1.2. Frequent engagement with simulated gambling

Participants reported that they had come across various gambling elements in games, which included wheel spinning, roulette, slot machines, horse racing and virtual casinos. Simulated gambling elements were reported to appear in '*almost every game'* and were becoming '*more frequent'*. Some participants said that they encountered gambling elements '*every now and then*', but others reported seeing them '*all the time'*.

Simulated gambling has been integrated in games in various ways. Participants explained that players could participate in simulated gambling to win in-game currencies/credits, acquire items (car, weapon, coin), advance to the next level of the game, or gain lives in the game. Some examples were:

> '*Like in a game called Red Dead Redemption, you're a cowboy, and then there's a bunch of gambling in it…it's supposed to be really interactive and stuff; so you just go, and you can just play cards, and then you can win money in the game*.' – Male, age 15-17, North Sydney

> '*You can bet on, it's not real horse racing, but it's like a screen. There's a lot of casino machines and there's a roulette wheel. It doesn't cost anything to enter it, but you can win fifty thousand dollars or you can win a car. There's a lot of different types of things you can win, but there's a proper casino you go into*.' – Male, aged 12-14, Paramatta.

Simulated gaming might also attract players by offering rewards such as free in-game currency or accelerating the progress of games:

> '*Usually it might speed it up, like the time or something…They are like these games that pop up, you play this game and then you win free money*.' – Female, aged 12-14, Dubbo.

However, simulated gambling was not always free. Sometimes players needed to spend real money or in-game currency, which needed to be purchased with real money, to participate. One participant explained how much players needed to pay for wheel spinning in a game, while another noted that players might buy in-game currency with real money to gain more spins:

> '*Buy this for ten thousand credits and it will spin, this item more credit on a different car*' – Male, aged 12 to 14, Parramatta.

> *'…the spin again option takes money from the in-game currency. Then you can also buy in-game currency with real money. So the idea is you might just keep spinning until you have no in-game currency, and then start buying in-game currency to keep the sort of lottery going*.' – Female, aged 15-17, North Sydney.

7.2.1.3. Ease of getting around age verification for gaming and online payment

Participants were aware of age restrictions for some online games; for example, Grand Theft Auto (GTA) is rated 18+. However, getting around age restrictions for online games appeared to be common and was considered easy. Participants shared different ways to circumvent age restrictions:

> '*You just say - Yes, I am 18'*. – Male, aged 15-17 North Sydney.

> '*When they put your date of birth in, you just say 19 whatever*.' – Female, aged 12-14, North Sydney,

> *'Just put a different year that you were born in*.' – Male, aged 12-14, North Sydney.

Participants further explained that circumventing age verification was easy, because no proof was needed and it was difficult to monitor and police:

> '*…you can falsify your age so easily…They just ask you for your age, and you scroll down until you're 18… it's not very easy to police, because they can't use your computer to like, go, 'Oh, this is this person. They're not 18', because it's just random*'. – Male, Age 15-17, North Sydney.

Participants also reported avoiding age verifications for online payment. For example, even though in Australia people need to be 18 to have a PayPal account, some participants reported owning a PayPal account at 16 and said that it was easy to falsify:

> '*I had a PayPal account when I was 16. You're supposed to be 18, but you just say Yes, I am 18.'* – Female, aged 15-17, North Sydney.

Another way of avoiding age restrictions for online payments was reported to be through parents. One participant explained that some of his friends used their parents' PayPal accounts, while their parents did not know what the money was spent on:

> *'For PayPal, a lot of my friends go to their parents, if they have an account. They go, 'Can I put on five dollars for this account and buy this with it?' and they just*

give their parents the cash, and then their parents don't really know what they're spending it on.' – Male, aged 15-17, North Sydney.

7.2.2. Youth attitudes towards simulated gambling

In general, participants were cynical about gambling elements in games and showed a degree of 'savviness' in their attitudes towards simulated gambling in terms of the odds of winning, the perceived value of money, impacts on the game experience, and revenue-generation by game operators.

7.2.2.1. Distorting perceived odds of winning

Some participants noted that simulated gambling could distort the perceived odds of winning in real money gambling. This could occur through misleading advertising and because the odds of winning in the game were not reflected in real money gambling. One participant explained that game operators wanted to keep gamers playing, so they offered higher odds of winning in games than in real gambling:

'*Video games give you more of a chance than real life does so it's like they have higher odds, like it's in your favour when you're playing a game because they want you to keep on playing the game…*' – Male, aged 15-17, Newcastle.

7.2.2.2. Misjudging the value of money

Some participants expressed concerns that simulated gambling could result in people misjudging the value of money in real life, given the differences in values of real money and in-game currency. One participant referred to:

'The ignorance of childhood, not knowing…or not having a sense of reality as to how much things actually cost, and what real money is, versus in-game currency...' – Female, aged 15-17, North Sydney.

Another participant believed that gamers might misjudge the value of money because, in some games, players might obtain in-game currencies without paying, and use them for simulated gambling. As a result, players might think the same occurs in gambling in real life:

'Because you can do it (gambling) with in-game money, which takes nothing to get; but if you do it in real life, you might be misjudging the value of the money.' – Male, aged 12-14, Newcastle.

Some participants were very aware of the value of in-game currency in some games. One participant said she did not want to spend in-game currency because she realised it correlated with actual money:

'*I'm very much less likely to spend in-game currency, because I'm now aware that it correlates to actual money*.' – Female, aged 15-17, North Sydney.

7.2.2.3. Potential negative impacts on the gaming experience

Simulated gambling elements did not appear to enhance the gaming experience, according to most participants. When asked their attitudes towards simulated gambling in games, some participants were indifferent, while other participants found simulated gambling '*boring*', '*not interesting'* and described it as '*a side thing'*. Participants seemed to value playing skills and strategies more than winning items or

progressing from chance-based gambling scenarios. One participant explained that players preferred to do missions in games instead of simulated gambling:

> '*Because it's boring, they'd rather play the game instead of spending money…like in the game there are missions that you can earn just way more money. And then people just do the missions*.' – Male, Indigenous group.

For some participants, particularly older ones, simulated gambling elements had negative influences on the gaming experience and could even be a deterrent to playing or continuing to play a game. One participant said he stopped playing because items he won were not worth the effort:

> '*Winning a car in GTA instead of just winning clothes every single time. I stopped playing because of that…I only win clothes or like $10 in the thing and it's not worth it'* – Male, aged 15-17, North Sydney.

7.2.2.4. Cynicism towards revenue generation

Participants appeared to be 'savvy' about the gaming industry and shared their views on how game operators generated revenue. Participants described how the gaming industry was money-driven and games were designed to '*squash all the money and time out of you'***.** The amount of money spent on gaming also accumulated over time. Participants said it kept getting more expensive when '*you die again'.* Participants thought games were designed to lure players with seemingly free games, then included in-game purchases to keep them playing or required them to pay extra to level up. One participant explained:

> *'The people that makes the games do it on purpose because they know that once they start playing the game that they'll send it to other people to get more and then it'll keep on going, increasing the popularity of the game.' – Male, aged 15 to 17, Newcastle.*

Participants also discussed their understanding of the mechanisms behind virtual currencies in games. It was explained that real money was needed to participate in simulated gambling, which started free of charge:

> '*You could have a few turns on the slot machine or something and then you need to buy them with the in-game money which costs like actual money...*' – Female, aged 12-14, North Sydney.

7.2.3. Youth attitudes and behaviours relating to skins

Skins were described as being, in most games, aesthetic only; and designed to enhance the appearance of game avatars. According to participants, skins '*differentiate yourself from each other'*, helped players '*stand out'* and could be used '*for recognition'*. In other games, participants explained that skins were functional. For example, in games like Apex Legend, skins might give players '*abilities*'.

7.2.3.1. How to acquire skins

Some games offer free skins, but according to participants the free skins tended to be inferior:

'…*you can get skins for free but they're not very good…you pretty much have to spend money'* (to obtain worthwhile skins) – Female, aged 12-14, Paramatta.

Participants said that players spent real money to buy virtual currency, with which they could purchase desirable skins. One participant explained how skins could be purchased in Fortnite:

'I think ultimately the first step is on cash payment, like actual money because that then translates to a currency in the game, so it can be points, it can be coins, in the case of Fortnite V bucks, and that currency is then used to buy the skins...' – Male, aged 12-14, Paramatta.

Large amounts of money could be spent on obtaining skins. One participant talked about her brother's large spending on skins:

'*My brother, he used to be really addicted to Fortnite and he would be constantly buying skins and stuff but it was off mum and dad's credit card…one transaction was over $1,000 so he owes them a lot of money*' – Female, age 15 to 17, Coffs Harbour.

7.2.3.2. Motivations for acquiring skins

When asked the motivations for acquiring skins, participants discussed in-game status, social desirability, and uniqueness as the main reasons.

In-game status was one of the main reasons to acquire skins, as participants said skins showed the level of players in the game. One participant explained how skins demonstrated status in the game:

'*You can tell like someone has played it for longer or is better because they have more stuff. You can tell someone that has just started because they don't have anything*.' – Female, aged 15-17, Coffs Harbour.

Social desirability seemed to be another reason for obtaining skins. Players wearing rare or expensive skins were considered to have money, which was considered socially desirable. This participant referred to skins that are sold and not just distributed through loot boxes:

'It's just to make you look fancy and it's a way for people to gloat online saying like 'Oh yeah, I have more skins than you' and it's a way of showing off who has more money.' – Male, aged 15-17, Newcastle.

Participants also said that some players obtained skins because of the uniqueness and expression they allowed, which could differentiate the player from others:

'I reckon a lot of it's to be unique…everyone has the same goals but to differentiate yourself from each other. You want to be cool, you know, have like different abilities even if it's just cosmetic…be different from everyone else.' – Male, aged 15-17, Paramatta.

7.2.3.3. Varying attitudes towards skins

Some participants were opposed to paying money for skins in games, rather than advancing and earning items through skills and strategies. Earning items through playing appeared to be more valued than buying them. In addition, the older groups did not seem to be in favour of skins, and described skins as '*waste of money*', and '*pointless'*, as it '*does not give you competitive advantage*' in games. Older participants said that they '*don't do it anymore*' and looked down on '*colours and things to appeal to younger audiences*'. The cynicism towards skins seemed to increase as participants matured, as they said they used to purchase skins, but with maturity (and other things to spend their money on), the concept of buying just for the sake of appearance, was less appealing.

However, other participants still felt that skins were valued and that other players would not assume they had necessarily been purchased:

> '*Yeah but I don't think other people would know that though. You might feel that you'll know if you've earned it or not but other people will just see it as they must be great. They probably don't think, oh they paid the money*.' – Female: aged 15-17, Coffs Harbour.

7.2.3.4. Skin betting and trading

The rules for skin betting varied between games. According to participants, skins were locked to an account and skin betting/trading was not allowed in some games, while skin betting can be done in other games. For example, one participant said skin trading is allowed in CS:GO:

> '*In CS:GO, you could do a trade-off. So like, you'd put it in, and you'd do that, and you could maybe get something higher, or just lose it*.' – Male, aged 15 to 17, North Sydney.

Participants also noted that skin betting and trading could be done on external websites. One participant explained the external websites for skin trading:

> '…*where there's a lot of rare skins you can get for your weapons, which are extremely valuable…It's like, there's hundreds of sites, and basically you can roll and sell them off*.' – Male, aged 15 to 17, Dubbo.

No age verification was reported for those external platforms. One participant shared her experience of skin betting on an external website while being underage:

> '*No, I just put my real age and then it didn't really do anything...It seems really shady.'*

7.2.4. Youth attitudes and behaviours relating to loot boxes

Participants discussed their experiences relating to obtaining loot boxes, and some negative attitudes towards loot boxes.

7.2.4.1. Obtaining loot boxes

Participants said players could gain loot boxes through playing; for example '*you get 100 kills today, you get a loot box'.* Alternatively, loot boxes could be purchased with real money or in-game currency, which needed to be purchased with real money.

Loot boxes were usually considered '*surprises'* and may come with desirable items. However, most of the time players might not get desired items. One participant explained his friend's experience of not getting worthwhile items from loot boxes:

> '*I watched my friend get three and open three more that were free. Probably about three-quarters of the things he got was just rubbish, the other quarter was decent moderately good stuff and nothing too good*.' – Male, aged 12 to 14, Dubbo.

Loot boxes could be expensive and potentially addictive. According to participants, players were more likely to get better items in more expensive loot boxes, but it appeared that the odds of getting what players wanted were low. One participant explained how price could '*make a difference'*:

> '*And a lot of the crates vary in price. They're like, two dollars, 10 dollars, 15 dollars. If you buy the two-dollar one, you're not going to get the same rarity of stuff as the 15-dollar one.*' – Male, aged 15 to 17, North Sydney.

Furthermore, participants said the advertising of loot boxes could sometimes be deceptive. For example:

> '*Sometimes they can state what type of things they can give you but they don't give you what you're actually going to get. They can say, 'Oh, we can give you this stuff' and you can get a different version of that...*' – Male, aged 12 to 14, North Sydney.

Therefore, to obtain desired items to advance in the games or to get rare in-game items such as skins and weapons, players might make excessive purchases of loot boxes and end up spending large amounts of money. One participant described her cousin spending '*ridiculous'* amounts of money on loot boxes:

> '*My cousin…was like in so much trouble, I think he spent, like, two thousand dollars…he just was like, ran out of stuff and he kept buying it, like over a long period of time but I think altogether he spent, like, two thousand dollars or something ridiculous*.' – Female, aged 15 to 17, Paramatta.

7.2.4.2. Negative attitudes towards loot boxes

Participants expressed a range of negative attitudes towards loot boxes. It appeared that some participants valued the skills involved in playing the games more than paying for loot boxes, which might involve large amounts of money due to the rare chance of getting good items (e.g., a powerful weapon). One participant said: '*you are good if you are rich*.' Participants understood that loot boxes might help advance players in the game, but thought the money spent was '*stupid'*.

Furthermore, participants considered purchasing loot boxes to be risky, given the small chance of getting desired items. One participant explained the high likelihood of getting a '*bad player'* from packs in FIFA:

> '*You spend real money on FIFA points, they allow you to open what's called packs. Packs, they actually, if you click on a certain button they show you the percentages of what you can get in a pack or like, a loot box, so, it's a very small*

percentage of getting a rare player and a high percentage of getting like a bad player…obviously massive risk involved and…the odds of a good outcome are very slim.' –Male, aged 15 to 17, Paramatta.

As previously discussed, loot boxes could be expensive. Participants associated loot boxes with revenue generation by the gaming industry. Loot boxes were described as '*just a way of generating revenue'* for the game companies and '*a subtle way of trying to get people's money'*.

Participants further discussed the 'scheme' behind revenue generation. It was believed that loot boxes aimed to entice players into purchasing, using designated pricing schemes and an '*exaggerated chance of winning'*. One participant believed the small chance of winning was exaggerated in the promotion of loot boxes:

'*…in these loot boxes, very small chance; however, they emphasise the chance of winning much more…a lot of the time, they'll also exaggerate the chances…they'll make it seem like it's better than it is. Because five per cent and one in 20 chance sound completely different*.' – Male, aged 15 to 17, Dubbo.

Another participant explained how game companies promoted loot boxes, despite the fact that the market prices of loot boxes might change:

'*It's just all rubbish and there's a lot of things that say, 'oh it was this amount of money but now it's here', but next week its actually gone down, but it's still the same price…you're only getting it for this price this week but it's the same as every other time. It's just people thinking well if I can get it now, it will be cheaper than any other time. Then they get it and it's just the same, wasting money for something that is not really going to get you anything'* –Male, aged 12 to 14, Dubbo.

7.2.5. Factors reported to influence simulated gambling amongst youth

Three main factors were said to influence young people's participation in simulated gambling: game structure, access to money, and access to devices.

7.2.5.1. Influence of game structure

Game structure was considered to be an important factor influencing young people's participation in simulated gambling. Many participants reported that gambling elements were '*part of the game'*, with players needing to engage in simulated gambling activities to progress in games, gain lives or obtain free items. For example, two participants explained how players could gain lives or be rewarded for their in-game progress by participating in simulated gambling:

'*Sometimes it will be every time you die, or something*.' – Female participant aged 15-17, North Sydney.

'*Or like, after you do something, if you win a level, it would be like, 'Here, here's your reward.' And you get a spin…*' – Male participant aged 15-17, North Sydney.

In addition, simulated gambling is structured in games as opportunities to win rewards, including in-game currencies/credits, items (car, weapon, coins), and

advancement to the next level. One participant explained how players could win in-game currency and in-game items:

> '*Like mini games you get more like fake coins…you can use your fake coins to get more, or like win different prizes…Coins on the game you get diamonds or you can level up…or you can win a dress or like an outfit piece, all on that game*.' – Female, aged 15-17, Coffs Harbour.

7.2.5.2. Influence of access to money

Even though players could not win real money from engaging in simulated gambling in games, real money was needed to purchase in-game currencies which players used to participate in simulated gambling. Therefore, access to money, which was especially linked to parents' control over money, was a key influence on young people's simulated gambling activities. Most participants did not have an independent source of income, and the money spent on games (as well as simulated gambling) came from parents. However, it appeared that some parents were unaware of how young people might spend money online. One participant explained how adolescents might use their parents' credit card without permission for in-game expenditures, creating credit card debt that parents were unaware of:

> *'I've seen a few things about kids taking the parents' money, taking the credit card to buy things for the games and they keep using it. The parents then find out that the parents are in debt and they don't have money for important things, and they can't really do anything about it.'* – Female, aged 12-14, Dubbo.

Another participant noted that, once a credit card had been linked to the account for a one-off purchase, future purchases were also deducted from that card, enabling continued purchases using a parent's credit card:

> '*Mum consented to me buying a game on my laptop, and so she put her credit card details in and stuff, and didn't click the 'save credit card' option; so it didn't save her credit card information, or anything. And it bought the game once, and then it started taking multiple purchases out, of all these different amounts; and it racked up to like, two grand or something*.' – Male, aged 15-17, North Sydney.

7.2.5.3. Influence of access to devices

Another factor that influenced young people's participation in simulated gambling was their access to devices that enabled them to engage with online video games, simulated gambling, and other online platforms (i.e. social media). As previously discussed, most participants had access to at least one digital device. Participants reported that the frequency and duration of gaming and simulated gambling was linked to how accessible their device was and whether it was in sight of parental monitoring.

7.3. Convergence of gaming and gambling

Participants discussed three main ways in which gaming and gambling were converging: the perceived blurring of boundaries between gaming and gambling activities within games; in-game items that could be used to gamble outside of the games; and exposure to gambling advertisements when playing games.

7.3.1. Perceived blurring boundaries of gaming and gambling within games

Some participants perceived simulated gambling in games to be gambling, indicating that the boundaries between gaming and gambling in games may be indistinct for some young people. When asked if they had ever gambled, a number of participants talked about the simulated gambling activities they had engaged in within games, implying that they thought that this simulated gambling was a type of real gambling. For example, one participant said that he gambled in Fortnite:

> *'I kind of do a bit of gambling on Fortnite, because there's these cash cups that you can enter, and it doesn't cost you any money, but if you get into enough place, the top prize is $4,500'* – Male, aged 12-14, Newcastle.

Most participants agreed that purchasing loot boxes within games was a form of gambling. This was because money was invested, the chances of getting what you want was '*unknown*' and '*random*', and the '*odds of winning (were) outweighed by losing*. Two participants identified these characteristics of loot boxes as follows:*'*.

> '*Because a lot of the time, you're investing money into having a chance to get a certain reward from the loot box that was completely random. So you have a pretty high possibility of actually wasting money, or you invest more money into getting the loot box and the reward isn't as…*' – Male, aged 15 to 17, North Sydney.

> '*So you put in money and there's like different types, there's like a roulette, yeah, so there's like a, you pay money for loot boxes and then like, you know, there's like a small percentage that'll land on like the rarest skin in the game and then the other times it will be like, the bad skins, so it's like a form of gambling, I guess*.' – Male, aged 15 to 17, Paramatta.

One participant described purchasing loot boxes as:

> '*the worst version of gambling, because there's no chance of getting monetary benefits out of it*.' - Male, aged 15 to 17, Dubbo.

Participants mainly distinguished between gambling and simulated gambling according to whether real money was involved (directly or indirectly), and whether the outcome was unknown. Two participants explained the role of chance in this distinction between whether certain loot boxes were a form of gambling or not:

> '*So, in some ways, yes. In some ways, no…Because there could be sometimes where it's a bundle and they tell you what you're going to get. But if it's one where they just say 'You have a certain chance, you could get this, but it's not guaranteed.' That's more gambling, but one where they're actually telling you what you are going to get, that's not.*' – Male, aged 12 to 14, Paramatta.

> *They have online, so you can purchase with in game currency or real money. You can actually buy a pack and it's got, it's called a gold box or a silver box, and they give you better as you go on… (Whether it is gambling) depends which box you get. Because there's some boxes where it tells you exactly what you're going to get and then there's others where you don't know what you're going to get*.' – Male, aged 12 to 14, Paramatta.

7.3.2. In-game items enabling gambling outside of games

Most participants agreed that skin betting or betting with in-game items outside of the game was a form of gambling, given the value associated with skins, the risks involved with betting, and because outcomes of this betting were unknown. External websites enabled betting with skins on games of chance, reflecting the monetary value of skins. One participant shared his experience of skin betting on a roulette game on an external website and clearly considered it to be gambling:

> *'…you get the skin and like you deposit the skins and then sort of if it lands on your number…it's like a roulette type of thing…there's odds as well, so like, I guess it is gambling…if it lands on like, a certain number you win, like, more than you put in*.' – Male, aged 15-17, Paramatta.

As discussed previously, the provision of skins betting on external websites is illegal for any age group. A few participants mentioned that they managed to bet using skins while being underage. One participant said no age verification was required and he was allowed to bet on skins even after he entered his real age (under 18).

7.3.4. Advertising of gambling and simulated gambling products

Many participants discussed seeing advertisements for gambling and simulated gambling when playing games on social media and online. One participant explained that advertisements were more common on free apps, because advertising was an important source of revenue for the games operator:

> '*Especially for free apps. Because usually free apps only have two sources of revenue, which is the ads and the dodgy in-game purchases*.' – Male, aged 15-17, North Sydney.

Seeing these advertisements was unavoidable, although some games allowed players to pay money to avoid these advertisements. One participant explained:

> '*Some things give you options to watch an ad, and then but most of the time it's if you pay them money, they won't give you the ad option*.' – Female, aged 15-17, North Sydney.

Participants also commented on the deceptiveness of some advertising, as expressed here where the advertising did not make it clear that players needed to pay to progress in the game:

> *On the ads before you buy the game they show you all of this good stuff like what the game is like and then you get onto the game and you can't go this far without paying this money*.' – Female, aged 15-17, Coffs Harbour.

Even though participants had been indifferent to advertising and found some advertisements '*annoying'* and '*dumb*', advertising of gambling and simulated gambling products were thought to normalise gambling, as discussed earlier.

7.4. Chapter conclusion

Gambling amongst young people most often involved private betting amongst friends. Few young people reported gambling on commercial activities on their own and were more likely to gamble with adults. Parents, grandparents and older siblings sometimes involved the adolescent in gambling activities (e.g., Keno, scratchies) or allowed them to gamble through their online account. Participation in simulated gambling, gambling advertising and peer pressure were said to normalise and potentially entice young people to gamble. Youth had easy access to a wide range of gambling-like activities within games and may need to engage in these activities to progress in games. They could easily get around age verification for certain games and for online payment. They were generally aware that simulated gambling could distort the perceived odds of winning in real money gambling. Some young people spent money in games to acquire skins, to gain in-game status and because of peer pressure, social desirability and uniqueness. Participants had little experience with skin betting and trading, but were aware they could easily access these activities. Participants were attracted to loot boxes, but recognised they can be expensive and involve risking money for a small chance of winning a desired item. They noted that their access to money, and their parents' control over this, influenced their in-game spending. Participants discussed how gaming and gambling have converged because in-game items have been monetised and can be gambled on skin betting websites. Most participants considered skin betting and purchasing loot boxes to be gambling activities because they involved spending money in the hope of acquiring an item of unknown value and with unknown odds. They also noted the convergence of advertising for gaming and gambling products in social media and online.

8. Weighted letterbox survey results

This chapter presents the results from the letterbox survey. As explained in the Methods chapter, all descriptive results are based on the weighted letterbox drop sample as this was the most representative, and all Ns are therefore weighted. For transparency, Appendix G includes the descriptive results for the other samples.

8.1. Gambling

8.1.1. Gambling participation in the last 12 months

Overall, **29.8 per cent** (*n* = 164, 95% CI: 26%-33.8%) of the letterbox survey respondents reported gambling with money on at least one of the 11 activities within the last 12 months. There was no statistically significant difference between males (27%) and females (32.1%).[3] Respondents aged 15-17 years (38.4%) were statistically significantly more likely than those aged 12-14 years (21.4%) to report past-year gambling.[4]

When considering commercial forms only (i.e., excluding informal private betting), the gambling participation rate was 21 per cent (*n* = 116, 95% CI: 17.7% - 24.7%). No statistically significant difference was observed between males (20.2%) and females (20.7%).[5] Older respondents (15-17 year olds) were statistically significantly more likely than younger respondents (12-14 year olds) to have participated in commercial gambling (28.4% vs 13.9% respectively).[6]

8.1.2. Gambling participation in their lifetime

Overall, **43.4 per cent** (*n* = 239, 95% CI: 39.2%-47.6%) of the letterbox survey respondents reported gambling with money on at least one of the 11 activities at some point in their life. There was no statistically significant difference between males (39.4%) and females (47.3%).[7] Respondents aged 15-17 year (54.3%) were statistically significantly more likely than those aged 12-14 years (32.9%) to report gambling during their lifetime.[8]

The participation rate of gambling on commercial forms only (i.e., excluding informal private betting) was 31.9 per cent (*n* = 176, 95% CI: 28.1%-36%). No statistically significant difference was observed between males (32.6%) and females (30.2%).[9] However, 15-17 year olds (40.2%) were statistically significantly more likely than 12-14 year olds (23.9%) to have participated in commercial forms of gambling.[10]

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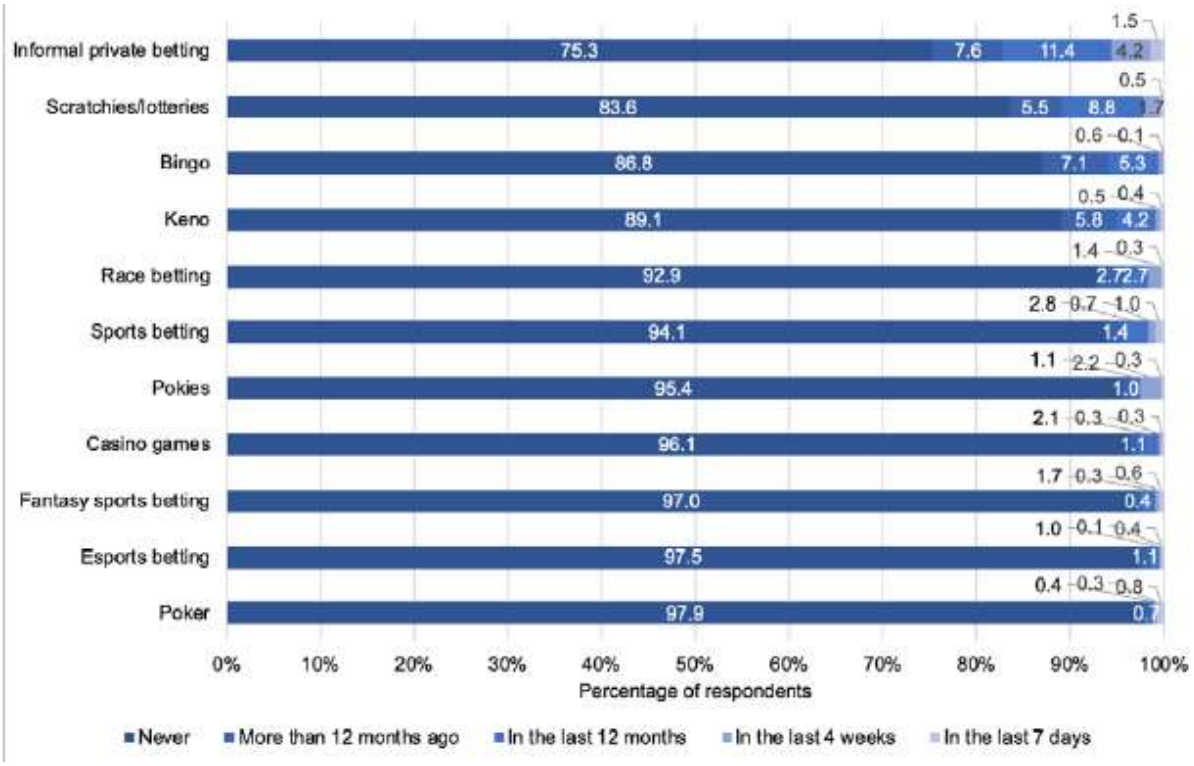
[3] chi-square (1, $N = 544$) = 1.71, $p = .191$)
[4] chi-square (1, $N = 551$) = 18.92, $p < .001$
[5] chi-square (1, $N = 543$) = .02, $p = .890$
[6] chi-square (1, $N = 551$) = 17.38, $p < .001$
[7] chi-square (1, $N = 544$) = 3.51, $p = .061$
[8] chi-square (1, $N = 551$) = 25.65, $p < .001$
[9] chi-square (1, $N = 544$) = .39, $p = .535$
[10] chi-square (1, $N = 551$) = 16.82, $p < .001$

8.1.3. Gambling participation in each activity

As shown in Figure 1, the most popular gambling activity in the letterbox sample was informal private betting (24.7% had ever participated), followed by scratchies/lotteries (16.4%), bingo (13.2%) and keno (10.9%). During the past 12 months, the most popular gambling activities were also informal private betting (17.1%), scratchies/lotteries (11%), bingo (6%) and keno (5.1%).

Figure 1. Frequency of gambling on each activity, weighted letterbox drop sample (N = 551)



GB1a. When did YOU last spend any REAL MONEY on each of the following activities?

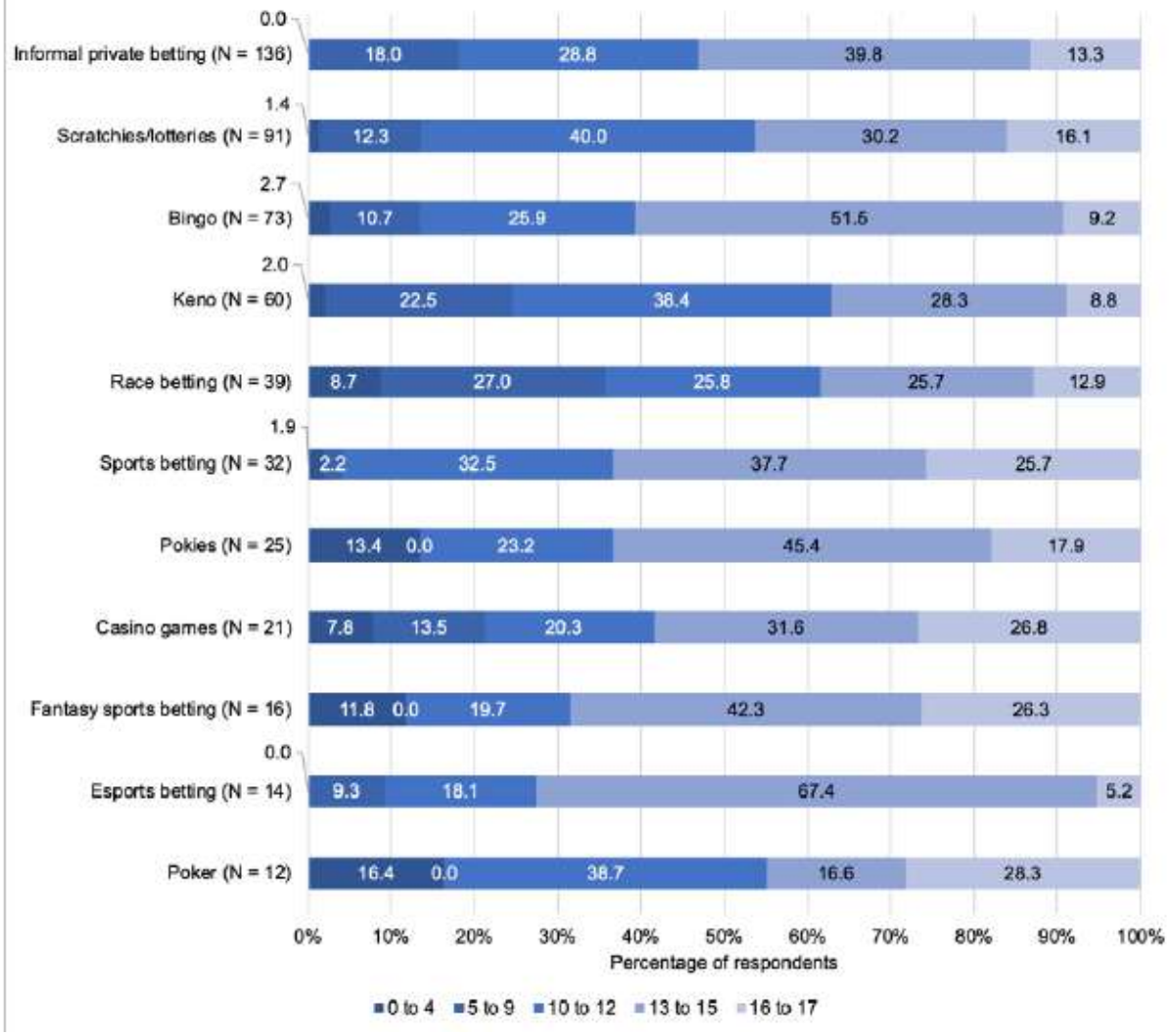
8.1.4. Frequency of preferred gambling activity

Of the 164 youth in the letterbox sample who had gambled in the last 12 months, most (80.7%) reported gambling on their favourite form once a month or less often, while 9.8 per cent reported betting on it a few times a month, 5.7 per cent about once a week, and 3.8 per cent more than once a week.

8.1.5. Age of first participating in each gambling activity

Amongst the letterbox survey respondents who had gambled (*N* = 164), the most commonly reported age of first gambling on each activity was 5-9 years for race betting, 10-12 years for scratchies/lotteries, keno and poker, and 13-15 years for all other forms of gambling. However, these results are based on low numbers of participants for several activities, which are reported in the labels for each bar in Figure 2. Some respondents reported first gambling aged 0-4 on some activities, which may be possible if they gambled with family members, for example. However, due to the low numbers of respondents, these data should be treated with caution.

Figure 2. Age at which respondents first gambled on each gambling activity, weighted letterbox drop sample



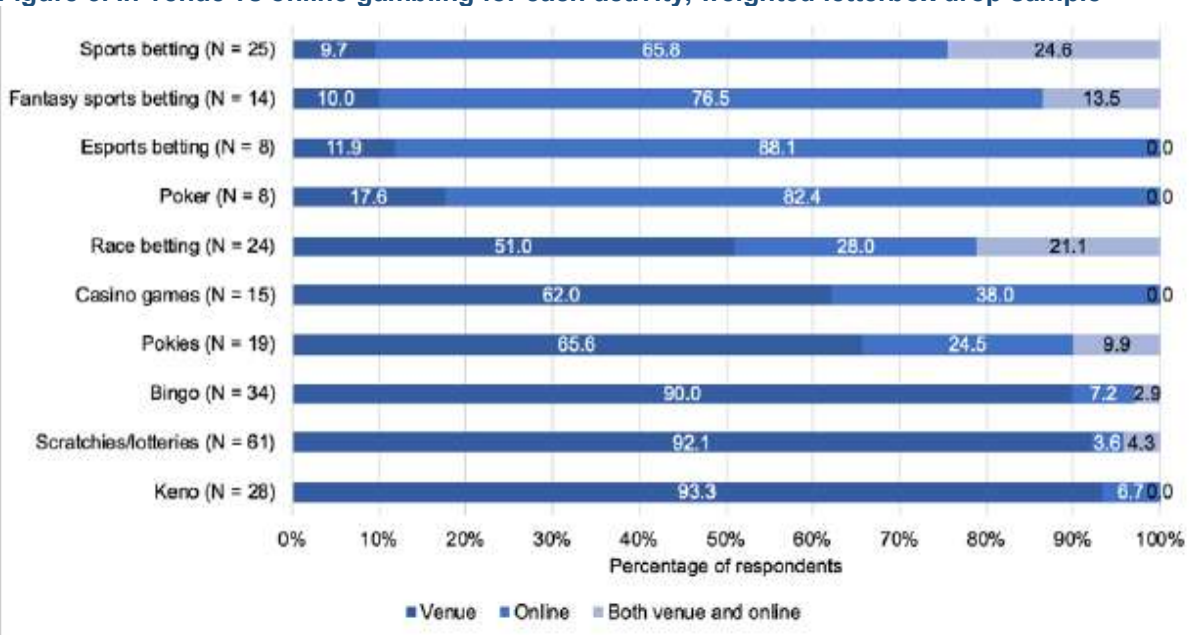
GB2. How old were you when you first spent REAL MONEY on each activity?

8.1.6. Mode/location of each gambling activity

As a general trend, amongst letterbox survey respondents who gambled on each activity within the last 12 months, the activities that are mostly available through venues (keno, bingo, scratchies/lotteries) were generally done in venues; whereas activities like sports betting, fantasy sports betting, esports betting, and poker were generally engaged in online. Some of these figures are based on low numbers of participants, and these are reported in the labels for each bar (Figure 3).

For informal private betting, different response options were provided to respondents based on findings from the focus groups. Amongst those who participated in informal private betting in the last 12 months, the most common locations were at their own house, a friend's house or a family member's house (86.2%), followed by school/TAFE (27.7%), and then online or via apps (12.8%) or 'other' (5.3%) – where multiple responses were allowed.

Figure 3. In-venue vs online gambling for each activity, weighted letterbox drop sample



GB3. During the last 12 months, did you spend REAL MONEY on these activities in a venue (such as a pub, club, casino, TAB or newsagent), online (using a smartphone, computer, tablet or gaming console), or both?

8.1.7. Online gambling

Of the 164 letterbox survey respondents who had gambled during the last 12 months, 24.9 per cent reported betting online for at least one gambling activity, while 75.1 per cent reported only gambling in venues. Males (31.6%) were more likely than females (16.7%) to bet online,[11] as were 15-17 year olds (31.7%) compared to 12-14 year olds (13.3%).[12]

8.1.8. Median annual expenditure on each gambling activity

The activity with the highest median annual expenditure (Table 10) was fantasy sports betting ($43.40), followed by poker ($34.00), esports betting ($20.80), sports betting ($20.00) and pokies ($19.00). Note that median expenditure is reported because these are based on relatively low numbers, and means are impacted by some large (but likely realistic) expenditure values.

[11] chi-square (1, N = 160) = 4.90, p = .027
[12] chi-square (1, N = 164) = 6.87, p = .009

Table 10. Median annual expenditure amongst those who participated in each gambling activity in the last 12 months (AU$)

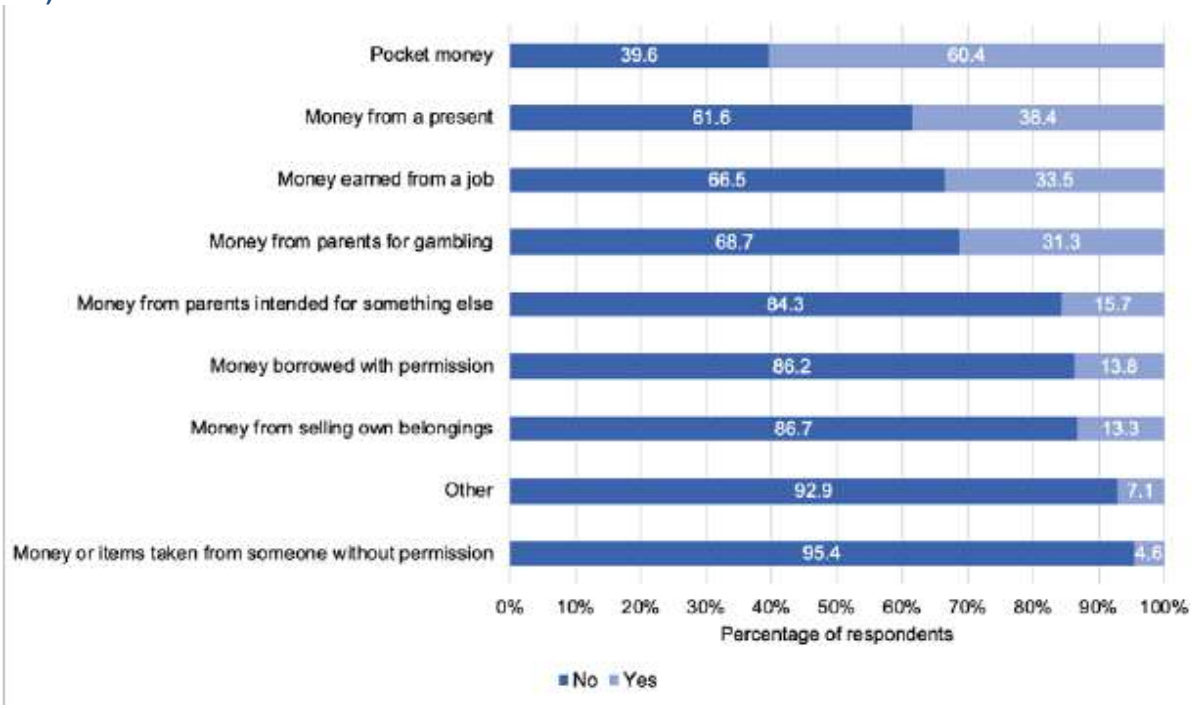
Gambling form	Weighted Letterbox ($)		
	Median	Minimum	Maximum
Pokies (n = 19)	19.00	<1.00	5,000.00
Race betting (n = 24)	10.00	<1.00	500.00
Scratchies/ lotteries (n = 61)	10.00	<1.00	400.00
Keno (n = 28)	10.00	<1.00	400.00
Bingo (n = 34)	14.80	<1.00	260.00
Poker (n = 8)	34.00	<1.00	5,000.00
Casino games (n = 15)	13.30	<1.00	2,000.00
Sports betting (n = 25)	20.00	<1.00	1,000.00
Esports betting (n = 8)	20.80	2.00	900.00
Fantasy sports betting (n = 14)	43.40	2.00	1,000.00
Informal private betting (n = 94)	14.00	<1.00	600.00

GB4. During the last 12 months, about how much money did you spend in total on each of these activities?

8.1.9. Sources of money for gambling

Figure 4 shows that the most common source of money for gambling amongst the letterbox survey respondents who gambled was pocket money (60.4%), followed by money from a present (38.4%), money earned from a job (33.5%), and money from parents specifically for gambling (31.3%).

Figure 4. Sources of money for gambling, gamblers only, weighted letterbox drop sample (N = 164)

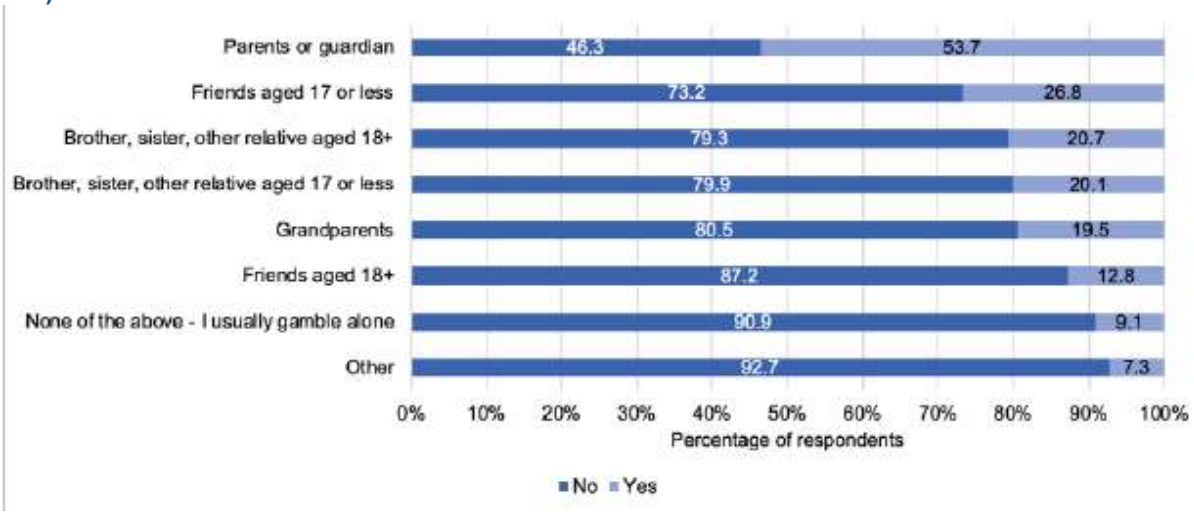


GB5. Have you used money from any of the following sources for gambling?

8.1.10. Who respondents gamble with

Amongst survey respondents who gambled during the last 12 months, the most common person that they gambled with was their parents or guardians (53.7%), followed by friends aged 17 or less (26.8%), siblings or other relatives aged 18 years or over (20.7%), siblings or other relatives under 18 years (20.1%), and grandparents (19.5%). Relatively few respondents (9.1%) reported gambling alone (Figure 5).

Figure 5. Who respondents gamble with, gamblers only, weighted letterbox drop sample (N = 164).



GB6. Who do you usually gamble or bet with FOR REAL MONEY?

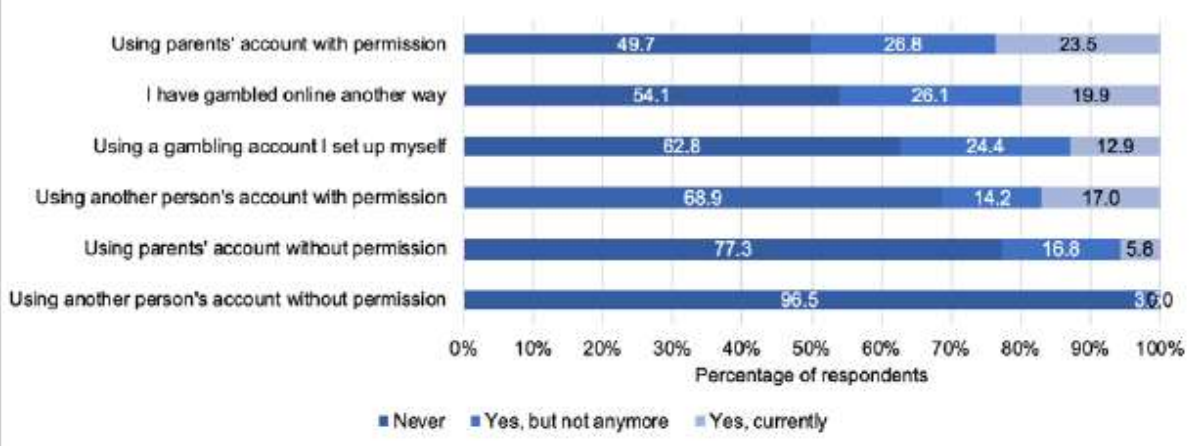
8.1.11. Whether respondents have been stopped when trying to gamble

When asked if they had ever tried to gamble with money but been stopped, most letterbox survey respondents who had gambled reported that they had never tried to gamble for money (78.1%). This proportion is inconsistent with past-year and lifetime non-participation rates based on asking about participation in each gambling activity individually. This may reflect that respondents included here only the types of gambling where they might expect to be stopped. For example, they might not expect to be stopped when participating in informal private betting. Amongst those who had tried to gamble for money, about one quarter (25.1%) reported being stopped, with three quarters (74.9%) reporting not being stopped.

8.1.12. How respondents access online gambling

When asked how they accessed online gambling services, most letterbox survey respondents who had gambled online (N = 41) reported they had used their parents' account with permission, or gambled online in other ways than through the options listed (Figure 6). Most of those who listed 'another way' reported options like paying someone else to gamble for them, or getting someone else to set up an account for them to use. Some respondents also reported asking a friend to place their bets for them, or gambling on overseas sites. Nine respondents reported using accounts without permission. Please note that these results are based on a small number of respondents (41), and should be interpreted with caution.

Figure 6. How respondents access online gambling services, online gamblers only, weighted letterbox drop sample (N = 41).



GB8. Please read all the sentences below and select one response on each line.

8.1.13. Approval or disapproval of gambling

All letterbox survey respondents were asked how much they approved or disapproved of people if they gambled 1) once a week or more often, or 2) less than once a week. Just under 90 per cent of respondents reported that they strongly disapproved (48%) or somewhat disapproved (41.5%) of people gambling regularly (at least weekly). In relation to people who gambled less than once a week, nearly half of respondents reported that they strongly disapproved (12.1%) or somewhat disapproved (37.5%), while 8.3 per cent somewhat approved and 2.1 per cent strongly approved.

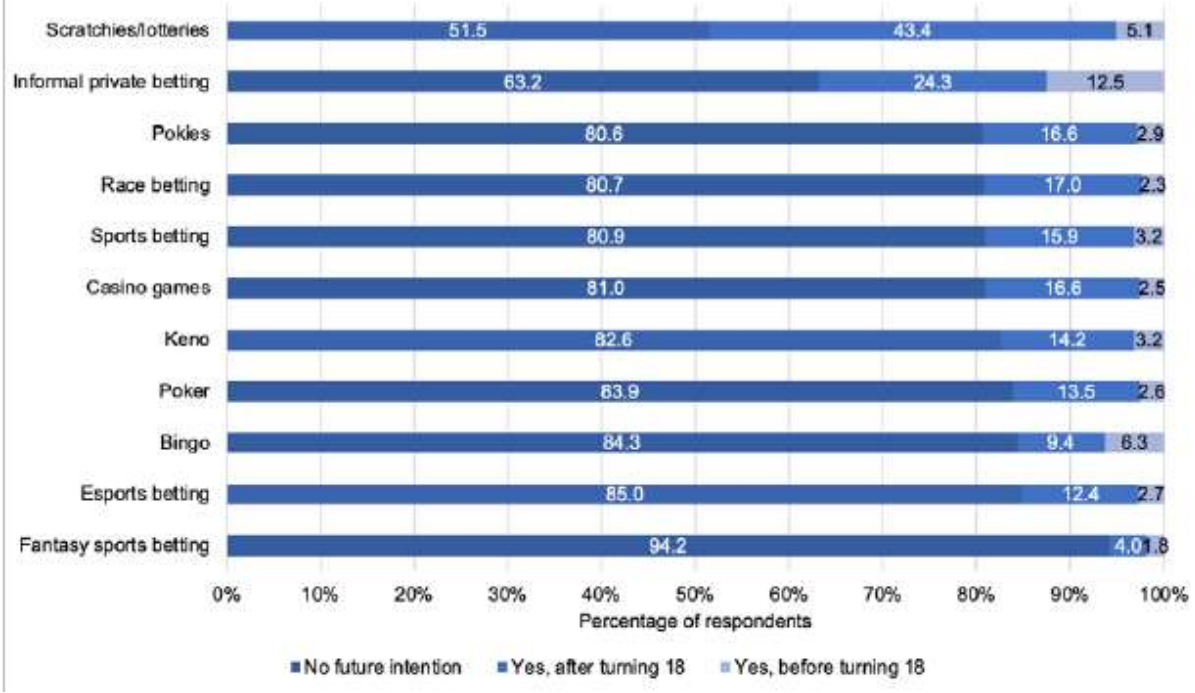
8.1.14. Attitudes towards risk of harm from gambling

All respondents were asked how much they thought people risked harming themselves (physically, mentally, financially or in other ways) if they gambled 1) once a week or more often, or 2) less than once a week. More than 93 per cent of letterbox survey respondents thought that people who gambled once a week or more were at great (62.8%) or moderate (30.7%) risk of harming themselves. Less than half (46.3%) thought that people who gambled less than once a week were at great (8.6%) or moderate (37.7%) risk of harming themselves. However, very few (~5%) thought people who gambled, no matter how frequently, were at no risk of harming themselves.

8.1.15. Future gambling intentions

When asked if they intended to gamble in the future with real money on each gambling activity, almost half the letterbox survey respondents (48.5%) reported an intention to gamble on scratchies/lotteries, including 5.1 per cent reporting they would do so while underage. Informal private betting was the next highest, with 36.8 per cent intending to gamble on this activity in the future, including 12.5 per cent intending to gamble on this activity while underage. Similar responses were observed for pokies, race betting, sports betting, and casino games, with approximately 16-17 per cent indicating an intention to gamble on these forms after turning 18, and 2.3-3.2 per cent before turning 18 (Figure 7).

Figure 7. Future gambling intention by activity, weighted letterbox drop sample (N = 551)



*GI1. **In the future**, do you intend to gamble WITH REAL MONEY on any of the following activities, either before or after you turn 18 years of age?*

8.1.16. Problem gambling

An estimated **1.5 per cent** (*n* = 8, 95% CI: 0.7%-2.8%) of letterbox survey respondents were classified as experiencing problems due to gambling, based on the DSM-IV-MR-J scale. A further **2.2 per cent** (n = 12, 95% CI: 1.3%-3.8%) were classified as at-risk gamblers, and 26.2 per cent non-problem gamblers (n = 144, 95% CI: 22.6%-30%), with 70.2 per cent non-gamblers (n = 387, 95% CI: 66.3%-73.9%).

No statistically significant differences were observed based on gender.[13] For males, 1.8 per cent were classified as experiencing problems due to gambling, 1.1 per cent at-risk, 23.8 per cent non-problem gamblers and 73.3 per cent non-gamblers. For females, the results were 0.8 per cent experiencing problems, 2.3 per cent at-risk, 29 per cent non-problem gamblers and 67.9 per cent non-gamblers.

Older respondents were statistically significantly more likely to be non-problem gamblers (33.9% for 15-17 year olds vs 18.6% for 12-14 year olds), and less likely to be non-gamblers (61.6% vs 78.6% for 12-14 year olds), with no age differences for at-risk (2.2% vs 2.1% for 12-14 year olds) or problem gambler status (2.2% vs 0.7% for 12-14 year olds).[14] It is important to note that the figures for at-risk and problem gambling status are based on a small number of people, and thus statistically significant differences were unlikely.

[13] chi-square (1, *N* = 543) = 4.23, *p* = .237
[14] chi-square (1, *N* = 551) = 20.23, *p* < .001

8.1.18. Parental attitudes towards youth gambling

Most (76.9%) letterbox survey respondents reported that their parents would either strongly disapprove (47%) or disapprove (29.9%) of them (the young person) gambling even once or twice over the next 12 months, while 20.5 per cent reported that their parents would neither approve nor disapprove. Few respondents felt that their parents would approve (2.5%) or strongly approve (0.1%) of them gambling.

8.1.19. Parental rule setting about gambling

The letterbox survey sample reported a wide range of rule setting behaviours amongst parents. Just over one-quarter (28.3%) of respondents reported that their parents set strict rules about gambling and no negotiation was allowed. A further 22.4 per cent reported that rules were set, but that these rules were discussed and agreed upon with them. Another 14.4 per cent reported that their parents did not set rules about gambling, but that they did discuss the best approach to dealing with gambling. Finally, 34.9 per cent reported that their parents did not set rules about gambling, and gambling was not discussed.

8.1.20. Peer gambling

When asked if their peers gambled, 58.8 per cent of the letterbox survey respondents said that they did not, 21.9 per cent reported that some of their friends gambled, 1.9 per cent reported that most of their friends gambled, and 17.4 per cent reported that they did not know if their friends gambled or not.

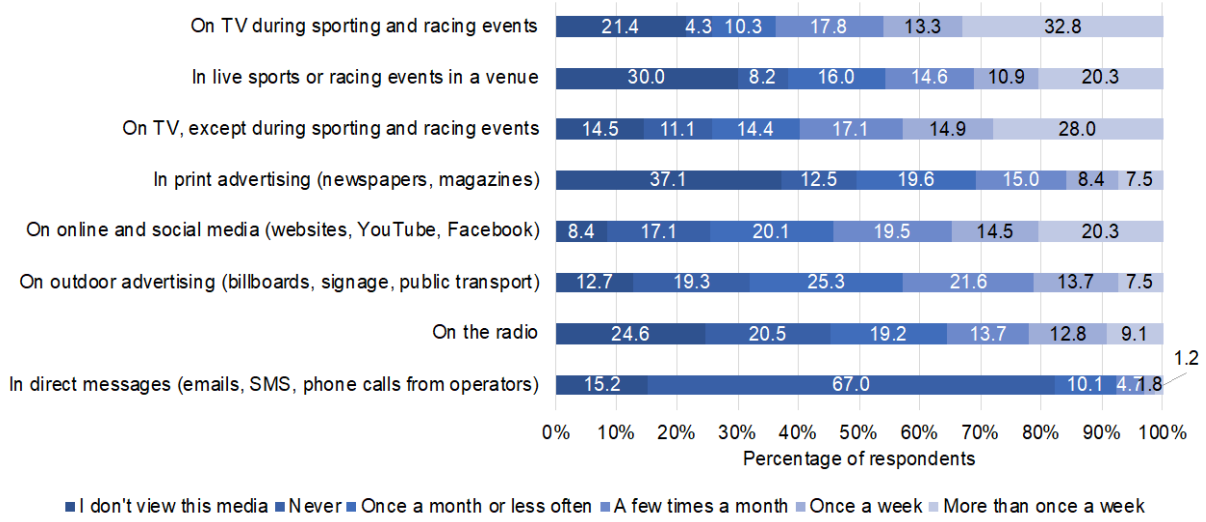
Most respondents (73.7%) indicated that they did not know if their peers approved of young people gambling or not as they did not discuss gambling with them. A further 9.9 per cent said that none of their friends approved of young people gambling, 12.6 per cent reported that some of their friends approved, and 3.7 per cent reported that most of their friends approved.

When specifically asked whether they had any close friends who strongly approved of gambling, 33.2 per cent of respondents indicated no, 8.9 per cent said yes, and 58 per cent said that they did not know or did not talk about it with friends.

8.1.21. Exposure to gambling advertising

As shown in Figure 9, over one-half of the letterbox survey respondents reported seeing gambling advertisements in the last 12 months in most forms of media they were asked about, especially on television during sporting and racing events (74.3%), on television outside of these events (74.4%), and in online and social media (54%). On a weekly basis, the respondents also most commonly noticed this advertising in these same media: on television during sporting and racing events (46.1%), on television except during sporting and racing events (42.9%), and in online and social media (34.8%).

Figure 9. Exposure to gambling advertising by channel, weighted letterbox drop sample (N = 551)

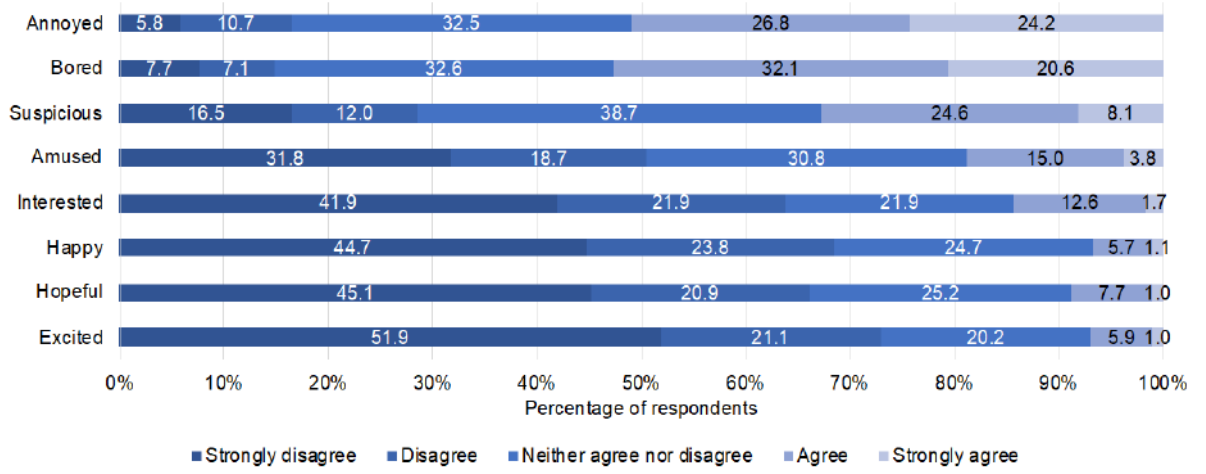


GAD1. During the last 12 months how often have you NOTICED gambling adverts, messages or logos in each of the following places?

8.1.22. Emotional responses to gambling advertising

Respondents were asked to rate their emotional responses towards gambling advertising (Figure 10). Approximately half reported that they were annoyed (51%) or bored (52.7%) by gambling advertisements. Relatively few reported positive responses, such as being amused (18.8%), interested (14.3%), happy (6.8%), hopeful (8.7%) or excited (6.9%).

Figure 10. Attitudes towards gambling advertising, weighted letterbox drop sample (N = 551)



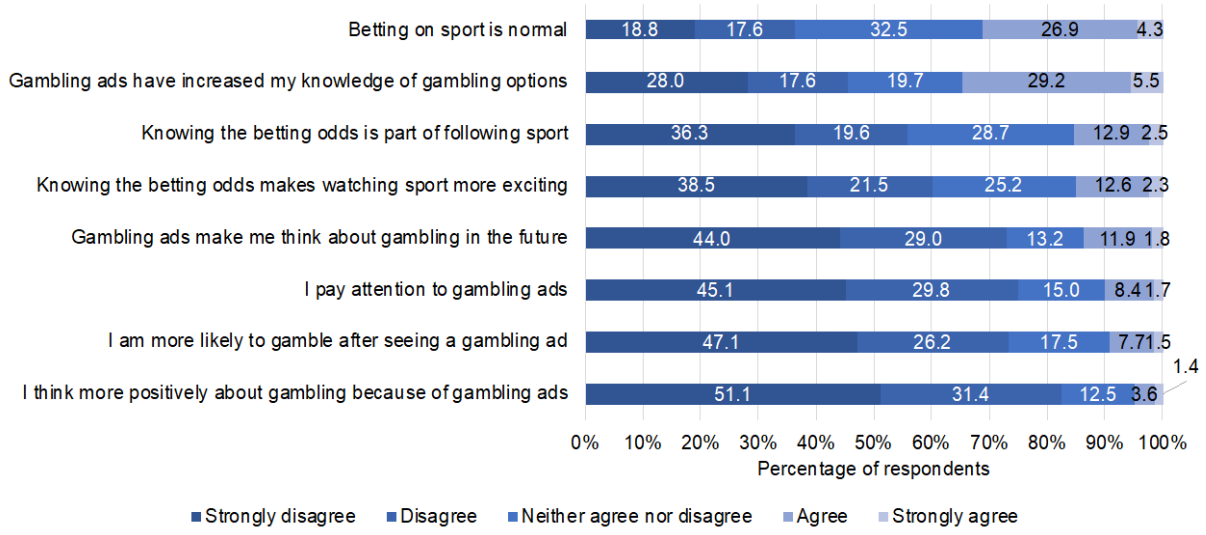
*GAD2. How strongly do you agree or disagree that gambling advertisements make you **feel**…*

8.1.23. Reactions to gambling advertising

Respondents were asked to respond to eight questions about how gambling advertisements made them feel or how they reacted to them (Figure 11). Almost one-third (31.2%) reported that they felt that betting on sport was normal, and 34.7 per cent reported that gambling advertisements had increased their knowledge of gambling options. Approximately one-in-six reported that knowing the odds is part of

following sport (15.4%), and that knowing the odds makes watching sport more exciting (14.9%). Fewer reported that gambling advertisements made them think about gambling in the future (13.7%), that they paid attention to gambling ads (10.1%), that they were more likely to gamble after seeing a gambling ad (9.2%), and that they thought more positively about gambling because of gambling advertisements (5%).

Figure 11. Reactions to gambling advertising, weighted letterbox drop sample (N = 551)



GAD3. How strongly do you agree or disagree with each of the following statements?

8.2. Simulated gambling

8.2.1. Participation in games with gambling components

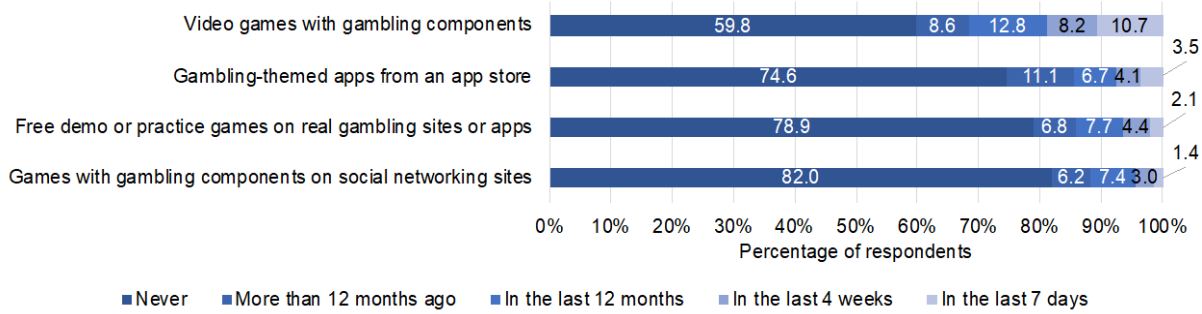
As shown in Figure 12, two-fifths of the letterbox sample (40.1%, *n* = 221, 95% CI: 36.1%-44.3%) had engaged in games with gambling components in the last 12 months, including video games with gambling components, gambling-themed apps from an app store, free demo or practice games on real gambling sites or apps, and games with gambling components on social networking sites. Males (48.2%) were statistically significantly more likely than females (31.3%) to engage in these games,[15] as were older respondents (15-17 year olds 47.2%, 12-14 year olds 33.2%).[16]

Excluding video games with gambling components from this analysis (as gambling may be a small component of the game rather than its primary feature), 24 per cent of respondents reported engaging in the other gambling-style games in the last 12 months. No statistically significant difference was observed for gender (males 22.3%,

[15] chi-square (1, *N* = 544) = 16.21, *p* < .001
[16] chi-square (1, *N* = 551) = 11.27, *p* = .001

females 25.3%,[17] but older respondents (15-17, 28.8%) were statistically significantly more likely than younger respondents (12-14, 19.3%) to have taken part.[18]

Figure 12. Frequency of participation in games with gambling components, weighted letterbox drop sample (N = 551)

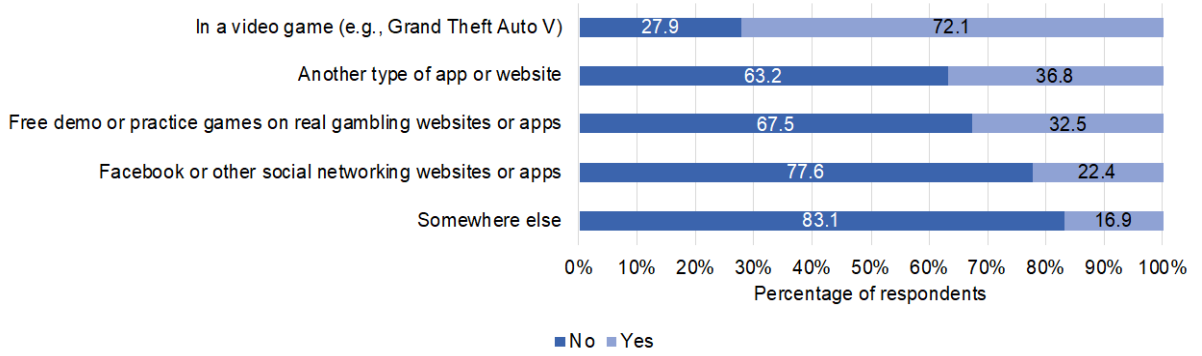


GSG1. When, if ever, did you last play any of these games with gambling components?

8.2.2. Where respondents play games with gambling components

Of the 291 respondents who played games with gambling components at any point in their lives, most (72.1%) reported that they played them in video games. Around one-third (36.8%) played them on other types of apps or websites, while 32.5 per cent played them on real gambling websites or apps, and 22.4 per cent on social networking sites or apps (Figure 13).

Figure 13. Where respondents play games with gambling components, weighted letterbox drop sample (N = 291)



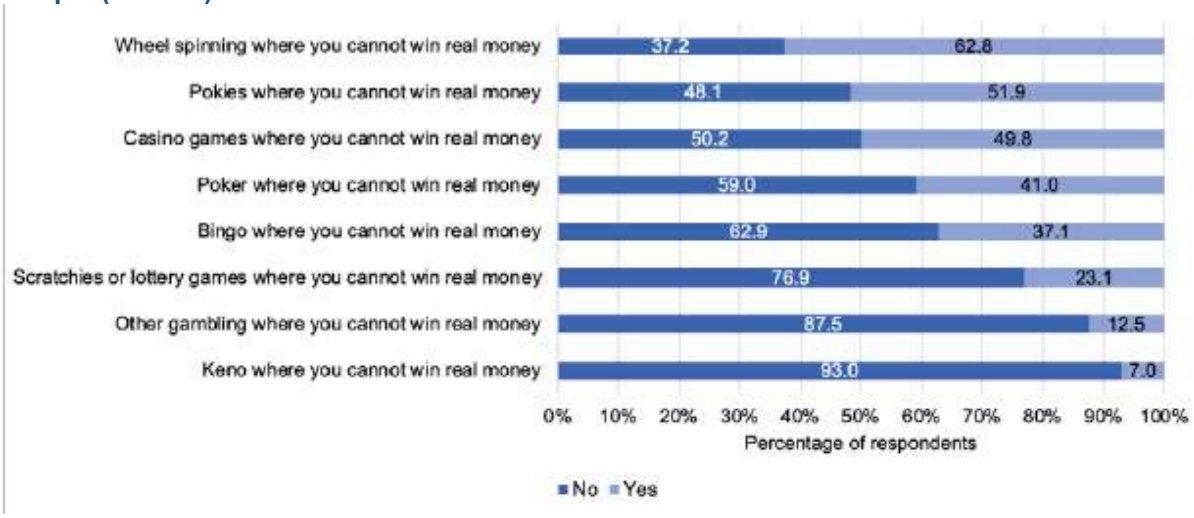
GSG2. Still thinking about the games with gambling components you have played, where did you play these games?

8.2.3. Participation in simulated gambling components in games

Figure 14 shows that the most common types of simulated gambling components that respondents had played were: wheel spinning (62.8% of the 291 respondents who played games with gambling components at any point in their lives), pokies (51.9%), casino games (49.8%), poker (41%) and bingo (37.1%).

[17] chi-square (1, N = 543) = .65, p = .420, ns)
[18] chi-square (1, N=551) = 6.82, p = .009

Figure 14. Simulated gambling components played by respondents, weighted letterbox drop sample (N = 291)



GSG3. Have you ever played any of the following gambling components in games?

8.2.4. Age of first playing games with gambling components

Amongst the of the 291 respondents who played games with gambling components at any point in their lives, most (86.1%) reported first playing these games from the age of 10, with 44.9 per cent first playing between 10 and 12 years of age, 34.6 per cent between 13 and 15 years of age, and 6.7 per cent first playing between 16 and 17 years of age.

8.2.5. Where respondents play games with gambling components

Respondents reported most often playing games with gambling components at home, either in private areas such as bedrooms (47.8% of the 291 respondents who played games with gambling components at any point in their lives), or in public areas (41.9%). Few respondents reported mostly playing games while out and about (3.1%), at friends' places (1.8%), at school (0.8%), or elsewhere (4.7%).

8.2.6. Time spent playing games with gambling components

The amount of time spent playing games with gambling components ranged up to a reported maximum of 48 hours per month or 12 hours per week. However, about half of the respondents who played these games played them for four hours a month or less.

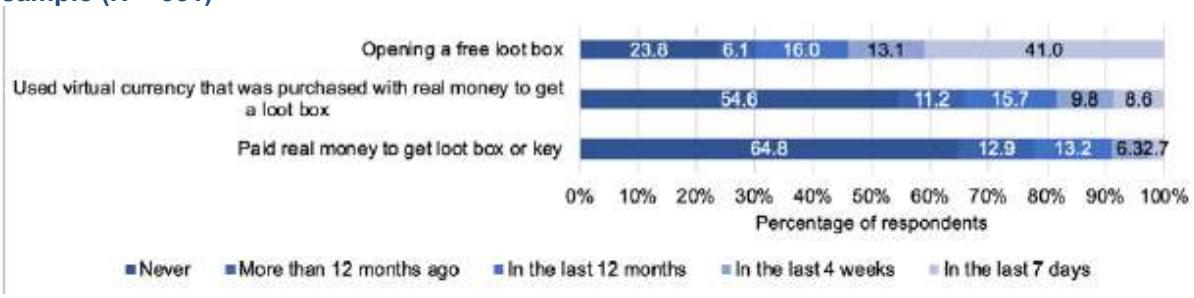
8.2.7. Opening and purchasing loot boxes

Figure 15 indicates that most of the letterbox sample (72.2%) reported engaging with loot boxes in the last 12 months. Males (87.2%) were statistically significantly more likely than females (56.3%) to engage with loot boxes,[19] but no differences were observed based on age.[20]

[19] chi-square (1, N = 543) = 64.78, p < .001
[20] chi-square (1, N = 551) = .00, p = .962

Using real money or virtual currency purchased with real money, 37.2 per cent of the letterbox sample reported paying for loot boxes in the past year. Males (47.9%) were statistically significantly more likely than females (26.1%) to pay for loot boxes.[21] No statistically significant differences were observed in terms of age.[22]

Figure 15. Engagement with loot boxes during the last 12 months, weighted letterbox drop sample (N = 551)



LB1. When, if ever, did you last obtain a loot box in the following ways?

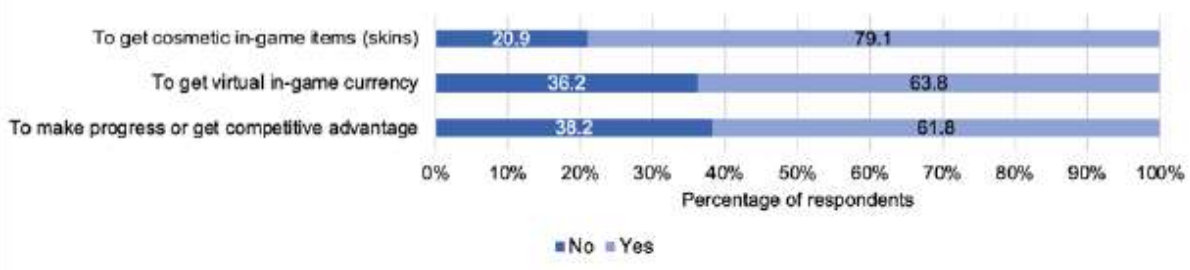
8.2.8. Age of first opening loot boxes

Respondents who had engaged with loot boxes (n = 428) reported first opening loot boxes at relatively young ages: 18.6 per cent of those who had engaged with loot boxes first engaged with loot boxes between the ages of 5 and 9, 48.6 per cent between 10 and 12, and 29.8 per cent between 13 and 15 years.

8.2.9. Reasons for purchasing loot boxes

Figure 16 shows that over 60 per cent of the respondents who had purchased loot boxes at any point in their life (n = 272) endorsed each of the three surveyed reasons for purchasing loot boxes: to get cosmetic in-game items (skins; 79.1%), to get virtual in-game currency (63.8%), and to make progress or gain competitive advantage (61.8%).

Figure 16. Reasons for purchasing loot boxes, weighted letterbox drop sample (N = 272)



LB3. Have you bought loot boxes for any of the below reasons?

8.2.10. Expenditure on loot boxes

A little over one-third (36.5%) of the whole letterbox sample had purchased loot boxes, either with money or in-game currency purchased with real money. Amongst

[21] chi-square (1, N = 543) = 27.57, p < .001
[22] chi-square (1, N = 551) = 1.60, p = .206

those who had bought loot boxes, expenditure was relatively low (median = $10 per month).

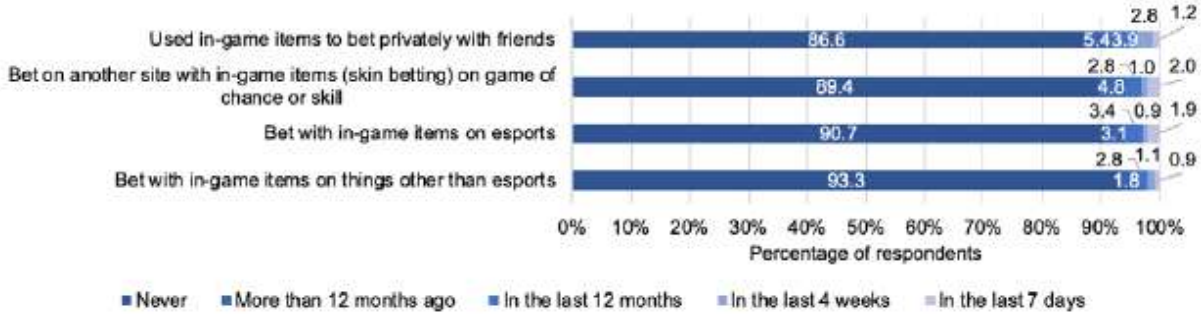
8.2.11. Microtransactions in games

Similar to loot boxes, approximately one-third (33.4%) of the whole sample reported spending money on microtransactions in a typical month. Median monthly expenditure on microtransactions was also $10.

8.2.12. Betting with in-game items

As shown in Figure 17, about one-in-seven survey respondents (14.5%) had bet with in-game items in the last 12 months. Males (17.7%) were statistically significantly more likely than females (10.3%) to have bet with in-game items.[23] No statistically significant differences were observed based on age.[24]

Figure 17. Betting with in-game items, weighted letterbox drop sample (N = 551)



IGI1. When, if ever, did you last use in-game items for betting in the following ways?

8.2.13. Age of first betting with in-game items

Amongst the 121 respondents who had bet with in-game items, most (87.7%) reported doing so after the age of 10, with 39.7 per cent first buying in-game items when aged 10-12 years, 43.6 per cent when aged 13-15 years, and 4.3 per cent when aged 16-17 years.

8.2.14. Other gaming activities

When asked about other gaming activities they had engaged in, most letterbox survey respondents had played video games that were not esports (68.6%), and just over half had played esports video games (54.4%). Just under half (48.1%) reported having watched esports events either online or in person, with 24 per cent having done so in the last 4 weeks. Just over 15 per cent reported entering free fantasy sports competitions, and just over 10 per cent reported having competed in a professional esports competition (Figure 18). When asked how many hours they usually spent on gaming, the median response was 40 hours per month, or 10 hours per week.

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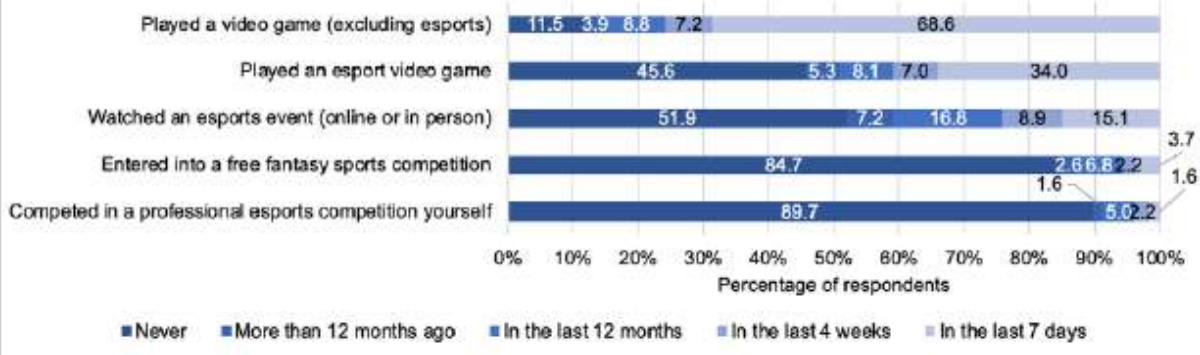
[23] chi-square (1, N = 544) = 6.16, p = .013
[24] chi-square (1, N = 551) = 2.59, p = .108

Figure 18. Frequency of other gaming activities, weighted letterbox drop sample (N = 551)



POG1. When, if ever, did you last do any of the following activities?

8.2.15. Problematic gaming

The scoring used in the current study for the Internet Gaming Disorder scale is relatively strict, in that classification as a problematic gamer requires not just meeting a threshold of items endorsed, but also endorsing the final item ('did you risk or lose significant relationships, or job, educational or career opportunities because of gaming?').

Based on these stricter criteria, **5.2 per cent** (95% CI: 3.6%-7.5%) of the letterbox survey respondents were classified as problem gamers. Males (6.7%) were statistically significantly more likely than females (3.1%) to be classified as a problem gamer.[25] No statistically significant differences were observed in terms of age.[26]

8.3. Peer friendship and online groups

Most survey respondents in the letterbox sample reported a sense of belonging to (offline) friendship groups. The sense of belonging with online communities was present, but less strong (Figure 19).

Figure 19. Sense of belonging to friendship or online groups, weighted letterbox drop sample (N = 551)

PG1. How strongly do you feel you belong to the following?

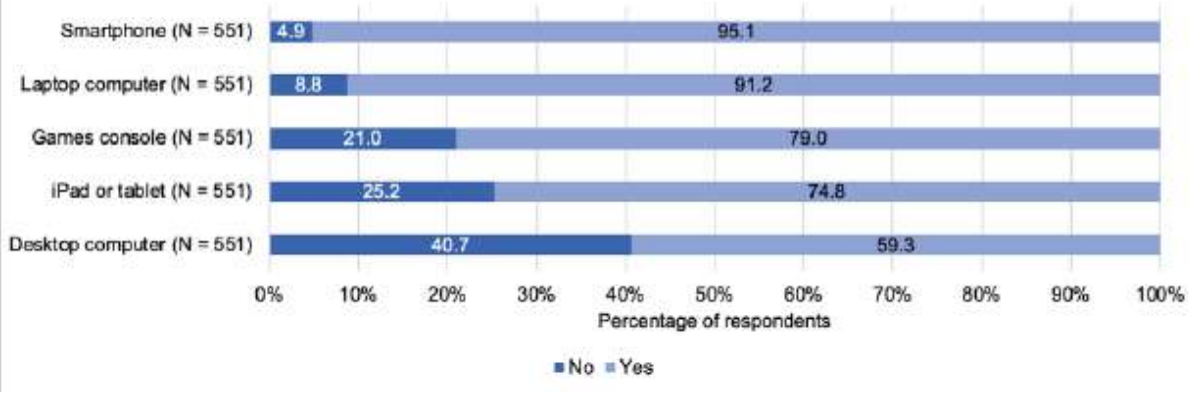
[25] chi-square (1, *N* = 544) = 3.91, *p* = .048
[26] chi-square (1, *N* = 551) = 1.09, *p* = .296

8.4. Access to internet-connected devices

8.4.1. Availability of devices

Almost all letterbox survey respondents reported having a smartphone and laptop computer in their household (Figure 20). Games consoles and tablets were also reported by approximately three quarters of respondents. Desktop computers were less common, but still reported by more than half of the respondents.

Figure 20. Access to devices within the household, weighted letterbox drop sample (N = 551)

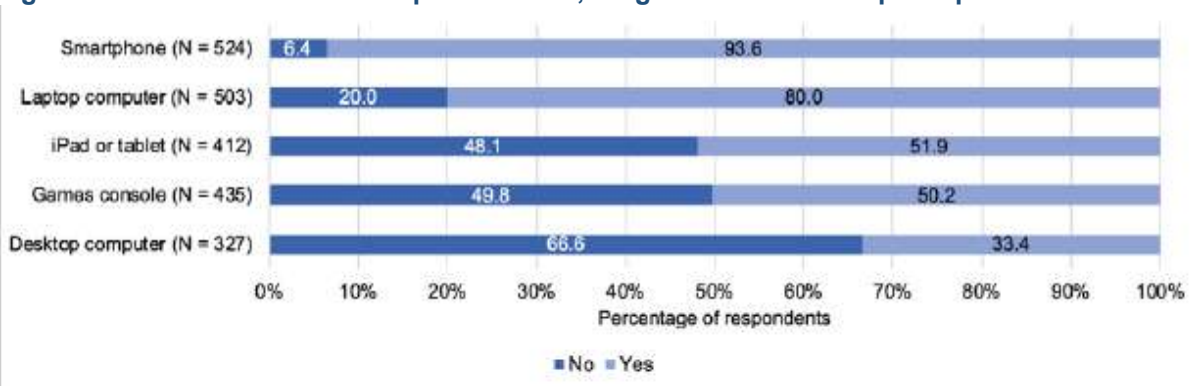


MD1. Which of these devices are available for you to use within your household?

8.4.2. Sole use of devices

Respondents who reported each device being in their household were then asked if they were available only for their own use (Figure 21). Almost all had a smartphone for their sole use, and 80 per cent reported that laptops were available for their personal use only. Just over half reported sole personal use of tablets and games consoles, and approximately one-third reported individual use of a desktop computer.

Figure 21. Access to devices for personal use, weighted letterbox drop sample



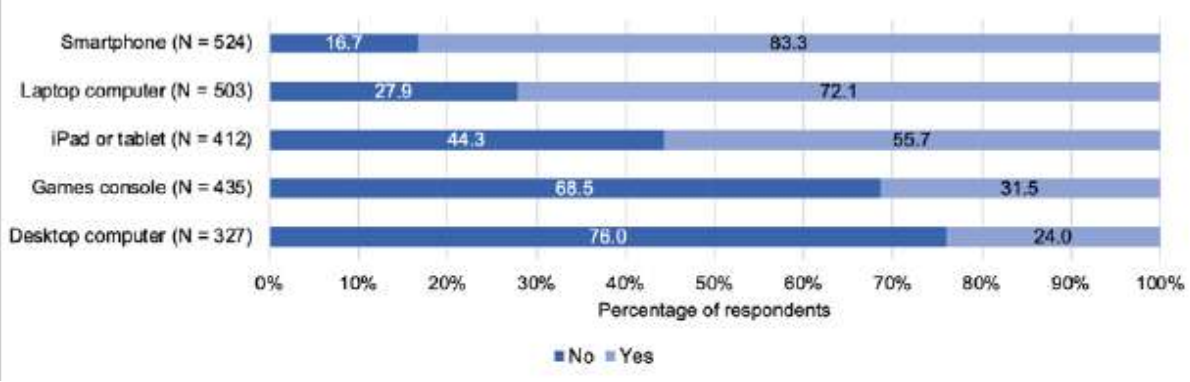
MD2. Which of these devices are for your use only?

8.4.3. Availability of devices in bedrooms

Respondents who reported having a device for their own use were then asked if the device was available for them to use in their bedroom (Figure 22). More portable

devices, like smartphones, laptops and tablets, were most likely to be reported for personal use in their bedroom.

Figure 22. Access to devices for personal use in their bedroom, weighted letterbox drop sample



MD3. Which of these devices are available for you to use in your bedroom?

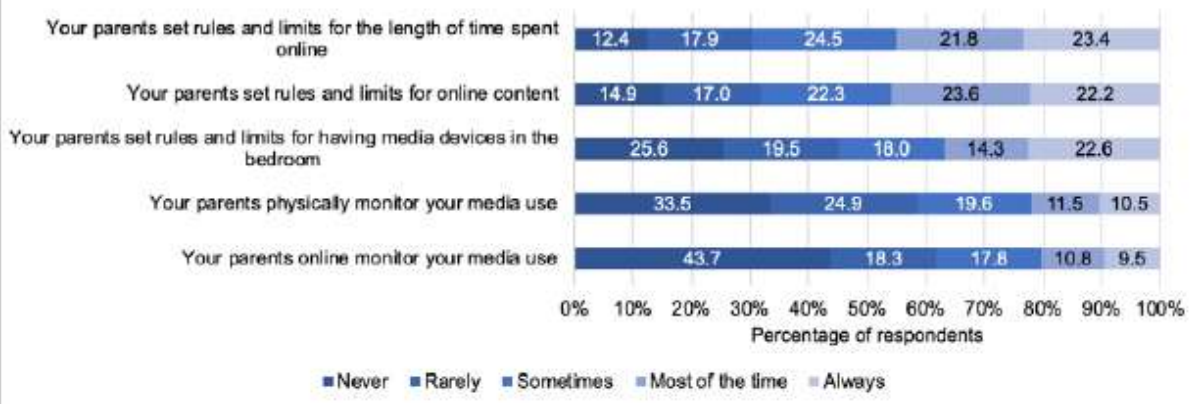
8.4.4. Parental advice about online safety

The vast majority of letterbox survey respondents (90.4%) reported that their parents had spoken to them about being safe online (cybersafety).

8.4.5. Parental monitoring of online media use

Over half of letterbox survey respondents reported that their parents never or rarely monitored their media use, either physically (58.4%) or by using online means (62%). However, most parents at least sometimes set rules and limits for online content (68.1%) and length of time (69.7%) spent online, and rules about having media devices in the bedroom (54.9%, Figure 23).

Figure 23. Parental monitoring of online media use, weighted letterbox drop sample (N = 551)



MD5 – MD9. Please answer each question below.

8.5. The convergence of participation in gambling and simulated gambling amongst youth

Further analysis of the weighted letterbox survey responses was conducted to examine the convergence between gambling and simulated gambling behaviour. This involved first collapsing the 11 gambling activities surveyed into six categories based on their similarities, due to small numbers of participants for some activities and to reduce the number of results. These categories were: EGMs; lotteries/scratchies/keno/bingo (combined because they are all lottery-type games); sports/race betting (combined because they are both wagering activities); poker/casino table games (combined because poker is a specific type of casino table game); informal private betting; and esports betting/fantasy sports betting (combined because they are relatively new online forms of sports betting). Six forms of simulated gambling were designated as: playing video games with gambling components; playing demo or practice games; playing simulated gambling games on social networking sites; playing simulated gambling apps; buying loot boxes; and betting with in-game items. All forms refer to participation in the last 12 months and are coded as 0 = no, 1 = yes.

For respondents who took part in each simulated form, we calculated the proportion who also took part in each monetary gambling form. The percentages in Table 11 below are based on the number of people who took part in that simulated form. It is important to note that they vary across the columns because different numbers of respondents took part in each monetary form, so the differences in percentages are not a reflection of the strength of the association between each simulated and monetary gambling form.

Table 11. Proportion of respondents who had engaged in each simulated form of gambling, who had also engaged in each monetary form of gambling – weighted letterbox sample

	n	EGMs	Lottery, scratchies, bingo, keno	Sports or race betting	Poker or casino games	Informal private betting	Esports, fantasy sports betting
Video games with gambling components	174	5.7	18.4	9.2	6.3	21.8	8.6
Simulated gambling – demo or practice games	79	8.9	32.9	16.5	11.5	32.9	11.4
Simulated gambling – social network sites	65	10.8	35.4	18.5	10.8	43.1	15.4
Simulated gambling – apps	79	12.7	29.5	17.7	11.4	36.7	13.9
Bought loot boxes	205	3.9	22.9	8.3	4.9	24.9	6.8
Bet with in-game items (skin gambling)	80	10.0	31.3	16.3	11.3	30.4	16.5

Then, we fitted logistic regression models, predicting each monetary form of gambling by each simulated form of gambling (please see Appendix I). We also ran the same analyses controlling for age, gender and location, and these results were very similar. They are reported in Appendix H. The rationale for these analyses was to determine associations between each simulated form of gambling against the

categories of monetary forms of gambling. If a positive association was found between any simulated and monetary form, this would indicate that the respondents who took part in the simulated form were more likely to also take part in the monetary form, giving an indication of convergence. While the analysis was run for all four samples for transparency (Appendix I), here we report results from the weighted letterbox drop sample only, as they are the most conservative.

In the weighted letterbox sample, respondents who engaged in simulated gambling apps, demo games, simulated gambling games on social networking sites, or betting with in-game items were statistically significantly more likely to engage in each monetary gambling form (EGMs; lotteries/scratchies/keno/bingo; sports/race betting; poker/casino games; informal private betting, esports/fantasy sports betting). Those who bought loot boxes were statistically significantly more likely to gamble on lotteries/scratchies/keno/bingo; informal private betting, and esports/fantasy sports betting. Playing games with 'mini' gambling components was statistically significantly associated with esports/fantasy sports betting, gambling on poker/casino games and informal private betting.

In order to examine the order of engagement with monetary and simulated gambling activities, the age of first taking part in each category of activity was considered for the weighted letterbox sample. Age of first taking part in monetary gambling was calculated by taking the youngest age at which respondents reported taking part in any of the gambling activities, and also separately for just the commercial monetary gambling activities (i.e., excluding informal private betting).

The average age for first taking part in any monetary gambling activity was 11.55 years (*SD* = 3.71, *N* = 239), or 11.25 years (*SD* = 3.91) when only considering commercial activities. The average age of first playing games with gambling components was 11.87 years (*SD* = 2.75, *N* = 291). The average age of first opening loot boxes was 11.23 years (*SD* = 2.50, *N* = 428), and 11.67 years (*SD* = 3.43, *N* = 121) for betting with in-game items.

A statistical comparison between age of first taking part in monetary gambling activities and simulated gambling required respondents to take part in both activities. Amongst the 145 respondents who reported participating in both monetary and simulated gambling activities at some point in their life, no statistically significant difference was observed in the age of first taking part in these activities.[27] When only considering commercial forms of gambling, the result was also not statistically significant.[28]

[27] *Wilcoxon signed ranks test, Z* = -1.38, *p* = .167
[28] *Wilcoxon signed ranks test, Z* = -1.95, *p* = .051

9. Multivariate analyses of Qualtrics and email/ads survey results

The results described in the preceding chapter were based on the weighted letterbox drop sample. Because the weighted letterbox drop sample was initially expected to be representative, analyses of factors predicting relatively rare outcomes like problem/at-risk gambling status and problematic gaming were expected to be biased, due to the low proportion of problem/at-risk gamblers and problem gamers in the sample. We therefore recruited two additional samples that were expected to have higher proportions of at-risk respondents: a sample from an online panel, recruited by Qualtrics, and a sample recruited by emailing existing mailing lists maintained by CQU and the ORG and through external advertising (email/ad sample). These samples were not weighted, as no representative data were available for them. Output tables are presented in Appendices J-L.

It is important to note that these analyses test the relationships between variables, and as such do not necessarily require representative samples. Because the results for the weighted letterbox drop sample were biased for the low prevalence outcomes, we have not reported them in this chapter. However, for full transparency, we have reported them in Appendices J-L.

9.1. Approach

Multivariate analyses were conducted to examine factors associated with youth gambling attitudes and behaviours in three parts. First, bivariate analyses were conducted for each sample to determine the associations between each independent variable and each dependent variable (described below). Second, possible multicollinearity was checked through initial correlation analyses, and a series of tolerance checks for each analysis. Purchasing loot boxes within the last 12 months was consistently and strongly associated with betting with in-game items within the last 12 months, and both could not therefore be included in multivariate models. Therefore, loot box purchasing was dropped from consideration. Finally, multivariate tests were conducted for each sample for each dependent variable. The bivariate tests, therefore, indicate which of the independent variables were associated with each outcome. Because some independent variables were correlated with each other, only a portion of that covariance is *uniquely* associated with the dependent variable. The multivariate tests gave an indication of which variables provided a unique contribution to understanding each dependent variable. It is important to note that variables that are statistically significant in the bivariate analyses, but not statistically significant in the multivariate analyses, are still of interest, but may not have contributed unique variance explained because of the covariance of other variables in the models.

The five dependent variables examined were as follows. All were binary variables, and thus binary logistic regressions were conducted for all analyses:

- Gambling participation the last 12 months (reference group = no)
- Future gambling intention (reference group = no)

- Problem/at-risk gambling, based on the DSM-IV-MR-J (reference group = non-problem)
- Participating in simulated gambling within the last 12 months (reference group = no)
- Problematic gaming, based on the IGD scale (reference group = no).

The independent variables were chosen based on variables that were expected to be predictors of each dependent variable. Independent variables were considered based on broader categories, including demographic factors (age, gender, parents' living arrangement), psychological factors (wellbeing, impulsivity), current gambling behaviour (particularly expenditure), parental factors (childhood exposure through parents or other adults in the household, parental supervision and monitoring, parental approval of gambling), peer factors (whether peers gamble, sense of belonging to friend and online groups), environmental factors (access to devices in bedrooms, gambling advertising) and gaming behaviour (use of simulated gambling, products, loot boxes, betting with in-game items, expenditure in games, other gaming, problematic gaming).

The specific factors included in each model depended on certain theoretical assumptions. For example, we included some gaming-related factors when predicting gambling behaviour, intentions and problems, but did not include many gambling factors when predicting gaming behaviour or problems. Models predicting current gambling status did not include current gambling variables, as they would be constant for the non-gamblers. In addition, tests for the most important predictors were conducted using changes in pseudo R^2 values for each predictor (McFadden R^2) for bivariate models. For the multivariate models, the varImp function in the *caret* package in R was used to determine variable importance (Appendix L).

The tables in Appendix J present results for the two additional samples, green = unweighted Qualtrics panel, and red = unweighted emails/ads sample. As noted, the results for the weighted and unweighted letterbox drop samples are not reported here, as they are biased for low prevalence outcomes, but are contained in Appendix J for transparency. In the following text (and in the Discussion chapter), we report only the results that were statistically significant in *both* the Qualtrics and emails/ads samples to ensure findings were robust with respect to sampling differences.

9.2. Factors predicting gambling participation in the last 12 months

As indicated in Appendix J, the bivariate results in both of the two samples found that respondents who had gambled in the last 12 months were more likely to: be older, have lower wellbeing, to have gambled with their parents when they were growing up, and to have grown up in a household that included adult(s) with gambling problems. Respondents who gambled were more likely to have parents who did not talk about safety online, or set rules for online use, and whose parents were more likely to approve of the adolescent's gambling. They were more likely to associate with peers who gambled, and to feel a stronger sense of belonging to an online community. Respondents who gambled were more likely to be more exposed to gambling advertisements via traditional and digital media, and to think more

positively about gambling due to these advertisements. Respondents who gambled were more likely to have played games with gambling components including demo or social casino games, bought loot boxes, and gambled with in-game items in the last 12 months, and to be problematic gamers.

The multivariate analyses indicated that unique predictors of gambling participation in both of the two samples were: gambling with parents during childhood, having parents who approved of gambling, associating with peers who gambled, playing demo or social casino games, and betting with in-game items. Of these, the most important predictors were in order (Appendix L): whether they had peers who gambled, whether they gambled with their parents while growing up, whether they had bet with in-game items, whether their parents approved of gambling, and whether they had engaged in simulated gambling.

9.3. Factors predicting future gambling intention

As indicated in Appendix J, the bivariate results in both of the two samples found that respondents who were more likely to intend to gamble: currently spent more on gambling, gambled with their parents when growing up, grew up in a household with an adult with gambling problems, gambled with their parents now, had parents who did not set rules about online use, had parents who approved of gambling, had peers who gamble, gambled with their peers during the last 12 months, felt a stronger sense of belonging to an online community, were exposed to gambling advertisements through traditional and digital media, thought more positively about gambling because of gambling advertisements, played games with gambling content in the last 12 months, played games with gambling content and social casino games in the last 12 months, bought loot boxes, bet with in-game items in the last 12 months, or were problematic gamers.

Multivariate analyses found that there were no predictors of gambling intention that were statistically significant in both the Qualtrics and emails/ads samples.

9.4. Factors predicting problem/at-risk gambling

As indicated in Appendix J, the bivariate results in both of the two samples found that problem/at-risk gamblers: had lower wellbeing, were more impulsive, spent more money on gambling, had first gambled at a younger age, had gambled with their parents when growing up, had grown up in a household with an adult(s) with gambling problems, had parents who did not talk about safety online, had parents who did not set rules for online use, had parents who approved of their gambling, associated with peers who gambled, had a stronger sense of belonging to an online group, had more exposure to gambling advertisements through both traditional and digital media, thought more positively about gambling because of gambling advertisements, played games with gambling components in the last 12 months, played social casino or demo games in the last 12 months, bought loot boxes within the last 12 months, and bet with in-game items.

Multivariate analyses identified two variables in both samples that uniquely predicted being a problem/at-risk gambler, in order (Appendix L): higher gambling

expenditure, and more likely to have grown up in a household with an adult(s) with gambling problems.

Note: We also conducted these analyses with problem gambling as the dependent variable vs at-risk/non-problem gamblers. That is, the analyses attempted to predict only those respondents with the most severe gambling problems. The results are similar to those for problem/at-risk gamblers and are presented in Appendix K.

9.5. Factors predicting participation in simulated gambling in the last 12 months

As indicated in Appendix J, the bivariate results in both of the two samples found that predictors of engaging in simulated gambling included: being male, having lower wellbeing, having higher impulsiveness, gambling during the last 12 months, having parents who do not talk about safety online, having parents who do not set rules about online use, and feeling a stronger sense of belonging to an online community.

Multivariate analyses in both samples found that unique predictors of engaging in simulated gambling were: being male, lower wellbeing, gambling during the last 12 months, and having a stronger sense of belonging to an online community. The most important predictors, in order (Appendix L), were: gambling during the last 12 months, male gender, sense of belonging to an online community, and lower wellbeing.

9.6. Factors predicting problematic gaming

As indicated in Appendix J, the bivariate results in both of the two samples found that respondents who were more likely to have gaming problems: had lower wellbeing; had higher impulsiveness; gambled during the last 12 months; had parents who did not set rules about online use; felt more of a sense of belonging to an online community; played social casino games or demo games, or gambling-themed apps in the last 12 months; bought loot boxes in the last 12 months; and bet with in-game items.

In the multivariate analysis, the only unique predictor of problematic gaming across both samples was impulsiveness.

10. Discussion and conclusions

This chapter discusses the key results from this study in relation to each of the research questions identified by NSW Office of Responsible Gambling (ORG). It triangulates results from the literature review, focus groups and the survey samples. Results from the weighted letterbox drop sample were used to address RQ1, RQ2 and RQ4 as this sample was the most representative of the NSW youth population, although results may not be generalisable due to possible response bias. The multivariate analyses of the Qualtrics and emails/ads samples were used to address RQ3 because these samples had robust numbers of problem/at-risk gamblers and problematic gamers. A discussion of implications, limitations and further research concludes the chapter.

10.1. RQ1. What is the nature and prevalence of gambling amongst young people in NSW?

10.1.1. Gambling participation amongst young people

Past-year gambling participation in the letterbox survey sample was **29.8 per cent**, while 43.4 per cent reported having gambled at some point in their life. Older respondents were more likely to report past-year and lifetime gambling, but there were no statistically significant differences by gender.

This past-year participation rate is within the estimates of 25-37 per cent found in the most recent school-based studies conducted in Australia (King et al., 2016; King & Delfabbro, 2016). Earlier studies identified higher participation rates of 50-70 per cent (e.g., Delfabbro & Thrupp, 2003; Delfabbro et al., 2005; Dowling et al., 2010; Lambos et al., 2007; Purdie et al., 2011). However, no previous Australian studies have been based on representative samples, with some samples comprising students only from one school. Studies have also varied in the types of gambling included, with some including raffles and tipping competitions which elevate participation rates. Nonetheless, results from youth gambling studies conducted in Australia since the early 2000s suggest a possible decline in participation rates.

Comparing the NSW participation rate to international results is not particularly helpful, given that overseas studies have found participation rates that vary from 11 per cent (Turner et al., 2018) to 84 per cent (Canale et al., 2016). The best comparison is arguably with a representative study which found a past-year prevalence of 36 per cent in 2019 amongst young people aged 11-16 years in England, Scotland and Wales (UK Gambling Commission, 2019). Unlike in Australia, young people in the UK can play low-stakes fruit machines, they can legally purchase National Lottery tickets from age 16 (Newall et al., 2020), and online casinos are widely available.

As noted above, youth gambling studies in Australia suggest a decline in participation over the last decade. Representative surveys in the UK have also found a decline, with the overall prevalence of youth gambling halving between 2011 and 2019, although not for all gambling forms; and this may also reflect changes in methodology between surveys (UK Gambling Commission, 2019). While the reasons for any decline are uncertain, they may reflect better monitoring of underage access

to gambling, heightened awareness amongst young people and their parents of the potential harms from gambling, and the many alternative forms of entertainment now available to young people. The declining prevalence of gambling amongst adults, observed in NSW and other Australian jurisdictions (cf., Browne et al., 2019; Rockloff et al., 2020), is another factor likely to result in lower prevalence amongst youth because, as detailed later, parents/guardians are the main facilitators of gambling amongst young people.

10.1.2. The nature of gambling amongst young people

The letterbox survey indicated that the most popular gambling activity in the past year was informal private betting (17.1%), followed by scratchies/lotteries (11%), bingo (6%) and keno (5.1%). Less than 5 per cent of respondents reported past-year gambling on any of the other gambling forms. The literature review also found that private betting (e.g., on card games), scratch tickets and lotteries are the most popular gambling activities amongst youth. In contrast, a study in Victoria Australia (Freund et al., 2019) found race betting to be the most popular activity amongst young people. This result probably reflects the popularity of the Melbourne Cup horse race in that state, and that differences in gambling cultures impact on youth gambling.

Amongst past-year gamblers in the letterbox survey, 24.9 per cent had bet online. Males (31.6%) were statistically significantly more likely than females (16.7%) to have gambled online. Respondents also reported that betting on sports, fantasy sports, esports and poker was generally conducted online, with access to online gambling accounts most often facilitated by parents. The letterbox survey found that the most common way that respondents accessed online gambling was by using a parent's account with permission (50.3% of online gamblers), followed by 'another way' such as paying someone else to gamble for them or having someone else set up an account for them (45.9%). About one-third of those who had gambled online had set up an account themselves (37.2%) and/or used another person's account with permission (31.1%). However, these results are based on small numbers so should be treated with caution. Focus group participants also noted that online gambling was facilitated by websites where participants could simply select a false age or date of birth in order to place a bet, and by having older friends (18+) place sports bets on their behalf.

Amongst past-year gamblers in the letterbox survey, 75.1 per cent had gambled only in land-based venues. Although based on small numbers of respondents who engaged in each activity, survey respondents reported that keno, bingo and scratchies/lotteries were generally accessed in land-based venues. Land-based venues include newsagents for scratchies/lotteries, as well as clubs, hotels and casinos. Focus group participants thought that youth participation in land-based gambling was rare, except when it occurred with parents, because of better monitoring of minimum age requirements. However, exceptions included some older adolescents using other people's ID or going to gambling venues that did not check ID.

The letterbox survey indicated that private betting usually took place in private homes, although over one-quarter of those who bet privately (27.7%) reported doing so at school or TAFE (technical college). In the focus groups, private gambling was

the most commonly reported form of gambling amongst youth, especially on sporting events. This usually involved small wagers amongst friends for recreational and social reasons.

As alluded to above, the letterbox survey responses indicated that young people have access to age-restricted gambling activities. Amongst respondents who reported trying to gamble for money when underage (21.9%), about three quarters reported not being stopped. These results encompassed both online and venue-based gambling, with access to both these gambling modalities also discussed by the focus group participants. These results indicate that age and ID verification is not fail-safe in ensuring that young people cannot access online and land-based gambling products.

While some young people access gambling by themselves, parents or guardians were the greatest facilitators of gambling amongst respondents to the letterbox survey. Of those who had gambled during the last 12 months, the most common person that they gambled with was their parents or guardians (53.7%), followed by friends aged 17 or less (26.8%), siblings or other relatives aged 18 years or over (20.7%), siblings or other relatives under 18 years (20.1%), and grandparents (19.5%). Relatively few young people (9.1%) gambled alone. Parental facilitation of gambling by young people has been found in other studies, particularly when gambling on races, lotteries and scratch tickets (Delfabbro et al., 2005; Dowling et al., 2010; Freund et al., 2019; Lambos et al., 2007; Nitschke, 2013). The focus group participants indicated that parents might ask their adolescent to select lotto numbers or a horse or greyhound to bet on, engage in scratch cards and other lotteries, or play keno when in a venue with them. In contrast, private betting was said to mostly occur with friends, and gambling on poker machines appeared to mainly occur alone, which largely aligns with with previous findings (Delfabbro et al., 2005; Dowling et al., 2010; Lambos et al., 2007; Nitschke, 2013). Public service announcements or other educational resources on the risks of involving children in gambling might improve upon future outcomes by reducing gambling problems and harm in the community.

Consistent with findings from the focus groups and literature review, the forms on which the letterbox respondents reported gambling the most frequently were also informal private betting, scratchies/lotteries, and keno. Half (50.8%) of the past-year gamblers had most recently engaged in their preferred gambling activity more than one month ago, while 17 per cent had done so in the last month, and 16.5 per cent during the past seven days.[29] Letterbox survey respondents who gambled reported gambling on their favourite activity once a month or less often, while 9.8 per cent reported betting on it a few times a month, 5.7 per cent about once a week and 3.8 per cent more than once a week. Consistent with the overall infrequency of gambling, respondents reported modest expenditure on gambling during the past 12 months. The highest median annual expenditure was for fantasy sports betting ($43), followed by poker ($34), esports betting ($21), sports betting ($20) and pokies ($19).

[29] Land-based gambling venues (hotels, clubs and casinos) and professional sporting competitions were closed down on 23 March 2020 and for the duration of the survey period, due to COVID-19 restrictions. This may have impacted on frequency of gambling in the last 7 days and the last month. However, retail outlets for scratchies/lottery tickets remained open and other forms of online gambling were available during the survey period.

However, these medians are based on small numbers of respondents who engaged in each activity. The most common source of money for gambling was pocket money (60.4%), followed by money from a present (38.4%), from a job (33.5%), and provided by parents specifically for gambling (31.3%). Other studies have identified pocket money, presents and part-time jobs as the most common sources of gambling money amongst youth (Splevins et al., 2010; UK Gambling Commission, 2019).

10.1.3. Gambling attitudes and intentions amongst young people

Nearly 90 per cent of the letterbox survey respondents disapproved of people gambling regularly (at least weekly), while 49.6 per cent disapproved of people gambling less than once a week. Young people appeared to be highly aware that gambling could lead to financial, mental, physical or other harm, especially if gambling was frequent. The vast majority of survey respondents (93%) considered that people who gambled once a week or more were at moderate or great risk of harming themselves. Nearly half (46.3%) also felt that people who gambled less often than once a week would be at moderate or great risk of harm, although slightly more (53.7%) considered they would be at no or minor risk of harm. Very few respondents (~5%) considered that people who gambled were at no risk of harming themselves, no matter how frequently or infrequently they gambled. Additionally, most focus group participants also appeared to be aware that gambling could lead to harmful consequences or addiction.

More than half of the letterbox survey respondents stated they did not intend to gamble in the future on any of the gambling activities surveyed. Highest intention to gamble in the future was for scratchies/lotteries (49.5%) and informal private betting (36.8%), with 15-20% of respondents intending to gamble on each of the other gambling forms, except fantasy sports, on which only 5.8 per cent intended to gamble in the future. In contrast, most focus group participants expressed a willingness to try gambling with friends when they turned 18, just for the experience, to heighten peer group belonging and, for some, in response to peer pressure. These results might reflect the intention of some young people to try gambling in the future as a novelty experience, but not to ‘take up’ gambling as a regular or semi-regular pastime.

10.1.4. Gambling problems amongst young people

Based on the DSM-IV-MR-J scale (Fisher, 2000), an estimated **1.5 per cent** (95% CI: 0.7%-2.8%) of the letterbox survey respondents were classified as problem gamblers, and a further **2.2 per cent** (95% CI: 1.3%-3.8%) as at-risk gamblers. This problem gambling rate is within the range found by previous Australian studies that have also used this instrument. These estimates include 0.7 per cent (Dowling et al., 2010), 6.7 per cent (Splevins et al., 2013), 3.6 per cent for those aged 10-14 and 2.7 per cent for those aged 15-17 (Purdie et al., 2011), 1 per cent (King et al., 2014) and 1.4 per cent (Freund et al., 2019). As noted earlier, none of these other studies have included representative samples which explains this variation in prevalence estimates. However, Freund et al.’s (2019) survey of 3,448 secondary students from a randomly selected sample of schools in Victoria is probably the most representative of prior Australian studies (although it does not include young people not attending school). It found a very similar problem gambling rate (1.4%) to the current study (1.5%).

The problem gambling rate found in the letterbox sample is also within the range found by international studies using the DSM-IV-MR-J (Fisher, 2000), which include studies in Canada (McBride & Derevensky, 2016; St Pierre et al., 2015), Finland (Castren et al., 2015), and the UK (Calado et al., 2017; UK Gambling Commission, 2017, 2018, 2019). Arguably, the most representative studies have been conducted by the UK Gambling Commission (2018, 2019), which found a problem gambling prevalence of 1.7 per cent across young people in England, Scotland and Wales in both 2018 and 2019.

10.2. RQ2. What is the nature and prevalence of simulated gambling amongst young people in NSW?

10.2.1. Participation in playing games with gambling components amongst young people

Games with gambling components include: 1) video games with 'mini' gambling components (such as Diamond Casino & Resort in the video game Grand Theft Auto V), 2) gambling-themed apps from an app store (such as bingo, poker, pokies/slots, or roulette that can be played on a smartphone, tablet or computer), 3) free demo or practice games on real gambling websites or apps, and 4) games with gambling components on social networking websites (such as Zynga games on Facebook). Amongst letterbox survey respondents, past-year participation in playing games with gambling components (across all four types) was 40.1 per cent and was statistically significantly higher amongst males (48.2%, females 31.3%) and older respondents. Of note is that the past-year participation in simulated gambling (40.1%) was higher than the past-year participation in gambling (29.8%).

Comparisons with Australian and international studies are obscured by inconsistencies in the way questions have been asked due to changes in simulated gambling activities over time, varying classifications of activities, and how well questions have distinguished these activities from real-money gambling (King et al., 2020). Further, no Australian studies and few international studies have been based on representative samples.

An early Australian study (King et al., 2014) found that 13 per cent of adolescents aged 12-17 years reported past-year engagement in simulated gambling. A later study (King & Delfabbro, 2016) found a participation rate of 14.2 per cent amongst secondary school students. Notwithstanding the cautions above about comparisons across studies, it is highly likely that simulated gambling has substantially increased amongst young people in recent years, given its increased availability, faster internet speeds, and greater access to smartphones and other devices, along with the increased popularity of gaming amongst young people (Brand et al., 2019). Some more recent surveys conducted overseas have found participation rates in simulated gambling similar to the current NSW study. For example, two studies of school students in Germany found a past-year year rate of 38 per cent and 'about half'[30]

[30] Hayer et al (2019) is published in German. An English translation of the abstract noted 'about half' of young people in the study participated in simulated gambling.

(Hayer et al., 2018, 2019). These two studies used the same four game classification as the current NSW study.

10.2.2. The nature of playing games with gambling components amongst young people

The letterbox survey respondents reported most frequently playing games with gambling components at home, and they played for a median of four hours per month. Amongst the four types of games, the most popular was video games with 'mini' gambling components, that is, video games with mini gambling games in them that are not the primary game, such as Diamond Casino & Resort in the video game Grand Theft Auto V. These were played by 31.7 per cent of respondents in the past 12 months, which is a similar proportion to the 29.8 per cent who engaged in gambling. This was followed by gambling-themed apps from an app store (14.3%), free demo or practice games on real gambling websites or apps (14.2%), and games with gambling components on social networking websites (11.8%).

Other studies have noted that 'mini gambling games' in video games are the most prevalent form of simulated gambling amongst young people (King et al., 2014; Hayer et al., 2019). In Australia, past-year participation has previously been much lower (e.g., 7.9% in King & Delfabbro, 2016, compared to 31.7% in the current study), although a more recent German study found that 40 per cent of young people had engaged in these games (Hayer et al., 2018). These figures may indicate substantial recent growth in this type of simulated gambling. The focus group participants discussed how simulated gambling elements in video games have increased, and that players need to participate in these activities to progress in games, gain lives, earn in-game currency or obtain free items. However, most participants felt that simulated gambling elements did not enhance the gaming experience, and they instead valued playing skills and strategies more than winning items or progressing from chance-based gambling scenarios. Older participants tended to consider that the simulated gambling elements detracted from the gaming experience.

When compared to the literature, the letterbox survey results also suggest that gambling-themed apps from an app store have increased in popularity, relative to gambling-style games on social networking websites. For example, King et al. (2014) found that around one in 20 young people had participated in the former and 1 in 10 in the latter, whereas this relative popularity was reversed in the current study. A past-year participation rate of 22.6 per cent for social casino game play (including both games from an app store and on social networking sites) was found in a panel sample of 555 Australian adolescents (Gainsbury et al., 2015a). In that study, the most common platform reported for playing these games during 2013-14 was Facebook (64.5%). This again suggests that using social networking sites to access social casino games may have now declined in relative popularity compared to using apps from an app store, consistent with findings in the UK (UK Gambling Commission, 2019). A decline in the use of demo games might be also expected due to the greater current availability of alternative forms of simulated gambling.

Amongst letterbox survey respondents who had ever engaged in any of the four types of games with gambling components (n = 291, 52.8 per cent), the most played gambling components were wheel spinning (62.8%), simulated pokies (51.9%) and

simulated casino games (49.8%). Simulated forms of poker (41%), bingo (37.1%) and scratchies/lotteries (23.1%) were less played. Other studies have found that pokies and casino games tend to be the most popular simulated gambling activities amongst young people (King et al., 2014; UK Gambling Commission, 2019). The focus group participants also discussed numerous gambling elements that they frequently encountered in games, including wheel spinning, roulette, slot machines, horse racing and virtual casinos.

The average age that letterbox survey respondents had first played games with gambling components was 11.9 years, 11.2 years for loot boxes, and 11.7 years for betting with in-game items. These are all similar to the average of first gambling on any activity of 11.6 years, and on any commercial gambling activity (not including informal private betting) of 11.3 years. No statistically significant difference was observed in the age of first taking part in simulated gambling and in monetary gambling amongst those who had done both activities at some point in their life. This result is different from a representative UK survey that found that young people there tend to engage in simulated forms of gambling before they engage in real-money gambling (UK Gambling Commission, 2019).

Overall, one-third (33.4%) of the letterbox survey sample had spent money on microtransactions in games with gambling components (not including loot boxes), such as to get virtual credits, with a median monthly expenditure of $10.[31] Gainsbury et al. (2015a) found that approximately 9 per cent of adolescents in a panel sample had spent money on microtransactions in social casino games in 2013-14. The use of microtransactions is expected to have increased, given the growth in games with gambling components that might require or encourage payment. Focus group participants noted that players might need to spend real money or purchase in-game currency to participate, such as to buy more spins of the wheel. They described how the gaming industry was money-driven, and that games were designed to lure players with free games, then included in-game purchases to enable continued play or required players to pay extra to level up.

10.2.3. Engagement with loot boxes

Video games commonly offer loot boxes, with a recent study finding that loot boxes were offered in 62 per cent of the best-selling video games (Rockloff et al., 2020). Loot boxes are in-game items which can be purchased with real money, in-game currency, or awarded for free. When opened, loot boxes contain a random selection of virtual items (e.g., weapons, cosmetic items known as skins, or in-game currency). The letterbox survey indicated that 72.2 per cent of respondents reported engaging in loot boxes in the past year. This was statistically significantly higher amongst males (87.2%, females 56.3%) but there were no differences by age. A prior study with a panel of 919 adolescents aged 12-17 years in NSW found that 69.4 per cent had opened a loot box within a game (Rockloff et al., 2020), similar to the current finding of 72.2 per cent. International research has also found that half or more of

[31] While respondents were asked to not include purchasing loot boxes in these microtransactions, it is possible that they may have used in-game currency purchased to subsequently purchase loot boxes.

young people report having opened loot boxes in games (Kristiansen & Severin, 2020).

10.2.4. The nature of engaging with loot boxes

In the past 12 months, the most common way that the respondents engaged with loot boxes was to open a free loot box (reported by 70 per cent of letterbox survey respondents). Less common was using virtual credits purchased with real money to obtain a loot box (34.1%), and paying real money to get a loot box or loot box key (22.2%). Of the whole sample, 36.5 per cent had spent money on loot boxes, with a median monthly expenditure of $10.[32] Of note is that, in the past 12 months, more respondents had spent money on loot boxes (36.5%) than had participated in gambling (29.8%).These results are consistent with a nationally representative survey of 3,017 Australians aged 8-17 years (Office of the eSafety Commissioner, 2018) where 34 per cent had made in-game purchases. In NSW, Rockloff et al. (2020) also found that about double the proportion of young people opened a loot box (69.4%) as purchased one (32%). In representative international studies, 22 per cent of young people in the UK (UK Gaming Commission, 2019) and 17.5 per cent in Denmark (Kristiansen & Severin, 2020) reported paying money to open loot boxes. Higher proportions have been found in non-representative samples of adolescent gamers (e.g., 40.5% in Zendle et al., 2019).

The most common age at which letterbox survey respondents first opened a loot box was 10-12 years (48.6%), followed by 13-15 years (29.8%). The most commonly reported reason for buying loot boxes was to get cosmetic in-game items (skins; 79.1 per cent of those who purchased loot boxes), followed by to get virtual in-game currency (63.8%), and to make progress or gain competitive advantage within the game (61.8%). Gaining new, rare and valued skins, and gaining items to advance more quickly within the game were also endorsed as the main motivations for purchasing loot boxes in Rockloff et al.'s study (2020).

The focus group participants provided further insights into motivations for acquiring skins. These included: in-game status as they demonstrated the player's level in the game; social desirability as rare and expensive skins demonstrated having money; and uniqueness and expression that differentiated them from other players. Some games offer free skins, but these tend to be inferior, so players spend real money to buy virtual currency, with which they can purchase desirable skins. Large amounts of money can be spent on obtaining skins. Some focus group participants were opposed to buying skins rather than earning them through skill and strategy, although others felt that skins were valued and that other players would not assume they had been purchased. Skins appeared to become less appealing with age, with older participants sceptical about buying items just for cosmetic appearance.

The focus group participants also shared other opinions about loot boxes. Most participants considered that purchasing loot boxes was a form of gambling because it required monetary expenditure to obtain a chance of winning an unknown prize. They noted that loot boxes may yield desirable items, but most do not. Players were

[32] Those who had purchased virtual credits with real money to obtain loot boxes may have reported this same expenditure when asked about microtransactions.

more likely to get better items in more expensive loot boxes, but the odds of getting what players wanted were said to be low. Some participants valued the skills involved in playing the games more than paying for loot boxes. To obtain desired items to advance in the game or to get rare in-game items, players might make excessive purchases of loot boxes and spend large amounts of money. Loot boxes could therefore be expensive and potentially addictive, and their purchase was considered risky, given the small chance of acquiring desired items. Participants associated loot boxes with revenue generation by the gaming industry and considered that their advertising could sometimes be deceptive by exaggerating the chances of winning.

10.2.5. Betting with in-game items

Video games have various in-game items which can be traded or used as virtual currency for gambling on third-party websites. In the letterbox sample, 14.5 per cent of respondents had bet with in-game items during the last 12 months. This was statistically significantly higher amongst males (17.7%) than females (10.3%) but there was no difference by age. Of note is that, in the past year, fewer respondents had bet with in-game items (14.5%) than had participated in the most popular gambling activity of informal private betting (17.1%), but betting with in-game items was more popular than the next most popular gambling activity (buying scratchies/lotteries, 11%). In the UK, only 3.1 per cent of young people reported ever betting with in-game items on websites outside of the game or privately with others (UK Gambling Commission, 2019).

Letterbox survey respondents reported betting with in-game items in various ways. In the past 12 months, 7.9 per cent of the whole sample had used in-game items to bet privately with friends, 6.2 per cent to bet on esports, 5.8 per cent to bet on another site on a game of chance or skill (‘skin betting’), and 4.8 per cent to bet on the outcome of other competitive events or sports (excluding esports). The most common age at which respondents first bet with in-game items was 13-15 years. In the focus groups, only a few participants mentioned they had bet using in-game items. Most also recognised that betting with in-game items outside of the game was a form of gambling, given the value of items, the risks involved with betting, and because outcomes were unknown.

10.2.6. Internet gaming disorder amongst young people

The vast majority of letterbox survey respondents played video games, with 68.6 per cent playing in the last 7 days and 84.6 per cent playing in the last 12 months. The median time spent gaming was 40 hours per month or 10 hours per week. Based on the Internet Gaming Disorder Scale (Petry et al., 2014), **5.2 per cent** of survey respondents were classified as problem gamers. A statistically significantly higher proportion of males (6.7%) than females (3.1%) were problem gamers, but there were no statistically significant differences by age.

No studies have been based on representative samples of young people and have used the same scale as the current study (Petry et al., 2014), so direct comparisons are not possible. However, a systematic review and meta-analysis of studies using a diversity of measures (Stevens et al., in press) found the global prevalence of gaming disorder to be 3.05 per cent. Consistent with current study, gaming disorder was statistically significantly higher amongst males (6.31%) than females (2.54%).

10.3. RQ3. What are the factors that influence youth gambling attitudes and behaviours?

As evident from the literature review, youth gambling is understood to be the product of multiple biopsychosocial factors that contribute to gambling behaviour and gambling-related harm. For this reason, the analyses of the two survey samples with relatively large numbers of problem/at-risk gamblers and problematic gamers (Qualtrics sample and email/adverts sample) considered a range of personal, parental, peer and environmental factors and their associations with 1) gambling participation during the past 12 months, 2) gambling intentions, 3) problem/at-risk gambling, 4) participation in simulated gambling, and 5) problematic gaming. Results that were found in both of these samples are summarised and then discussed below.

10.3.1. Factors associated with youth gambling participation during the past 12 months

In terms of personal characteristics, respondents who had gambled in the last 12 months were more likely to be older and have lower wellbeing. Numerous parental factors were also associated with past-year gambling participation amongst respondents. These included: having parents who approved of their gambling; to have gambled with their parents when growing up; growing up with an adult(s) with gambling problems; and having parents who did not talk about safety online or set rules for online use. Peer factors associated with past-year gambling were associating with peers who gamble, and feeling a higher sense of belonging to an online group. Environmental factors included those relating to gambling advertising, including exposure to gambling advertisements in both traditional and digital media, and thinking more positively about gambling due to advertisements. Respondents who had gambled in the last year were also more likely to play video games with 'mini' gambling components, as well as social casino and demo games, to buy loot boxes or to bet with in-game items, and to be a problematic gamer. The unique predictors of past-year gambling participation amongst youth (logistic regression), and also those with the strongest effects, in order were: gambling with parents when growing up, parental approval of their gambling, associating with peers who gamble, playing social casino and demo games, and betting with in-game items.

10.3.2. Factors associated with youth gambling intentions

No personal factors were associated with respondents' intentions to gamble in the future. Parental factors associated with respondents' gambling intention were: having gambled with their parents when growing up; growing up with an adult(s) with gambling problems; having parents who approved of their gambling; gambling with their parents now; and having parents who did not set rules about online use. Peer factors included associating with peers who gamble, gambling with their peers, and feeling a stronger sense of belonging to an online community. Gambling advertising was also linked to youth gambling intentions, specifically being exposed to gambling ads through both traditional and digital media, and thinking more positively about gambling due to advertisements. Respondents who intended to gamble in the future currently spent more on gambling; were more likely to play video games with 'mini' gambling components, as well as social casino and demo games, to buy loot boxes or bet with in-game items; and to be a problematic gamer. There were no unique predictors of future intention to gamble (logistic regression).

10.3.3. Factors associated with problem/at-risk gambling amongst youth

Respondents who were classified as problem/at-risk gamblers had higher trait impulsiveness and lower wellbeing. They were more likely to have gambled with their parents when growing up, to have grown up with an adult(s) who had gambling problems, and to have parents who approved of gambling, who do not talk about safety online, and who do not set rules for online use. Problem/at-risk gamblers were more likely to associate with peers who gamble, and have a stronger sense of belonging to an online community. They also reported more exposure to gambling advertisements through both traditional and digital media, and were more likely to think positively about gambling because of these advertisements. They spent more on gambling and were more likely to have first gambled at a younger age. Gaming-related correlates included playing video games with 'mini' gambling components, as well as social casino and demo games, purchasing loot boxes, and betting with in-game items. Two factors in the logistic regression uniquely predicted being a problem/at-risk gambler and also had the strongest effects, in order: higher gambling expenditure, and having grown up with an adult(s) who had gambling problems.

10.3.4. Factors associated with youth participation in simulated gambling during the past 12 months

Respondents who participated in simulated gambling were more likely to be male, and to have lower wellbeing and higher impulsiveness. They were also more likely to have parents who do not talk about safety online and who do not set rules about online use, and they felt a stronger sense of belonging to an online community. They were also more likely to have gambled in the past 12 months. Factors that uniquely predicted participation in simulated gambling (logistic regression) and which had the strongest effects, in order, were: gambling in the past 12 months, being male, lower wellbeing, and having a stronger sense of belonging to an online community.

10.3.5. Factors associated with problematic gaming amongst youth

Respondents classified as problematic gamers were more likely to have lower wellbeing and higher impulsiveness. They were more likely to have parents who did not set rules about online use. They felt a stronger sense of belonging to an online community. They were also more likely to have gambled in the past 12 months. All other factors associated with problematic gaming were related to game playing. Problematic gamers were more likely to play social casino and demo games, purchase loot boxes, and bet with in-game items. One factor in the logistic regression uniquely predicted being a problematic gamer and also had the strongest effect: higher trait impulsiveness.

The personal, parental, peer and environmental factors identified above are discussed further below.

10.3.6. Personal factors

Only one demographic factor was associated with past-year gambling participation amongst the respondents, and none with gambling intentions. Not surprisingly, those in older age groups were more likely to have participated in gambling, as also found in previous studies (Freund et al., 2019; Lambos et al., 2007). Earlier research has also generally found that male youth have higher rates of gambling participation (Delfabbro & Thrupp, 2003; Freund et al., 2019; King & Delfabbro, 2016; Lambos et

al., 2007), intentions (Delfabbro & Thrupp, 2003; Freund et al., 2019) and problems (Dowling et al., 2017a; Splevins et al., 2010). However, the current study found no statistically significant differences between males and females in relation to gambling participation, gambling intention and problem/at-risk gambling.

Two psychological characteristics were associated with the respondents' gambling behaviours. Lower wellbeing was linked to gambling participation, while both lower wellbeing and higher trait impulsiveness were associated with problem/at-risk gambling. Previous research has identified higher trait impulsiveness as a strong predictor of problem gambling amongst both adults (Browne et al., 2019) and youth (Nower et al., 2004; Secades-Villa et al., 2016; Shead et al., 2010). Thus, our finding that impulsiveness distinguished between youth who gamble and those who have gambling problems is consistent with the literature.

In relation to gaming, respondents who participated in simulated gambling more likely to be male, as found in previous research (Desai et al., 2010; Elton-Marshall et al., 2016; King & Delfabbro, 2016; UK Gambling Commission, 2019). The multivariate analyses found that males were not more likely than females to be problematic gamers (although this difference just reached statistical significance in the weighed letterbox sample, based on small numbers of problematic gamers). Problematic gaming has been associated with a range of detrimental health outcomes (Männikkö et al., 2020), as well as higher impulsivity (Kim et al., 2016; Walther et al., 2012). This is consistent with the current results indicating that both participation in simulated gambling and problematic gaming were associated with lower wellbeing and higher impulsiveness. In fact, higher trait impulsiveness was the only unique predictor of problematic gaming in this study.

10.3.7. Parents/guardians and other adults in the household

Many respondents in the letterbox survey reported being exposed to gambling through their parents. More than half of the respondents (58.4%) reported that one or more adults in their household gambled when the respondent was growing up. Of those who reported that adults in their household gambled, 66.3 per cent reported being present when these adults gambled, and over one-quarter (28.8%) reported participating in gambling with adults. Amongst the whole letterbox sample (N = 551), 10.4 per cent of respondents reported growing up in a household where they thought an adult had gambling problems (5.4% 'minor gambling problems'; 2.3% 'moderate gambling problems'; 2.8% 'severe gambling problems'). The focus groups suggested that family participation in gambling was perceived to normalise gambling for young people, and thus increase their propensity to gamble; but conversely it could deter them from gambling if they had seen or heard about the negative consequences. Nevertheless, participants were more likely to have negative attitudes to gambling if their family did not engage in gambling or opposed it.

While many letterbox survey respondents reported that their parents/guardians gambled, over three-quarters (76.9%) reported that their parents/guardians would disapprove of them (the young person) gambling. Consistent with this, parents/guardians were said to 'set strict rules about gambling with no negotiation' (28.3%) or 'we discuss and agree rules about gambling which they expect me to follow' (22.4%). However, about one-third of respondents (34.9%) reported that their parents/guardians 'don't set rules about gambling and it's not something we talk

about'. Despite perceiving that their parents/guardians would disapprove of them gambling, the letterbox survey results indicated that most gambling amongst respondents occurred with parents, either in venues or facilitated through use of parent's online gambling accounts.

The multivariate analyses of the Qualtrics and emails/ads samples indicated that several parental factors were associated with youth gambling attitudes and behaviours. Parental approval of the young person's gambling, gambling with parents when growing up, growing up with one or more adults with a gambling problem, and not setting rules for the young person's online use, were all associated with youth gambling participation, intentions and problem/at-risk gambling. Thus, respondents were less likely to gamble, intend to gamble or develop a gambling problem unless adults in their household approved of and facilitated the young person's gambling, neglected to set limits on their online use, or had a gambling problem themselves. In fact, having a problem gambling adult in the household when growing up uniquely predicted problem/at-risk gambling amongst the respondents. Parental gambling problems are a well-recognised risk factor for gambling problems amongst young people, either when they are underage or later in adulthood (Dowling et al., 2010, 2017b). This may be due to the influence of genetic or biological factors, parental modelling, and having more opportunities to gamble themselves (Jacobs et al., 1989; McComb & Sabiston, 2010; Vitaro et al., 2014). The respondents were also more likely to engage in simulated gambling and be problematic gamers if their parents did not set rules for online use.

10.3.8. Peers

The literature review highlighted the importance of peer relationships to adolescents. Most letterbox survey respondents reported having a very strong sense of belonging to a friendship group, and a less strong sense of belonging to an online community. Where peer bonds are strong, friends may influence an adolescent's gambling. This may occur through increased normalisation of gambling within peer groups, encouragement to gamble by peers, and social incentives such as recognition of wins and group status (Castren et al., 2015). A minority of letterbox survey respondents reported that some of their friends approved of gambling (16.3%), although most did not know (73.7%). Nearly one-quarter reported having friends who gambled (23.8%). Amongst respondents who had gambled in the last 12 months, private gambling was the most common activity, and approximately one-quarter (26.8%) usually gambled with friends aged 17 years or under, while fewer gambled with friends aged 18 years or over (12.8%).

The multivariate analyses of the Qualtrics and emails/ads samples identified some peer-related factors associated with youth gambling attitudes and behaviours. Associating with peers who gamble was linked with youth gambling participation, intentions and problems. This suggests that young people who are interested in gambling are likely to have friends who are also interested in gambling, as found in research on gamblers' social networks (Russell et al., 2018a, 2018b). That research also found that problem and at-risk gamblers are more likely to have friends who also have gambling problems. Thus, gambling with peers may indicate that the activity is more central to their social network, which may increase the risk of gambling problems.

A stronger sense of belonging to an online community was also associated with youth gambling attitudes and behaviours. Gambling participation, gambling intentions and gambling problems were all linked to a greater sense of belonging to an online community. Previous research has found that online communities can be attractive to young people who are dissatisfied with their offline networks, and who are interested in gambling or have gambling problems (Sirola et al., 2019). Furthermore, online gambling communities can elevate the risk of problem gambling because the sharing of gambling tips and experiences may normalise excessive gambling (Sirola et al., 2018). Little is currently known about how online communities might increase interest in gambling and the risk of gambling problems. Respondents who participated in simulated gambling, and problematic gamers, also felt a stronger sense of belonging to an online community, which reflects that these games are usually played online and typically have online social features.

10.3.9. Gambling advertising

The letterbox survey respondents reported frequent exposure to gambling advertising, as found in many previous studies (e.g., Freund et al., 2019; Hing et al., 2014; Sproston et al., 2015). The majority reported noticing gambling advertisements, messages and logos in all media they were asked about, except for direct messages such as emails and texts from gambling operators. The letterbox survey respondents most commonly noticed this advertising at least once a week on television during sporting and racing events (46.1%), on television except during sporting and racing events (42.9%), and in online and social media (34.8%). Previous research has also found that young Australians most often see gambling advertisements on television and in social media (Freund et al., 2019). Many focus group participants also noted that they saw gambling advertisements when playing games on social media and online.

Most respondents in the letterbox sample reported negative responses to gambling advertising, such as feeling annoyed, bored or suspicious. Less than one-fifth reported positive responses, such as being amused, interested, hopeful or excited. While one-third reported that gambling advertisements have increased their knowledge of gambling options (34.7%), smaller minorities reported that gambling advertisements make them think about gambling in the future (13.7%), that they pay attention to gambling ads (10.1%), that they are more likely to gamble after seeing a gambling ad (9.2%), and that they think more positively about gambling because of gambling ads (5%). However, advertising often works at a subconscious level so its reported effects are unreliable (Newall et al., 2019); accordingly, self-reported data on responses to advertising, such as obtained in the survey, should be interpreted with caution. It is also important to acknowledge the well-recognised third person effect consistently found in advertising research, where people tend to report that they are not affected by advertising, but believe that it influences others (Binde, 2014). This was reflected amongst focus group participants, who discussed how gambling advertising and glamorised depictions of gambling (e.g., in movies) normalises, increases knowledge about, and the appeal of gambling, and could thereby increase other young people’s propensity to gamble.

Sports betting advertising is pervasive in Australia (Hing et al., 2018a, 2018b). Research suggests a relationship between exposure to this advertising and increased normalisation of gambling amongst youth, with young people reporting

strong brand association between gambling sponsors and sport (Bestman et al., 2015; Pettigrew et al., 2012; Pitt et al., 2017; Sproston et al., 2015). In the letterbox survey, nearly one-third of young people (31.2%) considered betting on sport to be normal. Further, more than one-in-six felt that knowing the betting odds was part of following sport and also makes watching sport more exciting. Previous research has highlighted the 'gamblification' of sport (Sproston et al., 2015; Hing et al., 2018a), and the current results reflect that some young people see attractive links between sport and betting.

The multivariate results from the Qualtrics and email/ads samples indicated some links between gambling advertising and youth gambling attitudes and behaviour. Exposure to gambling advertising in both traditional and digital media, and thinking more positively about gambling due to seeing these advertisements, were all associated with gambling participation, intentions and gambling problems. That is, positive attitudes towards gambling nurtured by gambling advertisements increased the likelihood of gambling problems amongst respondents. Previous research has also found that positive attitudes towards gambling ads are linked to gambling intentions amongst young people (Hing et al., 2014; Li et al., 2018; Sproston et al., 2015). However, no studies have established a causal link between exposure and attitudes to gambling advertising, and gambling behaviour and problems amongst youth. Longitudinal and experimental studies are needed to establish any such link.

10.3.10. Access to internet-connected devices

The young people surveyed had ready access to devices which can be used for gaming and gambling. Over 90 per cent of letterbox survey respondents reported access to a smartphone and laptop, and around three-quarters to a games console and tablet. Further, most respondents had sole use of these devices, particularly smartphones (93.6%) and laptops (80%). Most respondents with access to them reported being able to use their smartphones (83.3%) and laptops (72.1%) in their bedroom. Most respondents (90.4%) reported that their parents had spoken to them about being safe online. Further, about two-thirds of parents set rules and limits at least sometimes about the length of time spent online and about online content, and a little over half for having media devices in the young person's bedroom. However, most respondents reported that their parents never or rarely actively monitored their media use.

The multivariate analyses based on the Qualtrics and email/ads samples did not find a relationship between access to devices and youth gambling attitudes and behaviours, probably because access to devices was nearly ubiquitous. However, having no rules set by parents about online use was associated with gambling behaviour, intentions and gambling problems. It was also associated with participation in simulated gambling and problematic gaming. Focus group participants noted that access to devices influenced young people's participation in simulated gambling. Participants reported that the frequency and duration of gaming and simulated gambling was linked to how accessible their device was and whether it was in sight of parental monitoring.

10.4. RQ4. What is the nature and extent of the convergence of gaming and gambling?

10.4.1. Convergence of gaming and gambling products

As discussed in the literature review, research has increasingly highlighted the many ways in which gaming and gambling products are converging.

10.4.1.1. Convergence of gaming and gambling elements within products

Gaming and gambling are defined as separate activities but they share aspects of interactivity, presentational qualities, and elements of skill and chance. Increasingly, online games are social activities, and include the acquisition of persistent virtual items of perceived value. Many games are available that simulate gambling without money necessarily being involved, and these were participated in by 40.1 per cent of the letterbox survey respondents in the past 12 months. These include games that contain 'mini' gambling components, such as spinning wheels or roulette, which 31.7 per cent of respondents participated in during the past year. Other games essentially replicate gambling products but use virtual credits instead of real money, such as social casino games, demo games, and games on social networking sites. Past-year participation rates for these activities were 14.2 per cent, 14.2 per cent and 11.8 per cent, respectively. As discussed by the focus group participants, participating in these simulated gambling activities can provide the opportunity to win virtual credits, acquire in-game items, advance to the next level, or gain lives in the game. The focus group participants discussed having frequent engagement with simulated gambling because it is embedded in many video games and engagement is necessary to progress in the game. They explained how virtual credits could be used on simulated gambling elements within the game and to purchase loot boxes and skins. They also discussed that the main reasons for acquiring in-game items were in-game status, peer pressure, social desirability and uniqueness.

10.4.1.2. Increased monetisation of gaming

Many games are monetised, where players can spend real money to purchase virtual credits. As discussed by the focus group participants, this can allow them to engage in the gambling components in the game, such as buying more spins of the wheel. Virtual credits (purchased with real money) can also be used to buy skins (cosmetic in-game items) or to open loot boxes which may contain skins or items that help players advance in the game. Overall, 33.4 per cent of the survey respondents reported spending money on microtransactions and 36.5 per cent reported purchasing loot boxes in the past year. Focus group participants discussed spending money to acquire skins because the default skins were not valued, and to purchase loot boxes in the hope of acquiring valuable skins. They also noted that in-game items have become increasingly monetised in games, reflecting a convergence of gaming and gambling.

10.4.1.3. Gambling with in-game items

Recent innovations have enabled games to provide monetised goods, facilitating unregulated gambling activities offered by third parties. In-game items acquired in games can be used on third-party websites to bet privately with friends, on esports, on an online game of chance or skill, and on the outcome of other competitive events or sports. In the letterbox survey, 14.5 per cent of respondents reported betting with in-game items in the past year, and this was statistically significantly more common

amongst males (17.7%) than females (10.3%). The focus group participants had little experience with skin betting and trading, but noted that the rules for these activities varied between games, and that these activities could be done on third-party platforms and with no age verification requirements. The provision of betting opportunities using in-game items to Australian residents is illegal, but offshore third-party platforms may be accessible in spite of these restrictions.

10.4.1.4. Gambling on competitive gaming events

Betting operators offer gambling products associated with esports (competitive video gaming). Amongst the letterbox survey respondents, involvement in esports in the past year ranged from playing an esports video game (by 49.1% of respondents), watching an esports event (in person or online; 40.8 per cent), competing in professional esports competitions (5.3%), to placing monetary bets on esports competitions (1.4%). Further, 6.2 per cent of survey respondents reporting betting on esports with in-game items. The letterbox survey found that 15.1 per cent of respondents intended to bet on esports in the future, which is much higher than the current prevalence of 3.3% of esports betting (for money) amongst NSW adults aged 18-24 years (Browne et al., 2019). Browne et al. (2019) also found that esports betting was strongly associated with problem gambling. These findings suggest that betting on esports with money and in-game items has potential to increase gambling-related harm to adolescents and young adults.

10.4.1.5. Cross-promotion of gaming and gambling

Many gaming and gambling promotions are shared and accessible from the same devices and online channels. Promotions for simulated gambling and gambling products can be found in online games and social media, including those viewed by underage users. Esports betting and other forms of gambling are also promoted within video games and during esports competitions. The focus group participants discussed the convergence of advertising for gaming and gambling products, where gambling and simulated gambling are promoted alongside games on social media and online. While the cross-promotion of gaming and gambling products was not examined in the survey, youth reported frequent exposure to gambling advertising, particularly on television, online and in social media.

10.4.1.6. Shared media for gaming and gambling

Digital media and associated technologies are integrated into young people's lives, and are used regularly across home, school, and social life domains. Young people typically have personal access to a smartphone and other digital devices. They can access a range of simulated gambling activities via online digital media, such as video games, social media sites and smartphone apps. The same devices can also be used to access online gambling. The letterbox survey found that almost all respondents had a smartphone for their sole use, and 80 per cent reported that laptops were available for their personal use only. Just over half reported sole personal use of tablets and games consoles, and approximately one-third reported individual use of a desktop computer. Over half of young people reported that their parents never or rarely monitored their media use, either physically (58.4%) or by using online means (62%). However, most parents at least sometimes set rules and limits for online content (68.1%) and length of time (69.7%) spent online, and rules about having media devices in the bedroom (54.9%, The focus group participants discussed that the more accessible their device was, and the more out of sight from

parental monitoring (i.e., in their bedroom), the longer and more frequently participants played video games.

10.4.2. Convergence of gaming and gambling behaviour amongst young people

10.4.2.1. Relationships between engagement in simulated gambling and gambling

The multivariate analyses examined overall participation in simulated gambling in relation to gambling participation, gambling intentions and gambling problems. Respondents who had participated in gambling in the past year, who intended to gamble in the future, or who were problem/at-risk gamblers were more likely to engage in simulated gambling.

Participation in each form of simulated gambling was then examined in relation to participation in each form of gambling. Letterbox survey respondents who engaged in simulated gambling apps, demo games, simulated gambling games on social networking sites, or betting with in-game items were statistically significantly more likely to engage in each monetary gambling form (EGMs; lotteries/scratchies/keno/bingo; sports/race betting; poker/casino games; informal private betting, esports/fantasy sports betting). Those who bought loot boxes were statistically significantly more likely to gamble on lotteries/scratchies/keno/bingo; informal private betting, and esports/fantasy sports betting. Playing games with 'mini' gambling components was statistically significantly associated with esports/fantasy sports betting, gambling on poker/casino games and informal private betting.

These results do not indicate causal relationships, and may simply reflect that young people who are interested in gambling are also interested in simulated gambling, particularly social casino and demo games. Other studies have also found that simulated gambling is more prevalent amongst young people who gamble (Baggio et al., 2016; Dreier et al., 2017; King et al., 2014; Wardle, 2019).

10.4.2.2. Relationships between problematic gaming and problem/at-risk gambling

While the multivariate analyses found no direct association between problematic gaming and problem/at-risk gambling, respondents with a gambling problem were more likely to engage in all forms of simulated gambling, including games with 'mini' gambling components, social casino and demo games, as well as betting with in-game items. Previous research has also found higher engagement with simulated gambling amongst young people with gambling problems (King et al., 2014; King et al., 2016; Rockloff et al., 2019). Also, in support of the current results, studies have linked in-game purchases in simulated gambling, particularly loot boxes, to gambling problems amongst youth (Kristiansen & Severin, 2020; Zendle et al., 2019). Prospective studies are needed to ascertain whether these relationships are due to a 'gateway effect', where engagement in simulated gambling might normalise gambling and entice young people to gamble, which increases the risk of problem gambling. Overseas longitudinal youth studies have found some evidence for migration from simulated gambling to monetary gambling (Dussault et al., 2017; Hayer et al., 2018; Molde et al., 2019). However, no longitudinal youth gambling studies have examined this migration in Australia.

10.5. Conclusions

This study found that, based on the letterbox survey, young people appear to commence simulated gambling and monetary gambling at much the same age, on average (around 11-12 years). However, more young people in the letterbox sample engaged in simulated gambling and purchased loot boxes in the past year, than engaged in traditional forms of gambling. Further, all individual forms of simulated gambling were more popular amongst the survey respondents than most forms of gambling, except for engaging in informal private betting for money. Reflecting a convergence in gambling and gaming activities and engagement, those who participated in simulated gambling were more likely to participate in gambling.

Problematic gaming was more prevalent than problem/at-risk gambling in the letterbox sample, although this result is based on small numbers of respondents with gambling or gaming problems. Based on the multivariate analyses with much larger sub-samples in these categories, while problematic gamers were more likely to participate in gambling, there was no statistically significant association between problematic gaming and problem/at-risk gambling.

Numerous personal, parental, peer and environmental factors were associated with gambling and gaming participation and problems. Parental factors were particularly influential, with parents being the greatest facilitators of youth gambling. Gambling with parents while growing up, parental approval of the young person's gambling, growing up with an adult/s with a gambling problem, and not setting rules for online use predicted gambling participation, intentions and problems amongst the respondents. Lack of parental rules for online use was also associated with simulated gambling participation and problematic gaming, but lower wellbeing and higher impulsiveness were stronger predictors.

The convergence of gaming and gambling, the proliferation of simulated gambling products, and their popularity amongst young people suggest that several developments warrant particular attention. Longitudinal research is required to examine causal relationships, to examine whether simulated gambling contributes to gambling-related harm amongst youth as they approach and enter adulthood. Sizeable proportions of young people appear to engage in purchasing loot boxes (36.5% of the letterbox sample in the past year) and betting with in-game items (14.5%). These activities share several characteristics with gambling and may be particularly harmful for young people. Watching esports events is also a popular activity amongst young people (40.8% of the letterbox sample in the past year). While only a small proportion of the letterbox survey respondents reported esports betting in the past year, 15.1 per cent intended to bet on esports in the future, indicating its likely future popularity amongst adolescents and young adults. Other implications of the findings are discussed below.

10.6. Implications of the findings

The results of this study have implications for efforts to prevent and reduce gambling-related harm amongst young people in NSW, directed at the stakeholder groups below.

Parents/guardians. Parents were the strongest influence on youth gambling participation and problems and should therefore be a key target group for education and awareness. These efforts could alert parents and other adults to the critical influence they have, and advise them against approving of an adolescent's gambling, gambling in the presence of young people, gambling with them, or otherwise facilitating their gambling. Parents could also be encouraged to monitor their children's engagement in simulated gambling and online use more generally, and particularly discourage their engagement with social casino and demo games, purchasing of loot boxes and betting with in-game items. Parents can also implement strategies to limit their child's exposure to online gambling advertising, such as through settings on social media and web browsers to block gambling advertising or using in-built parental control features or third party software.

Adolescents. Given that nearly one-third of adolescents participated in gambling in the past year, education and awareness initiatives for young people could emphasise that gambling is an activity that should be undertaken only by adults and that underage gambling on commercial activities is illegal. Having friends who gamble was a strong predictor of youth gambling participation, and gambling with peers was associated with gambling problems. Education initiatives could therefore caution young people against forming friendship groups around gambling and gambling with their friends. The influence of peers could also be harnessed through strategies that encourage appropriate peer norms in relation to gambling and to discourage their friends from gambling. Lower wellbeing was linked to gambling participation and problems, and initiatives could consider ways to encourage youth to engage in more positive coping strategies instead of gambling. Young people could also be educated on the potential risk that engaging in simulated gambling can lead to gambling and gambling problems, and the importance of keeping their online gaming in balance with other activities in their life.

Gambling operators. About three quarters of survey respondents who had tried to gamble reported not being stopped and one-third of those who had gambled online had set up an account themselves. This indicates that age and ID verification systems are not fail-proof, despite the regulatory requirements currently in place, and the penalties associated with breaches. Young people also reported frequent exposure to gambling advertising which was linked to their gambling attitudes and behaviours. Of particular concern was that many young people consider that knowing the betting odds is integral to following and watching sport. This indicated a need for operators to consider reviewing or changing their advertising practices to reduce the exposure of young people to gambling advertising in the media, including sports media.

Game developers and gaming operators. Given that many young people engage in various forms of simulated gambling, and the continued convergence between gambling and gaming, game developers and gaming operators could examine ways to reduce gambling components in online games, impose age restrictions for simulated gambling, ensure their marketing is responsible, and implement responsible gaming measures such as self-limiting features, self-exclusion and links to sources of help for gaming and gambling problems.

Support services. Given estimates that around one in 20 young people have a gaming-related problem, and the links between gaming, simulated gambling and

monetary gambling, help services accessed by young people may benefit from professional education about the nature and risks of simulated gambling and gambling. These services include youth services, gambling support and mental health services.

Regulators. Purchasing loot boxes and betting with in-game items have characteristics of gambling, are recognised by young people as such, and are linked to gambling and gambling problems, so their regulation needs consideration. Regulators could also examine ways to reduce gambling components in games and impose age restrictions for simulated gambling. Regulation could be considered to limit gambling advertising in both traditional and digital media to reduce the exposure of young people to this marketing to reduce its normalising effects, especially given that existing restrictions relate to G-rated programming which is aimed at children younger than those in this study.

10.7. Limitations of the study

The main limitation was the smaller than expected sample attained from the letterbox drop. Although recruitment flyers should have been delivered to ~82 per cent of households in NSW, we were advised by several contacts that their household had not received it. Nevertheless, an examination of respondents' postcodes indicated good coverage of NSW, and there were sufficient responses to be weighted against population data and to conduct the planned sub-analyses. Where a few sub-analyses were based on small numbers, we have noted these in the text. However, because the recruitment flyer was not delivered to all in-scope households across NSW, the survey is subject to non-response bias. Nevertheless, the results have strong alignment with previous representative studies which improves confidence in the results. This recruitment method may still have merit in the future if a more reliable letterbox drop supplier is used. We used additional methods to recruit additional samples to enhance the rigour of the multivariate analyses.

A further limitation is the cross-sectional design based on self-reported data. Prospective and experimental studies are needed to examine causal relationships between simulated gambling and monetary gambling amongst young people.

The survey also coincided with the start of the COVID-19 lockdown, with the letterbox survey completed by the second week of the lockdown. During the lockdown, hotels, clubs, casinos and retail betting outlets were closed and sporting events suspended. This meant that all commercial land-based gambling was unavailable (except scratchies/lotteries) and sports betting opportunities were severely curtailed. This was a significant influencing factor on the potential of survey respondents to have gambled, which may have particularly affected the past 7-day measures. Schools were also closed and other recreational activities were restricted, which may have influenced the respondents' engagement in online gambling and simulated gambling during this time. However, data were mainly retrospective over the previous 12 months, so the lockdown should have had minimal effect on these data.

The study examined only at-risk and problem gambling and not broader gambling-related harms amongst young people, in order to limit the length of the survey.

Young people may experience more harms than are captured by the DSM screening instrument.

Despite these limitations, this is one of the few studies to provide very detailed information on gambling and gaming and to disaggregate the many different types of simulated gambling. The study also had much larger samples of at-risk/problem gamblers which enabled between variable comparisons.

10.8. The need for prospective longitudinal research

This study has provided valuable insights into youth participation and problems related to gambling and simulated gambling, as well as personal, parental, peer and environmental factors associated with these behaviours. However, prospective longitudinal research is needed to establish causal relationships between these factors, and gambling behaviour and gambling problems. Prospective research is also needed to examine the so-called 'gateway effect' between simulated gambling and gambling. This is the potential for simulated gambling to entice young people to gamble, thereby increasing the risk of gambling problems and harm. This design could also test how personal, parental, peer and environmental factors impact on young people's transitions from simulated gambling to gambling, and to gambling problems and harm.

Important issues that could be addressed by a prospective cohort study are:

- The nature and extent of young people's transitions:
    - from gambling to problem gambling
    - from simulated gambling to monetary gambling
    - from simulated gambling to at-risk and problem gambling
    - from problematic gaming to problematic gambling
- Risk and protective factors that influence the above transitions, including personal, parental, peer, and environmental factors.

The current study included mechanisms to facilitate a prospective cohort study. Of the 2,220 survey participants, 1,530 agreed to be invited into a prospective study and provided their contact details. Further, each of these participants generated a unique identifier by answering a set of questions, enabling matching of participants across survey waves.

While the sampling limitations of the baseline survey do not allow a representative sample to be obtained at follow-up, all longitudinal surveys are subject to attrition such that a representative sample at follow-up is *never* achievable. Further, basing a follow-up survey on a representative sample at baseline would have required the baseline sample to be extremely large so that it had sufficient numbers of problem/at-risk gamblers and problematic gamers, given these are key dependent variables. For example, a representative baseline sample of 2,000 would expect to find only 74 problem/at-risk gamblers which is insufficient for longitudinal analysis, after accounting for attrition. In contrast, our total baseline sample (letterbox, Qualtrics and email/ad samples) contains 599 problem/at-risk gamblers and 270 problematic gamers who have agreed to be contacted for follow-up. These numbers

provide a powerful basis for a longitudinal analysis of factors that influence these key variables of interest.

It is also important to note that the main purpose of a prospective cohort study is to identify changes at the individual respondent level to determine transitions in young people's gambling and simulated gambling over time. This helps to elucidate causal influences on these transitions. While it is possible for a longitudinal study to function as *both* a prevalence study requiring a representative sample at each wave, *and* a follow-up study focusing on transitions relating to key variables of interest, this would have required a very large baseline sample of, ideally at least N = 10,000. This was not achievable within the project budget.

We therefore suggest that a follow-up to the current study should not be considered a prevalence study, but instead it should capitalise on the availability of a large cohort of young people who have agreed to be invited into a follow-up, and which comprises large numbers of problem/at-risk gamblers and problematic gamers. This will allow important transitions over time to be examined. A representative sample is not necessary to meaningfully examine these transitions.

The methodology for a prospective cohort study could therefore entail:

- Email invitations to the 1,530 follow-up contacts to complete an online survey.
- Subject to ethics approval, a generous incentive to maximise the response rate (e.g. $30 per participant). This may be affordable given there are no other direct costs in recruiting the sample. Ensuring the recruitment and survey materials are engaging, and sending at least two follow-up reminders would also assist in optimising the response rate. The response rate would also be optimised if the time between the current survey and the follow-up survey is minimised, while also allowing sufficient time for meaningful changes in behaviour to take place.
- Replication of most questions from the current survey, although consideration could be given to culling some questions that provided less useful results (e.g., where young people engage in simulated gambling; whether their peers approve of gambling – which most respondents did not know). Some questions would not need to be asked again (e.g., certain demographics, age of first engaging in forms of gambling and simulated gambling).
- Some additional questions could be included (if space permits), for example psychological distress (which was not included in the current survey due to concerns about young people's mental health due to COVID-19).

In summary, there is a unique opportunity to conduct a prospective cohort study that moves beyond prevalence estimates, descriptive data and cross-sectional analyses, to focus on transitions in young people's gambling and simulated gambling over time. This would enhance understanding of the causal factors influencing harmful gambling and simulated gambling amongst young people, to valuably inform initiatives to prevent and reduce this harm.

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List of appendices

Appendix A: Methodology for the literature review

The literature review was designed to gather relevant documentation and other source material on the broad topic of adolescent gambling in Australia and other regions. The review applied a wide scope for inclusion of studies (i.e., post-2000 studies) in Australian jurisdictions to contextualise the survey in the current project against other recent findings. Australian source material was not only limited to peer-reviewed studies, but also included government-funded independent research studies in technical reports (i.e., grey literature). This review also includes research studies of young people from other important overseas jurisdictions that may be considered comparable to Australia on the basis of being primarily English-speaking industrialised countries with similar digital media habits (e.g., Canada, United Kingdom, and USA). Coverage of international studies was more recent (i.e., 2015 to 2019) given the large number of available studies and the rapid pace of technological developments in gambling and related online activities that may limit the capacity to compare these studies across longer periods of time (e.g., 'skin betting' and betting on esports are recent phenomena).

Research on gaming and gambling technologies and products is only new relative to studies of land-based gambling, and therefore the literature in these specific areas is quite limited. Research on the intersection of gambling and online technologies can become outdated relatively quickly (i.e., within a few years) due to the introduction of new products and services that supersede activities or disrupt the market. The basic terminology for new and emerging activities can also sometimes create some uncertainty regarding the legal status of the activity as a form of gambling (e.g., the conceptual ambiguity of 'gambling-like game'). The primary focus of this review was on gambling and 'simulated gambling' (i.e., activities not involving cash payout) (King, Delfabbro, & Derevensky, 2012). This review employed a wide net in its search protocol, to include academic material (i.e., peer-reviewed scholarly papers), sourced from bibliographic databases including *PsychINFO, ScienceDirect,* and *Web of Science*, and *Google Scholar*. This review should not be considered comprehensive but rather a 'snap shot' of recent research on youth gambling across numerous jurisdictions.

Searches were conducted using the keywords and logic, including "[Adolescent]" AND [Gambling; Internet OR online gambling; Internet OR online gaming; social media AND gambling; skin AND gambling; gambling-like AND gaming; simulated gambling AND game; social gaming AND gambling problems; gambling AND virtual good; gambling AND gaming consoles"]. Reference lists of identified major publications were also searched to identify further relevant publications. The citation lists of highly cited and relevant papers (e.g., systematic reviews) were evaluated for additional results. This search process identified the key authors and teams who were then searched using searches conducted in Scopus. Reference lists of reviews of gambling and simulated gambling were also examined.

To supplement this protocol, the review searched the websites of university-based research centres to identify any relevant research publications or projects either completed or in progress, both in Australia and internationally. Additional search methods were employed to identify literature outside traditional academic sources, including: (1) government websites and state gambling regulatory bodies; (2)

industry reports, such as reports published by SuperData and Newzoo and other companies that specialise in gaming-related market research, and (3) review of media articles, including coverage of presentations by industry experts, and reports on policy and industry developments relevant to gambling and gambling-themed gaming.

This protocol led to the development of a database including a total of 92 references presenting studies of adolescent gambling were identified, which included 18 sources (i.e., journal articles, technical reports) in the Australian context (Section 1). These papers referred primarily to land-based gambling activities (e.g., scratch cards, card games, and sports betting) in addition to participation in online gambling products. This database also included 10 studies that presented data on simulated gambling activities. Examination of these publications assisted in the identification of the main screening tools and approaches used in adolescent gambling research (Section 2). This review was also supplemented by material presented in 16 narrative and systematic reviews on topics relevant to adolescent gambling, including measurement, gaming-gambling convergence, prevalence rates, risk factors, and correlates. These papers, in addition to others, informed the discussion of factors that influence youth gambling (Section 3). There were 9 studies that presented relevant analysis of mediating variables, and 10 studies that examined moderating variables (Section 4), that might influence access and uptake of gambling and simulated-gambling products by adolescents. Identified studies informed the critical discussion of high-risk products (Section 5) and convergence of gaming and gambling via new and emerging products and promotions (Section 6).

Appendix B: Cognitive testing for the survey

ENGINE was commissioned by CQUniversity to conduct cognitive testing of the draft survey instrument and recruitment flyer. The aim of cognitive testing was to test if young people could understand the questions being asked, and if questions were understood in the same way, so that measurement error and random variability were minimised.

The target participants were young people aged 12-17 who fulfilled at least one of the following criteria; with a particular emphasis on the first two criteria:

1. Any current or past involvement in simulated gambling (all types, may not involve money);
2. Active/current video game players who purchase loot boxes or made other microtransactions;
3. Have encountered advertisements/promotions for gambling on social media or other related media channels (e.g., esports channels).

Twelve cognitive interviews were conducted: six interviews with general population participants, and two with Chinese, two with Vietnamese and two with Indigenous participants. A roughly equal split across two age groups (12-14 and 15-17) was achieved in recruiting participants from the general population, to ensure the questionnaire was tested across the full age range. Age group split was not strictly imposed in recruiting the Indigenous and CALD participants, given that recruitment was more difficult. For each participant, compensation of $80 ($20 for parent and $60 for participant) was provided.

Table 4 shows the profile of participants from the general population. They were recruited through Stable Research. Face-to-face interviews with Sydney-based participants were conducted in ENGINE's Sydney office and interviews with participants in regional NSW were conducted by telephone.

Table 4. Profile of general population participants in the cognitive testing

General population	Sydney	Regional NSW	Total
Aged 12-14	2	1	3
Aged 15-17	1	2	3
Total	3	3	6

Table 5 shows the profiles of CALD and Indigenous participants. Indigenous and Vietnamese participants were recruited through a community organisation and Fairfield City Council, respectively. A cash donation of $100 was made to the Indigenous community organisation, but Fairfield City Council was unable to accept a donation. Two Chinese participants were recruited using a researcher's own network as it was particularly difficult to secure Chinese participants from community organisations. Face-to-face interviews with Indigenous participants were conducted in Redfern and with Vietnamese participants in Fairfield. Interviews were conducted by telephone with Chinese participants.

Table 5. Profile of CALD and Indigenous participants in the cognitive testing

CALD and Indigenous	Chinese	Vietnamese	Indigenous	Total
Aged 12-14	2	0	1	3
Aged 15-17	0	2	1	3
Total	2	2	2	6

The cognitive testing approach engaged participants to 'think out loud'. Participants were asked to give a response for each question and the interviewer encouraged participants to articulate their thinking process as they were answering the questions, with retrospective probes after each question to obtain further detail. Participants were also asked to highlight any confusion or uncertainty. Particular emphasis was placed on testing participants' understanding of certain terms in the questionnaire, including: 'simulated gambling', 'gambling-style games', 'loot boxes', 'microtransactions, and 'virtual credits'. The length of each cognitive test was approximately 1.5 hours.

The interviewer made notes and marked changes on the questionnaire at each interview. After the first four interviews, recommended changes were collated, reviewed and approved by the CQU researchers, and the revised survey instrument was then tested in the rest of the interviews (n = 8). The resulting changes included minor re-arrangement of some elements on the recruitment flyer. In the questionnaire, some terminology was altered, including changing 'money' to 'real money', 'gambling-style games' to 'games with gambling components', and 'a video game which is also an esport' to 'esports (professional video gaming matches)'. Other changes included: additional responses options added to some questions (e.g., 'not applicable'); minor changes to improve the phrasing of some questions; and minor changes to improve survey flow. No changes were made to standard scales. All changes made were tested in the remaining interviews and worked well.

Appendix C: Discussion Guide for focus groups

Moderator information only:

The aim is to explore gambling and gaming amongst young people (12–17 years old), specifically:

- youth gambling participation, behaviours and attitudes;
- the impact of advertising and normalisation (especially in sport), and other gambling influences on young people; and
- the convergence of gaming and gambling.

The discussion should drill down into youth attitudes and engagement with different types of gambling and simulated gambling, including as far as possible:

Gambling:

1. Online gambling. (e.g. sports betting is of particular interest)
2. Land-based gambling activities (e.g. sports betting is of particular interest)
3. Gambling on esports.
4. Betting on fantasy sports and daily fantasy sports.

Simulated gambling:

1. Video games with gambling themes and elements.
2. Gambling-themed games on social media.
3. Loot boxes and other microtransactions.
4. Skins collecting, trading and betting.
5. Practice games for online gambling.

The discussion should also cover parental/family, peer, media, celebrity and contextual influences on youth attitudes towards and engagement in these activities.

Introduction (5 minutes)

- Introduction by the facilitator, Engine, academic collaborators and ORG
- Purpose
    - Conducting research on behalf of the NSW Office of Responsible Gambling
    - Interested in youth attitudes and engagement with different types of gambling and simulated gambling
    - We'd like to get your feedback – we want to know what you think about these activities, whether and how you engage with them, and how parents, friends, advertising and technology might encourage or discourage you from playing these games
    - Please turn off or put on silent mode mobile phones
    - Confidentiality and anonymity
    - Reminder that you are being observed and audio-recorded; as discussed during recruitment (where relevant)
    - Housekeeping – up to 2 hours, catering, amenities, fire-exits (as needed)
    - Group rules – different points of view encouraged, no right or wrong answers, keep from criticising other contributors, moderator and participant roles.
    - Ice-breaker for participants to introduce themselves.

Discussion topics: types of gambling and simulated gambling (75 mins)

Types of gambling

I'd like you to tell me about your thoughts and experiences with gambling.

Prompts:

What do you think gambling is? What types of gambling are you aware of?

Do you think gambling is something cool to do?

Is it a good thing for young people to do or is it only for older people?

What types of gambling have you or your friends participated in?

1. Land-based gambling activities

There are lots of types of land-based gambling in casinos, hotels, clubs, TABs and other places e.g., lotto, instant scratchies, poker machines, race betting, sports betting, casino games, keno and bingo.

Prompts:

Do young people in your age group ever gamble in this way? Or purchase lottery or scratch tickets?

Do they do this with adults in their family?

How do these places verify they are aged 18+? How do young people get around these restrictions?

What do you like or dislike about these land-based gambling activities?

Is this something you think you'll do more of when you are older? Why?

2. Online gambling.

There are lots of online gambling activities available e.g., online sports and race betting, online lotteries and online casinos.

Prompts:

Do young people in your age group ever gamble online? What types?

Do they do this with adults in their family?

How do these sites verify they are aged 18+? How do young people get around these restrictions?

What do you like or dislike about online gambling?

Is this something you think you'll do more of when you are older? Why?

3. Gambling on esports.

Gambling on esports involves betting on the outcome of professional video gaming matches.

Prompts:

Do you watch esports competitions? Where do you see ads for betting on esports? Are you tempted by them?

How much time and money do young people in your age group spend betting on esports?

How do young people bet on esports - with skins, money or cryptocurrencies?

What sites do they use?

How do these sites verify they are aged 18+? How do young people get around these restrictions?

Do these sites offer other types of gambling; what types?

What do you like or dislike about betting on esports?

4. Betting on fantasy sports and daily fantasy sports.

Fantasy sports involve assembling a virtual sports team of players, with the team's performance determined by these players' performance in real matches.

Prompts:

Do young people in your age group ever bet on fantasy sports or daily fantasy sports? How often? What sports?

What sites do they use?

How do these sites verify they are aged 18+? How do young people get around these restrictions?

What do you like or dislike about betting on fantasy sports?

Would you prefer to bet directly on real matches, or do you like the fantasy teams? Why?

Types of simulated gambling

I'd like you to tell me about your thoughts and experiences with several types of gaming that have gambling elements in them.

1. Video games with gambling themes and elements.

Some video games contain elements like casino card games, slot machines, and blackjack, but you can't spend or win money playing them, they're only played for points.

Prompts:

When you are playing video games, how often do you come across elements that look like gambling?

Can you tell me about some of these games?

How often do you or your friends play them?

Do you like the gambling-like elements in these games? Why?

Does it make you interested in gambling for money, either now or in the future?

2. Gambling-themed games on social media.

Social casino games are gambling games like slot machines and roulette played on social media platforms, such as Facebook, but played for points. You can spend money to get virtual or pretend currency in these games, but you cannot win real money. An example is Slotomania.

Prompts:

Can you tell me about some of these games you've seen?

How often do you or your friends play them?

Do you receive invitations to play them from your friends? Or see advertisements for them?

Do you spend real money on them? Do you do this through a parent's credit card, vouchers from a store, or in other ways?

Do you like or dislike these games; why?

Do they make you interested in gambling for real money, either now in the future?

3. Loot boxes and other microtransactions.

A loot box contains a virtual item to use in a video game (e.g., weapons, skins). You can get loot boxes in the game as a reward, or you can purchase them. You can also make micro transactions in games for credits or chances to win at a game, like spins on a wheel.

Prompts:

Do you or your friends purchase loot boxes?

What sorts of games have them?

How do you mostly get loot boxes? How do you pay for them?

Do you see them as gambling?

Do you sell or trade loot box prizes?

Are there other elements in these games that involve spending money?

4. Skins collecting, trading and betting.

Skins are cosmetic enhancements to video game characters or items, and sometimes improve your character or weapon. You can collect them, trade them or use them for betting.

Prompts:

Do you or your friends collect skins? What sort?

How do you obtain skins (e.g. purchase them or via loot boxes)?

Do you just use skins in the game; how?

Do you use skins for trading; how?

Do you use skins as currency for betting? What do you bet on?

What sites do you use? Do these sites ask for proof of age? Do these sites offer other types of gambling; what types?

Do you see skins betting as gambling?

5. Practice games for online gambling.

Many online gambling sites provide practice games, where you can play a game such as blackjack, roulette or slot machines without spending any money.

Prompts:

Do you or your friends ever play practice games? How often? Which types?

What do you like or dislike about them?

Do they make you interested in gambling for money, either now or in the future?

Discussion topics: influences on youth gambling and simulated gambling (25 mins)

Parents

Are your parents aware that you play activities we've been discussing?

Do you hide gameplay or gambling from your parents; which types?

Do you play these games with your parents; which ones?

How do your parents feel about you playing these activities? Do they put any restrictions on this?

How do other adults, such as teachers, feel about you playing these activities?

Friends/peers

Do you play these games with friends, or brothers, sisters or other family members? Which games?

Do your friends or peers influence you to play or not play these games? Do you receive invitations from them to play? Or to collect skins or purchase loot boxes?

Advertising

How often do you see ads for the types of gambling and gaming we've been discussing?

What ads do you see on TV, such as during sports matches?

What ads do you see on trains, buses and outdoors?

What ads do you see online and in social media?

And during esports matches?

And from social influencers and streamers (e.g., Twitch/YouTube celebrities)?

What do you think of these ads and promotions? Do they tempt you to engage in the types of gambling and simulated gambling we've been discussing? Which types?

Technology and access

Nearly all the types of gambling and gaming we've been discussing are available online. What sort of access do you have to these activities? Do you have a smartphone? Do you have a tablet? A computer in your bedroom? A gaming console?

Do your parents or teachers monitor or place any controls on your online activities?

Discussion topics: Impacts of gambling and simulated gambling on youth (10 mins)

Intentions to gamble when 18+

So far, we've been talking about different types of gambling and gaming. Does playing or seeing these products make you want to engage in gambling for money once you turn 18?

Positive effects

Are there any positive effects of young people engaging in the gambling and gaming activities we've been talking about?

Negative effects

Are there any negative effects of young people engaging in the gambling and gaming activities we've been talking about? Do you think these problems are widespread amongst your peers?

Interventions

What do you think are some things that could be done to better protect young people from experiencing these negative effects?

Close

Are there any questions?

Thank you for your participation

Advise that Stable will send them the eGiftPay card.

Appendix D: Recruitment flyer for the youth gaming and gambling survey

Appendix E: Youth video gaming and gambling survey

NSW YOUTH VIDEO GAMING AND GAMBLING SURVEY

INFORMATION SHEET

This survey is being conducted by CQUniversity for the NSW Office of Responsible Gambling.

By participating, you can help us to learn more about video gaming and gambling by young people. We want to understand why some young people engage in these activities, and why others don't. We want to hear from as many young people as possible.

Responses from **all 12-17 year olds** are helpful, even if you do not participate in video gaming or gambling.

To participate in this survey you need to:

- be aged between 12 and 17 years old
- live in New South Wales
- have permission from your parent/guardian

The survey will take only 15-20 minutes to complete. It asks about any video gaming and gambling you may have done, as well as some questions about you. Your responses are completely anonymous.

The online survey can be completed only once on any device. Please use a different device for extra teens in your household.

At the end of the survey, you can enter a prize draw to win one of 200 electronic gift vouchers, each valued at $100.

If you have any questions, please contact the research team at n.hing@cqu.edu.au

CQUniversity Ethics Approval number: 21897.

Would you like to see more details about the study?

- Yes (goes to next page)
- No (skipped to consent form)

NSW YOUTH VIDEO GAMING AND GAMBLING SURVEY
ADDITIONAL INFORMATION

How your confidentiality will be protected

The survey does not ask for your name, so your responses will be completely anonymous. They will be combined with hundreds of other responses so no one will know your individual answers.

The anonymous data will be stored securely and indefinitely by CQUniversity. It will also be provided to the NSW Office of Responsible Gambling. At the end of this survey you will be given the opportunity to agree to be contacted about a follow-up survey.

Participation is voluntary

Participation in this study is completely voluntary. You are free to withdraw at any stage. If you withdraw before completing the survey, we will not use any of your responses.

How you will receive feedback

Information about the results of the research will be made available through CQUniversity's gambling research Facebook page - https://www.facebook.com/cquegrl/ . Information about the results will also be shared on the ORG website: https://www.responsiblegambling.nsw.gov.au/

Where you can get further information

If you want further information or have any questions, please contact Professor Nerilee Hing: n.hing@cqu.edu.au. You can also contact the Ethics Coordinator at CQUniversity's Office of Research: 07 4923 2603.

If you experience discomfort at any point during the survey, you can contact **Gambling Help on 1800 858 858 or www.gamblinghelponline.org.au** or **Kids Helpline on 1800 551 800 or www.kidshelpline.com.au**. These are free and confidential telephone/online help services that operate 24 hours a day, 7 days a week.

Participation

If you would like to participate and your parent/guardian has given you permission, please complete the consent form on the next screen. Next, we will ask some questions to determine whether you can do the survey. If you meet our criteria, you can then take part in our online survey.

Project team

Professor Nerilee Hing (Chief Investigator), Dr Daniel King, Professor Matthew Rockloff, Professor Matthew Browne, Dr Alex Russell, Nancy Greer, Dr Philip Newall. Independent Letterbox was engaged to distribute the recruitment flyer you received. Engine Asia-Pacific conducted initial survey testing.

Consent

I consent to participate in this research project and agree that:

- I have read and understood the Information Sheet that describes this study.
- Any questions I had about the study were answered by either the Information Sheet, my parent/guardian, or the researchers.
- I understand I have the right to withdraw from the survey at any time.
- The research findings, which will not identify me, may be included in the researchers' publications on the study which may include conference presentations and research articles.
- To protect my privacy, my name will not be recorded or used in publication(s).
- I am providing my consent, and I have my parent/guardian's permission to participate in this study

  - Yes (continue to next question)
  - No (screened out)

SURVEY

SCREENING QUESTIONS

IMPORTANT – this survey includes attention checks that you must answer correctly to continue with the survey. Please read each question carefully.

How old are you? (Please enter numbers only below)
(Text box, validation 0-100)

- Screen out if under 12, or older than 17

What is your gender? (Please select one response)

- Male
- Female
- Other

What is your postcode? (where you mainly live) (Please enter numbers only below)
(Text box, AU Postcode verification)

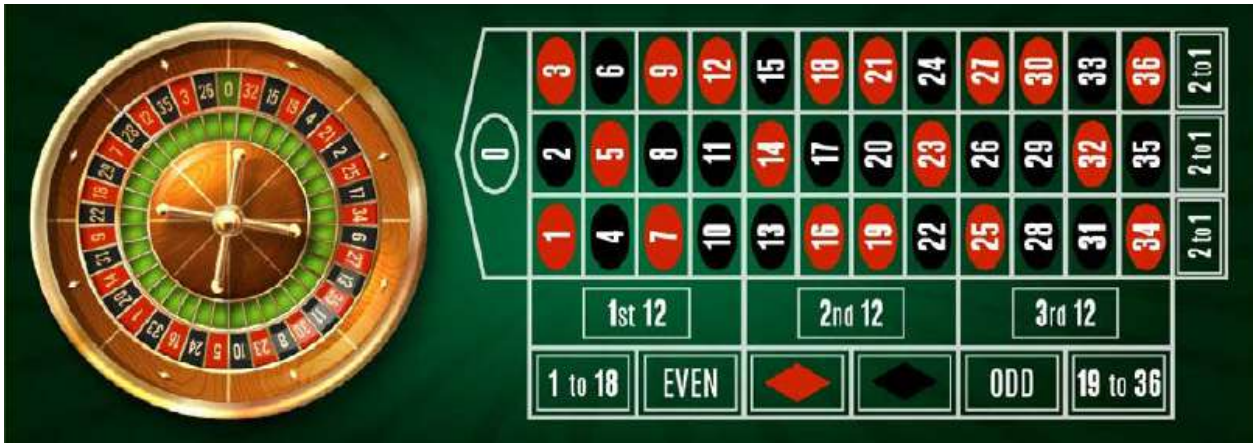
- Screen out if not in NSW (postcodes 1000—1999 (LVRs and PO Boxes only), 2000—2599, 2619—2899, 2921—2999)

GAMBLING BEHAVIOUR

The first section of this survey asks about any gambling you may have done FOR REAL MONEY. Gambling includes playing the following activities for real money: buying lottery, lotto, pools tickets or scratchies; private betting with family or friends; playing pokies, poker or casino table games; betting on sports, racing, esports or fantasy sports; or betting on bingo or keno.


BLACKJACK PAYS 3 TO 2


FANTASY TEAM OF THE WEEK


0
3 6 9 12 15 18 21 24 27 30 33 36
2 5 8 11 14 17 20 23 26 29 32 35
1 4 7 10 13 16 19 22 25 28 31 34
2 to 1
2 to 1
2 to 1
1st 12
2nd 12
3rd 12
1 to 18
EVEN
ODD
19 to 36

Participation in gambling

(Ask all)

GB1a. When did YOU last spend any REAL MONEY on each of the following activities?

(Please select one response on each line).

Note: If you don't know what one of these activities is, select "Never" for that activity. This does NOT include gambling-like activities in games, for example, Diamond Casino & Resort in the video game Grand Theft Auto V or spinning wheels in Candy Crush'

CODE	ITEM	In the last 7 days	In the last 4 weeks	In the last 12 months	More than 12 months ago	Never
1	Played pokies or poker machines FOR REAL MONEY					
2	Formally bet on horse or greyhound races, NOT including private betting with friends or family, FOR REAL MONEY					
3	Bought scratchies, lottery, lotto or pools tickets for your own use FOR REAL MONEY					
4	Played keno FOR REAL MONEY					
5	Played bingo or housie FOR REAL MONEY					
6	Played poker online or in a pub, club or casino FOR REAL MONEY					
7	Played casino table games such as Blackjack or Roulette (but NOT including poker) FOR REAL MONEY					
8	Bet on sporting events FOR REAL MONEY (but NOT sweeps, fantasy sports, or esports)					
9	Bet on esports events FOR REAL MONEY, like CS-GO, League of Legends or DOTA2					
10	Bet on Fantasy sports games, for example, NFL Fantasy Football FOR REAL MONEY such as Draftstars					
11	Informal private betting FOR REAL MONEY like betting on card or dice games, or betting on sports with family or friends.					

Frequency of gambling

(Don't ask if all responses to GB1a = "Never" or "More than 12 months ago"

Gb1b. During the last 12 months, which activity did you gamble on most frequently using REAL MONEY?

(display from GB1a all activities where respondent answered "In the last 7 days", "In the last 4 weeks", or "In the last 12 months")

Gb1c. During the last 12 months, how often did you gamble using REAL MONEY on this activity? [insert activity identified in GB1b]?

- More than once a week
- About once a week
- A few times a month
- Once a month or less often

Age first gambled on each activity

(Don't ask if all responses to GB1a = Never)

GB2. How old were you when you first spent REAL MONEY on each activity? If you're unsure, please provide your best guess. (Please insert one response on each line)

(Display only responses from GB1a where respondent answered "In the last 7 days", "In the last 4 weeks", "In the last 12 months", "More than 12 months ago")

CODE	ITEM	____ years old
1	Played pokies or poker machines FOR REAL MONEY	
2	Bet on horse or greyhound races FOR REAL MONEY	
3	Bought scratchies, lottery, lotto or pools tickets for your own use FOR REAL MONEY	
4	Played keno FOR REAL MONEY	
5	Played bingo or housie FOR REAL MONEY	
6	Played poker online or in a pub, club or casino FOR REAL MONEY	
7	Played casino table games such as Blackjack or Roulette (but NOT including poker) FOR REAL MONEY	
8	Bet on sporting events FOR REAL MONEY (but NOT sweeps, fantasy sports, or esports)	
9	Bet on esports events FOR REAL MONEY, like CS-GO, League of Legends or DOTA2	
10	Bet on Fantasy sports games FOR REAL MONEY such as Draftstars	
11	Informal private betting FOR REAL MONEY like betting on card or dice games, or betting on sports with family or friends.	

Mode of gambling for each activity

(Ask only if responses from GB1a include "In the last 7 days", "In the last 4 weeks" or "In the last 12 months" to any item)

GB3. During the last 12 months, did you spend REAL MONEY on these activities in a venue (such as a pub, club, casino, TAB or newsagent), online (using a smartphone, computer, tablet or gaming console), or both?

(Please select one response on each line)

(Display only items from GB1a where respondent answered "In the last 7 days", "In the last 4 weeks" or "In the last 12 months")

CODE	ITEM	Venue (pub, club, casino, TAB, newsagent)	Online	Both
1	Played pokies or poker machines FOR REAL MONEY			
2	Bet on horse or greyhound races FOR REAL MONEY			
3	Bought scratchies, lottery, lotto or pools tickets for your own use FOR REAL MONEY			
4	Played keno FOR REAL MONEY			
5	Played bingo or housie FOR REAL MONEY			
6	Played poker online or in a pub, club or casino FOR REAL MONEY			
7	Played casino table games such as Blackjack or Roulette (but NOT including poker) FOR REAL MONEY			
8	Bet on sporting events FOR REAL MONEY (but NOT sweeps, fantasy sports, or esports)			
9	Bet on esports events FOR REAL MONEY, like CS-GO, League of Legends or DOTA2			
10	Bet on Fantasy sports games FOR REAL MONEY such as Draftstars			

[Display only if respondent answered at GB1a "In the last 7 days", "In the last 4 weeks" or "In the last 12 months" for Informal private betting]

GB3a. During the last 12 months, where did you bet FOR REAL MONEY on informal private betting, like betting on card or dice games, or betting on sports with family or friends? (select all that apply)

- At your own or a friend's or family member's house
- At school or TAFE
- At work
- Online or through apps
- Other

Gambling expenditure for each activity

(Ask only if responses from GB1a include "In the last 7 days", "In the last 4 weeks" or "In the last 12 months" to any item)

GB4. During the last 12 months, about how much money did you spend in total on each of these activities? If you're unsure, please provide your best guess. (Please insert one response on each line)

(Display only items from GB1a where respondent answered "In the last 7 days", "In the last 4 weeks" or "In the last 12 months")

CODE	ITEM	$ ___
1	Played pokies or poker machines FOR REAL MONEY	
2	Bet on horse or greyhound races FOR REAL MONEY	
3	Bought scratchies, lottery, lotto or pools tickets for your own use FOR REAL MONEY	
4	Played keno FOR REAL MONEY	
5	Played bingo or housie FOR REAL MONEY	
6	Played poker online or in a pub, club or casino FOR REAL MONEY	
7	Played casino table games such as Blackjack or Roulette (but NOT including poker) FOR REAL MONEY	
8	Bet on sporting events FOR REAL MONEY (but NOT sweeps, fantasy sports, or esports)	
9	Bet on esports events FOR REAL MONEY, like CS-GO, League of Legends or DOTA2	
10	Bet on Fantasy sports games FOR REAL MONEY such as Draftstars	
11	Informal private betting FOR REAL MONEY like betting on card or dice games, or betting on sports with family or friends.	

Sources of money for gambling

(Ask only if responses from GB1a include "In the last 7 days", "In the last 4 weeks" or "In the last 12 months" to any item)

GB5. Have you used money from any of the following sources for gambling? If you don't have this source of money tick "No" to the question (Please select no or yes on each line)

	No	Yes
Money you earned from a job/part-time job		
Your pocket money		
Money you received as a present (such as for your birthday or Christmas)		
Money given to you by your parents, guardians or relatives that was intended to buy something else (such as lunch money, transport money)		
Money given to you by your parents, guardians or relatives specifically for gambling		

Money from selling any of your belongings		
Money you borrowed from someone else **with** their permission		
Money or items you took from somewhere else **without** permission		
Other, please specify INSERT TEXT BOX		

Who you usually gamble with

(Ask only if responses from GB1a include "In the last 7 days", "In the last 4 weeks" or "In the last 12 months" to any item)

GB6. Who do you usually gamble or bet with FOR REAL MONEY? (Please select no or yes on each line)

Remember, gambling includes playing the following activities FOR REAL MONEY: buying lottery, lotto, pools tickets or scratchies; private betting with family or friends; playing pokies, poker or casino table games; betting on sports, racing, esports or fantasy sports; or betting on bingo or keno.

	No	Yes
Parents or guardians		
Grandparents		
Brother, sister or other relatives aged 18 or over		
Brother, sister or other relatives aged 17 or younger		
Friends aged 18 or over		
Friends aged 17 or younger		
Other [Insert open text box]		
None of the above, I usually gamble alone EXCLUSIVE		

Attention check

(Ask all)

This question is an attention check. Please select the number "seven" to continue.

(List numbers 1-10)

Stopped from gambling

(Ask all) GB7. Have you ever TRIED to gamble FOR REAL MONEY and been stopped because you were too young? (Please select one response)

Remember, gambling includes playing the following activities FOR REAL MONEY: buying lottery, lotto, pools tickets or scratchies; private betting with family or friends; playing pokies, poker or casino table games; betting on sports, racing, esports or fantasy sports; or betting on bingo or keno.

1. Yes, I have been stopped
2. No, I haven't been stopped
3. I have never tried to gamble for money

Access to online gambling account(s)

(Ask those who answer ONLINE or BOTH to any item in GB3)

GB8. Please read all the sentences below and select one response on each line.

	Yes, currently	Yes, but not anymore	Never
I have gambled online using my parents' / guardians' gambling account **with** their permission			
I have gambled online using my parents' / guardians' gambling account **without** their permission			
I have gambled online using another person's gambling account **with** their permission			
I have gambled online using another person's gambling account **without** their permission			
I have gambled online using a gambling account I set up myself			
I have gambled online another way			

(If "I have gambled online another way" is "yes currently" or "yes but not anymore", ask…)

GB8_other. You said that you 'gambled online another way', other than using an account set up by yourself, your parent /guardian, or another person. How did you gamble online?

(Text entry) _____

ATTITUDES ABOUT GAMBLING

Approval of gambling

(Ask all)

GA1. Do you approve or disapprove of…? (Please select one response on each line)

	Strongly disapprove	Somewhat disapprove	Somewhat approve	Strongly approve
People who gamble once a week or more often				
People who gamble less often than once a week				

Perception of the harmfulness of gambling

(Ask all)

GA2. How much do you think people risk harming themselves (physically, mentally, financially or in other ways) if they gamble? (Please select one response on each line)

	No risk	Minor risk	Moderate risk	Great risk
People who gamble once a week or more often				
People who gamble less often than once a week				

GAMBLING INTENTIONS

(Ask all)

GI1. **In the future**, do you intend to gamble WITH REAL MONEY on any of the following activities, either before or after you turn 18 years of age? (Please select one response on each line)

ITEM	Yes, I will before I turn 18	Yes, I will after I turn 18	No, I do not intend to gamble on this in the future
Play pokies or poker machines FOR REAL MONEY			
Bet on horse or greyhound races FOR REAL MONEY			
Buy scratchies, lottery, lotto or pools tickets for your own use FOR REAL MONEY			
Play keno FOR REAL MONEY			
Play bingo or housie FOR REAL MONEY			
Play poker online or in a pub, club or casino FOR REAL MONEY			
Play casino table games such as Blackjack or Roulette (but NOT including poker) FOR REAL MONEY			
Bet on sporting events FOR REAL MONEY (but NOT sweeps, fantasy sports, or esports)			
Bet on esports events FOR REAL MONEY, like CS-GO, League of Legends or DOTA2			
Bet on Fantasy sports games FOR REAL MONEY such as Draftstars			
Informal private betting FOR REAL MONEY like betting on card or dice games, or betting on sports with family or friends.			

PROBLEMATIC GAMBLING

This section is about your behaviour related to gambling in the last 12 months.

Note: 'Remember, gambling includes playing the following activities FOR REAL MONEY: buying lottery, lotto, pools tickets or scratchies; private betting with family or friends; playing pokies, poker or casino table games; betting on sports, racing, esports or fantasy sports; or betting on bingo or keno.'

DSM-IV-MR-J

(Ask all)

DSM1. During the last 12 months, how often have you found yourself thinking about gambling or planning to gamble? (Please select one response)

Never
Once or twice
Sometimes
Often

(Ask rest of DSM-IV-MR-J items only if responses from GB1a include "In the last 7 days", "In the last 4 weeks" or "In the last 12 months" to any item)

DSM2. During the last 12 months, have you needed to gamble with more and more money to get the amount of excitement you want? (Please select one response)

Yes
No

DSM3. During the last 12 months, have you ever spent much more than you planned to on gambling? (Please select one response)

Never
Once or twice
Sometimes
Often

DSM4. During the last 12 months, have you felt bad or fed up when trying to cut down or stop gambling? (Please select one response)

Never
Once or twice
Sometimes
Often
Never tried to cut down

DSM5. During the last 12 months, how often have you gambled to help you to escape from problems or when you are feeling bad? (Please select one response)

Never
Once or twice
Sometimes
Often

DSM6. During the last 12 months, after losing money gambling, have you returned another day to try and win back money you lost? (Please select one response)

Never
Less than half the time
More than half the time
Every time

DSM7. During the last 12 months, has your gambling ever led to lies to your family? (Please select one response)

Never
Once or twice
Sometimes
Often

DSM8. During the last 12 months, have you ever taken money from the following without permission to spend on gambling? If you don't have each source of money below select "Never" for that item

DSM8a. School dinner money or fare money? (Please select one response)
Never
Once or twice
Sometimes
Often

DSM8b. Money from your family? (Please select one response)
Never
Once or twice
Sometimes
Often

DSM8c. Money from outside the family? (Please select one response)
Never
Once or twice
Sometimes
Often

DSM9a. During the last 12 months, has your gambling ever led to arguments with family or friends or others? (Please select one response)
Never
Once or twice
Sometimes
Often

DSM9b. During the last 12 months, has your gambling ever led to missing school, TAFE or work? (Please select one response)
Never
Once or twice
Sometimes
Often

FAMILY GAMBLING

Childhood exposure to gambling

(Ask all)

CE1. The next few questions are about adults in your household, including parents/guardians you have spent time with.

During the time that you've been growing up… (Please select one response on each line)

	More than once a week	About once a week	A few times a month	Once a month or less often	Never
How often did any of the adults in your household gamble?					
(do not ask if previous option = never) How often were you present when any adults in your household gambled?					

(do not ask if first option = never) How often did you PARTICIPATE in gambling with any adults in your household?					

Adult gambling problems in the household

Do not ask if first option at CE1 = never

CE2. During the time that you've been growing up, did any of the adults in your household experience problems with their gambling? This means spending too much money or time on gambling which causes problems for themselves or other people). (Please select one response)

1. No gambling problems
2. Minor gambling problems
3. Moderate gambling problems
4. Serious gambling problems

Parental permissiveness towards gambling

(Ask all)

CE3. How do you think your parents/guardians would feel if you gambled, even once or twice, over the next 12 months? (Please select one response)

1. Strongly disapprove
2. Disapprove
3. Neither approve or disapprove (they wouldn't care or would ignore it)
4. Approve
5. Strongly approve

Parental rules about gambling

(Ask all)

CE4. Which of the following statements best describes your parents'/guardians' approach to you and gambling? (Please select one response)

1. They set strict rules about gambling with no negotiation
2. We discuss and agree rules about gambling which they expect me to follow
3. They don't set rules about gambling, but we discuss the best approach together
4. They don't set rules about gambling and it's not something we talk about

PEER GAMBLING

Peers norms for gambling

(Ask all)

PE2. Do none, some, or most of your friends gamble? (Please select one response)

Remember, gambling includes playing the following activities FOR REAL MONEY: buying lottery, lotto, pools tickets or scratchies; private betting with family or friends; playing pokies, poker or casino table games; betting on sports, racing, esports or fantasy sports; or betting on bingo or keno.

1. None of my friends gamble
2. Some of my friends gamble
3. Most of my friends gamble
4. Don't know

Peer approval of gambling

(Ask all)

PE3. How do your friends feel about someone your age gambling? (Please select one response)

1. Most of my friends approve
2. Some of my friends approve

3. None of my friends approve
4. Don't know / We don't talk about it

Do not ask if PE3=3.

PE4. Do you have any close friends who strongly approve of gambling? (Please select one response)

1. Yes
2. No
3. Don't know / We don't talk about it

GAMBLING ADVERTISING

Exposure to gambling advertising

(Ask all)

GAD1. During the last 12 months how often have you NOTICED gambling adverts, messages or logos in each of the following places? (Please select one response on each line)

	More than once a week	Once a week	A few times a month	Once a month or less often	Never	I don't view this media
In live sports or racing events in a venue (e.g. at football stadiums or on players' shirts or around the grounds)						
On TV during sporting and racing events						
On television, except during sporting and racing events						
On the radio						
In print advertising (e.g. newspapers, magazines)						
On outdoor advertising (e.g. billboards, signage, public transport)						
On online and social media (e.g. websites, Youtube, Facebook, Twitter)						
In direct messages (e.g. personal emails, SMSs, phone calls from operators)						

Emotional responses to gambling advertising

(Ask all)

GAD2. How strongly do you agree or disagree that gambling advertisements make you **feel**….*(Please select one response for each)*

	Strongly disagree	Disagree	Neither agree or disagree'	Agree	Strongly Agree
Excited					
Bored					
Annoyed					
Hopeful					
Happy					
Interested					
Suspicious					
Amused					

Perceived influence of gambling advertising

(Ask all)
GAD3. How strongly do you agree or disagree with each of the following statements?

	Strongly disagree	Disagree	Neither agree or disagree'	Agree	Strongly Agree
1. I am more likely to gamble after seeing a gambling advertisement					
2. Gambling advertisements make me think about gambling in the future					
3. I pay attention to gambling advertisements					
4. Gambling advertisements have increased my knowledge of gambling options					
5. I think more positively about gambling because of gambling advertisements					
6. Knowing the betting odds is part of following sport					
7. Knowing the betting odds makes watching sport more exciting					
8. Betting on sport is normal					

GAMES WITH GAMBLING COMPONENTS

Games have gambling components, which look and play like normal gambling games – for example roulette, poker, pokies and bingo – such as those shown below. They may be free to play, or you may pay to play, but you cannot win real money.

(Ask all)

GSG1. When, if ever, did you last play any of these games with gambling components? (Please select one response on each line)

	In the last 7 days	In the last 4 weeks	In the last 12 months	More than 12 months ago	Never
Games with gambling components on social networking websites (such as Zynga games on Facebook)					
Video games with gambling components (such as Diamond Casino & Resort in the video game Grand Theft Auto V)					
Free demo or practice games on real gambling websites or apps, for example, Mobile Casinos'.					
Gambling-themed apps from an app store (such as bingo, poker, pokies/slots, or roulette that you play on your phone, tablet or computer)					

(Ask if answered "In the last 7 days", "In the last 4 weeks", "In the last 12 months" or "More than 12 months ago" to any item in GSG1)

GSG2. Still thinking about the games with gambling components you have played, where did you play these games? Remember these are games where you cannot win real money. (Please select no or yes on each line)

	No	Yes
Facebook or other social networking websites or apps		
In a video game (such as Grand Theft Auto V)		
Free demo or practice games on real gambling websites or apps		
Another type of app or website		
Somewhere else		

(Ask if answered "In the last 7 days", "In the last 4 weeks", "In the last 12 months" or "More than 12 months ago" to any item in GSG1)

GSG3. Have you ever played any of the following gambling components in games? (Please select no or yes on each line)

	No	Yes
Pokies/slot machines where you cannot win real money		
Poker where you cannot win real money		
Casino games (like Roulette or Blackjack) where you cannot win real money		
Bingo where you cannot win real money		
Keno where you cannot win real money		
Scratchies or lottery games where you cannot win real money		
Wheel spinning where you cannot win real money		
Other gambling where you cannot win real money, specify		

(Ask if answered "In the last 7 days", "In the last 4 weeks", "In the last 12 months" or "More than 12 months ago" to any item in GSG1)

GSG4. At what age did you first play a game with gambling components? If you're unsure, provide your best guess. (Please enter numbers only below)

Age ____ years old

(Ask if answered "In the last 7 days", "In the last 4 weeks" or "In the last 12 months" to any item in GSG1)

GSG5. Where do you MOSTLY play games with gambling components? (Please select one response)

1. At home in my bedroom or other private area
2. At home in areas shared by my family
3. At school
4. At my friend's home(s)
5. When out and about (e.g. on public transport, hanging out, etc)
6. Somewhere else

(Ask if answered "In the last 7 days", "In the last 4 weeks" or "In the last 12 months" to any item in GSG1)

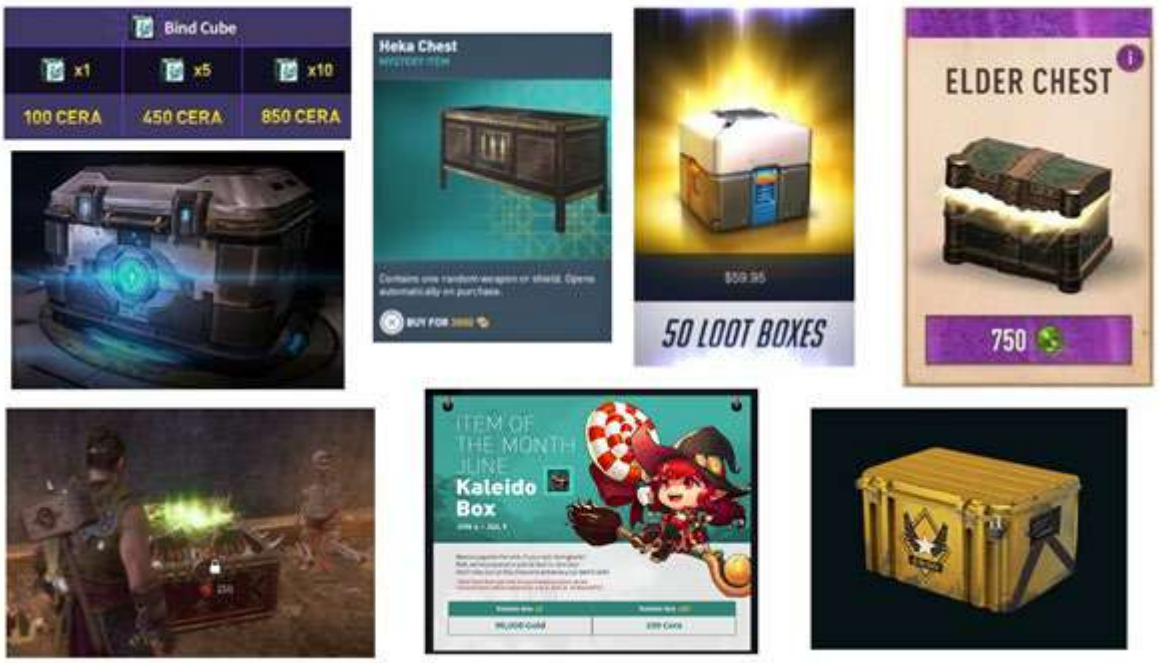
GSG6. In general, about how many hours per week OR per month do you usually spend playing games with gambling components? (Please enter only numbers below)

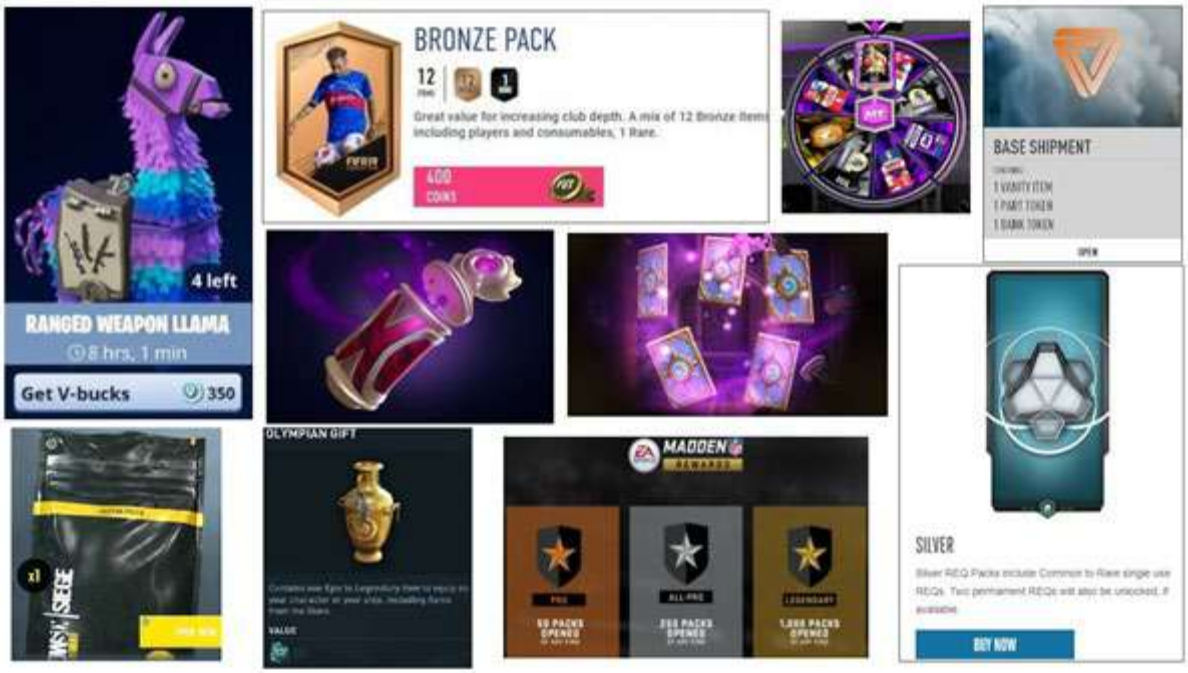
_____ hours per week OR _____ hours per month

LOOT BOXES

Many video games offer loot boxes. Loot boxes are in-game items which can be purchased with real money, in-game currency, or awarded for free. When opened, loot boxes contain a random selection of virtual items (e.g., weapons, cosmetic items known as skins, or in-game currency).

Some loot boxes are shown below. As you can see, they don't always look like a box. They can also appear as chests, crates, caches, packs, cards, etc.





(Ask all)

LB1. When, if ever, did you last obtain a loot box in the following ways? (Please select one response on each line)

ITEM	In the last 7 days	In the last 4 weeks	In the last 12 months	More than 12 months ago	Never
Opened a free loot box during a game					
Paid real money to get a loot box or key					
Used virtual currency that was purchased with real money to get a loot box					

(Ask if answered "In the last 7 days", "In the last 4 weeks", "In the last 12 months" or "More than 12 months ago" to any item in LB1)

LB2. At what age did you first open loot boxes/crates/packs? If you're unsure, provide your best guess. (Please insert only numbers below)

Age ____ years old

(Ask if answered "In the last 7 days", "In the last 4 weeks", "In the last 12 months" or "More than 12 months ago" to any item in LB1)

LB3. Have you bought loot boxes for any of the below reasons? (Please select no or yes on each line)

	No	Yes
To get cosmetic in-game items (skins) within the game you were playing		
To get items to make progress or give a competitive advantage within the game you were playing		
To get virtual in-game currency		

Expenditure on in-game purchases

(Ask if answered "In the last 7 days", "In the last 4 weeks", or "In the last 12 months" to item 2 or 3 in LB1)

EIG1. In a typical month, about how much do you spend on **loot boxes** in games, either directly with money or with in-game currency purchased with money? If you're unsure, please provide your best guess. (Please insert only numbers below)

Note: Do not include free or game-earned loot boxes, regardless of whether you initially paid for the game.

$ _____ per month

(Ask if answered "In the last 7 days", "In the last 4 weeks" or "In the last 12 months" to any item in GSG1)

EIG2. In a typical month, about how much do you spend on **microtransactions, such as to get virtual credits,** in games with gambling components (not including loot boxes)? If you're unsure, please provide your best guess. (Please insert only numbers below)

Note: Do not include free or game-earned loot boxes, regardless of whether you initially paid for the game.

$ _____ per month

BETTING WITH IN-GAME ITEMS

Video games come with a number of in-game items which can be traded or used as virtual currency.

(Ask all)

IGI1. When, if ever, did you last use in-game items for betting in the following ways? (Please select one response on each line)

ITEM	In the last 7 days	In the last 4 weeks	In the last 12 months	More than 12 months ago	Never
Bet with in-game items on the outcome of a competitive video gaming contest (esports betting)					
Bet on another site with in-game items ("skin betting") on a game of chance or skill (e.g., roulette, coin flip, jackpot)					
Bet with in-game items on the outcome of other competitive events or sports (excluding esports)					
Used in-game items to bet privately with friends					

(Ask if answered "In the last 7 days", "In the last 4 weeks", "In the last 12 months" or "More than 12 months ago" to any item in IGI)

IGI2. At what age did you first bet with in-game items? If you're unsure, provide your best guess. (Please insert only numbers below)

Age____ years old

PARTICIPATION IN OTHER GAMING

(Ask all)

POG1. When, if ever, did you last do any of the following activities? (Please select one response on each line)

Note: If you don't know what one of them is, select "Never " for that item.

ITEM	In the last 7 days	In the last 4 weeks	In the last 12 months	More than 12 months ago	Never
Played an esport video game (a video game that can be played in professional competitions)					
Played a video game (excluding esports)					
Watched an esports event (online or in person)					
Competed in a professional esports competition yourself					
Entered into a free fantasy sports or daily fantasy sports competition (one with no entry fee), for example, NFL Fantasy Football'.					

(Ask if "In the last 7 days", "In the last 4 weeks" or "In the last 12 months" to POG1)

POG2. About how many hours per week OR per month do you usually spend on gaming? (Please insert only numbers below)

_____ hours per week OR _____ hours per month

PROBLEMATIC GAMING

Internet Gaming Disorder

(Ask if answered "in the last 7 days", "In the last 4 weeks" or "In the last 12 months" to Item 1 in POG1)

IGD1. These questions will ask you about your gaming activity during the past 12 months. They refer to all types of gaming that you do, not just games with gambling components. (Please select one response on each line)

During the last 12 months:

	No	Yes
Did you spend a lot of time thinking about games even when you were not playing, or planning when you could play next?		
Did you feel restless, irritable, moody, angry, anxious or sad when attempting to cut down or stop gaming, or when you were unable to play?		
Did you feel the need to play for increasing amounts of time, play more exciting games, or use more powerful equipment to get the same amount of excitement you used to get?		
Did you feel that you should play less, but were unable to cut back on the amount of time you spent playing games?		
Did you lose interest in or reduce participation in other recreational activities (hobbies, meetings with friends) due to gaming?		

Did you continue to play games even though you were aware of negative consequences, such as not getting enough sleep, being late to school/work, spending too much money, having arguments with others, or neglecting important duties?		
Did you lie to family, friends or others about how much you game, or try to keep your family or friends from knowing how much you game?		
Did you game to escape from or forget about personal problems, or to relieve uncomfortable feelings such as guilt, anxiety, helplessness or depression?		
Did you risk or lose significant relationships, or job, educational or career opportunities because of gaming?		

PEER FACTORS

Peer group belonging

(Ask all)

PG1. How strongly do you feel you belong to the following? (Please select one response)

1. A friendship group
2. An online community

scale ranging from 1 (*no belonging at all*) to 10 (*very strong belonging*).

MEDIA DEVICES AND USAGE

Access to devices

(Ask all)

MD1. Which of these devices are available for you to use within your household? (Please select no or yes on each line)

	No	Yes
Desktop computer		
Laptop computer		
Smartphone		
Games console		
iPad or tablet		

Display responses of MD1

MD2. Which of these devices are for your use only? (Please select no or yes on each line)

	No	Yes
Desktop computer		
Laptop computer		
Smartphone		
Games console		
iPad or tablet		

Display responses of MD1

MD3. Which of these devices are available for you to use in your bedroom? (Please select no or yes on each line)

	No	Yes
Desktop computer		
Laptop computer		
Smartphone		
Games console		
iPad or tablet		

Parental regulation of media usage

(Ask all)

MD4. Have your parents talked to you about being safe online (cybersafety)? (Please select one response)

1. Yes
2. No

Please answer each question below. (Please select one response on each line)

	Never (0)	Rarely (1)	Sometimes (2)	Most of the time (3)	Always (4)
MD5. Your parents set rules and limits for online content					
MD6. Your parents set rules and limits for the length of time spent online					
MD7. Your parents set rules and limits for having media devices in the bedroom					
MD8. Your parents physically monitor your media use					
MD9. Your parents online monitor your media use					

PSYCHOLOGICAL CHARACTERISTICS

Wellbeing

(Ask all)

W1. How happy are you with your life as a whole?

Scale 0-10. End points: 0 - Very sad; 5 - Not happy or sad; 10 - Very happy

Impulsivity

(Ask all)

BIS. For each of the following statements, select the response which indicates how well it describes you. (Please select one response on each line)

	Rarely/ never	Occasionally	Often	Always
I plan tasks carefully				
I do things without thinking				
I don't "pay attention"				
I am self-controlled				
I concentrate easily				
I am a careful thinker				
I say things without thinking				
I do things with little planning (e.g. I act on the spur of the moment)				

DEMOGRAPHICS

D1. What is the main language that you speak at home? (Please select one response)

1. English
2. A language other than English (please specify)

D2. For statistical purposes, are you of Aboriginal or Torres Strait Islander origin? (Please select one response)

1. No, not Aboriginal or Torres Strait Islander
2. Yes, Aboriginal
3. Yes, Torres Strait Islander
4. Yes, both Aboriginal and Torres Strait Islander
5. Prefer not to say

D3. Which of these best describes your parents' living situation? (Please select one response)

1. Living together
2. Separated or divorced
3. Have never lived together
4. Something else

D4. Are you currently in school? (Please select one response)

1. Yes (continue)
2. No (skip to D6 highest level completed)

(Ask if Yes to D5)

D5. What year are you in at school? (Please select one response)

1. Year 5 or below
2. Year 6
3. Year 7
4. Year 8
5. Year 9
6. Year 10
7. Year 11
8. Year 12

(Ask if No to D4)

D6. What is the highest level of education that you have completed? (Please select one response)

1. Year 5 or less
2. Year 6
3. Year 7
4. Year 8
5. Year 9
6. Year 10
7. Year 11
8. Year 12
9. Completed trade or technical certificate or diploma

(Ask all)

D7. Do you currently have a paid job? (Please select one response)

1. Yes
2. No

(Ask if Yes to D8)

D8. Is this job (Please select one response)

1. Full-time
2. Part-time or casual

END STATEMENT

Thank you for completing this survey. We greatly appreciate it! We would like to invite you to be part of a folllow-up study and enter the prize draw if you wish. Please follow the instructions below.

OPT IN TO BE INVITED TO A FOLLOW-UP STUDY

The NSW Office of Responsible Gambling is interested in conducting a follow-up survey in a year or so, to see how video gaming and gambling among young people in NSW is changing. The follow-up survey would also offer prize draws.

Would you like to be invited to participate in a follow-up survey?

- Yes
- No

[If yes] Please answer the questions below so we can create a code based on your name and date that you were born, so that your current answers can be linked to your future answers. We do not ask you to provide your full name so your survey answers will still be anonymous.

FU1. What are the first TWO letters of your FIRST name? (For example, if your first name is Jane, you would insert JA)

_ _ [limit text entry to 2 character spaces, letters only]

FU2. What are the first TWO letters of your LAST name (surname)? (For example if your last name is Smith, you would insert SM)

_ _ [limit text entry to 2 character spaces, letters only]

FU3. On what DAY of the month were you born? (For example, if your birthday is 25th October, then you would answer 25.)

_ _ [limit text entry to 2 character spaces, numeric only]

Please click on the link below and enter your (or your parent's/guardian's) email address so you can be invited into a follow-up survey. The email address you provide will NOT be linked to your survey responses. If you do not wish to provide an email address to be invited to a follow-up survey, that is also fine.

[Separate survey] BE INVITED TO A FOLLOW-UP SURVEY

Please enter your (or your parent's/guardian's) email address below so you can be invited into a follow-up survey. The email address you provide will NOT be linked to your survey responses.

Please use an email address that you are still likely to have in a few years time, such as Gmail.

Email address _____

Please confirm email address _____

OPTIONAL

If you wish, you can also provide a mobile phone number as a back-up form of contact information. The mobile phone number you provide will NOT be linked to your survey responses and would only be used to send an SMS.

Mobile phone number _____

Please confirm mobile phone number _____

Please click SUBMIT

[Once respondent has submitted their email address to be invited to a follow-up survey, link back to previous page of main survey so they can enter the prize draw if they wish]

++++++++++++++++

SUBMIT YOUR SURVEY RESPONSES

Please SUBMIT your survey responses here. This will take you to a separate page where you can enter the prize draw if you wish. [automatically link to separate page for prize draw]

If you require any further information or have any questions about participation, please contact Nerilee Hing on n.hing@cqu.edu.au.

If you experience discomfort at any point during the survey, you can contact **Gambling Help on 1800 858 858 or www.gamblinghelponline.org.au** or **Kids Helpline on 1800 551 800 or www.kidshelpline.com.au**. These are free and confidential telephone/online help services that operate 24 hours a day, 7 days a week.

[Separate survey] PRIZE DRAW

To thank you for your time, you can enter into a prize draw to win one of 200 electronic gift vouchers, each valued at $100. If you win a prize, the voucher will be emailed to you.

If you would like to enter the prize draw, please enter your (or your parent's/guardian's) email address below. The email address you provide will NOT be linked to your survey responses. If you do not wish to provide an email address to enter the prize draw, that is also fine.

Email address _____

Please confirm email address _____

Please click SUBMIT

Appendix F: Table of themes, sub-themes and quotes from the focus groups

Youth gambling

Theme	Sub-theme	Quotes
The nature of youth participation in gambling	Youth participation in online gambling	'*If you want to get on that website, you can falsify your age so easily. They just ask you for your age, and you scroll down until you're 18. Whenever the age is 18 from the… it's not very easy to police, because they can't use your computer to like, go, "Oh, this is this person. They're not 18", because it's just random…*' – Male, aged 15 to 17, North Sydney. '*I know a couple of kids at school that like pay 18 year olds, or people they know they are above the legal age so they'll bet for them. And I'll give them money to put a bet on for them. But usually it's like minimal amounts, like $5, $10…Pretty much just footy games. It'd never be pokies or anything like that because kids aren't really into that but like footy games or even something that they think that they're going to win. Like for a horse race or something*.' – Male, aged 12 to 14, Paramatta. '*I had one (online sports betting account), that I set up, yeah it was fake… I just set it up that day I was there, and now it'd be up. I mean, we can in five minutes…I already had an email account on there, and the wrong date of birth...* '– Male, Indigenous group.
	Youth participation in land-based gambling	'*They probably just use their brother's ID… All my mates are bogans, they just go down to the local pub. They don't bother to check*.' – Male, Indigenous group. '*My mate won… all right, here's how it got bad for him. He spent, he's the one, the biggest one that I know spent a lot of money. He played one night, won like $370 profit. Then he went back for the next few nights and the next few weekends and He slowed down, but he still. He still goes in. He went into the ones at Circular Quay when I was him…in Circular Quay…There's pokies everywhere…No places care about ID*.' – Male, Indigenous group. '*Some of friends do Keno, like every now and then, with their parents. Like when they all go to dinner or something*.' – Male, age 12 to 14, Parramatta. '*Normally if our family is like at the club or something like that for dinner and we'll get like a sheet of Keno or something for everyone, or mum normally gets it so my little brother can be occupied*

		and focus on something and he doesn't go and cause panic somewhere else.' – Female, aged 5-17, Coffs Harbour. '*The only thing is occasionally on Melbourne Cup, I'll tell my mum, "I want to bet on a horse", but that's about it*,' – Female, aged 12 to 14, Newcastle. '*Dad put a bet on for like, for horses in the Melbourne Cup. We'd like, pick our horse or whatever, and we won about 600 bucks the other year*.' – Female, aged 12 to 14, Newcastle. '*My brother won $50 once which made him want to get more scratchies, like Dad can we get like more stuff like that – which is probably not a good thing. So Dad had to explain it, it's like a one off, you don't keep doing it, you take your money, what happens if you give it back and buy more scratchies then you can lose it*.' – Female, aged 15 to 17, Coffs Harbour. '*My Dad and Mum when we go and visit our uncle, because they have greyhounds, so we watch the greyhounds race and dad and I have little bets on dogs.'*- Female, aged 15 to 17, Coffs Harbour. '*I've bet once, my auntie set it up, and she told me to pick a number out of all the horses, me and my cousin. We both picked a number. I got the one that came second, so I got like, $60*.' – Male, Indigenous group.
	Youth participation in private gambling among friends/family	'*I'd do it as in maybe if it's like a final or something, or maybe if it's like an international game like the World Cup… if you go for a specific team it's like your two teams against each other, then you could do that…it's like $2 for whoever wins.'* – Male, age 12-14, Coffs Harbour. '*Some of my friends are big netballers, so if they were like really pumped about the grand final or something I might - and they were betting with each other, I might put in, you know, a dollar or whatever.*' – Female, aged 12-14, Coffs Harbour. '*If me and my mates can't get the footy pitch at lunch, sometimes we'll just go sit down and talk; but say, a couple times a fortnight, we'd… My friend's always got a pack of cards, for some reason; so we'll just bet food on blackjack*,' – Male, aged 15-17, North Sydney. '*In NFL fantasy football, you just get points. Me and my friends put down group money, so this season we were putting down 25 bucks, and there's six of us; so whoever wins at the end of this season gets all that money.*' – Male, aged 12-14, Newcastle. '*Basically my family gets together for Chinese New Year…and we hoard coins, like gold coins or whatever, and... We play cards, or any other game, and we just bet money. It's only like an annual*

		thing…it's a family thing… Probably per round, we'll probably bet around 50 cents, maybe.' – Male, Chinese Group, Cabramatta.
Youth exposure to gambling	Hearing anecdotal stories about gambling	"*As his friends started to stop, he kept going because he was still addicted to it. He started losing more and more money, and he said 'I need to win it back because it's such a bad feeling in your head. I've lost this amount of money, which I could have saved, I need to win it back somehow, the easiest way to do that is through gambling.' Slowly he started losing more, and more money and eventually he lost his house*.' – Male, Chinese group, Cabramatta.
	Witnessing adults gambling	'*He got like really addicted to it and spent like heaps of money on his computer, gambling with real money. He got so carried away, he just wouldn't stop…he was earlier twenties or something around that age. He just started getting his own money and stuff like that and he just uses it on gambling*.' – Female, aged 15-17, Coffs Harbour. '*My mate won… all right, here's how it got bad for him. He spent, he's the one, the biggest one that I know spent a lot of money. He played one night, won like $370 profit… He slowed down, but he still. He still goes in...*' – Male, Indigenous group. '*My uncle, my brother, my dad, and my mum probably all buy lottery tickets here and there. My brother goes to pokies. He's only turned 18 recently. He's probably 19 in September actually, so he's still in that age where he thinks he can bet on things on Sportsbet, and it won't really matter, because it's just five dollars, and just 10 dollars, or just… but it adds up*.' – Female, aged 15-17, North Sydney. **'***Our uncle does do sports gambling and my daddy does do lotto and stuff but only when he can, when he feels like it. It's not all the time. Our family, especially the younger ones, they're in their 20's and stuff they go to the Pokies and gamble, have a beer and stuff with their mates, that's like socializing basically with them*.' - Male, Indigenous group in Blacktown. '*I know my boyfriend sometimes goes to the pokies, but he's 18, and he'll put in… Sometimes even on his lunchbreak, he'll put in 20 dollars, and then win 200…. So then that's like… People think, "Oh, that's great", and then I think there's another sort of mental tally, where you think, "Oh, well if I won the 200, I can still put in more, because that's my winning money*.' – Female, aged 15-17, North Sydney.
Factors reported to influence youth gambling attitudes and behaviours	Influence of simulated gambling: teaches, normalises and potentially entices young people to gamble	*There's like these all different kind of levels of the gambling, and stepping stones to that gambling, and it's through… it's not directly gambling, like push this button and you're getting*…' – Female, aged 15-17, North Sydney.

		'*If you grow up with playing games and being on your phone you are probably more likely to gamble or if you don't understand what happens and what gambling is and stuff*.'- Female, aged 15-17, Coffs Harbour. *'Because they're used to winning in-game and they maybe don't know what it's actually like playing in real life…They might think they're lucky.*' – Male, aged 15-17, North Sydney.
	Influence of media and advertising: gambling advertising may normalise gambling behaviour, and increase intentions to gamble.	'*It has been very normalised, even at a young age, just seeing ads of it on TV and stuff, so it's sort of normalised it. I mean, at the end of the day, it's just where life takes you*.' – Female, aged 15-17, North Sydney. *'I think probably seeing the ads for it, and your parents being heavy gamblers and stuff would probably… that contributes, and normalises it for you'* – Female, aged 15-17, North Sydney. *'I think I definitely will, because… especially… probably just the casino and that, because you see it everywhere in movies and stuff, and it just looks really cool. There's just something about… even in like, Star Wars, there's that scene in Star Wars or something, where it's just the casino. It's really cool. Also, it kind of… I guess, like, to the extent of which I would depends on how much money I have. Because I'm notoriously bad with it, so I don't really… I don't really know what to spend it on, so I'm just sort of like, "Oh, well, I'm not going to buy anything else; I might as well just bet it, and see if I win anything*.' – Male, aged 15-17, North Sydney.
	Influence of friends and peer pressure: a sense of peer group belonging, peer pressure and friends gambling may rationalise gambling	'*I feel like when you're in a group, especially if like your mates are going to play something on the pokies or stuff like that, you kind of like go along with them anyway. Whether you do something or not, you're in the environment and it's like oh well I might just put that on, I've got a couple of dollars in my pocket I might just put that in, which then can lead to a lot more stuff*.' – Female, aged 15-17, Coffs Harbour. '*Slot machines, or casinos and stuff. I think that's… Like, especially when you go with friends or something. You know… like, you're willingly thinking like, "Oh, yeah, I'm not going to get this money back." It's just like… If you think it was just the money you spent, just for like, fun that day; and then you just willingly go*.' – Female, aged 15-17, North Sydney. '*If you're going to a party or something with your friends, it might be at the casino and then you can't do anything else except gamble there so*…' – Male, aged 12-14, North Sydney.
	Influence of family: parents, grandparents, and older siblings' participation in	'*Genetics. Like, if your parents gamble, like heavy gamblers, you would be more inclined to gamble, because it's just the norm for you*.' – Male, aged 15-17, North Sydney.

	gambling, family's non participation in gambling	'*Since my sister worked here, she worked in gaming, she just said how sad some people were, and all the stuff they were going through. So, I think I understand why people do it, but also I wouldn't do it*.' – Male, aged 15-17, Dubbo.
	Psychological influences: self-control, vulnerable (to addiction)	'*I have no self-control. Whatsoever. I, it's just, I've had to come to the realisation that if I even sort of step foot in a casino and, you know, the first bit of money I put in, I just know I don't have that restraint that a lot of people do sort of, to pull them back. I'd just get sucked into it so easily and I've been warned especially by my parents because they know I have an addictive personality, to stay away from all gambling. I, obviously, you know, buying packs is one thing, but, you know, pokies and betting in casinos and other, and yeah just overall, I'm not really interested in that sort of thing, yeah*.' – Male, Aged 12 to 14, Newcastle.

Youth simulated gambling

Theme	Sub-theme	Quotes
The nature of youth participation in simulated gambling	Easy access to gambling-like activities: young people can access a range of simulated gambling activities (virtual casino, spinning wheel etc.).	'*Like in a game called Red Dead Redemption, you're a cowboy, and then there's a bunch of gambling in it … it's supposed to be really interactive and stuff; so you just go, and you can just play cards, and then you can win money in the game*.' – Male, age 15-17, North Sydney. '*Sometimes it will be every time you die…or after you do something, if you win a level…you get a spin …'* – Female, aged 15 to 17, North Sydney. '*Or like, after you do something, if you win a level, it would be like, "Here, here's your reward." And you get a spin of the…*' – Male, aged 15-17, North Sydney. '*Another game like that is Grand Theft Auto. There was just another update for it where a casino came in… there's a lot of people that… they're not spending money to go in; it's more that whatever money they've earnt from doing a challenge or something, they'll just spend it on that*.' – Male, age 15-17, North Sydney. '*You can bet on, it's not real horse racing, but it's like a screen. There's a lot of casino machines and there's a roulette wheel. It doesn't cost anything to enter it, but you can win fifty thousand dollars or you can win a car. There's a lot of different types of things you can win, but there's a proper casino you go into*.' – Male, aged 12-14, Paramatta.

		‘*Often with games you can find daily bonuses sort of things, where it’s like, “Spin this wheel and it will give you a free thing”, and you get a free one of those. You get a free opportunity every day, or something.’* – Female, aged 15-17, North Sydney. ‘*You just spin it every day, and you just get… You can get a car. Or there’s like, horse racing and stuff, and you just… You just see all the horses, and you just bet on it, and then they race, and you just get the money, or you lose the money.*’ – Male, aged 12-14, North Sydney. *And then you have the opportunity to spin again, and that will sort of… the spin again option takes money from the in-game currency. Then you can also buy in-game currency with real money. So the idea is you might just keep spinning until you have no in-game currency, and then start buying in-game currency to keep the sort of lottery going*.’ – Female, aged 15-17, North Sydney. ‘There’s *a few games that if you spin a wheel, and you do get the one per cent chance, a lot of people go back to that game, because they did; and they’ll keep on going … to get the one per cent chance of winning again, but it never happens*.’ – Male, aged 15-17, North Sydney.’ ‘*Where the free spin option, the thing is, it’s very unlikely that they’ll have a free space where you win nothing. Sometimes you’ll get… you’ll land on a “spin again” sort of option. You have to win something. There has to be… you know, there’s always a sense of gratification for it*.’ – Female, aged 15-17, North Sydney. ‘*In a game I used to play, you could like, put game money… like, you would earn money from the game, and then you could put that game money back in, to like, slot machines*.’ – Male, aged 12-14, Newcastle.
	Frequent engagement with simulated gambling: part of the game – need to do it to proceed	‘*My brother plays like this game on like his iPad, it’s like this game called Flip Diving, and there’s like a daily spin every day. You like spin it and it costs like 400 coins of gold*.’ – Male, aged 12 to 14, Dubbo. ‘*The types of games that I play often have like the daily spin thing where you like get a reward or something, but like it doesn’t cost anything*.’ – Female, aged 12 to 14, Dubbo. *‘I feel like most games have it, like even the educational fake games that I play, they have the spin the wheel for gold or for outfits or whatever. So even like, you know, stuff that’s meant to be played in schools still has that theme in it.*’ – Female, aged 12-14, Coffs Harbour.
	Ease of getting around age verification for gaming and	‘*You just say - Yes, I am 18’*. – Male, aged 15-17 North Sydney. ‘*When they put your date of birth in, you just say 19 whatever*.’ – Female, aged 12-14, North Sydney,

	online payment: easy to fake your age	'*Whatever makes you over 18, because that means you can get any game*.' – Male, 12-14, North Sydney. '*Just put a different year that you were born in*.' – Male, aged 12-14, North Sydney. '*It is, but like, really there's nothing enforcing that, especially with online, there's nowhere like, you can like, make up your own identity, like, I'm sure even with iPhones like, if, like, people could just like lie about their age and like, there's nothing really to stop it, so especially with Apps as well*.' – Male, aged 15-17, Paramatta. '*If you want to get on that website, you can falsify your age so easily… They just ask you for your age, and you scroll down until you're 18. … it's not very easy to police, because they can't use your computer to like, go, "Oh, this is this person. They're not 18", because it's just random*'. – Male, Age 15-17, North Sydney. '*A lot of the online ones that you buy, it's like you just have to click a thing, like, "Yes, I am over 15." I had a PayPal account when I was 16. You're supposed to be 18, but you just say, "Yes, I am 18."* ' '*You just use a PayPal account…You just need to be 18 to get an account, which you can falsify easily*.' - Male, age 15-17, North Sydney. '*There might be sort of kid-safe settings and third-party downloadable content that would stop that, or lock that, so that depending on who's using the device, that wouldn't be able to happen...But you know, from a base standpoint, there's no restriction…And sometimes kids can even trick their parents into just putting their fingerprint on. Because I know my little brother did that to my mum, and then he racked up like, 50 dollars' worth on…'* – Female, aged 15-17, North Sydney.
Youth attitudes towards simulated gambling	Distorting perceived odds of winning	'*It sort of relates to that idea of escapism to some degree as well, because you're, you know… Yeah, as you were saying, you're putting actual real-life money, and therefore actual real-life effort into this sort of… Thing that doesn't actually exist*' – Female, aged 15-17, North Sydney. '*Video games give you more of a chance than real life does so it's like they have higher odds, like it's in your favour when you're playing a game because they want you to keep on playing the game, but if you keep on losing then you're not going to want to play the game but in real life it doesn't work like that*.' – Male, aged 15-17, Newcastle.
	Potential negative impacts on the gaming experience: some participants find it boring but have to do it to proceed	'*Because it's boring, they'd rather play the game instead of spending money…like in the game there are missions that you can earn just way more money. And then people just do the missions*.' – Male, Indigenous group.

		'*Winning a car in GTA instead of just winning clothes every single time. I stopped playing because of that… I only win clothes or like $10 in the thing and it's not worth it'* – Male, aged 15-17, North Sydney.
	Cynicism towards revenue generation:	'*You die again and then you can spend even more to go again, but it keeps getting more expensive'* – Male, age 15-17, North Sydney. *'Some people get really frustrated with the level and just buy it because it's only $2 but that keeps adding up*.' – Male, aged 15-17, North Sydney. '*The people that makes the games do it on purpose because they know that once they start playing the game that they'll send it to other people to get more and then it'll keep on going, increasing the popularity of the game*.' – Male, aged 15 to 17, Newcastle. '*They didn't give us the money back either. On the princess game, there's an ATM where you can purchase like gems and coins and because the credit card was already linked to the tablet, when she just pressed buy and just purchased it, it was like $100 worth of coins and gems. It wasn't the best for my mum, but at least it got all the cool stuff in the game, it was anything you want*'- Female, aged 15-17, Coffs Harbour. '*You could have a few turns on the slot machine or something and then you need to buy them with the in-game money which costs like actual money so maybe they're making money from that...they could cost in-game money and then you have to buy that in-game money with real money*.' – Female, aged 12-14, North Sydney. '*On like 8 Ball Pool and stuff like that you can get a free spin and earn money or boxes or stuff like that. Then they give you an option afterwards to pay $1.99 or something like that and instead of saying like 50 coins it will be like 5,000 coins or a lot more higher stakes to make you want to re-spin it now costs money*.' – Female, aged 15-17, Coffs Harbour. '*It's fun when you use the money in the game but then I don't like when they start like asking for real money. They'll say, you need more coins, like more coins and stuff like that*.' –Female, aged 15-17, Coffs Harbour. 'Y*ou use the money, your real money to buy currency in the game which would normally be zero if you weren't spending, oh well not zero but a low amount if you weren't spending any money externally and then you get the currency in the game*...' – Male, aged 15-17, Paramatta. '*Some things give you options to watch an ad, and then but most of the time it's if you pay them money, they won't give you the ad option*.' – Female, aged 15-17, North Sydney.

		'*Especially for free apps. Because usually free apps only have two sources of revenue, which is the ads and the dodgy in-game purchases*.' – Male, aged 15-17, North Sydney.
	savviness of the gaming industry	'*Or if the game is restricted or something you can pay to get a better version of the game and they'll show you like shorts. If you pay this money you get to unlock this and this…More levels or something…You can only go so far without paying…On the ads before you buy the game they show you all of this good stuff like what the game is like and then you get onto the game and you can't go this far without paying this money*.' – Female, aged 15-17, Coffs Harbour. '*You can work your way up and slowly gain your way up and get the stuff within the period of time that it's still out or you can just buy it straight up and get everything at the start and not have to worry about how well you play…If they want the good stuff and then they're good, it's just so easy to buy it… Cosmetics, skins, wraps'* – Male, aged 12-14, North Sydney. '*But for a whole random example… It's a bit more… bit better would be Overwatch, because they use a lot of techniques in them, and it's a whole incentive getting skins for your heroes, while a lot of them are random, duplicates, and are even limited time...Basically just saying, "Hey. Buy this now, or you're never going to get it again…And then 12 months later, they release it again*.' – Male, aged 15-17, Dubbo.
Youth attitudes and behaviours relating to skins	How to acquire skins: mostly using money (real money or in-game currency); default skins are not valued	'*So basically, League of Legends, obviously is a really popular game in my school. In that game, there are transactions, like the skins for example. So you have characters like let's say like a hundred-something characters in the game, and each character has different sets of skins that makes them look different but people have to use real money to buy it*.' - Male, Chinese group in Cabramatta. *'I think ultimately the first step is on cash payment, like actual money because that then translates to a currency in the game, so it can be points, it can be coins, in the case of Fortnite V bucks, and that currency is then used to buy the skins, or if not the skins; actually, Fortnite is like, one of the few games that doesn't have like, a loot box. You just buy the skins directly, and so, but other games like FIFA you buy the actual packs or like the loot boxes and then that gets you, sort of the place*.' – Male, aged 12-14, Paramatta. '*My brother, he used to be really addicted to Fortnite and he would be constantly buying skins and stuff but it was off mum and dad's credit card … one transaction was over $1,000 so he owes them a lot of money*' – Female, age 15 to 17, Coffs Harbour. '*So people in my school end up spending maybe $100 to $500 like over the years that they've played, to buy and collect these skins and stuff*.' – Male, Chinese group, Cabramatta.

	Motivations for acquiring skins: In-game status and peer pressure, social desirability, uniqueness	'*I also remember if you say you got a skin really early on in the game, it was only available in that time…everyone would go, "You've got this skin, you must have been playing for a really long time, so you must be good*'. – Male, aged 15-17, North Sydney. *'Like if someone is playing with a default skin then everyone will think that you're just a beginner*.' – Female, Chinese group in Cabramatta. '*Like Fortnite, he's got that skin and that guy is so good, look at the skin he's got, yeah like the accessories and the stuff that can determine how high up you are*.' – Female, aged 15-17, Coffs Harbour. '*You can tell like someone has played it for longer is better because they have more stuff. You can tell someone that has just started because they don't have anything*.' – Female, aged 15-17, Coffs Harbour. '*I don't but I know people in my grade who do because there's a lot of peer pressure and people are just like, "Oh, you should buy it because I have it. If you don't, then you're weird and I don't like you*.' - Female, age 12 to 14, North Sydney. *'It's just to make you look fancy and it's a way for people to gloat online saying like "Oh yeah, I had more skins than you" and it's a way of showing off who has more money*.' – Male, aged 15-17, Newcastle. '*On Fortnite not long ago they were capitalising on, like, name culture and all that kind of thing. Like, a couple of months ago there was this whole thing going on about Keanu Reeves, this actor, everyone was obsessed with him and then they released a skin of Keanu Reeves, not that long ago and it didn't do anything but it was a Keanu Reeves skin so everyone was like, I got to get this of Keanu Reeves, it was great*.' – Female, aged 15-17, Paramatta. *'I hate to bring in the example of Fortnite here, but, it is like, such, it is a prime example of sort of like, everything we're talking about because like, for an example, they only release a skin for when you buy a phone, which is like a thousand dollars, they release a specific skin when you buy that phone. So, only people who have bought, I think it was like, the newest Samsung, they were the only people in the game who had that. You obviously stand out, but, Fortnite has, like, the actual game stated that it's only cosmetic and you don't gain any competitive advantage over the other players. So, it's only for cosmetics, it's only for aesthetics*.' – Male, aged 15-17, Paramatta. *'I reckon a lot of it's to be like, unique, like, you're all playing this same game and like, everyone has the same goals but to differentiate yourself from each other, you want to like, you know, be cool, you know, have like different abilities even if it's just cosmetic, like you still, want to like, be different from everyone else and like that.*' – Male, aged 15-17, Paramatta.

		'*Cause some games, like Fortnite, it's just completely cosmetic, like it doesn't change your abilities or anything. But like Apex Legend does, like it's kind of the same sort of thing, but like different ones have different powers or whatever, so like you could pay money to get a really good one*.' – Male, aged 12-14, Coffs Harbour. '*In Destiny I do. You can buy helmets; like, different levels of helmets, different levels of chest pieces, different levels of boots, different levels of weapons; and some of them are just cool skins on it, like cool decorative stuff; but sometimes it is like, actually practical… practically better. So, say there's two different assault rifles, one is more powerful than the other; but you can only get this one through loot boxes. This one is the kind of base one that you have...I remember in Advanced Warfare, Call of Duty, you could get upgrades to weapons, but they were skins that also had upgrades to them*.' – Male, aged 15-17, Dubbo.
	Varying attitudes towards: more prevalent among younger participants – some older participants consider skins pointless	*'Well, it depends. I don't really play games like that, 'cause they're pointless. If you're rich then you'll probably win*.' – Male, aged 12-14, Coffs Harbour. '*Yeah but I don't think other people would know that though. You might feel that you'll know if you've earned it or not but other people will just see it as they must be great. They probably don't think, oh they paid the money*.' – Female: aged 15-17, Coffs Harbour. '*Skins change as you level up anyway, so at level five your bug goes from a baby to a kid and then at level ten it goes to teenager, then at level 15 it goes to an adult, then at level 20 it goes to like an older adult, and then there's also like you can buy a Christmas bug or whatever, but you don't 'cause it's like super expensive and you don't bother 'cause it doesn't change anything*.' – Female, aged 12-14, Coffs Harbour. *'It's proven, like, since early 2000s that people like the idea of having this skin, because it shows a status*.' – Female, aged 15-17, North Sydney. '*I don't really play games like that, 'cos they're pointless. If you're rich then you'll probably win*.' – Male, aged 12 to 14, Coffs Harbour. '*I bought skins on Fortnite the first couple of seasons, and then I stopped. Now I don't even use it, I don't even know what to do with it*.' – Male, Indigenous group.
	Skin betting and trading**:** rules vary between games; could be done on external platforms; no age verification reported	'*It's always… There's dances, and pickaxes, and gliders and stuff, but we never bet with skins, because you can't… If you have a skin in your locker, you can't give it to someone. You have to buy the exact same skin, and then give it to them. Because if you already have it, you can't press Buy as a gift, because it makes you buy the game. So you can't gift the skin that you already have in your locker*.' – Male, aged 12-14, Newcastle.

		'*You could in CS:GO. You could do a trade-off. So like, you'd put it in, and you'd do that, and you could maybe get something higher, or just lose it*.' – Male, aged 15 to 17, North Sydney. *'Like, once I was playing like, two years ago, I think it is for like, I can't even remember how it works, it's like, you get the skin and like you deposit the skins and then sort of if it lands on your number, oh I don't know, it's like a roulette type of thing. If it lands on, like, and there's odds as well, so like, I guess it is gambling. There's like odds and if it like, yeah there's odds of you winning and if it lands on like, a certain number you win, like, more than you put in*.' – Male, aged 15-17, Paramatta. '*They use the gambling site, because it's the only free option to get them (skins) … Otherwise you have to pay stupid amounts for certain things*.' – Male, 15-17, North Sydney. '*There's external websites that allow skins trading because it's not, it doesn't happen in the actual game. And these are the same sites that also provide a platform for gambling'* – Male, aged 15 to 17, Paramatta. '*So it's like a platform where you download the App, and then those games belong to that sort of platform and through Steam players are allowed to trade skins from the different games*' – Male, aged 15 to 17, Paramatta. '*where there's a lot of rare skins you can get for your weapons, which are extremely valuable…It's like, there's hundreds of sites, and basically you can roll and sell them off*.' – Male, aged 15 to 17, Dubbo. '*Cause when I played Fortnite, I would like, I would buy a skin and then I didn't like it, and then my mate would buy a skin that he didn't like, and then I'd trade it to him and he'd trade it back to me, or like yeah, get it for him for his birthday or something*.' – Male, aged 12-14, Coffs Harbour.
Youth attitudes and behaviours relating to loot boxes	Obtaining loot boxes: considered a 'surprise' and may come with 'decent' items; can be expensive	'*You can buy this character for 10 dollars, or you can open a loot box to have the chance to unlock them. …Basically, you can unlock them in a loot box, or you could spend 40 hours of gameplay for one hero*.' – Male, aged 15 to 17, Dubbo. '*And a lot of the crates vary in price. They're like, two dollars, 10 dollars, 15 dollars. If you buy the two-dollar one, you're not going to get the same rarity of stuff as the 15-dollar one*.' – Male, aged 15 to 17, North Sydney. '*In Fortnite at Christmas time you can get, there's a pack that you can get, like a present. And it's much like you can either buy a skin, which might be a thousand V bucks, or you can get the present, which will be much cheaper, but there's a chance you get a really bad thing or a really good thing*.' – Female, Male, aged 15 to 17, Paramatta.

		'*Sometimes they can state what type of things they can give you but they don't give you what you're actually going to get. They can say, "Oh, we can give you this stuff" and you can get a different version of that. You can get a basic idea sometimes of what you could get.*' – Male, aged 12 to 14, North Sydney. '*Lots of my friends have had them, like probably 10 of my friends have tried and only one has got what they wanted'*. – Female, aged 12 to 14, Paramatta. '*I watch my friend get three and open three more that were free. Probably about ¾ of the things he got was just rubbish, the other ¼ was decent moderately good stuff and nothing too good.*' – Male, aged 12 to 14, Dubbo. '*On 8 Ball Pool you can win Victory Boxes, they call them which have them like either bits of coins in them or new cue stick things and stuff like that. You can win them from winning a game like winning a match or you can buy them with proper money.*' – Female, aged 15-17, Coffs Harbour. '*My cousin did that. He was like in so much trouble, I think he spent, like, two thousand dollars…he just was like, ran out of stuff and he kept buying it, like over a long period of time but I think altogether he spent, like, two thousand dollars or something ridiculous.*' – Female, aged 15 to 17, Paramatta.
	Negative attitudes towards loot boxes: money spent was 'stupid'; risky (given the small chance of getting desired items); 'a revenue generation tool'	'*In the first week of the game being out, you had these people who were where they should have been for that time, and then you had these people who were eight, nine months ahead of the game, because they'd bought these loot boxes and spent stupid amounts of money.*' – Male, aged 15 to 17, North Sydney. '*I've never spent money on a game but my friends have…Because they're stupid. I've got a really rich friend who spends so much money, thousands of dollars... (Including on loot boxes)'*. – Male, aged 12-14, North Sydney. '*With FIFA, so, they have a point system, yeah, so they're called FIFA points. You spend real money on FIFA points, they allow you to open what's called packs. Packs, they actually, if you click on a certain button they show you the percentages of what you can get in a pack or like, a loot box, so, it's a very small percentage of getting a rare player and a high percentage of getting like a bad player and yeah, so you use those points and it's a surprise mechanism so you don't know what you're going to get until you see it and, yeah, obviously massive risk involved and the outcome is very, like, the odds of a good outcome are very slim.*' –Male, aged 15 to 17, Paramatta. '*Another problem with loot boxes is that with normal lottery, everyone is incentivised to get it for the small chance to win…in these loot boxes, very small chance; however, they emphasise the chance of winning much more… a lot of the time, they'll also exaggerate the chances. Like, it'll be… It*

		might be a five per cent chance, and they're like… And they might, like… They might be telling the truth, but they'll make it seem like it's better than it is. Because five per cent and one in 20 chance sound completely different.' – Male, aged 15 to 17, Dubbo. '*It's just all rubbish and there's a lot of things that say, oh it was this amount of money but now it's here, but next week its actually gone down, but it's still the same price. So it's actually false advertising saying, you're only getting it for this price this week but it's the same as every other time. It's just people thinking well if I can get it now, it will be cheaper than any other time. Then they get it and it's just the same, wasting money for something that is not really going to get you anything'* –Male, aged 12 to 14, Dubbo. '*Winning, exactly. All these loot boxes are designed for that exact reason and when people don't get what they want or don't, you know, get sort of, the thing of highest value, just keep buying more and that leads to where it shouldn't*.' – Male, aged 15 to 17, Paramatta. '*Yeah, gambling, leads to a lot of other issues and that's how you lose in the long term. But the game developers are great, they're so smart in the way that they only want you to focus on the short term and be in the present moment rather than think about your actions and the consequences that will occur in the future….so in FIFA they keep releasing different packs, like loot boxes, so you might say, oh, I've had enough, like I've already spent that, and then they'll release maybe a new card, high rated players, or like new packs and like, any sort of logic goes out the window and you just want to go straight for those.*'- Male, aged 15-17, Paramatta.
Factors reported to influence simulated gambling amongst youth	Influence of game structure: Part of the game – have to do it to progress	'*Like in a game called Red Dead Redemption, you're a cowboy, and then there's a bunch of gambling in it … it's supposed to be really interactive and stuff; so you just go, and you can just play cards, and then you can win money in the game*.' – Male, age 15-17, North Sydney. Female: '*Sometimes it will be every time you die, or something*.' Male: '*Or like, after you do something, if you win a level, it would be like, "Here, here's your reward." And you get a spin of the…*' – participants aged 15-17, North Sydney. '*It depends if the person, if they want to gamble or not, they can just go to the casino. They don't have to be forced to, they can just enter it, and gamble*' – Male, Chinese group in Cabramatta.
	Influence of peer pressure	'*it's a good laugh. It's just lonely if you play by yourself'* (Male, aged 12-14, North Sydney). '*It's like this whole like, friendship thing. Like, people go online… Like, I used to be in a friend group where every afternoon from school, you'd go online and play with your friends; and sometimes they could live in like, the other side of Australia. I had a friend in Adelaide who I would play those*

		games with, and then it was like your life, I guess. Because that was your friendships, and that's just what you would do.' – Female, aged 15-17, North Sydney. '*If you can go to school and go you friends like, "Oh, guess what I got on this game?" and everyone is playing that game in your friend group, that just makes you like… "Oh wow", you know*' – Female, aged 15 to 17, North Sydney.
	Influence of access to money: parents' control over money and payment	'*I feel like parents are just really unaware of how easy it is to do, especially when they have like, young kids, because it's already attached to the account, like they could just click, it takes two seconds and they've bought it, like it's so easy*.' – Female, aged 15-17, Paramatta. *'I've seen a few things about kids taking the parents money, taking the credit card to buy things for the games and they keep using it. The parents then find out that the parents are in debt and they don't have money for important things and they can't really do anything about it.'* – Female, aged 12-14, Dubbo. *'That's a thing I sometimes do with my mum. I have her credit card in my Xbox, and so we really shouldn't have done that, but sometimes if I want to buy something, I find money I have lying around, give it to her, and then use her credit card*.' – Male, aged 12-14, Newcastle. '*Well, one that happened to me was Mum consented to me buying a game on my laptop, and so she put her credit card details in and stuff, and didn't click the "save credit card" option; so it didn't save her credit card information, or anything. And it bought the game once, and then it started taking multiple purchases out, of all these different amounts; and it racked up to like, two grand or something*.' – Male, aged 15-17, North Sydney. '*Yeah, like linking it and then they don't even bother to maybe take it off the account. So, you don't have that second step of when you're purchasing it, it just goes straight through because your card's already linked. So, it's, I guess, that's how*.' – Male, aged 15-17, Parramatta.

Convergence of gaming and gambling

Theme	Sub-theme	Quotes
Games and gambling are converging	Perceived blurry boundaries of gaming and gambling in video games: Some participants consider simulated gambling activities (skin betting, purchasing loot boxes) to be gambling	'*Because a lot of the time, you're investing money into having a chance to get a certain reward from the loot box that was completely random. So you have a pretty high possibility of actually wasting money, or you invest more money into getting the loot box and the reward isn't as…*' – Male, aged 15 to 17, North Sydney. '*But it's not guaranteed. With the loot box it wouldn't say "Oh, you're going to get this." It's more of a one in a hundred-type thing. It's not, I guess it's kind of gambling sort of buying, because you don't know what you're going to get.*' - Male, aged 12 to 14, Paramatta. '*If you really think about it, it's more everyone. Because kids in games, sometimes you buy like, as you said, a loot box, and you don't know what's going to be in it. That's gambling.*' - Male, aged 12 to 14, Newcastle. '*So you put in money and there's like different types, there's like a roulette, yeah, so there's like a, you pay money for loot boxes and then like, you know, there's like a small percentage that'll land on like the rarest skin in the game and then the other times it will be like, the bad skins, so it's like a form of gambling, I guess.*' – Male, aged 15 to 17, Paramatta. '*They have online, so you can purchase with in game currency or real money. You can actually buy a pack and it's got, it's called a gold box or a silver box, and they give you better as you go on… (Whether it is gambling) depends which box you get. Because there's some boxes where it tells you exactly what you're going to get and then there's others where you don't know what you're going to get.*' – Male, aged 12 to 14, Paramatta. '*So in some ways, yes. In some ways, no…Because there could be sometimes where it's a bundle and they tell you what you're going to get. But if it's one where they just say "You have a certain chance, you could get this, but it's not guaranteed." That's more gambling, but one where they're actually telling you what you are going to get, that's not.*' – Male, aged 12 to 14, Paramatta.
	in-game items enabling gambling: In-game items have been monetised, enabling unregulated gambling on external platforms (skin betting on external websites);	*And then you have the opportunity to spin again, and that will sort of… the spin again option takes money from the in-game currency. Then you can also buy in-game currency with real money. So the idea is you might just keep spinning until you have no in-game currency, and then start buying in-game currency to keep the sort of lottery going*.' – Female, aged 15-17, North Sydney. '*I remember like, even as early as when I was really young… Like, because I had a computer when I was about five, because my dad does IT, and I remember me and my sister used to play Neopets,*

		which is like this really old game; but they had scratch cards that you could buy, and then scratch them, and you'd get money bags, which was in-game currency, or items.' – Female, aged 15-17, North Sydney. *'The ignorance of childhood, not knowing… or not having a sense of reality as to how much things actually cost, and what real money is, versus in-game currency, and stuff*.' – Female, aged 15-17, North Sydney. '*I only usually go for like, the free spins and stuff if it is like… If it's on like, Homescapes, or something on your phone. Then yeah, I'm very much less likely to spend in-game currency, because I'm now aware that it correlates to actual money*.' – Female, aged 15-17, North Sydney. *'I think ultimately the first step is on cash payment, like actual money because that then translates to a currency in the game, so it can be points, it can be coins, in the case of Fortnite V bucks, and that currency is then used to buy the skins, or if not the skins; actually, Fortnite is like, one of the few games that doesn't have like, a loot box. You just buy the skins directly, and so, but other games like FIFA you buy the actual packs or like the loot boxes and then that gets you, sort of the place*.' – Male, aged 12-14, Paramatta. 'Y*ou use the money, your real money to buy currency in the game which would normally be zero if you weren't spending, oh well not zero but a low amount if you weren't spending any money externally and then you get the currency in the game*...' – Male, aged 15-17, Paramatta. *When I gambled with in-game currency, which you earn by playing the game, in a game like Mario on DS or something like that; because I could never win, that sort of put me off from gambling in general*.' – Male, aged 15-17, Dubbo, *'Like, once I was playing like, two years ago, I think it is for like, I can't even remember how it works, it's like, you get the skin and like you deposit the skins and then sort of if it lands on your number, oh I don't know, it's like a roulette type of thing. If it lands on, like, and there's odds as well, so like, I guess it is gambling. There's like odds and if it like, yeah there's odds of you winning and if it lands on like, a certain number you win, like, more than you put in*.' – Male, aged 15-17, Paramatta. '*They use the gambling site, because it's the only free option to get them (skins) … Otherwise you have to pay stupid amounts for certain things*.' – Male, 15-17, North Sydney.
	Advertising of gambling and simulated gambling products: gambling and simulated gambling have been promoted	'*Some things give you options to watch an ad, and then but most of the time it's if you pay them money, they won't give you the ad option*.' – Female, aged 15-17, North Sydney.

	using video games on social media and online.	'*Especially for free apps. Because usually free apps only have two sources of revenue, which is the ads and the dodgy in-game purchases*.' – Male, aged 15-17, North Sydney. '*Or if the game is restricted or something you can pay to get a better version of the game and they'll show you like shorts. If you pay this money you get to unlock this and this…More levels or something…You can only go so far without paying…On the ads before you buy the game they show you all of this good stuff like what the game is like and then you get onto the game and you can't go this far without paying this money*.' – Female, aged 15-17, Coffs Harbour. '*You can work your way up and slowly gain your way up and get the stuff within the period of time that it's still out or you can just buy it straight up and get everything at the start and not have to worry about how well you play…If they want the good stuff and then they're good, it's just so easy to buy it… Cosmetics, skins, wraps'* – Male, aged 12-14, North Sydney.

Appendix G: Descriptive survey results for all samples

As explained in the Methods chapter, all descriptive results in the Survey Results chapter were based on the weighted letterbox drop sample as this was the most representative. This appendix includes the results for all samples.

Demographics

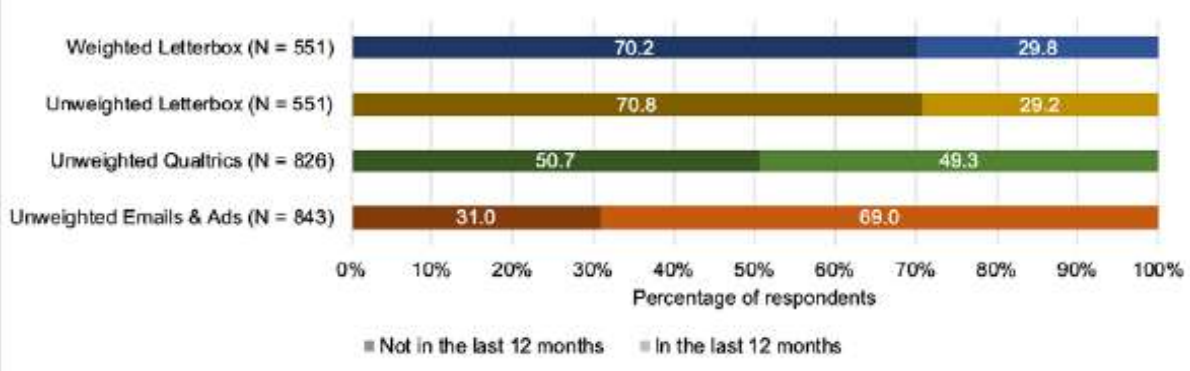
Additional demographic characteristics by sample

Variable	Weighted Letterbox Drop (N = 551)	Unweighted Letterbox Drop (N = 551)	Unweighted Qualtrics (n = 826)	Unweighted Emails and Advertising (N = 843)
	n (%)	n (%)	n (%)	n (%)
Main language				
English	508 (92.2)	525 (95.3)	776 (93.9)	834 (98.9)
Other	43 (7.8)	26 (4.7)	50 (6.1)	9 (1.1)
ATSI status				
Not ATSI	509 (92.4)	512 (92.9)	742 (89.9)	440 (52.2)
Aboriginal	28 (5.0)	27 (4.9)	40 (4.8)	171 (20.3)
TSI	1 (0.3)	2 (0.4)	8 (1.0)	122 (14.5)
Aboriginal and TSI	2 (0.3)	2 (0.4)	4 (0.5)	94 (11.2)
Prefer not to say	11 (2.0)	8 (1.5)	32 (3.9)	16 (1.9)
Parents' living situation				
Living together	398 (72.3)	398 (72.2)	637 (77.1)	534 (63.3)
Separated or divorced	111 (20.1)	119 (21.6)	146 (17.7)	279 (33.1)
Have never lived together	14 (2.5)	12 (2.2)	19 (2.3)	16 (1.9)
Something else	28 (5.1)	22 (4.0)	24 (2.9)	14 (1.7)
Currently in school				
Yes	524 (95.1)	525 (95.3)	784 (94.9)	829 (98.3)
No	27 (4.9)	26 (4.7)	42 (5.1)	14 (1.7)
Currently have a paid job				
Yes	159 (28.9)	164 (29.8)	246 (29.8)	118 (14.0)
No	392 (71.1)	387 (70.2)	580 (70.2)	725 (86.0)
Other	**43 (7.8)**	**26 (4.7)**	**50 (6.1)**	**9 (1.1)**

Gambling amongst young people

Gambling participation in the last 12 months

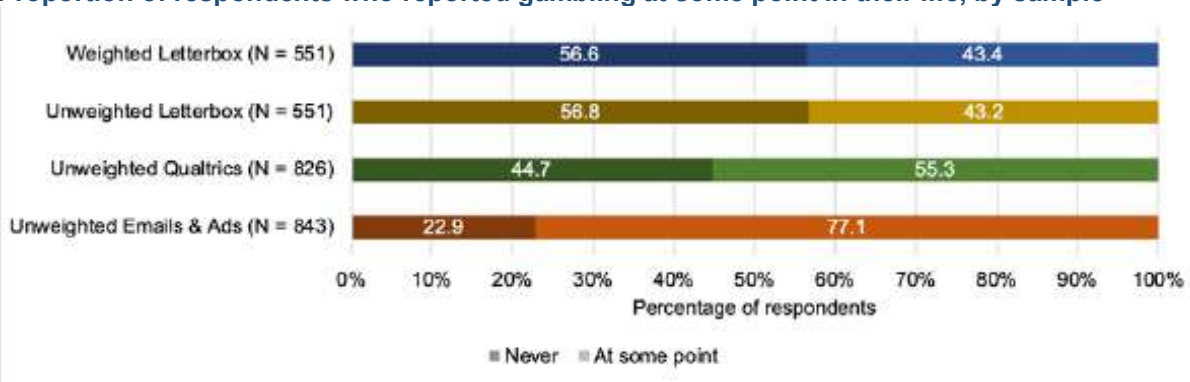
Proportion of respondents who reported gambling during the last 12 months, by sample



Calculated from. GB1a. When did YOU last spend any REAL MONEY on each of the following activities?

Gambling participation in their lifetime

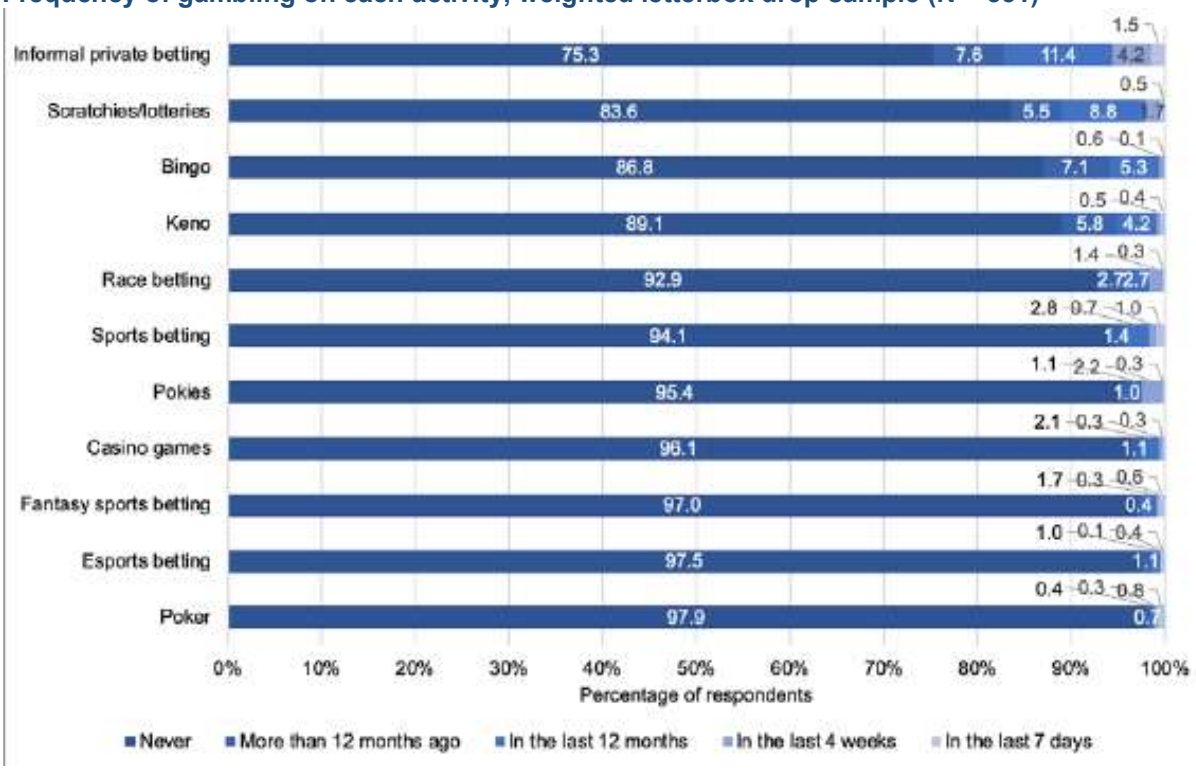
Proportion of respondents who reported gambling at some point in their life, by sample



Calculated from: GB1a. When did YOU last spend any REAL MONEY on each of the following activities?

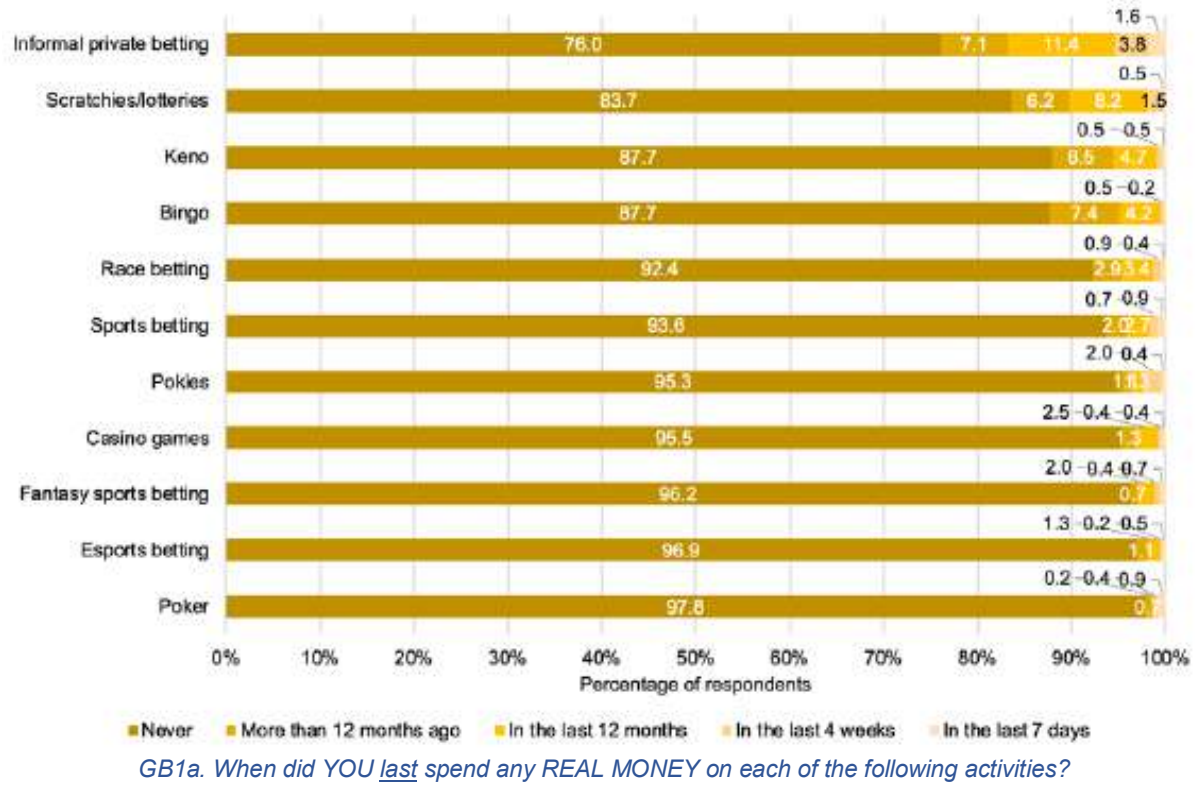
Gambling participation in each activity

Frequency of gambling on each activity, weighted letterbox drop sample (N = 551)



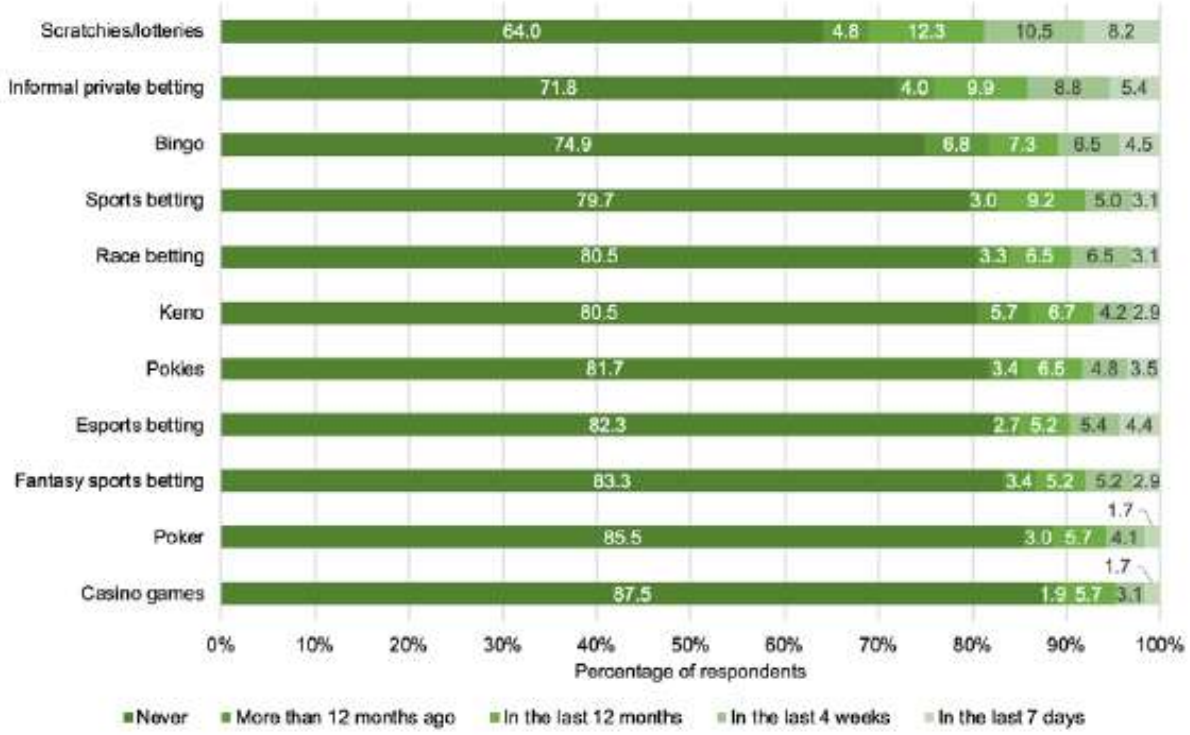
GB1a. When did YOU last spend any REAL MONEY on each of the following activities?

Frequency of gambling on each activity, unweighted letterbox drop sample (N = 551)



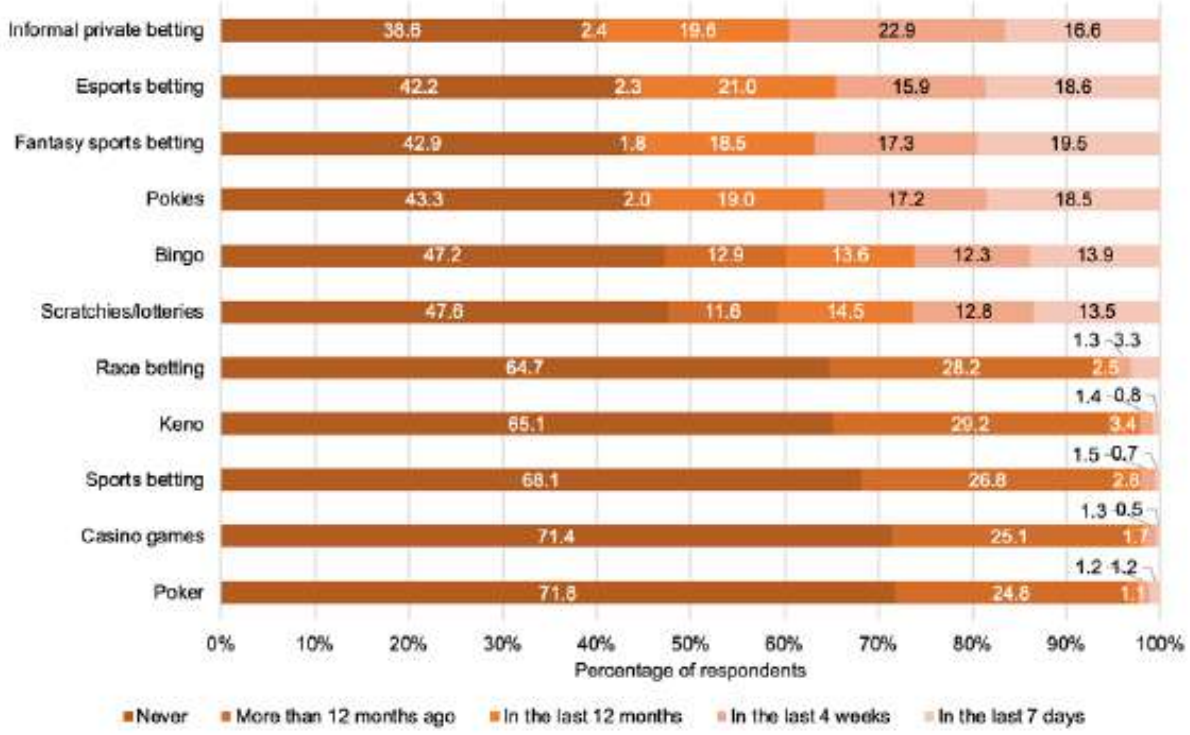
GB1a. When did YOU last spend any REAL MONEY on each of the following activities?

Frequency of gambling on each activity, unweighted Qualtrics sample (N = 826)



GB1a. When did YOU last spend any REAL MONEY on each of the following activities?

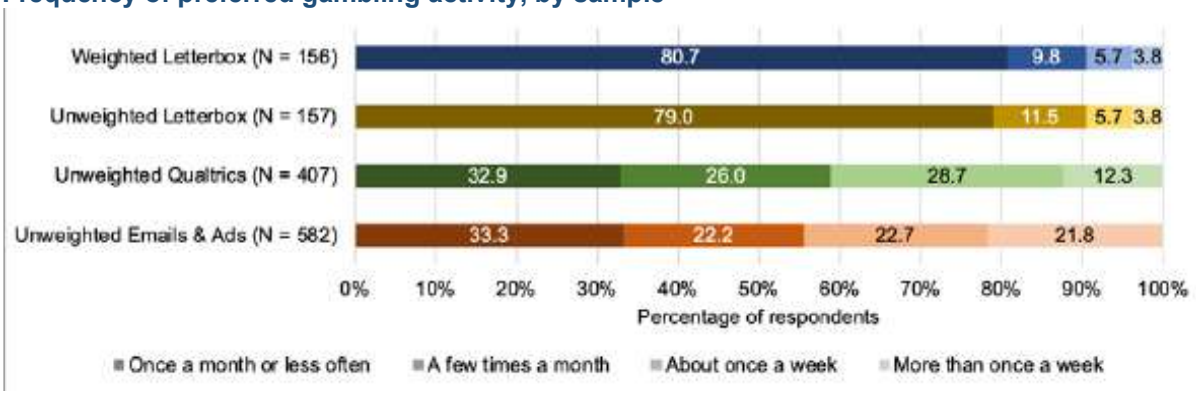
Frequency of gambling on each activity, unweighted emails and ads sample (N = 843)



GB1a. When did YOU last spend any REAL MONEY on each of the following activities?

Frequency of preferred gambling activity

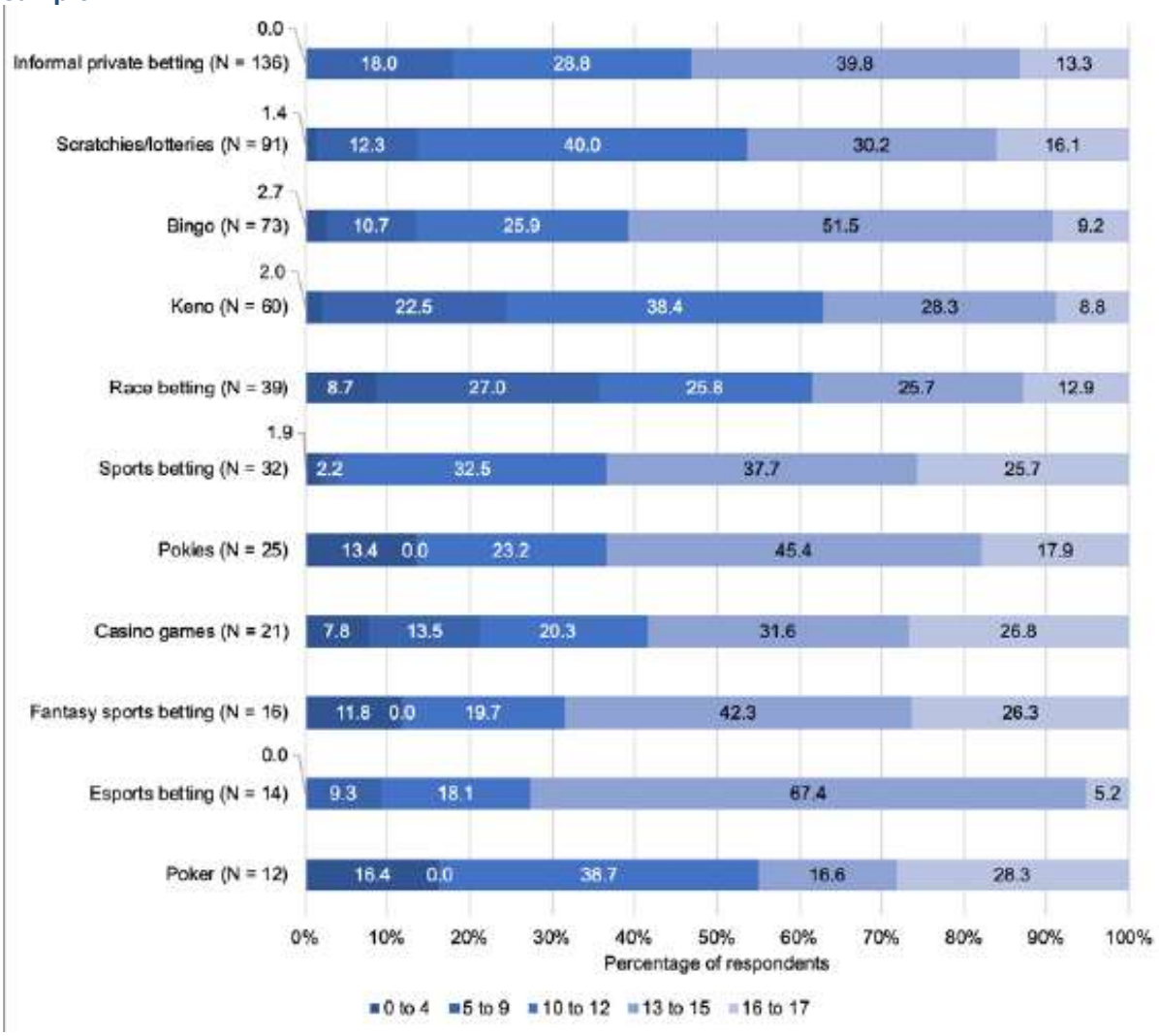
Frequency of preferred gambling activity, by sample



GB1b. During the last 12 months, which activity did you gamble on most frequently using REAL MONEY? Gb1c. During the last 12 months, how often did you gamble using REAL MONEY on this activity?

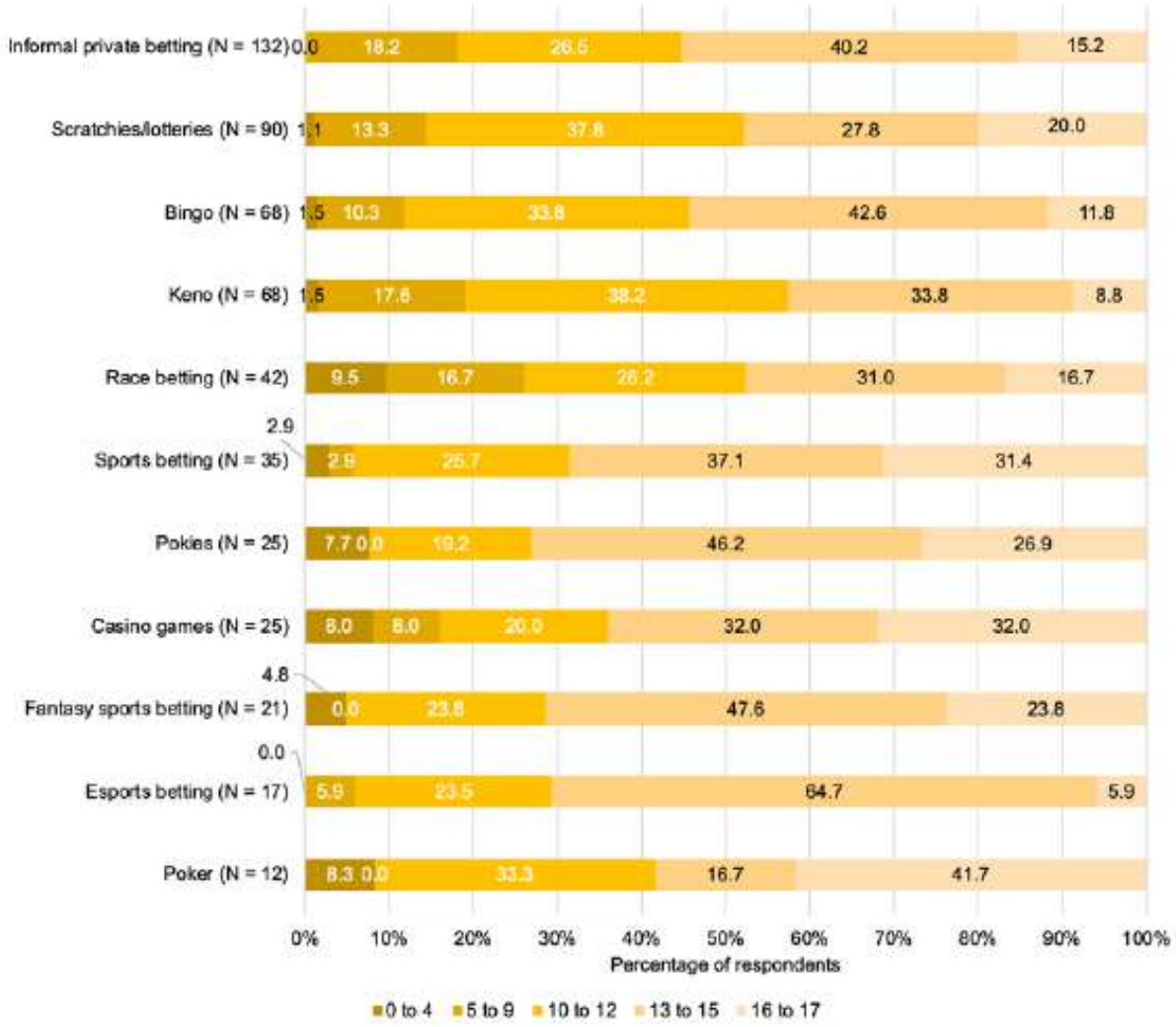
Age of first participating in each gambling activity

Age at which respondents first gambled on each gambling activity, weighted letterbox drop sample



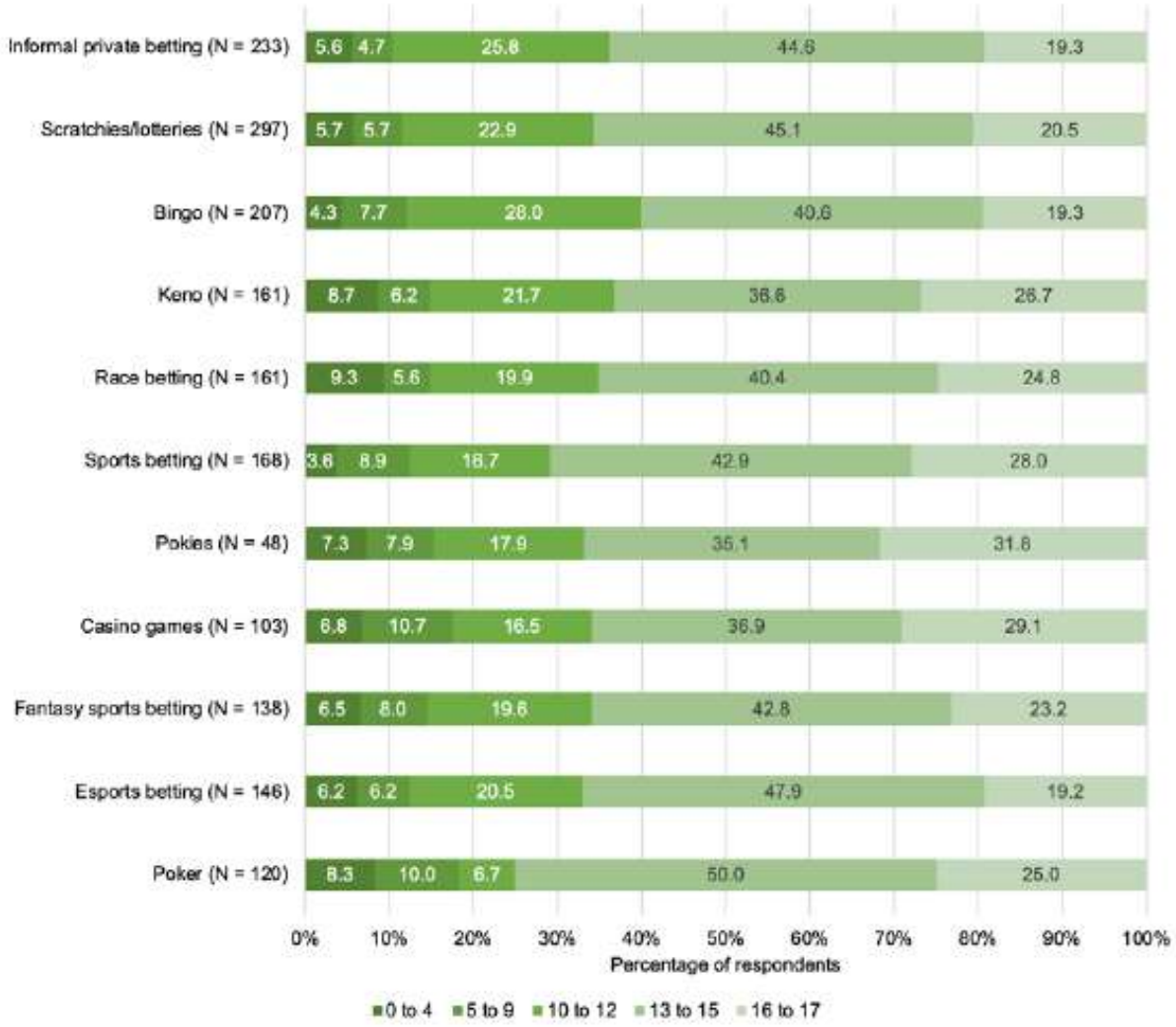
GB2. How old were you when you first spent REAL MONEY on each activity?

Age at which respondents first gambled on each gambling activity, unweighted letterbox drop sample



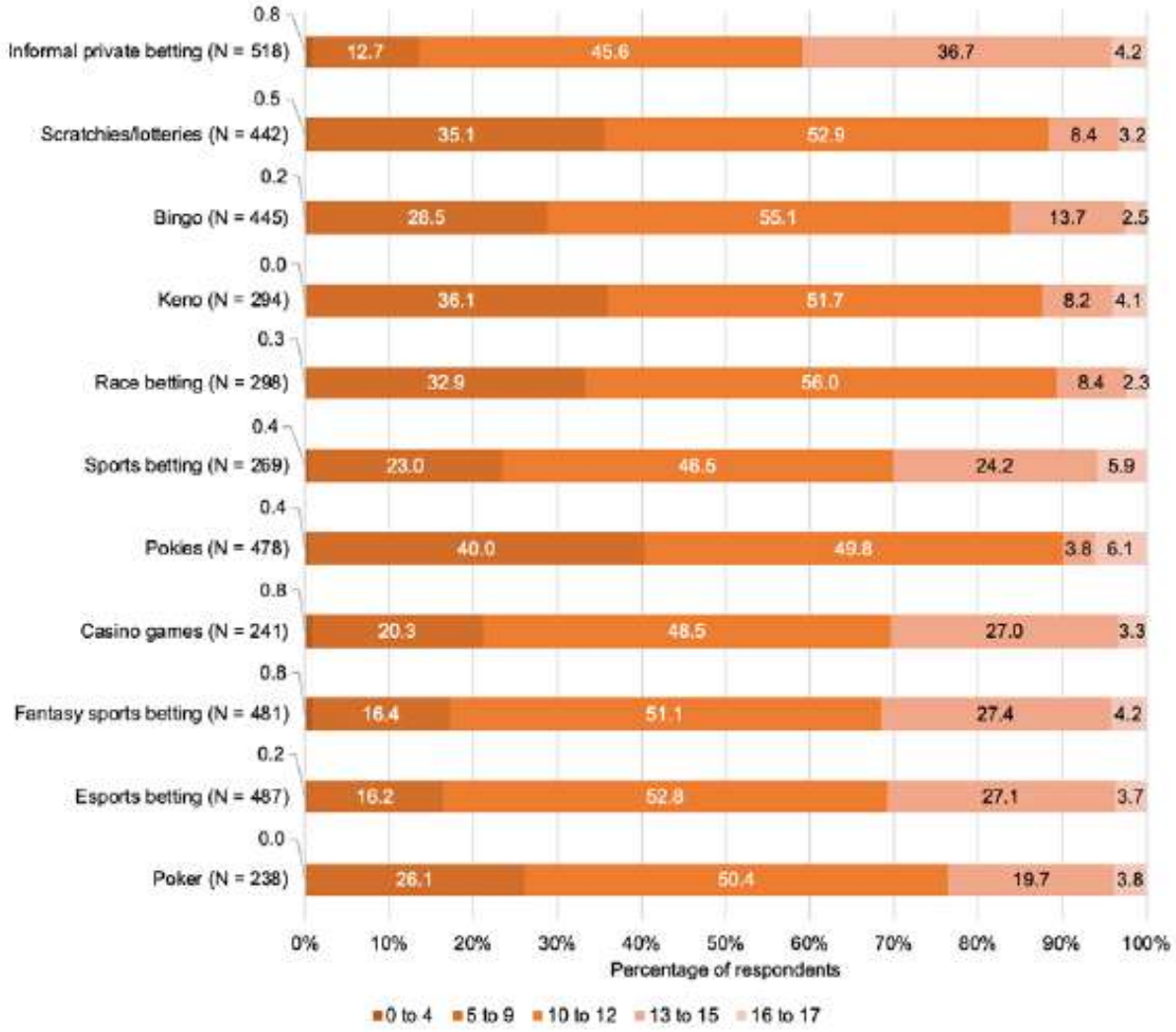
GB2. How old were you when you first spent REAL MONEY on each activity?

Age at which respondents first gambled on each gambling activity, unweighted Qualtrics sample



GB2. How old were you when you first spent REAL MONEY on each activity?

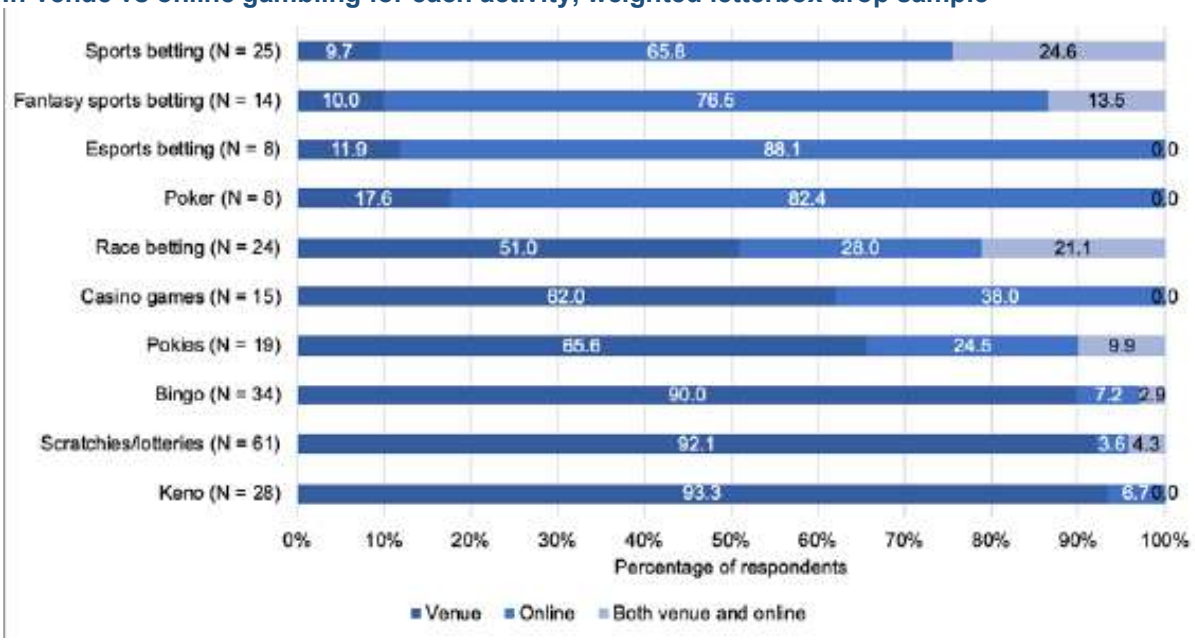
Age at which respondents first gambled on each gambling activity, unweighted emails and ads sample



GB2. How old were you when you first spent REAL MONEY on each activity?

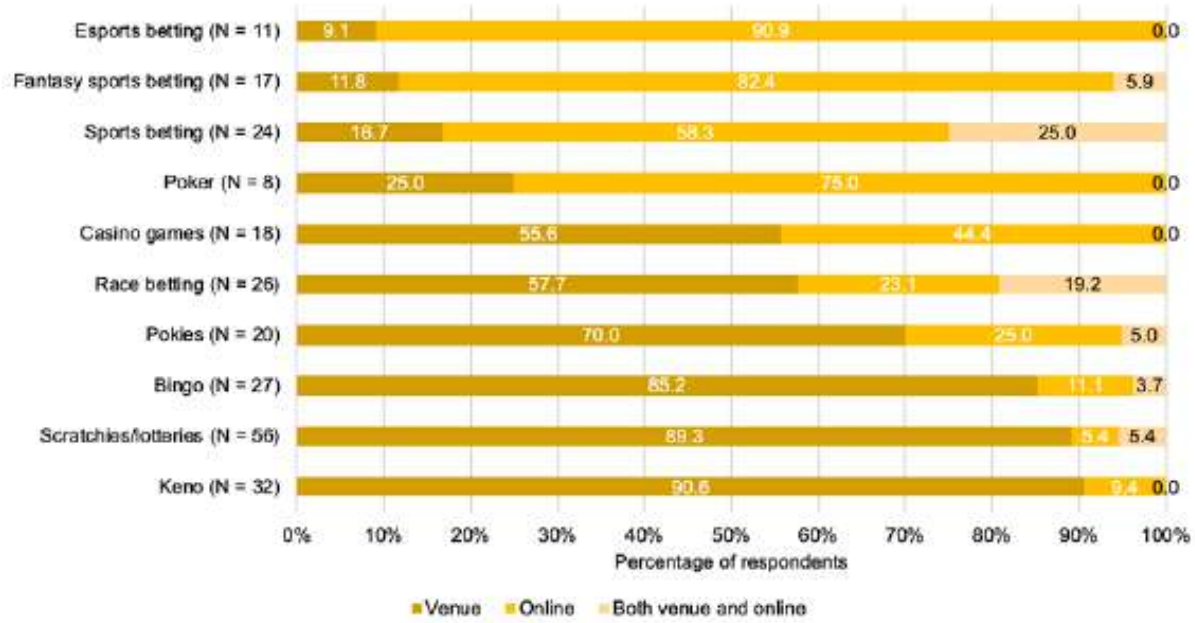
Mode/location of each gambling activity

In-venue vs online gambling for each activity, weighted letterbox drop sample



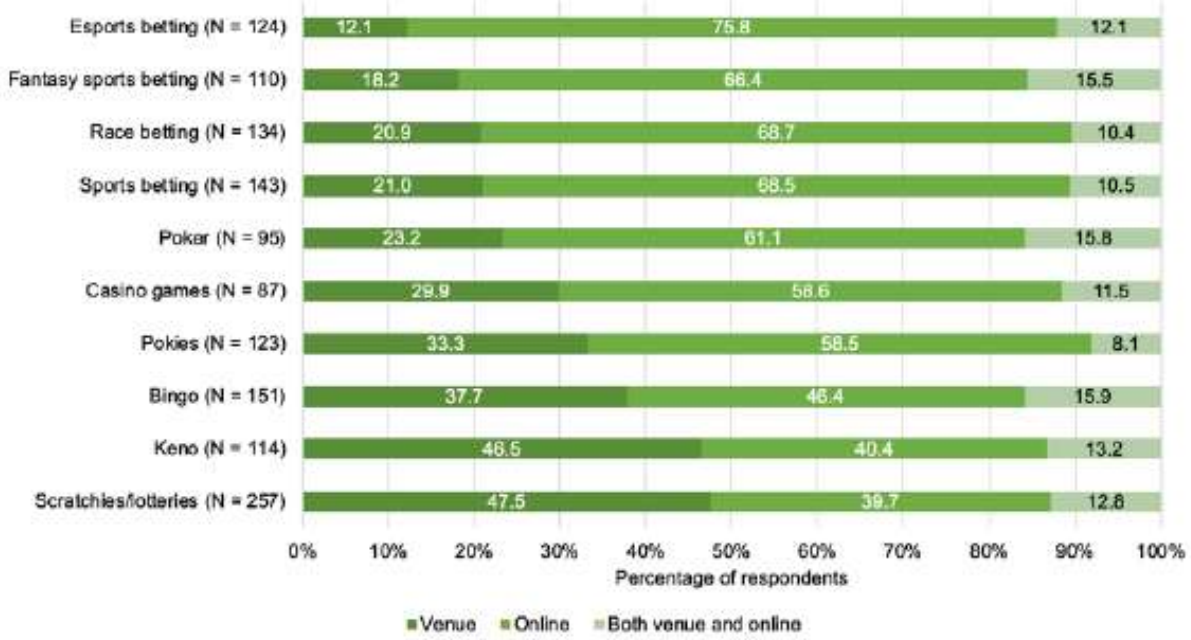
GB3. During the last 12 months, did you spend REAL MONEY on these activities in a venue (such as a pub, club, casino, TAB or newsagent), online (using a smartphone, computer, tablet or gaming console), or both?

In-venue vs online gambling for each activity, unweighted letterbox drop sample



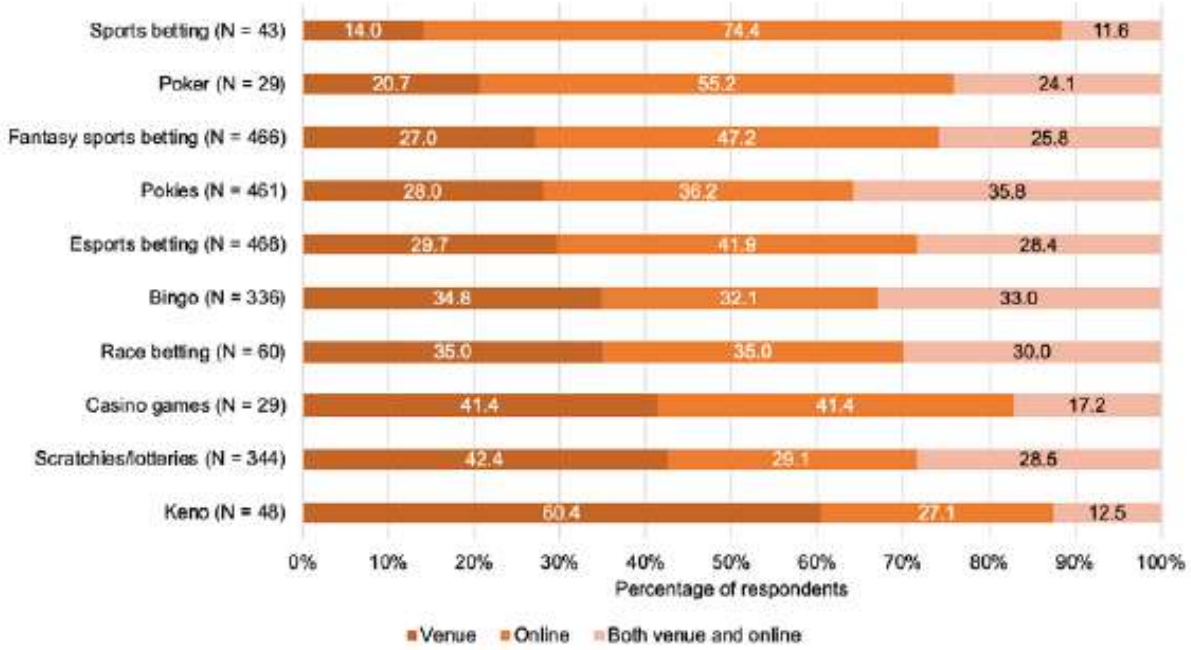
GB3. During the last 12 months, did you spend REAL MONEY on these activities in a venue (such as a pub, club, casino, TAB or newsagent), online (using a smartphone, computer, tablet or gaming console), or both?

In-venue vs online gambling for each activity, unweighted Qualtrics sample



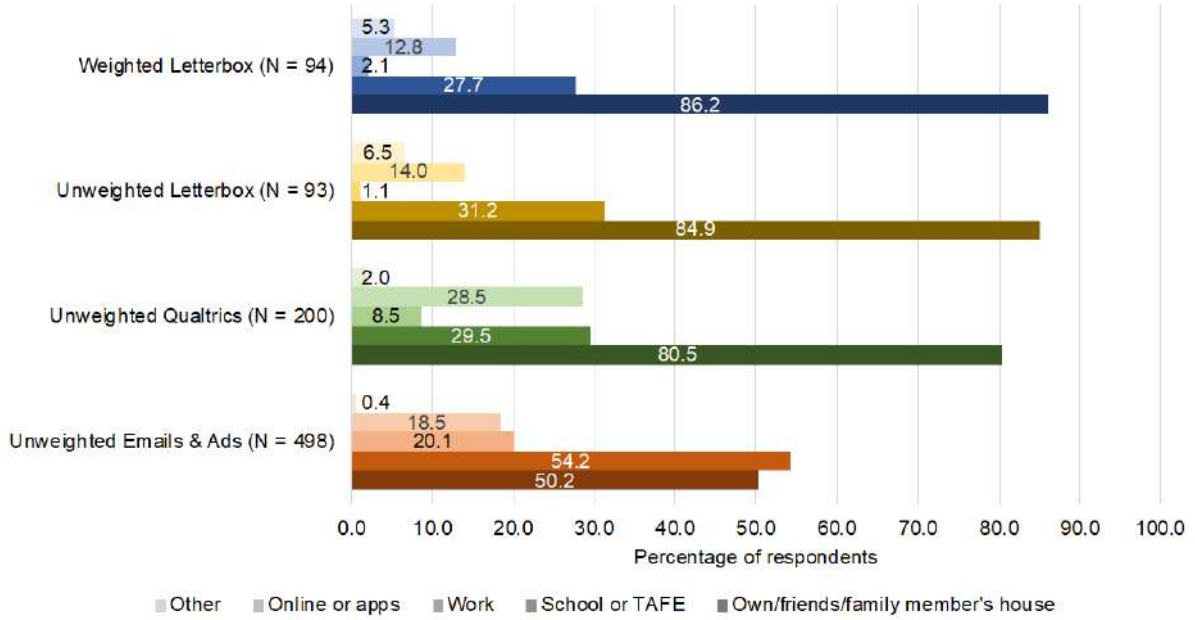
GB3. During the last 12 months, did you spend REAL MONEY on these activities in a venue (such as a pub, club, casino, TAB or newsagent), online (using a smartphone, computer, tablet or gaming console), or both?

In-venue vs online gambling for each activity, unweighted emails and ads sample



GB3. During the last 12 months, did you spend REAL MONEY on these activities in a venue (such as a pub, club, casino, TAB or newsagent), online (using a smartphone, computer, tablet or gaming console), or both?

Location where young people engaged in informal private betting, by sample



GB3a. During the last 12 months, where did you bet FOR REAL MONEY on informal private betting, like betting on card or dice games, or betting on sports with family or friends?

Median annual expenditure on each gambling activity

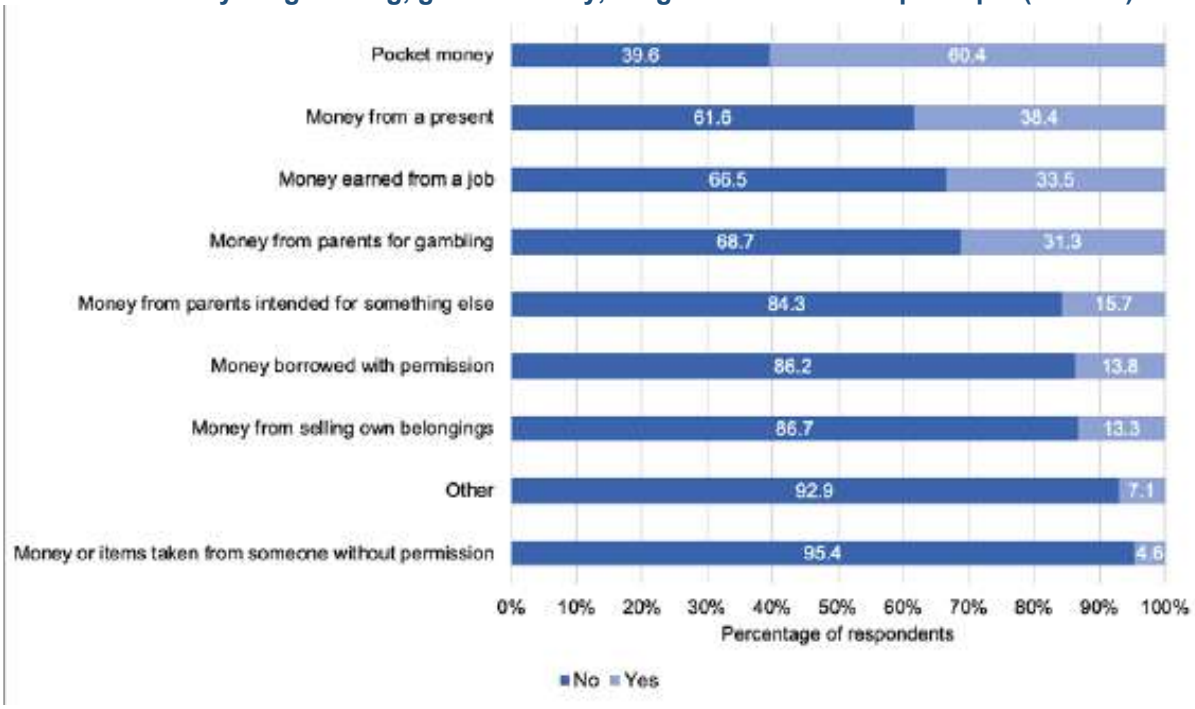
Median annual expenditure amongst those who participated in each gambling activity in the last 12 months, Ns differ by each form

	Weighted Letterbox	Unweighted Letterbox	Unweighted Qualtrics	Unweighted Emails & Ads
Pokies	19	15	50	130
Race betting	10	10	30	110
Scratchies/ lotteries	10	10	30	120
Keno	10	10	20	40
Bingo	14.8	20	20	170
Poker	34	30	30	100
Casino games	13.3	12.5	30	100
Sports betting	20	20	39	50
Esports betting	20.8	25	30	160
Fantasy sports betting	43.4	40	27.5	150
Informal private betting	14	10	25	150

GB4. During the last 12 months, about how much money did you spend in total on each of these activities?

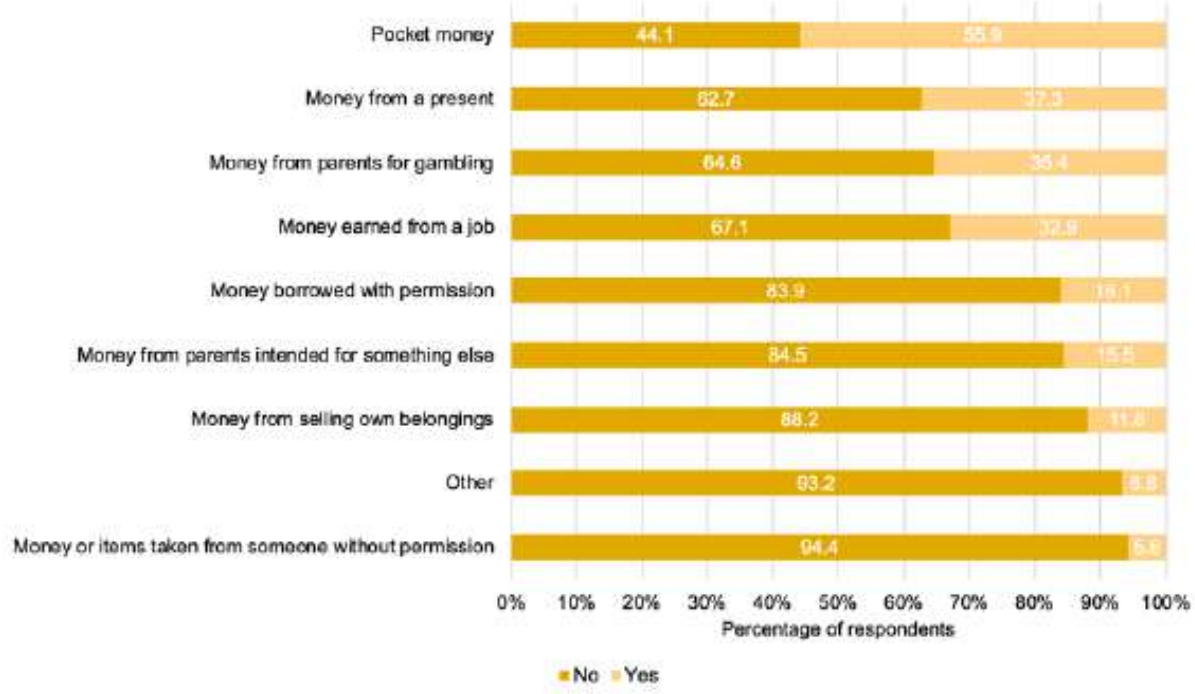
Sources of money for gambling

Sources of money for gambling, gamblers only, weighted letterbox drop sample (N = 164)



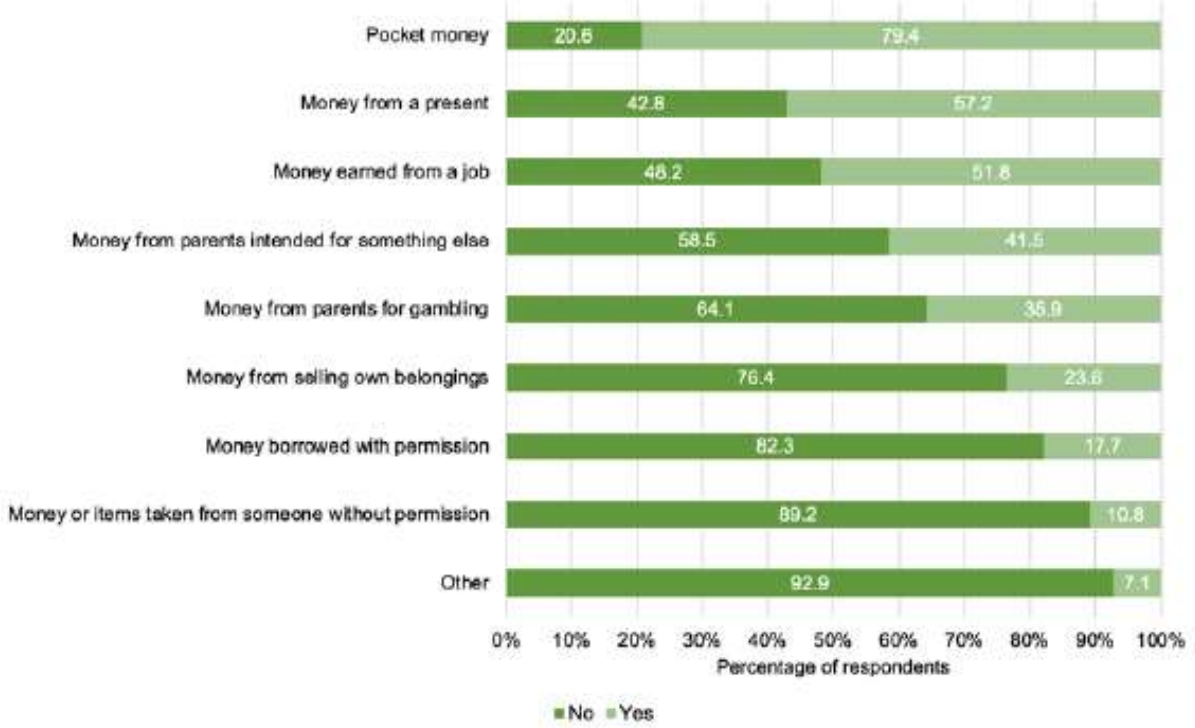
GB5. Have you used money from any of the following sources for gambling?

Sources of money for gambling, gamblers only, unweighted letterbox drop sample (N = 161)



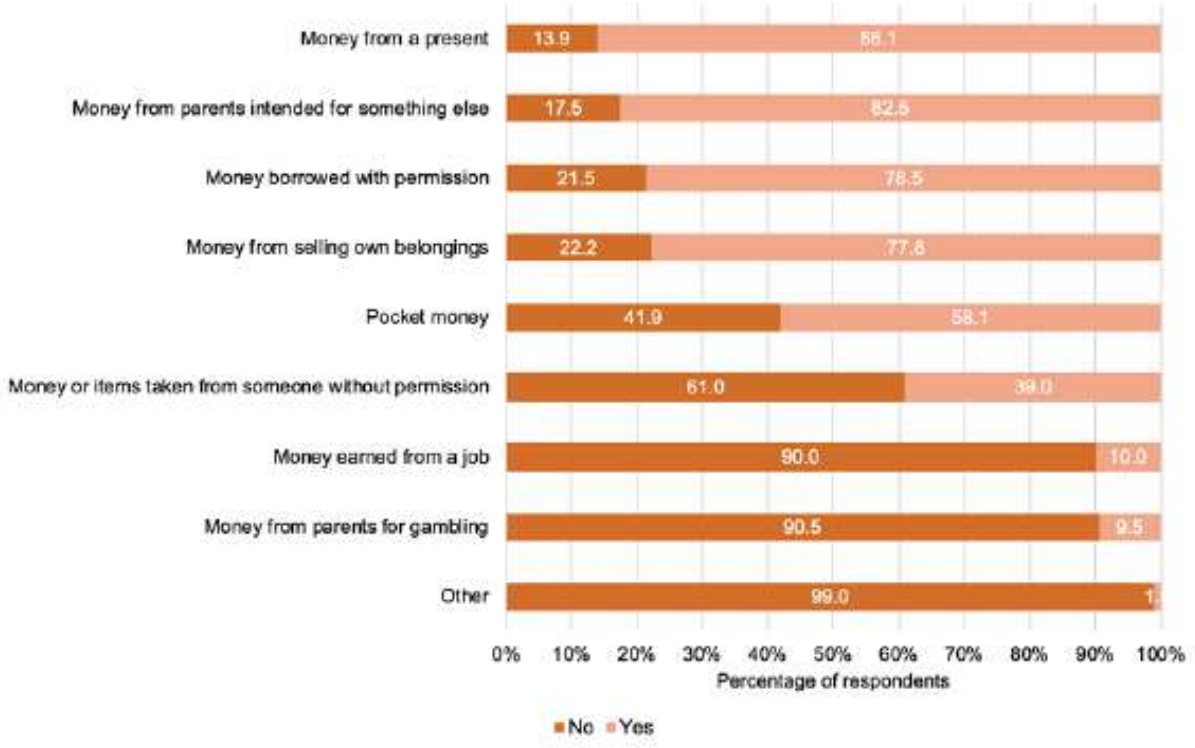
GB5. Have you used money from any of the following sources for gambling?

Sources of money for gambling, gamblers only, unweighted Qualtrics sample (N = 407)



GB5. Have you used money from any of the following sources for gambling?

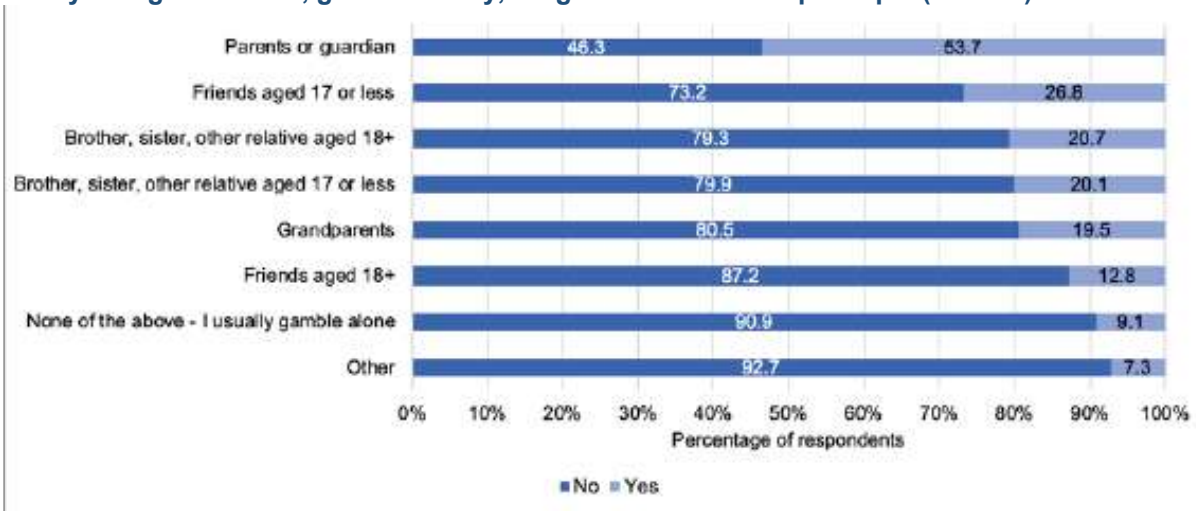
Sources of money for gambling, gamblers only, unweighted emails and ads sample (N = 582)



GB5. Have you used money from any of the following sources for gambling?

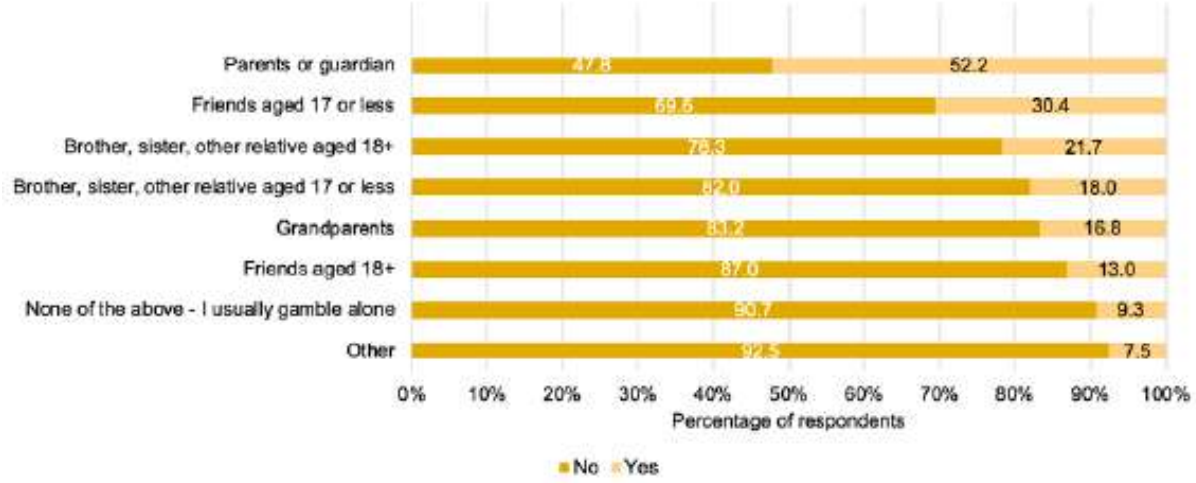
Who young people gamble with

Who youth gamble with, gamblers only, weighted letterbox drop sample (N = 164).



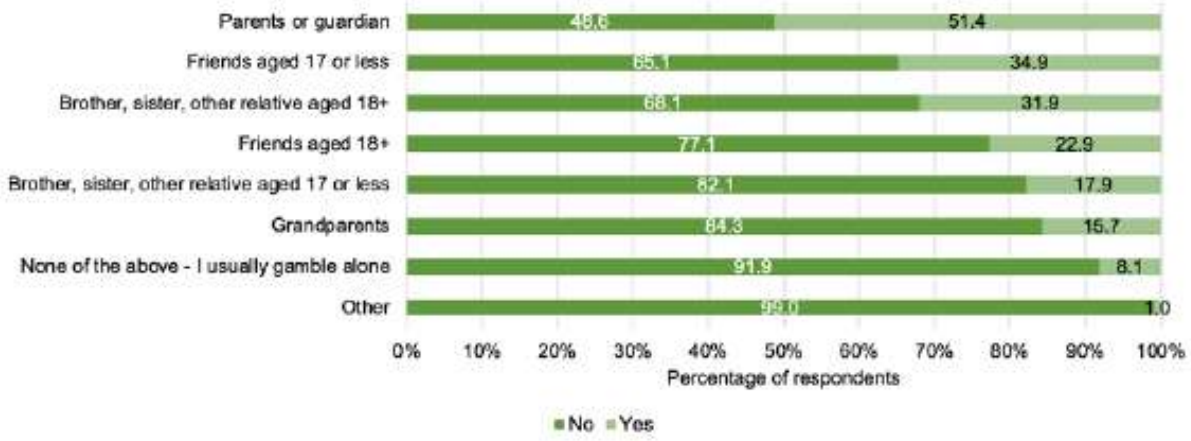
GB6. Who do you usually gamble or bet with FOR REAL MONEY?

Who youth gamble with, gamblers only, unweighted letterbox drop sample (N = 161)



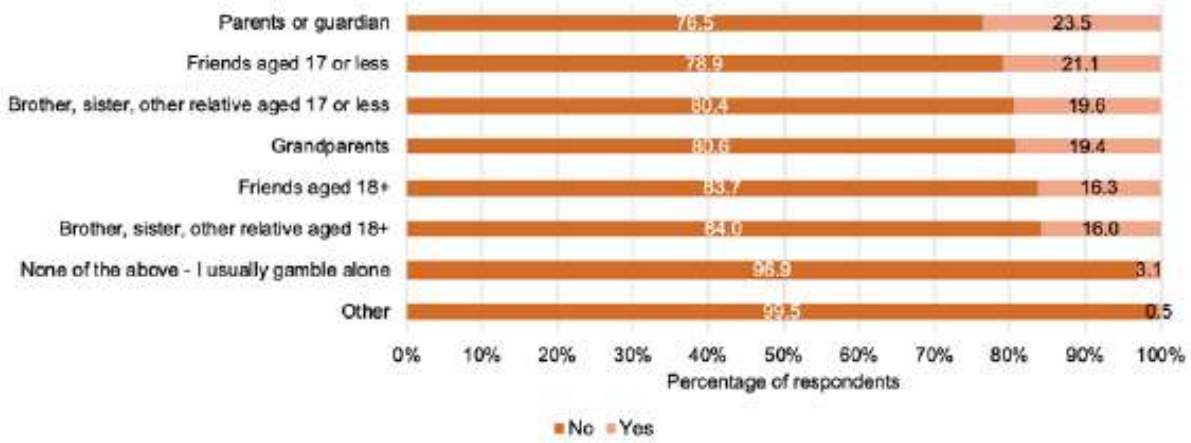
GB6. Who do you usually gamble or bet with FOR REAL MONEY?

Who youth gamble with, gamblers only, unweighted Qualtrics sample (N = 407)



GB6. Who do you usually gamble or bet with FOR REAL MONEY?

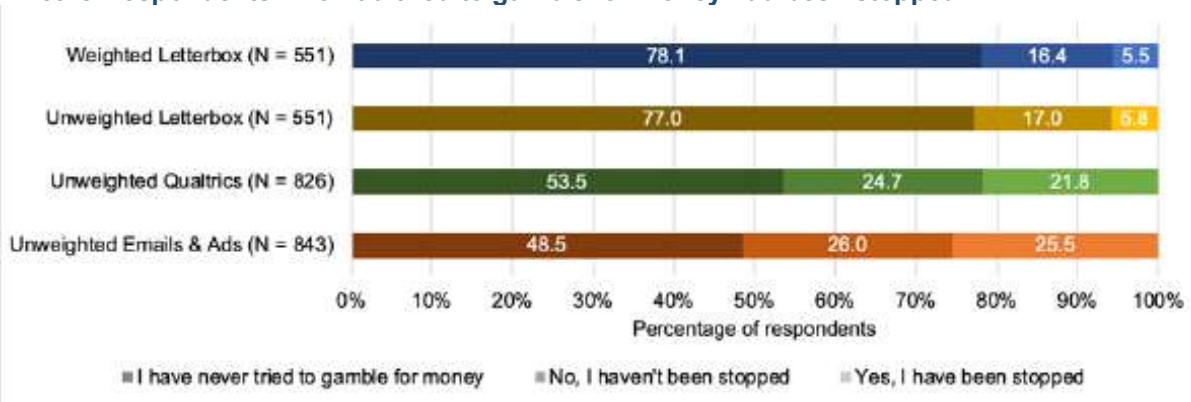
Who youth gamble with, gamblers only, unweighted emails and ads sample (N = 582)



GB6. Who do you usually gamble or bet with FOR REAL MONEY?

Whether young people have been stopped when trying to gamble

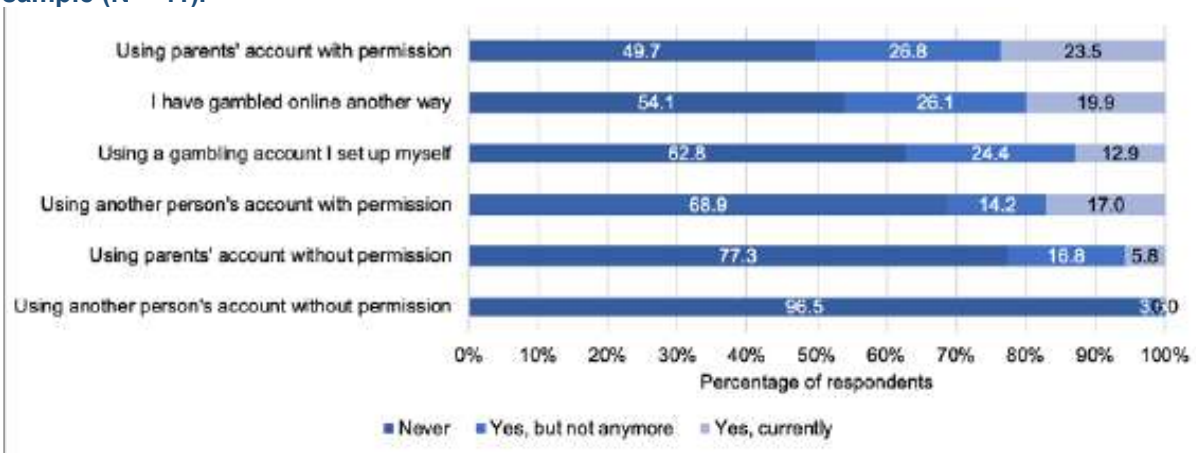
Whether respondents who had tried to gamble for money had been stopped



GB7. Have you ever TRIED to gamble FOR REAL MONEY and been stopped because you were too young?

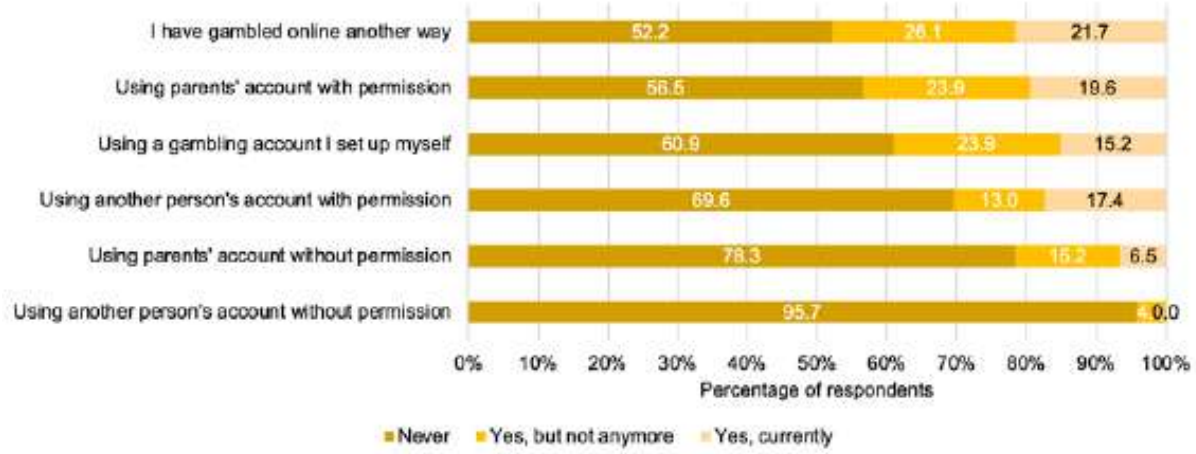
How young people access online gambling

How youth access online gambling services, online gamblers only, weighted letterbox drop sample (N = 41).



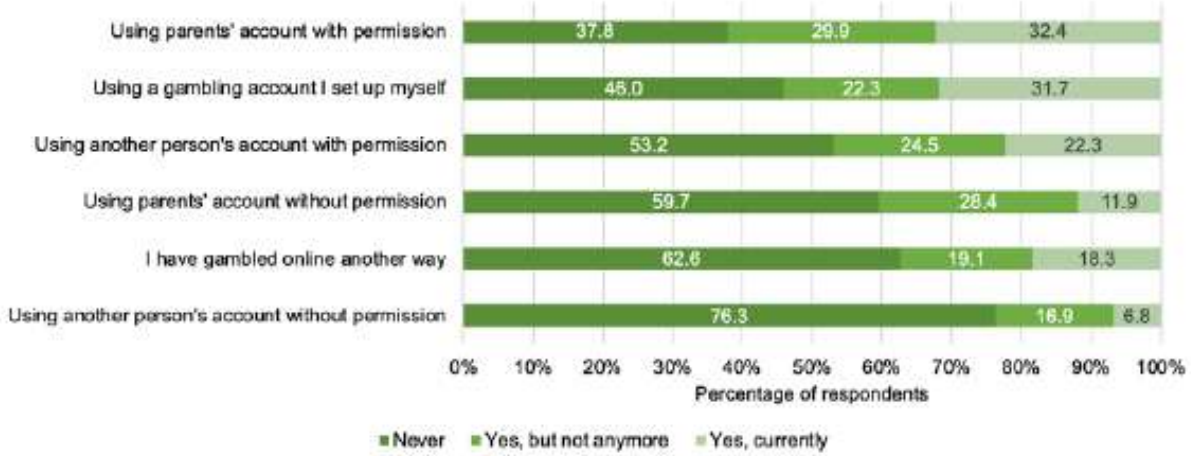
GB8. Please read all the sentences below and select one response on each line.

How youth access online gambling services, online gamblers only, unweighted letterbox drop sample (N = 46)



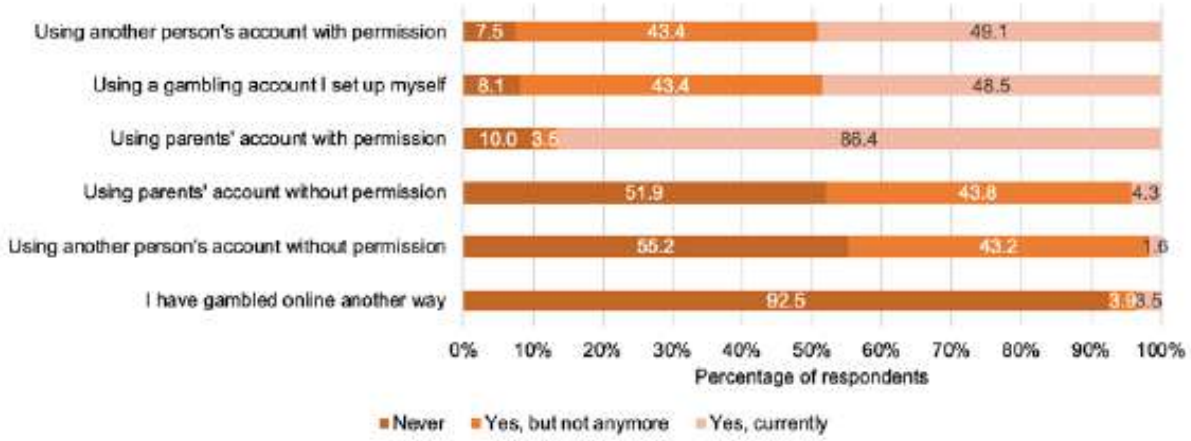
GB8. Please read all the sentences below and select one response on each line.

How youth access online gambling services, online gamblers only, unweighted Qualtrics sample (N = 278)



GB8. Please read all the sentences below and select one response on each line.

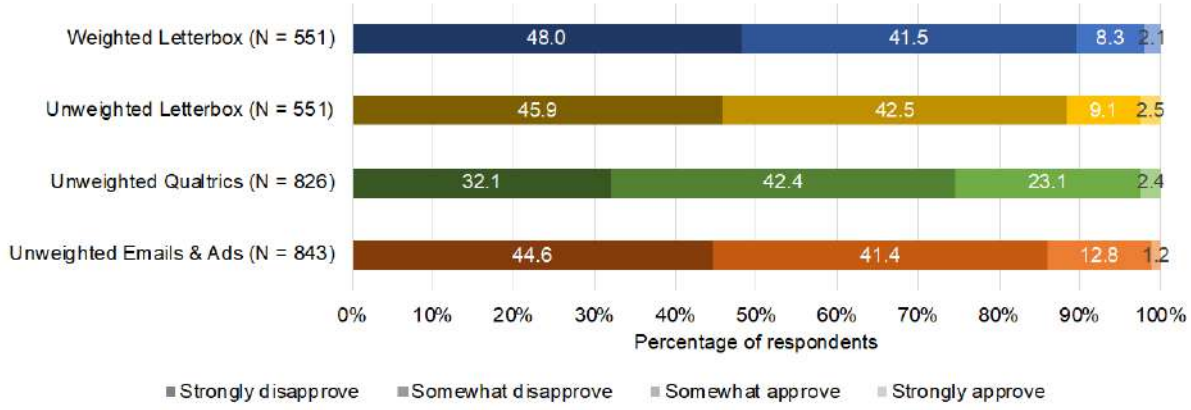
How youth access online gambling services, online gamblers only, unweighted emails and ads sample (N = 509)



GB8. Please read all the sentences below and select one response on each line.

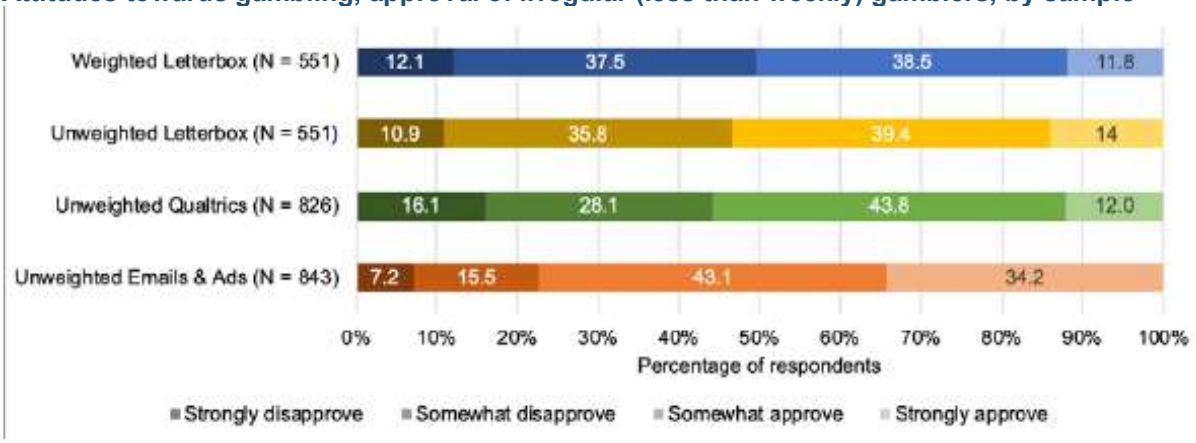
Approval or disapproval of gambling

Attitudes towards gambling, approval of regular (weekly or more frequent) gamblers, by sample



GA1. Do you approve or disapprove of people who gamble once a week or more often?

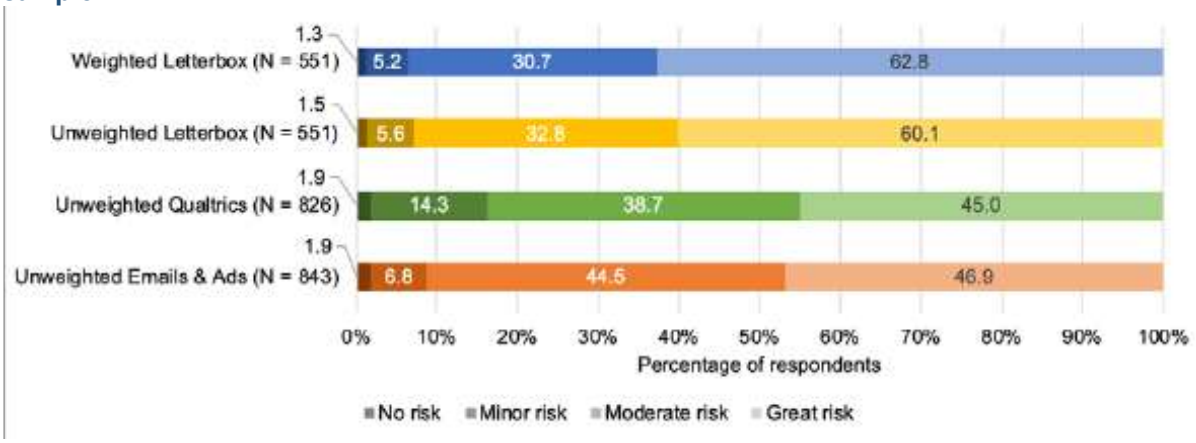
Attitudes towards gambling, approval of irregular (less than weekly) gamblers, by sample



GA1. Do you approve or disapprove of people who gamble less often than once a week?

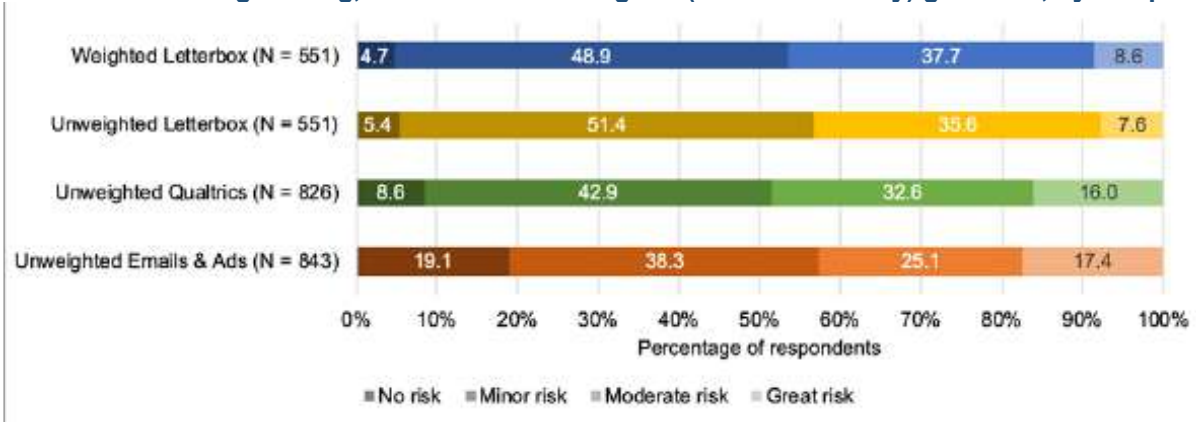
Attitudes towards risk of harm from gambling

Attitudes towards gambling, risk of harm for regular (weekly or more frequent) gamblers, by sample



GA2. How much do you think people risk harming themselves (physically, mentally, financially or in other ways) if they gamble?

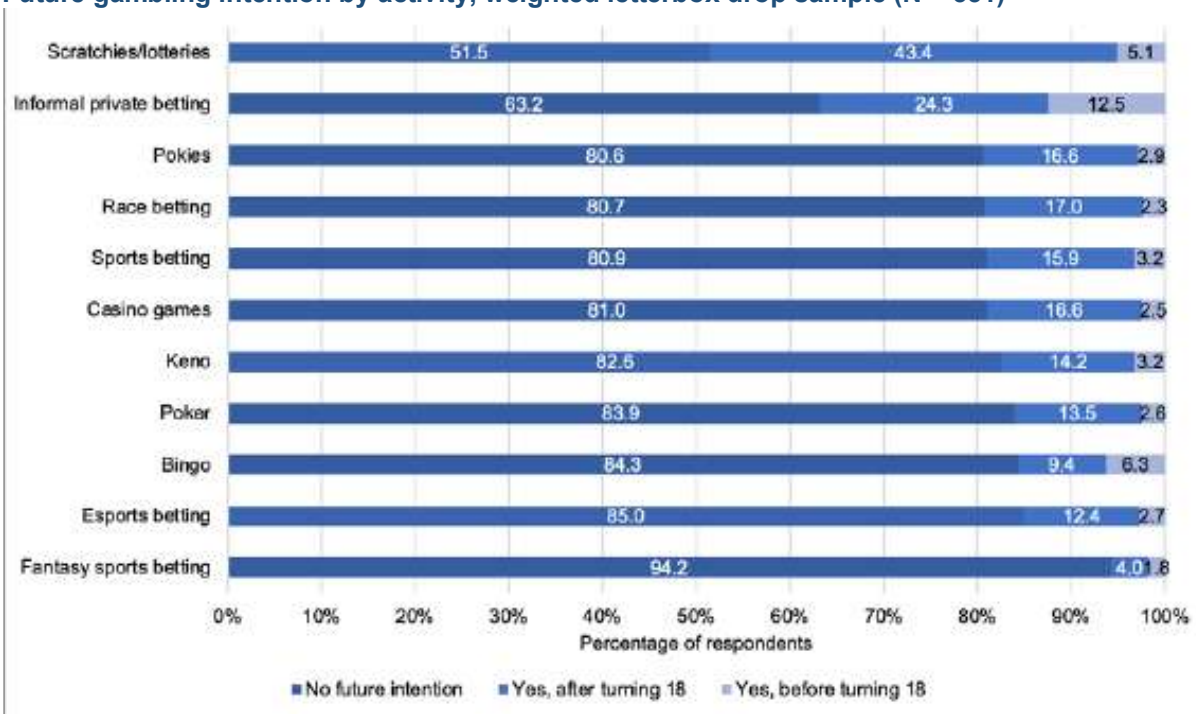
Attitudes towards gambling, risk of harm for irregular (less than weekly) gamblers, by sample



GA2. How much do you think people risk harming themselves (physically, mentally, financially or in other ways) if they gamble?

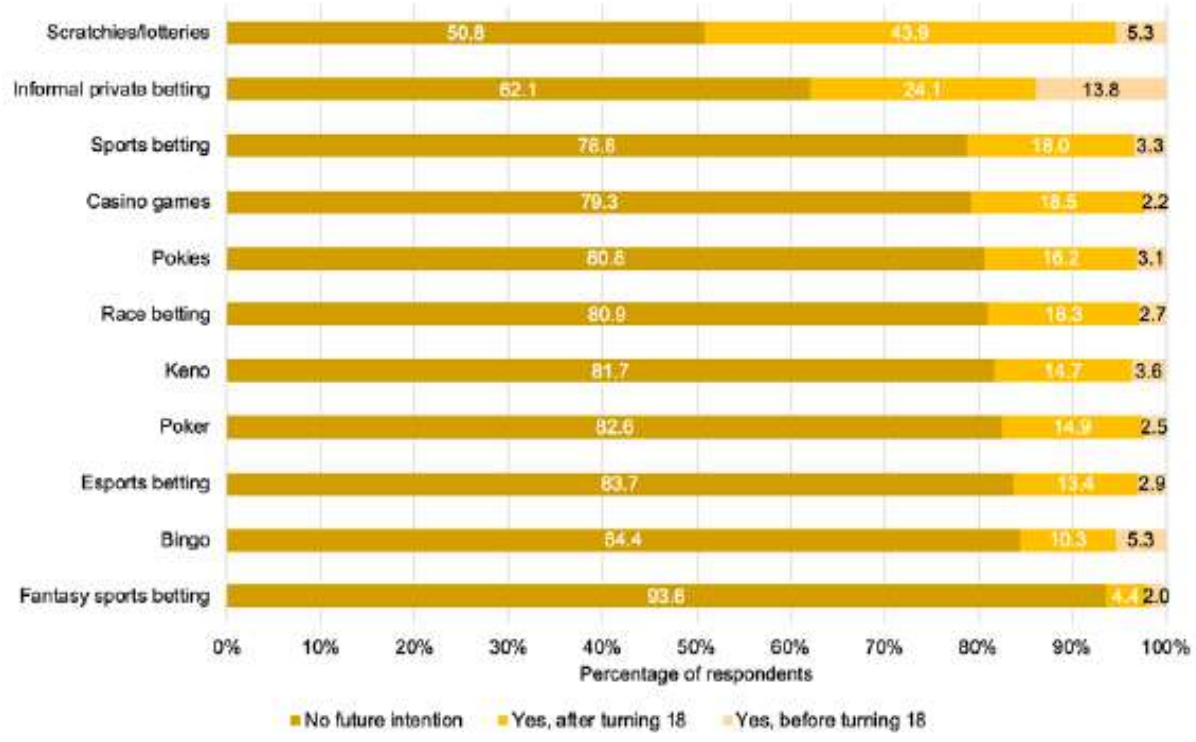
Future gambling intentions

Future gambling intention by activity, weighted letterbox drop sample (N = 551)



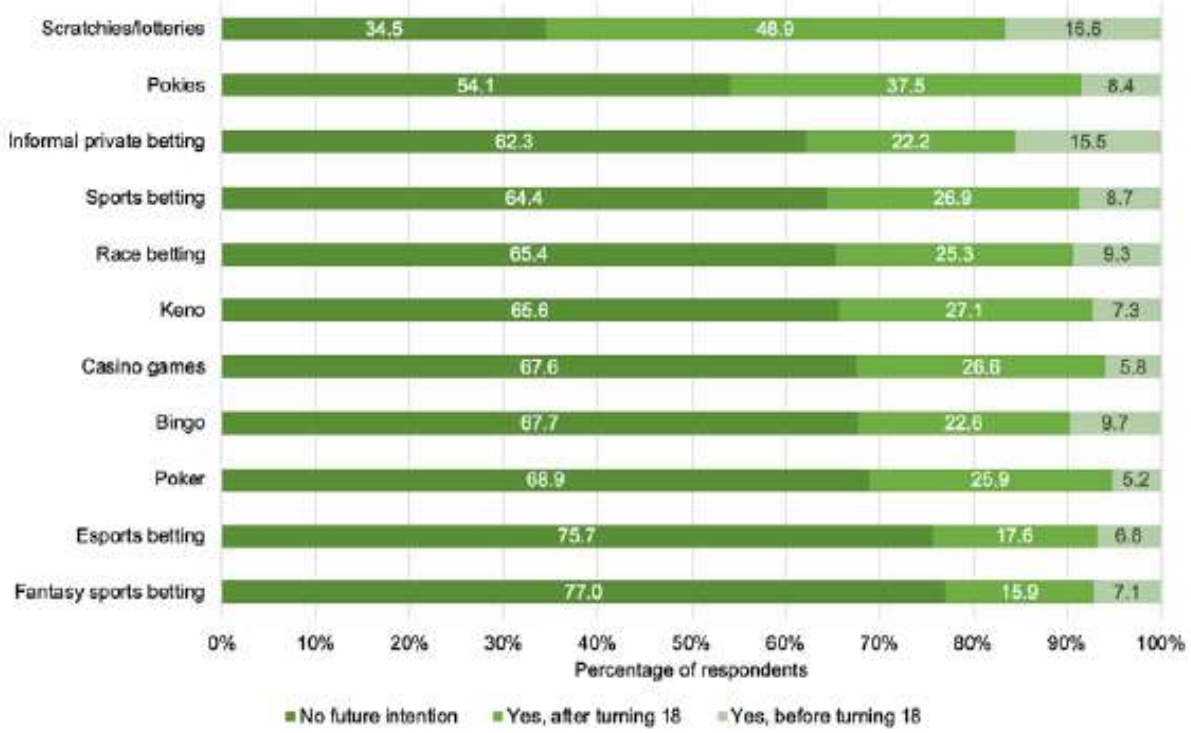
*GI1. **In the future**, do you intend to gamble WITH REAL MONEY on any of the following activities, either before or after you turn 18 years of age?*

Future gambling intention by form, unweighted letterbox drop sample (N = 551)



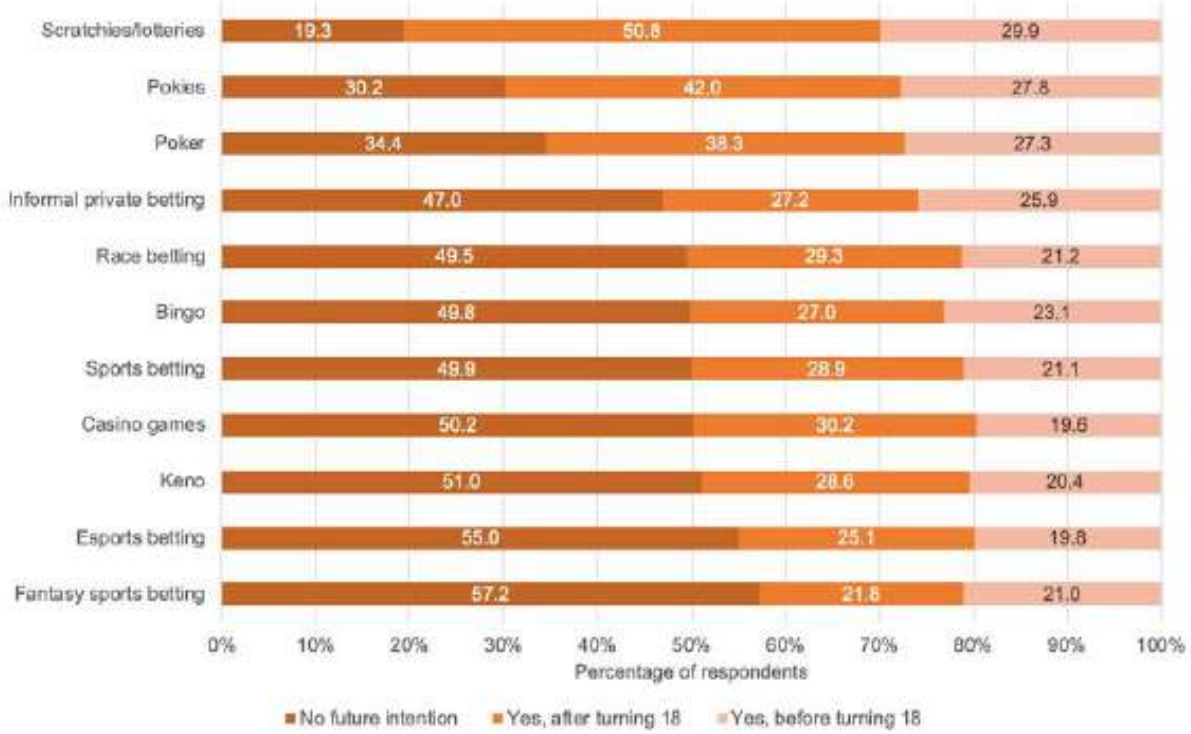
*GI1. **In the future**, do you intend to gamble WITH REAL MONEY on any of the following activities, either before or after you turn 18 years of age?*

Future gambling intention by activity, unweighted Qualtrics sample (N = 826)



*GI1. **In the future**, do you intend to gamble WITH REAL MONEY on any of the following activities, either before or after you turn 18 years of age?*

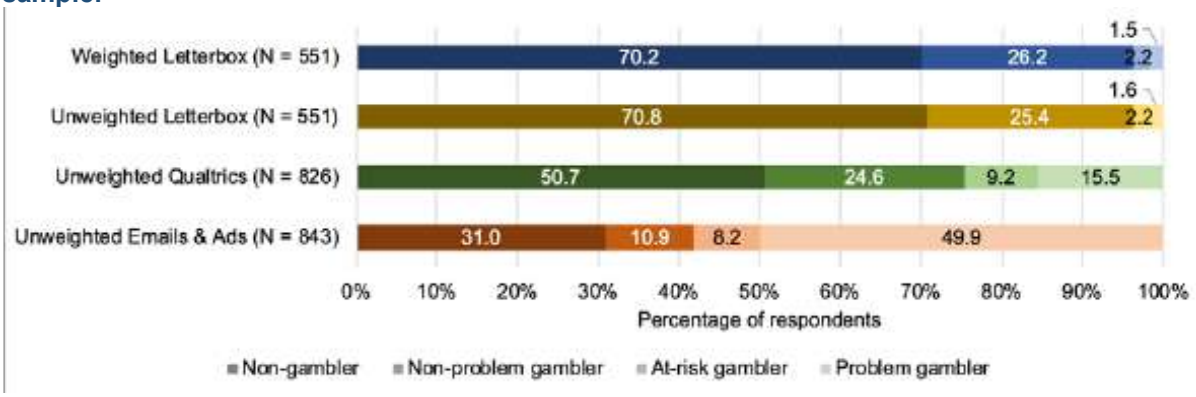
Future gambling intention by activity, unweighted emails and ads sample (N = 843)



*GI1. **In the future**, do you intend to gamble WITH REAL MONEY on any of the following activities, either before or after you turn 18 years of age?*

Problem gambling

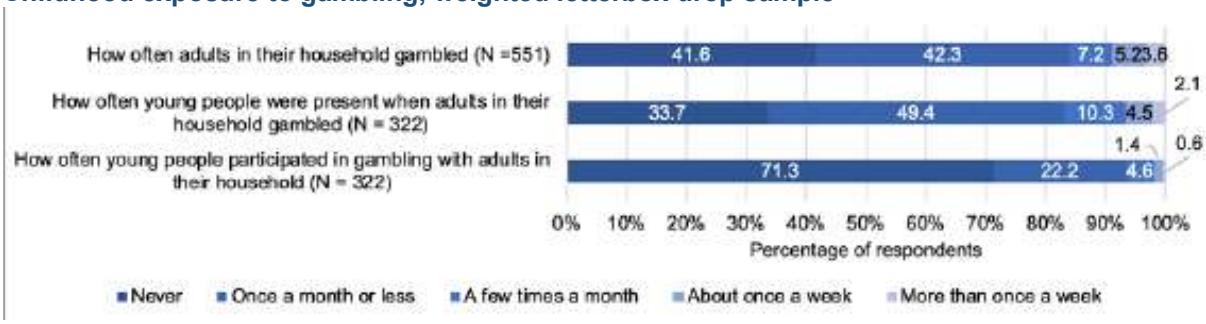
Non-gambling, non-problem gambling, at-risk gambling and problem gambling status, by sample.



Calculated from responses to DSM-IV-MR-J.

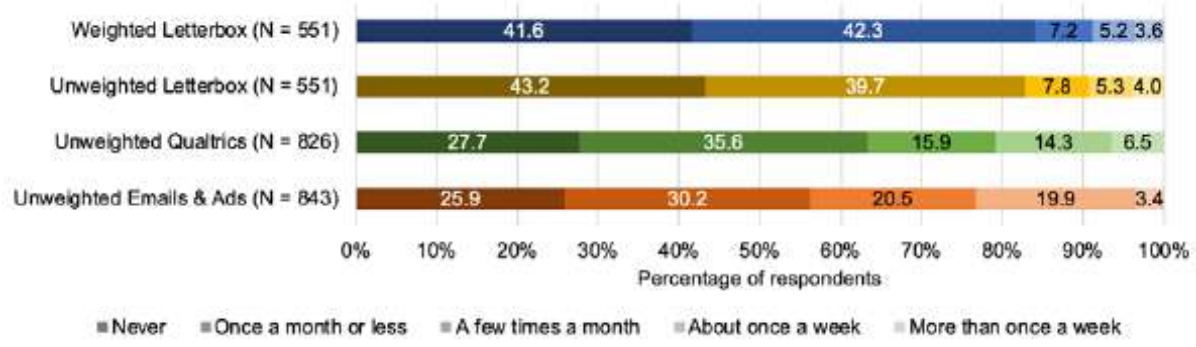
Childhood exposure to gambling

Childhood exposure to gambling, weighted letterbox drop sample



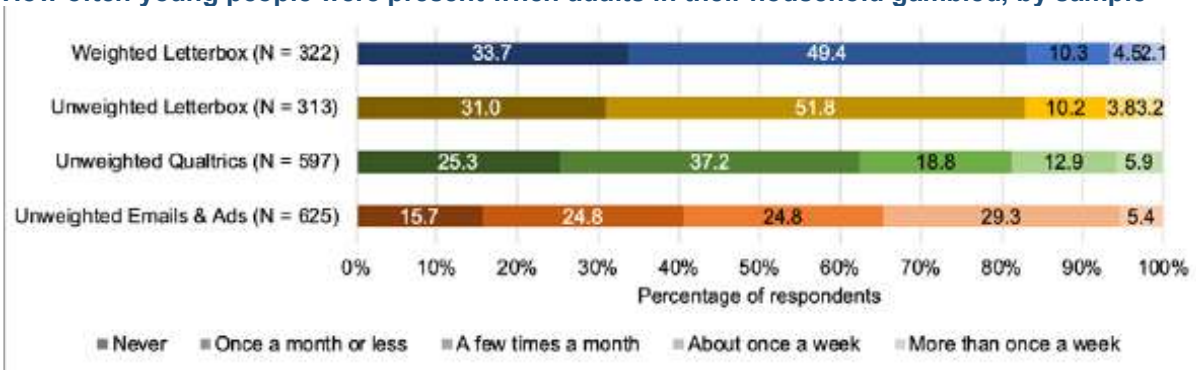
CE1. During the time that you've been growing up…

How often adults in their household gambled, by sample



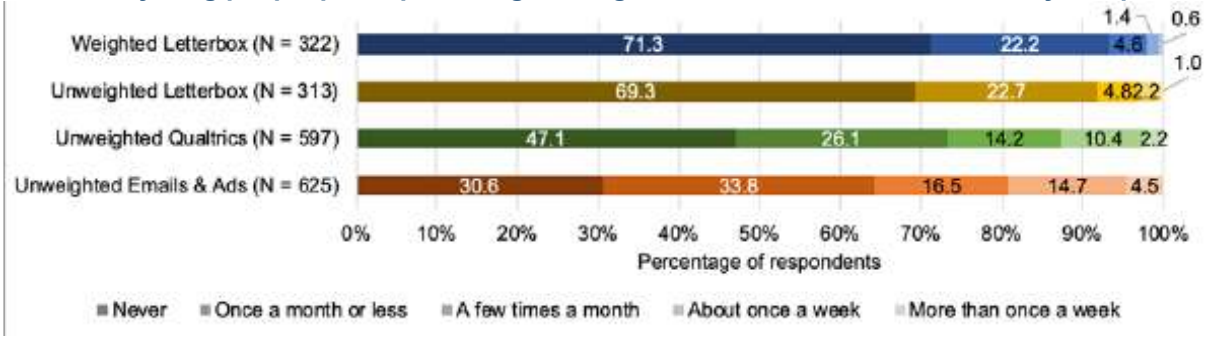
CE1. During the time that you've been growing up…

How often young people were present when adults in their household gambled, by sample



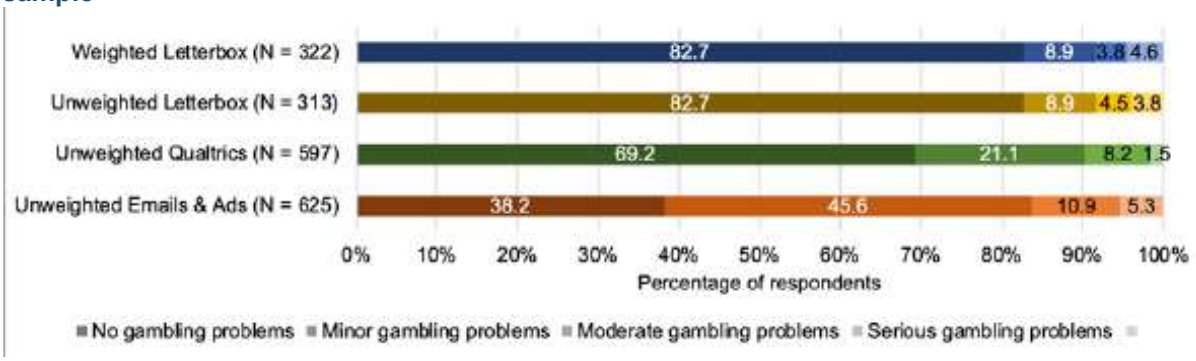
CE1. During the time that you've been growing up…

How often young people participated in gambling with adults in their household, by sample



CE1. During the time that you've been growing up…

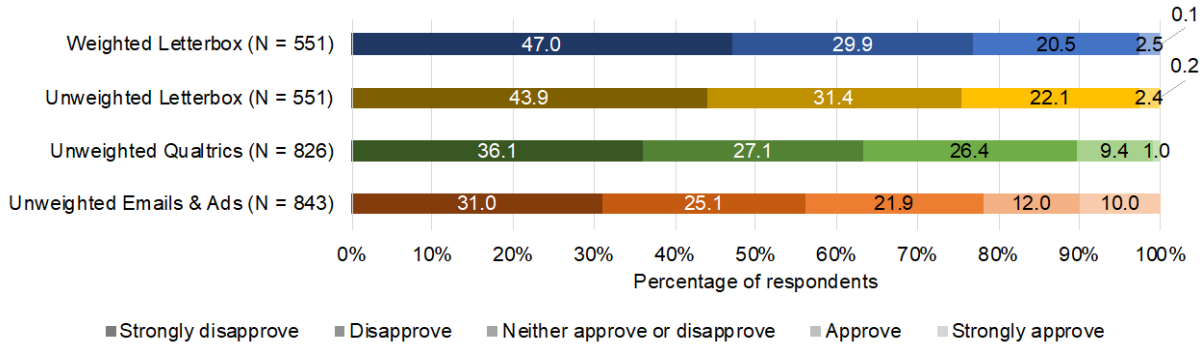
Whether any of the adults in their household experienced problems with their gambling, by sample



CE2. During the time that you've been growing up, did <u>any</u> of the adults in your household experience problems with their gambling? This means spending too much money or time on gambling which causes problems for themselves or other people).

Parental attitudes towards youth gambling

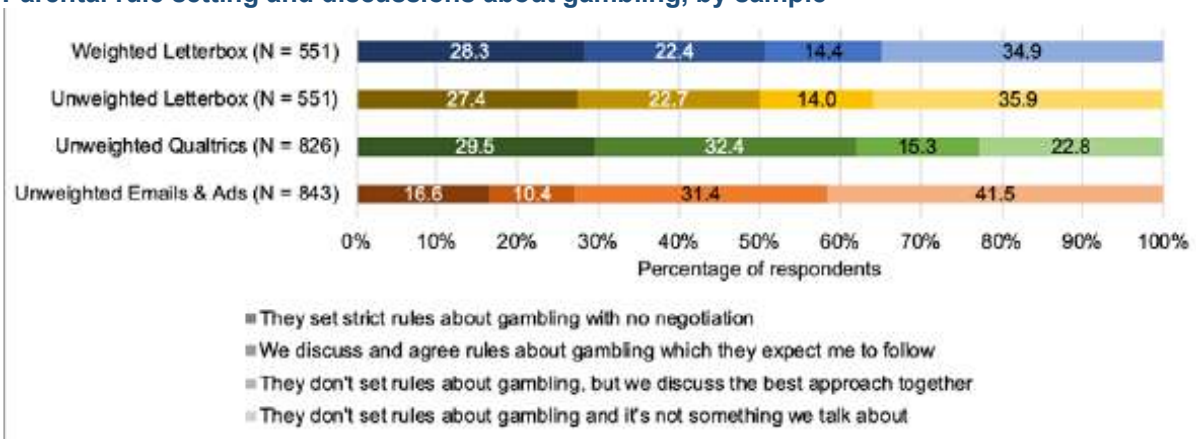
Parental attitudes towards the young person gambling, by sample



CE3. How do you think your parents/guardians would feel if you gambled, even once or twice, over the next 12 months?

Parental rule setting about gambling

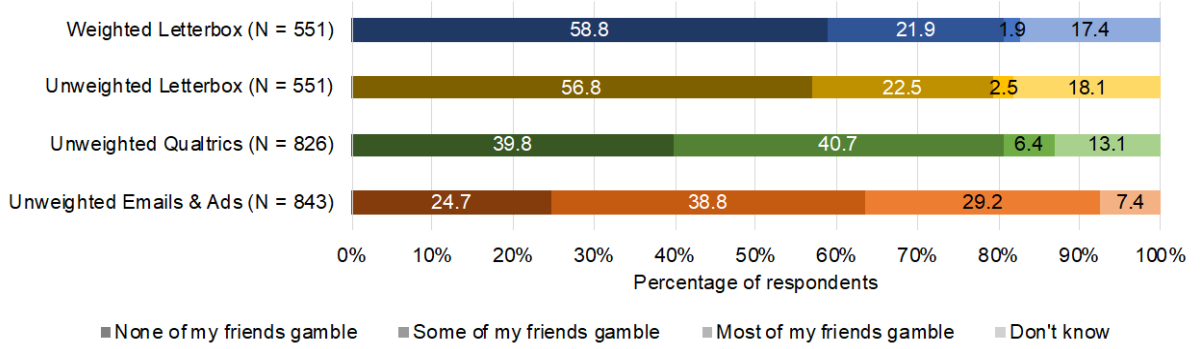
Parental rule setting and discussions about gambling, by sample



CE4. Which of the following statements best describes your parents'/guardians' approach to you and gambling?

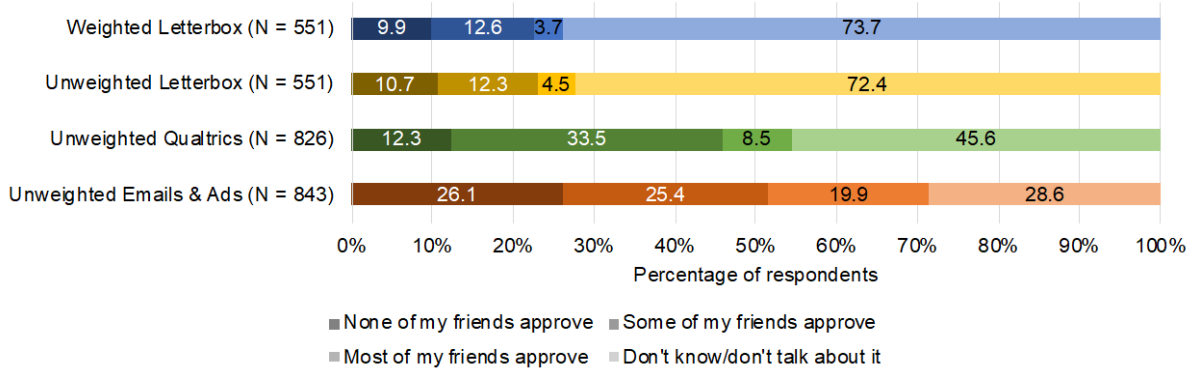
Peer gambling

Participation in gambling amongst peers, by sample



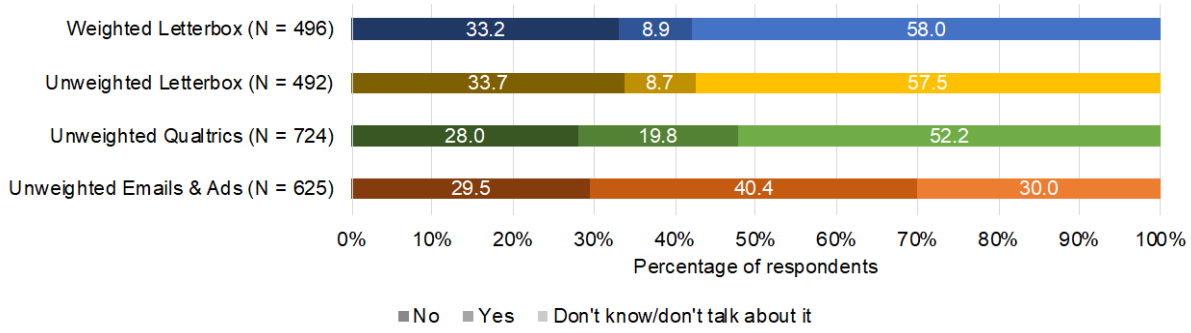
PE2. Do none, some, or most of your friends gamble?

Peer approval of young people gambling, by sample



PE3. How do your friends feel about someone your age gambling?

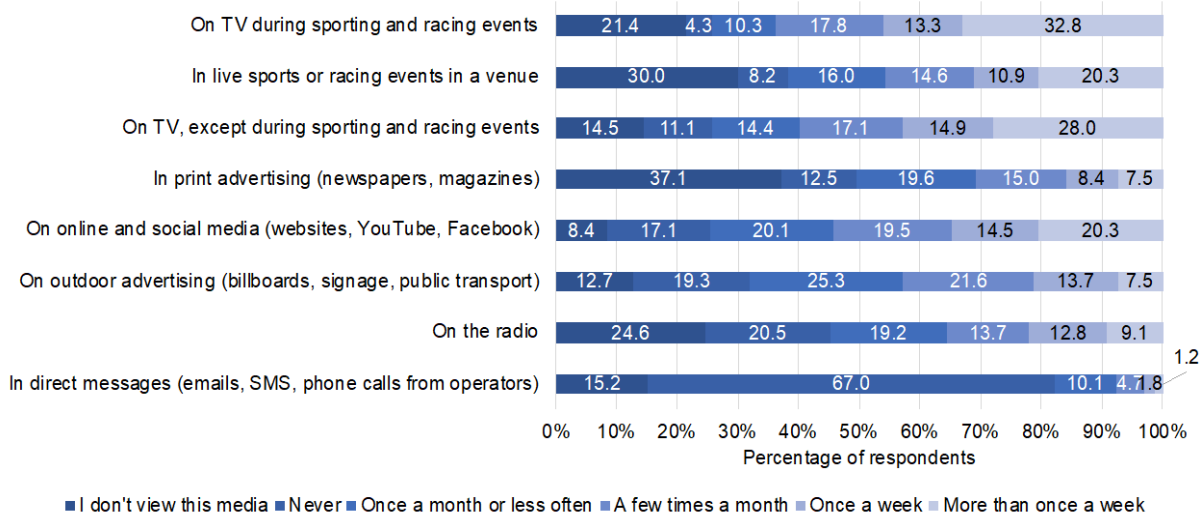
Close friends who strongly approve of gambling, by sample



PE4. Do you have any close friends who strongly approve of gambling?

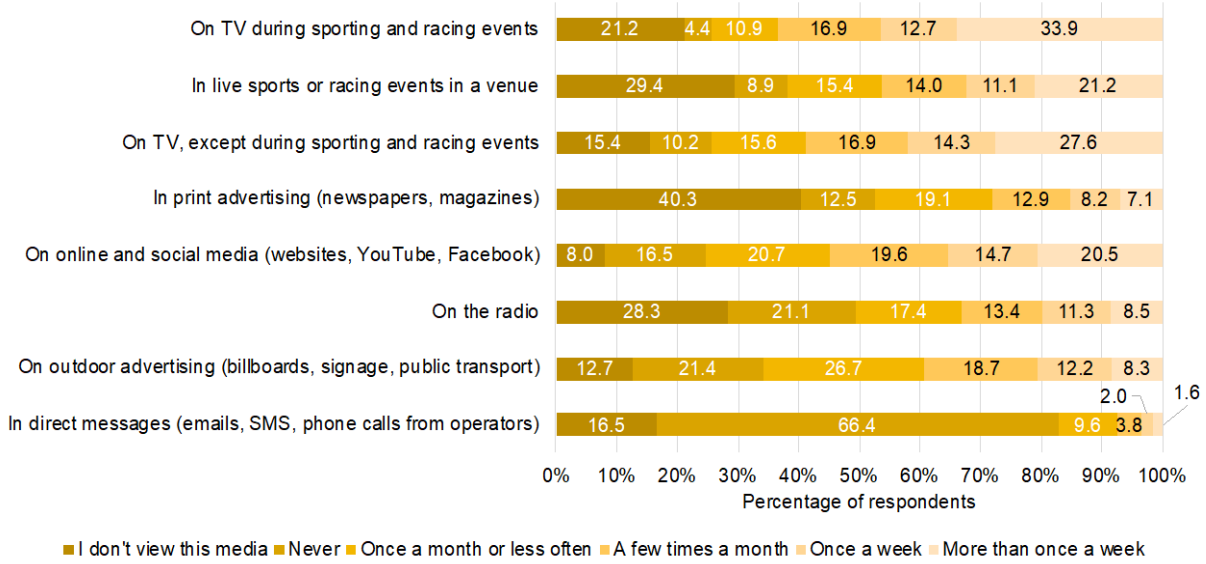
Exposure to gambling advertising

Exposure to gambling advertising by channel, weighted letterbox drop sample (N = 551)



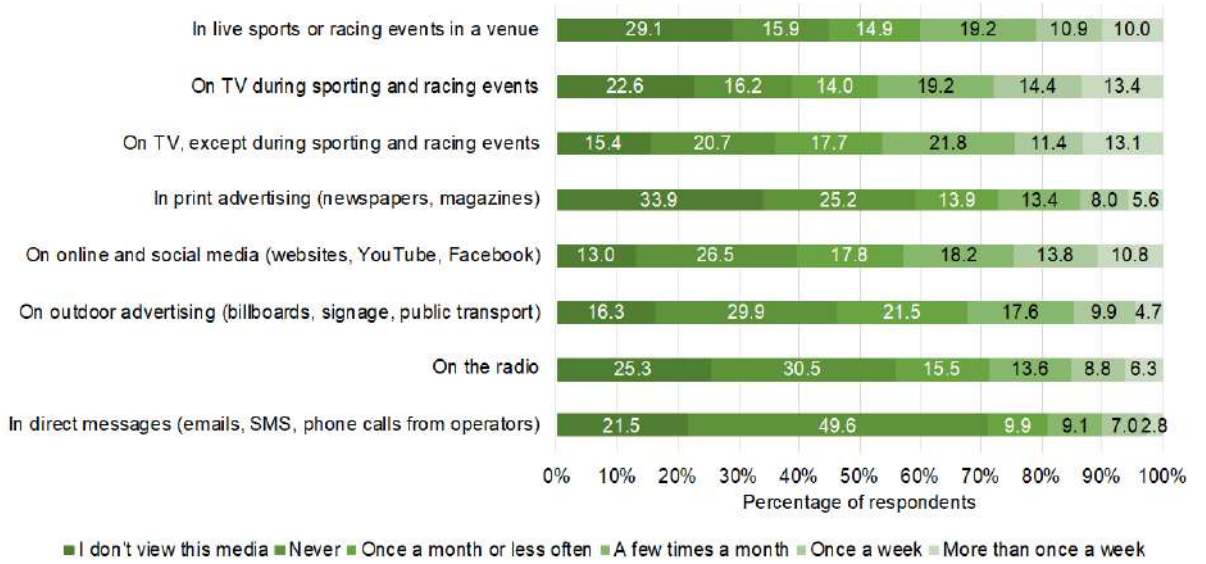
GAD1. During the last 12 months how often have you NOTICED gambling adverts, messages or logos in each of the following places?

Exposure to gambling advertising by channel, unweighted letterbox drop sample (N = 551)



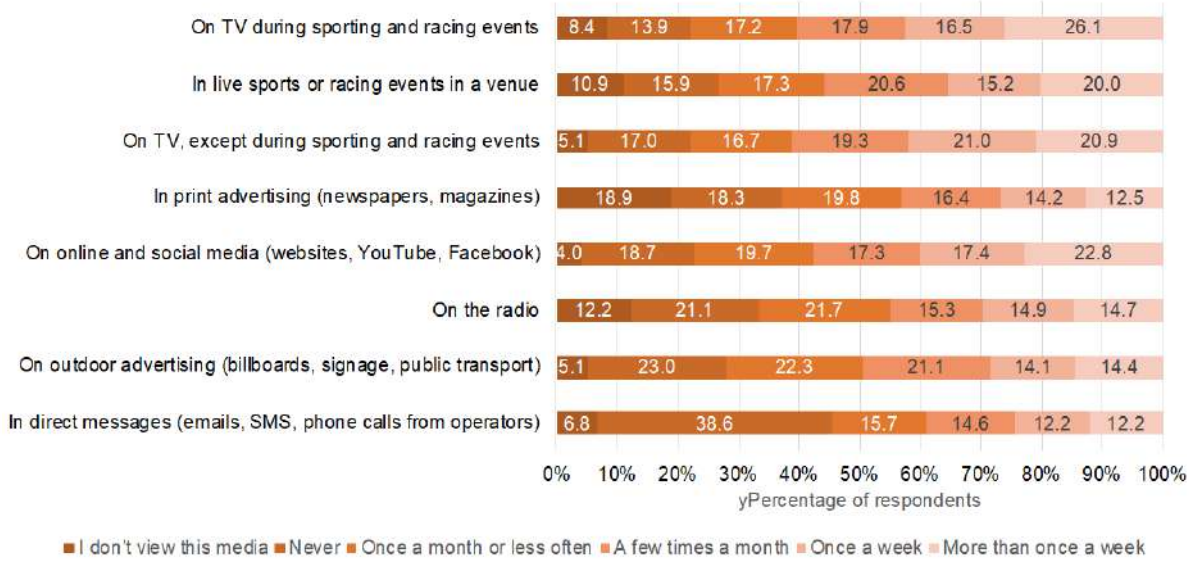
GAD1. During the last 12 months how often have you NOTICED gambling adverts, messages or logos in each of the following places?

Exposure to gambling advertising by channel, unweighted Qualtrics sample (N = 826)



GAD1. During the last 12 months how often have you NOTICED gambling adverts, messages or logos in each of the following places?

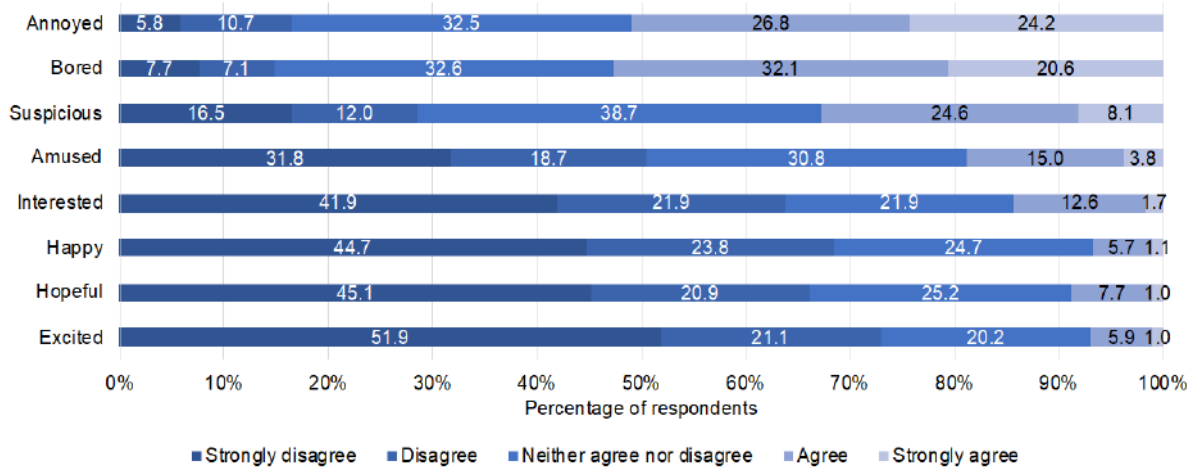
Exposure to gambling advertising by channel, unweighted emails and ads sample (N = 843)



GAD1. During the last 12 months how often have you NOTICED gambling adverts, messages or logos in each of the following places?

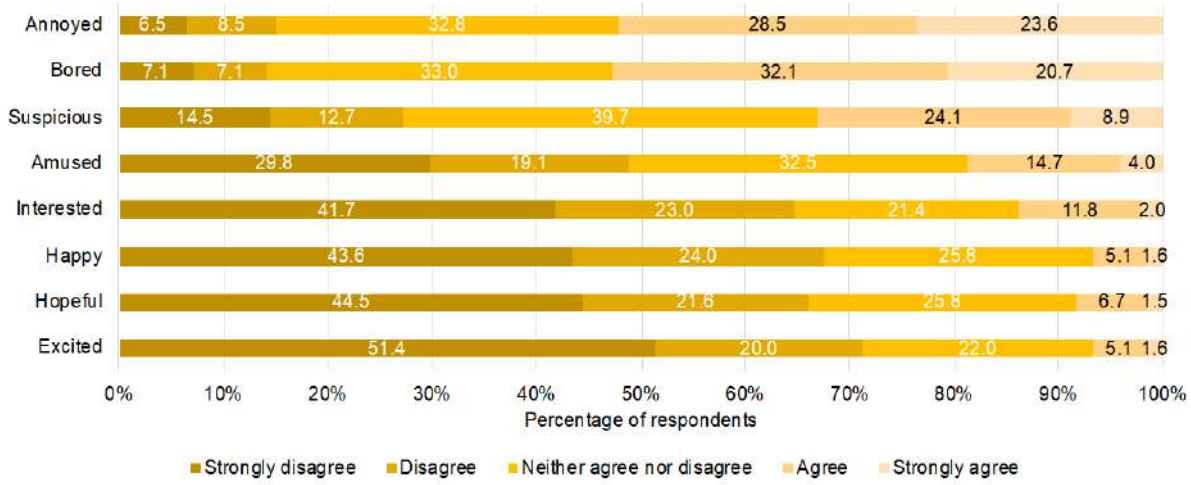
Emotional responses to gambling advertising

Attitudes towards gambling advertising, weighted letterbox drop sample (N = 551)



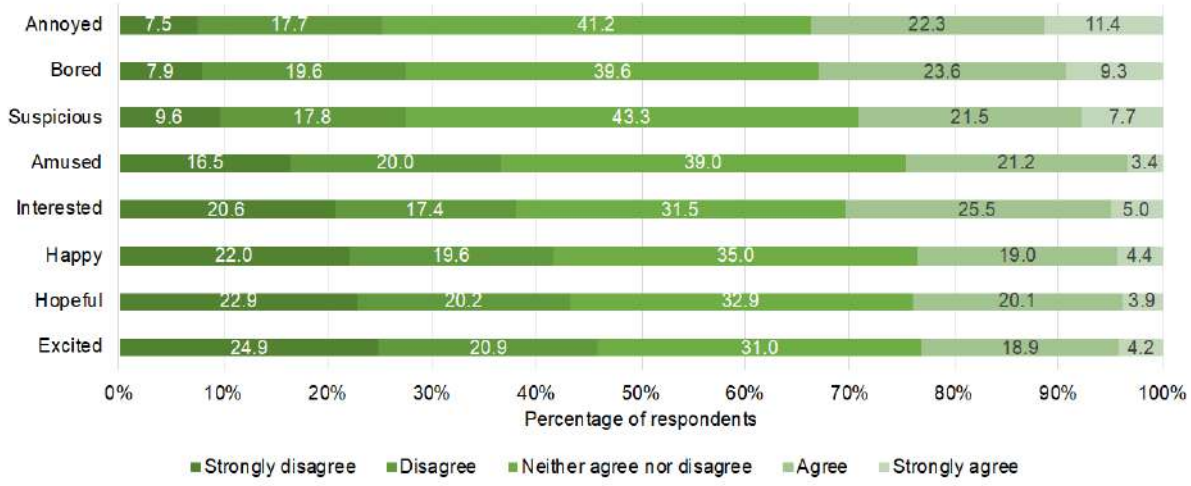
*GAD2. How strongly do you agree or disagree that gambling advertisements make you **feel**…*

Attitudes towards gambling advertising, unweighted letterbox drop sample (N = 551)



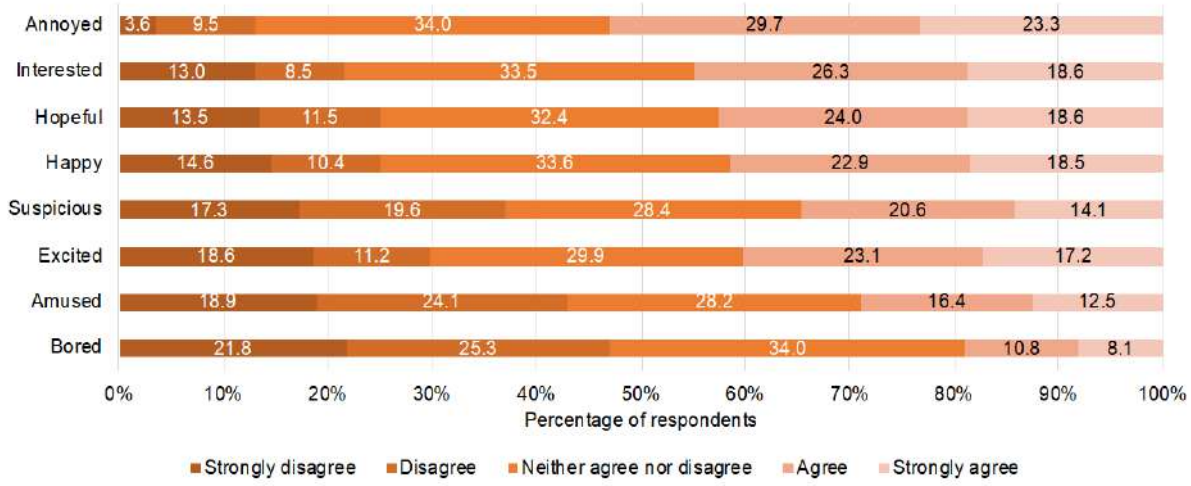
*GAD2. How strongly do you agree or disagree that gambling advertisements make you **feel**…*

Attitudes towards gambling advertising, unweighted Qualtrics sample (N = 826)



*GAD2. How strongly do you agree or disagree that gambling advertisements make you **feel**…*

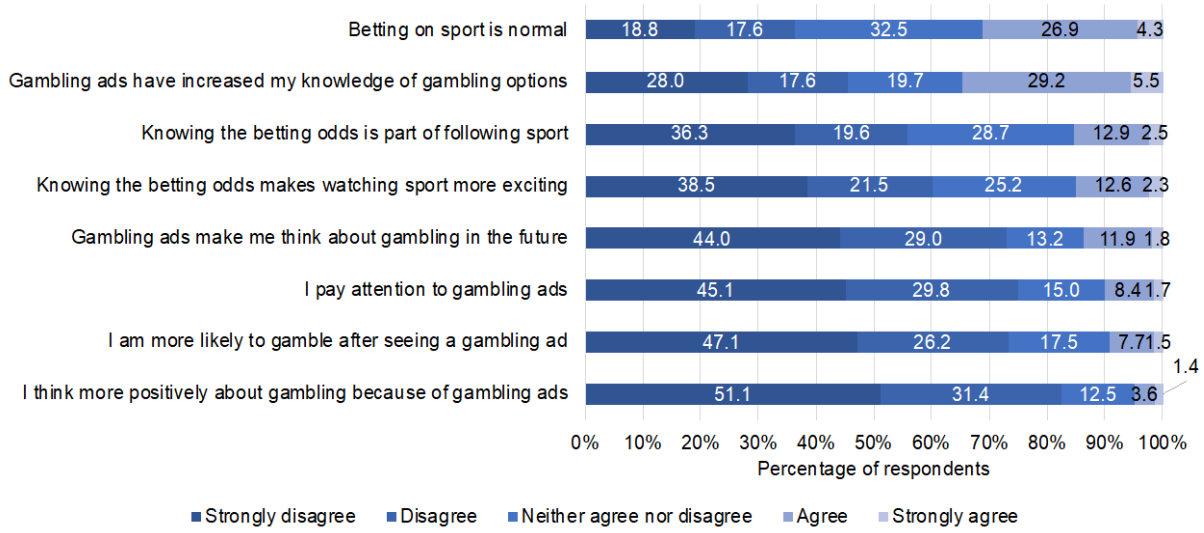
Attitudes towards gambling advertising, unweighted emails and ads sample (N = 843)



*GAD2. How strongly do you agree or disagree that gambling advertisements make you **feel**…*

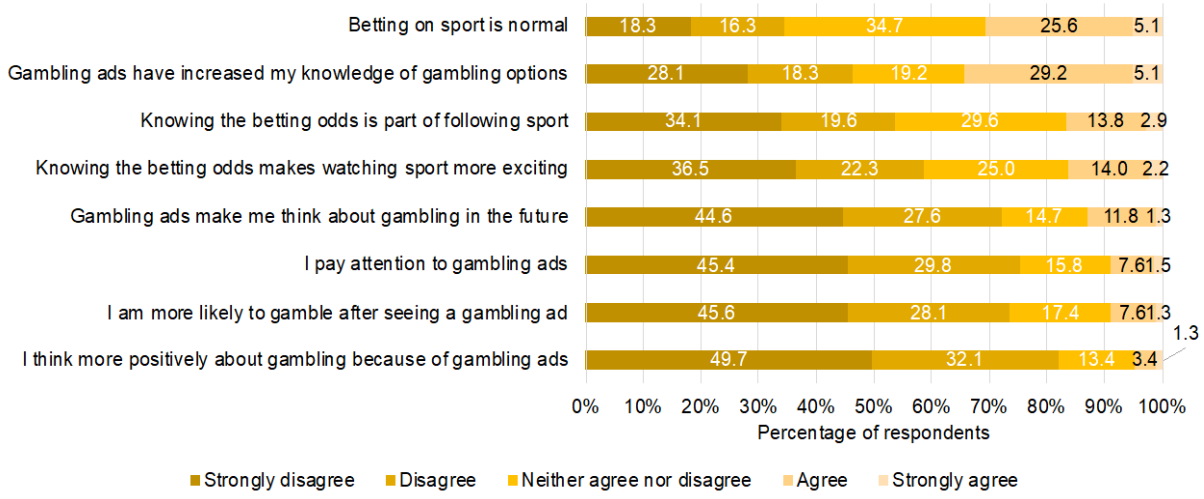
Reactions to gambling advertising

Reactions to gambling advertising, weighted letterbox drop sample (N = 551)



GAD3. How strongly do you agree or disagree with each of the following statements?

Reactions to gambling advertising, unweighted letterbox drop sample (N = 551)

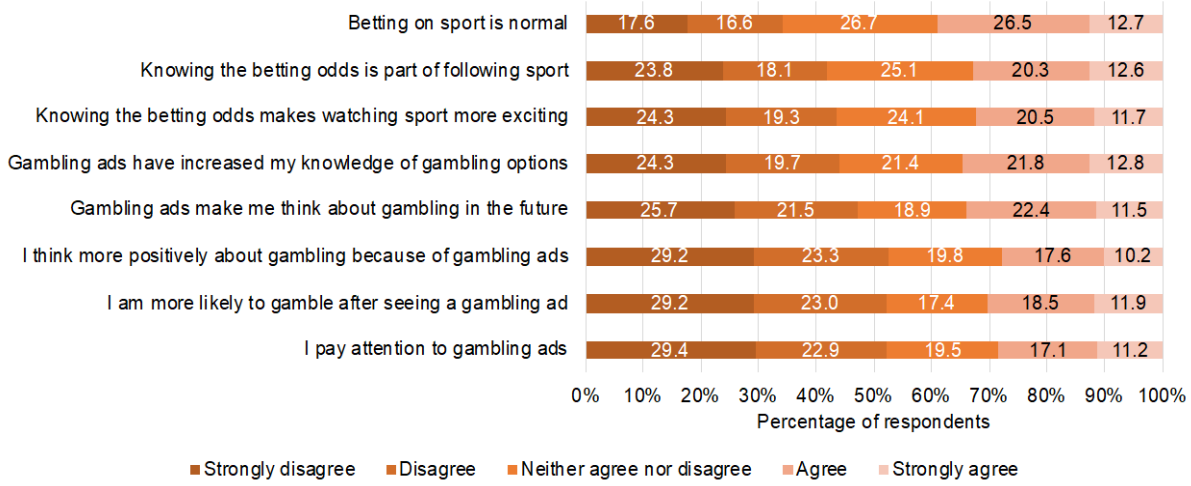


GAD3. How strongly do you agree or disagree with each of the following statements?

Reactions to gambling advertising, unweighted Qualtrics sample (N = 826)

GAD3. How strongly do you agree or disagree with each of the following statements?

Reactions to gambling advertising, unweighted emails and ads sample (N = 843)

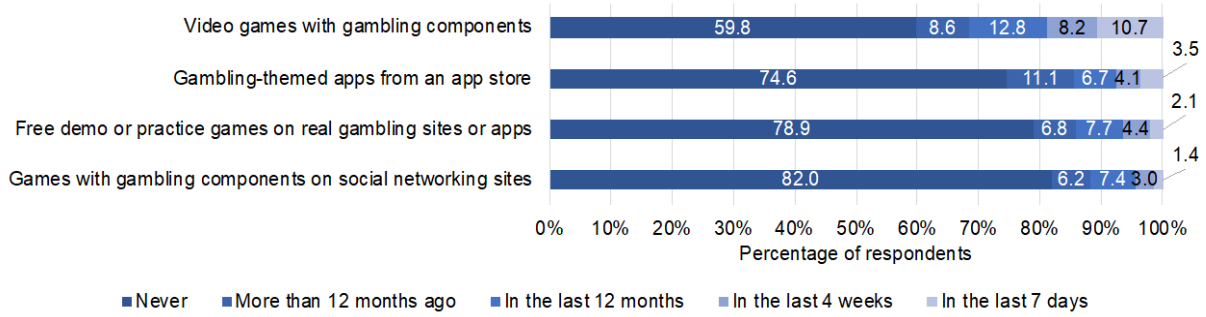


GAD3. How strongly do you agree or disagree with each of the following statements?

Simulated gambling amongst young people

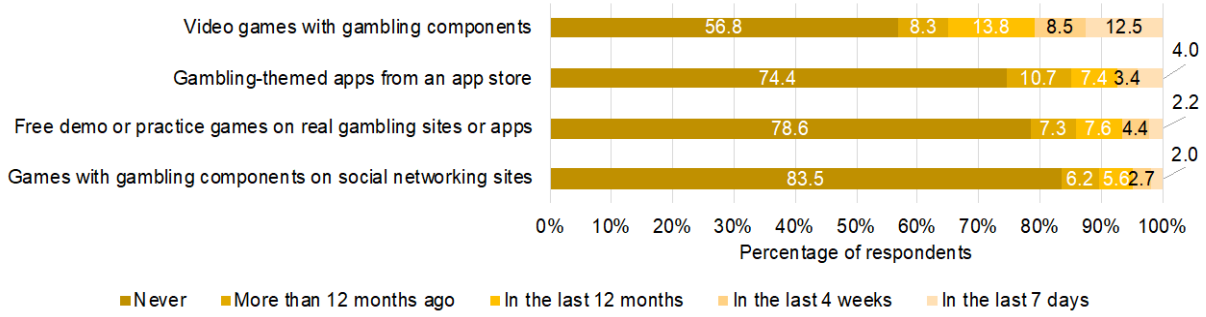
Participation in games with gambling components

Frequency of participation in games with gambling components, weighted letterbox drop sample (N = 551)



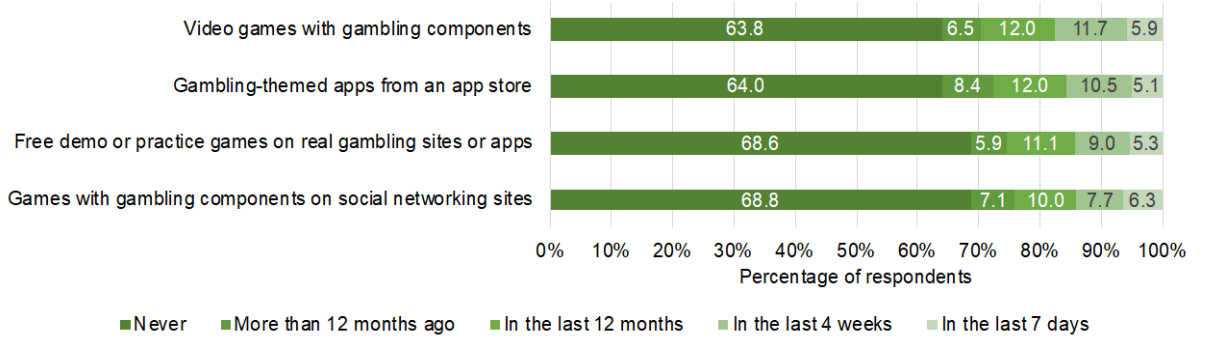
GSG1. When, if ever, did you last play any of these games with gambling components?

Frequency of participation in games with gambling components, unweighted letterbox drop sample (N = 551)



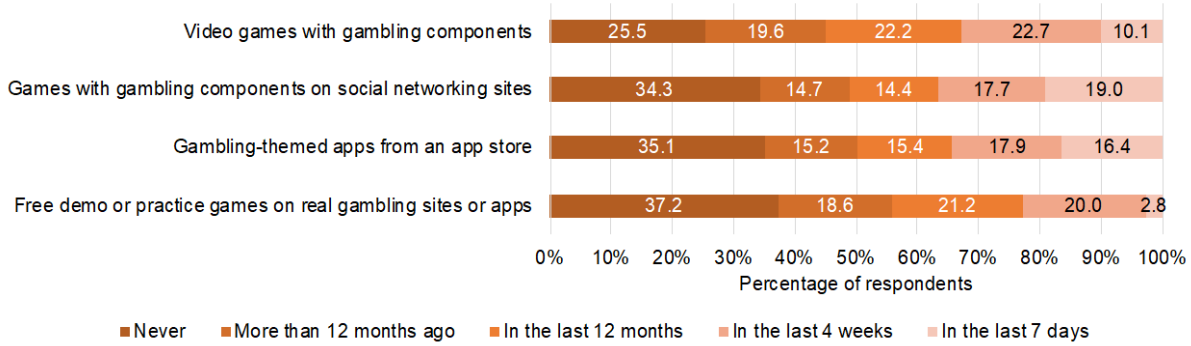
GSG1. When, if ever, did you last play any of these games with gambling components?

Frequency of participation in games with gambling components, weighted Qualtrics sample (N = 826)



GSG1. When, if ever, did you last play any of these games with gambling components?

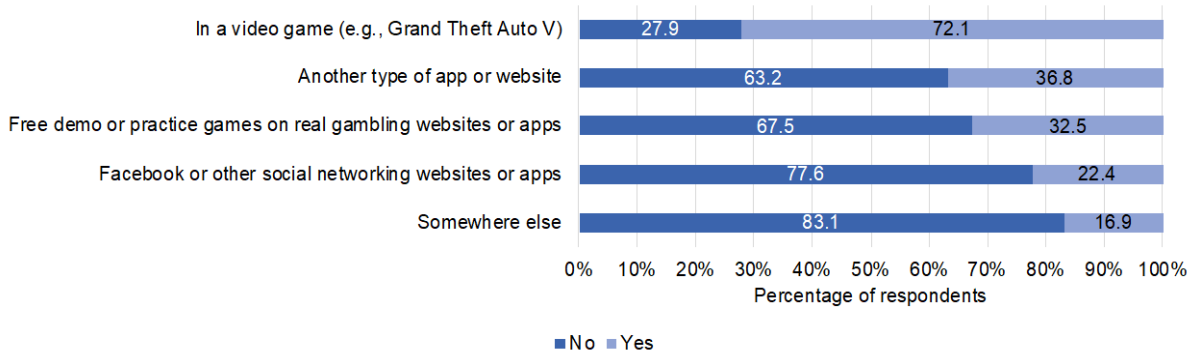
Frequency of participation in games with gambling components, weighted emails and ads sample (N = 843)



GSG1. When, if ever, did you last play any of these games with gambling components?

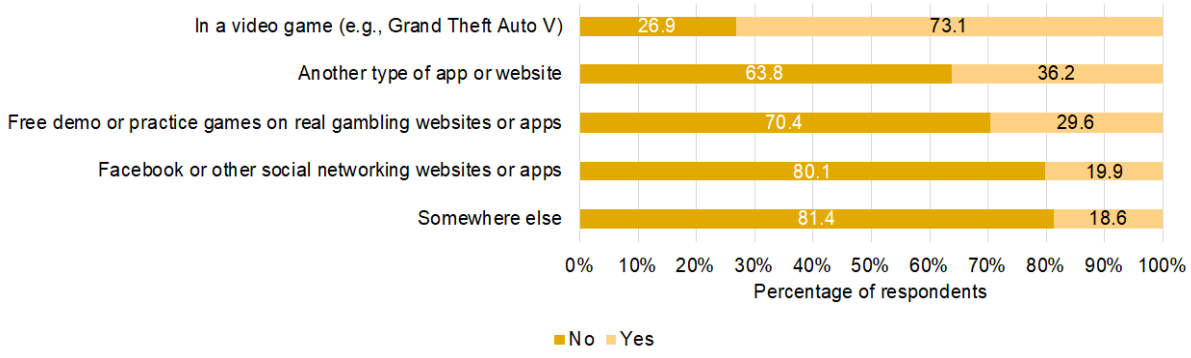
Where respondents play games with gambling components

Where respondents play games with gambling components, weighted letterbox drop sample (N = 291)



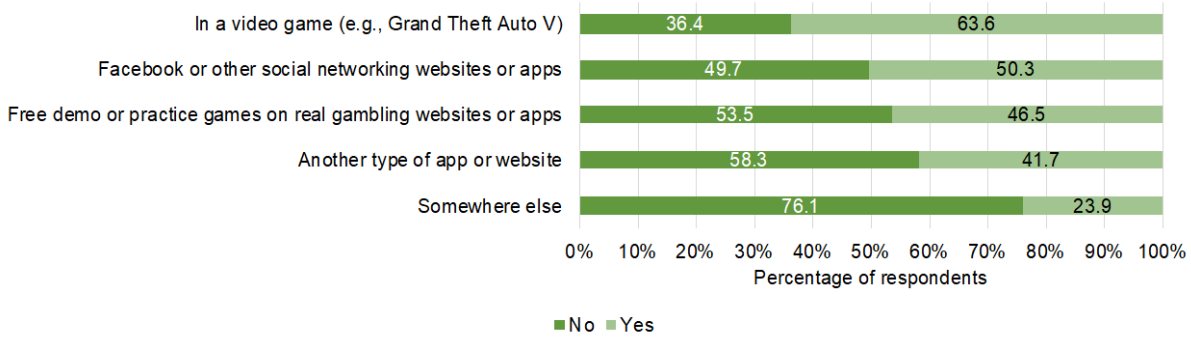
GSG2. Still thinking about the games with gambling components you have played, where did you play these games?

Where respondents play games with gambling components, unweighted letterbox drop sample (N = 301)



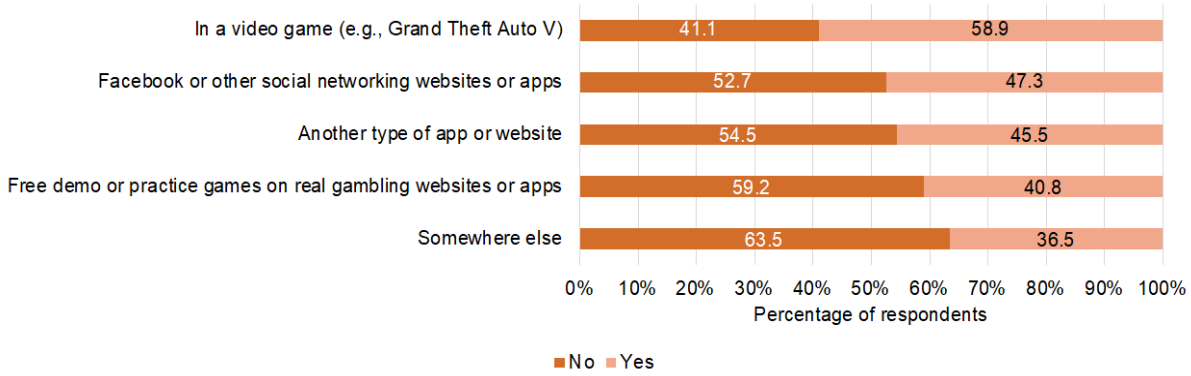
GSG2. Still thinking about the games with gambling components you have played, where did you play these games?

Where respondents play games with gambling components, unweighted Qualtrics sample (N = 398)



GSG2. Still thinking about the games with gambling components you have played, where did you play these games?

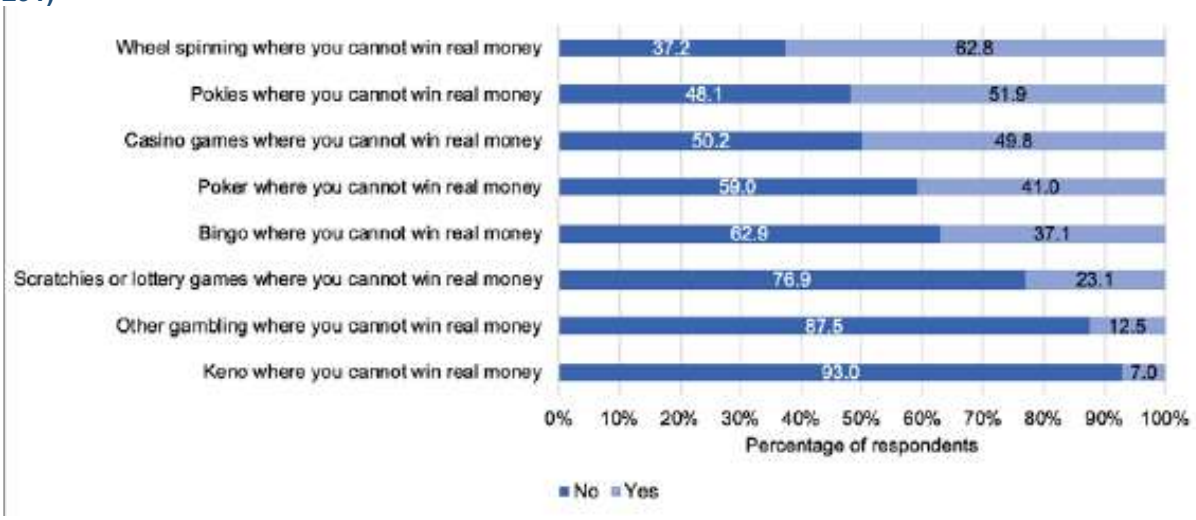
Where respondents play games with gambling components, unweighted emails and ads sample (N = 666)



GSG2. Still thinking about the games with gambling components you have played, where did you play these games?

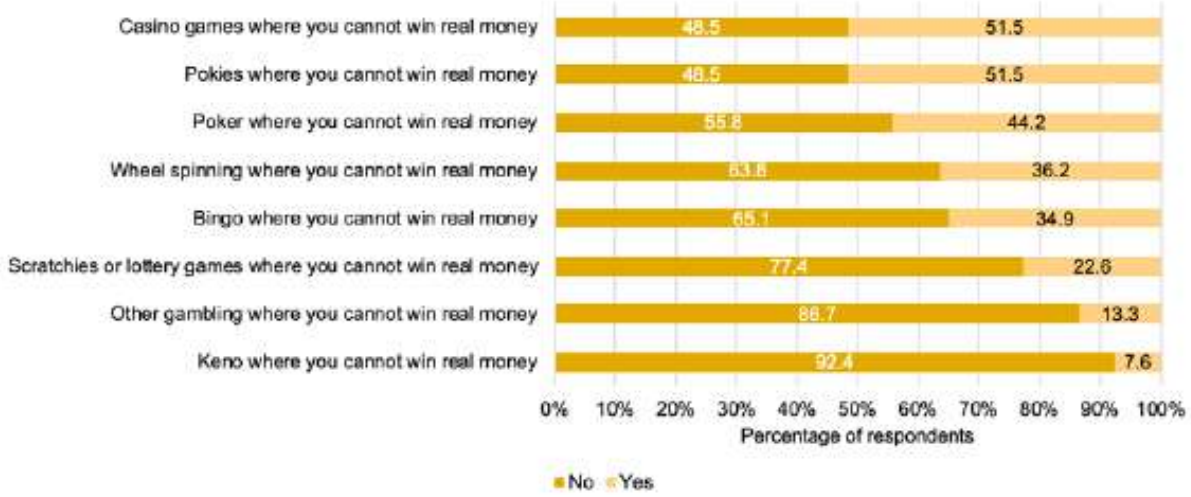
Participation in simulated gambling components in games

Simulated gambling components played by respondents, weighted letterbox drop sample (N = 291)



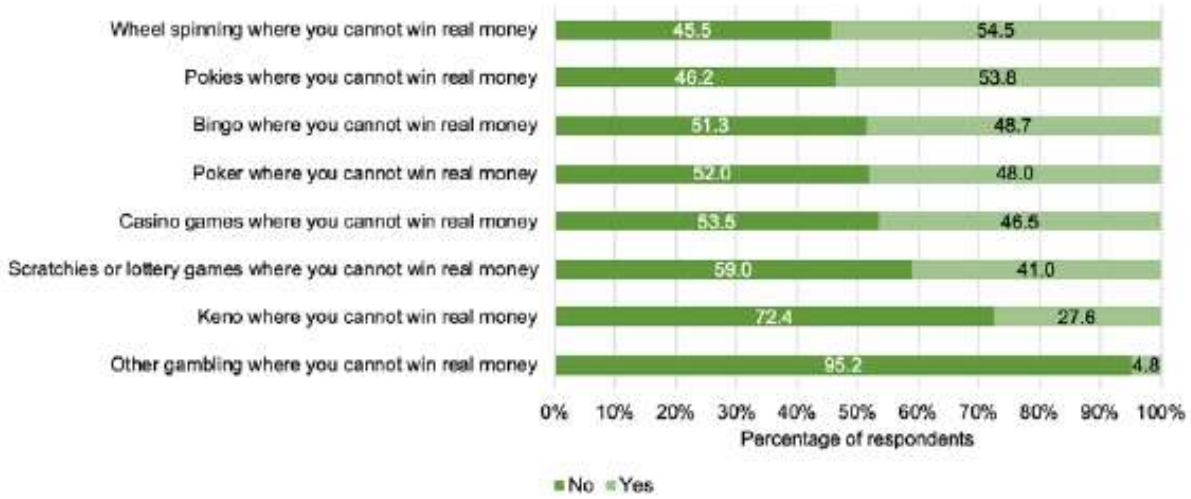
GSG3. Have you ever played any of the following gambling components in games?

Simulated gambling components played by respondents, unweighted letterbox drop sample (N = 301)



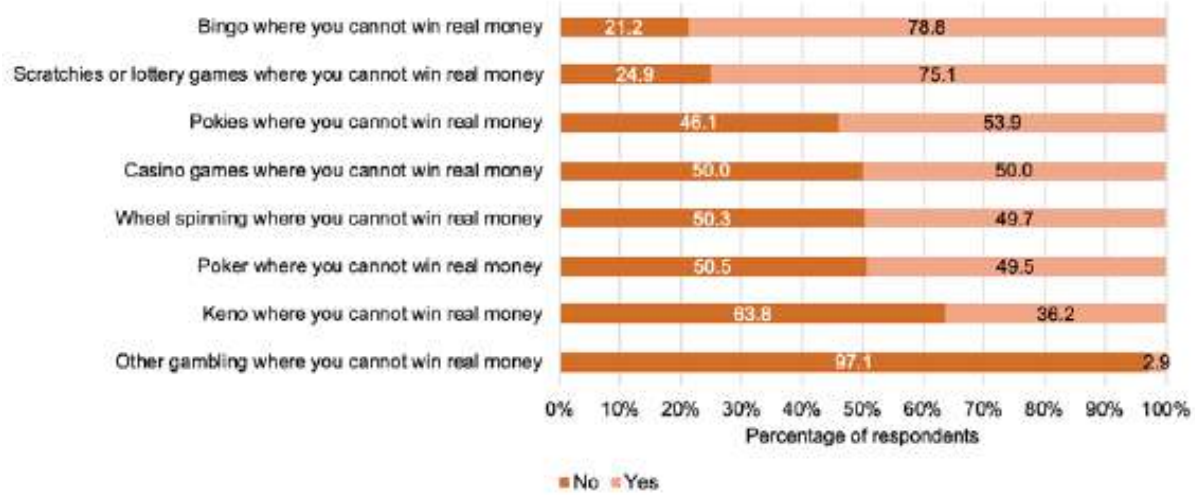
GSG3. Have you ever played any of the following gambling components in games?

Simulated gambling components played by respondents, unweighted Qualtrics sample (N = 398)



GSG3. Have you ever played any of the following gambling components in games?

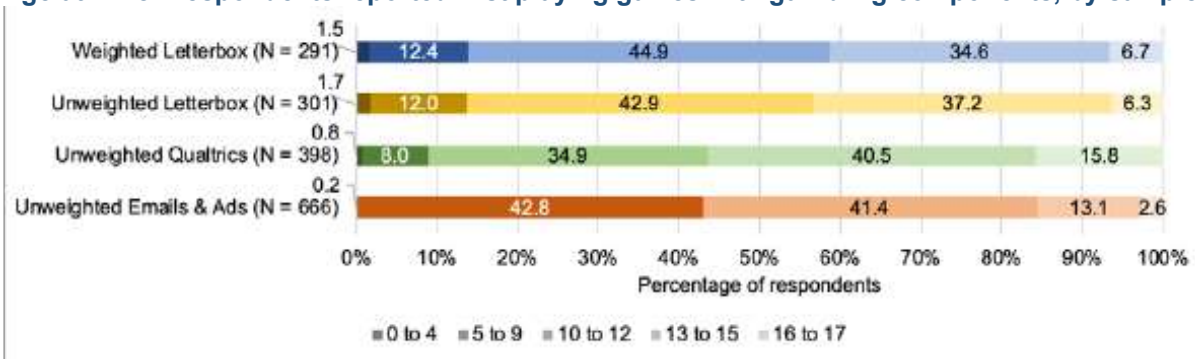
Simulated gambling components played by respondents, unweighted emails and ads sample (N = 666)



GSG3. Have you ever played any of the following gambling components in games?

Age of first playing games with gambling components

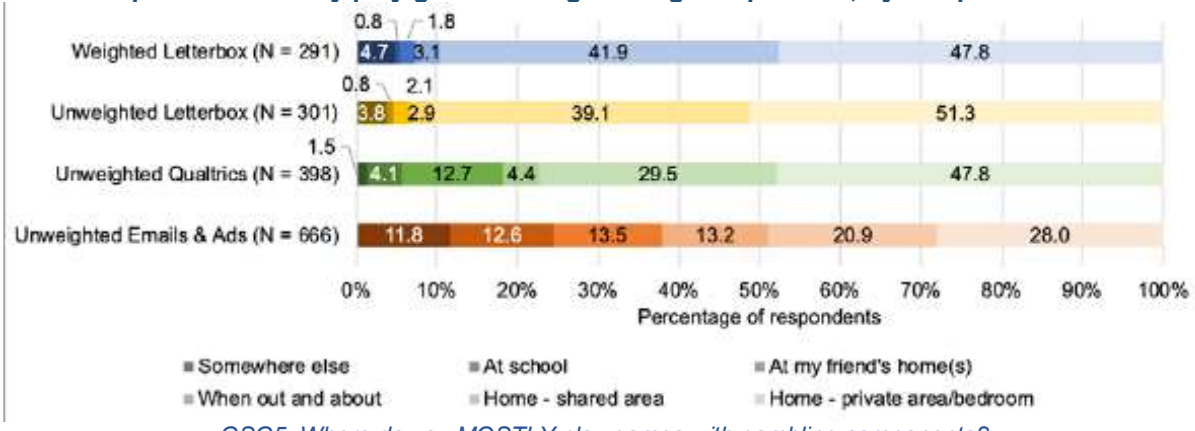
Age at which respondents reported first playing games with gambling components, by sample



GSG4. At what age did you first play a game with gambling components?

Where respondents play games with gambling components

Where respondents mostly play games with gambling components, by sample



GSG5. Where do you MOSTLY play games with gambling components?

Time spent playing games with gambling components

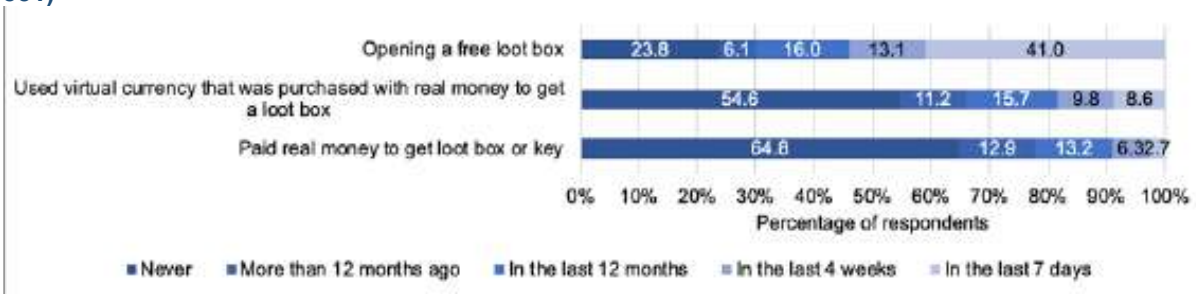
Median time per month spent playing games with gambling components

Source	Hours per month (median)
Weighted Letterbox (N = 476)	4.0
Unweighted Letterbox (N = 491)	4.0
Unweighted Qualtrics (N = 661)	8.0
Unweighted Emails & Ads (N = 784)	14.0

GSG6. In general, about how many hours per week OR per month do you usually spend playing games with gambling components?

Opening and purchasing loot boxes

Engagement with loot boxes during the last 12 months, weighted letterbox drop sample (N = 551)

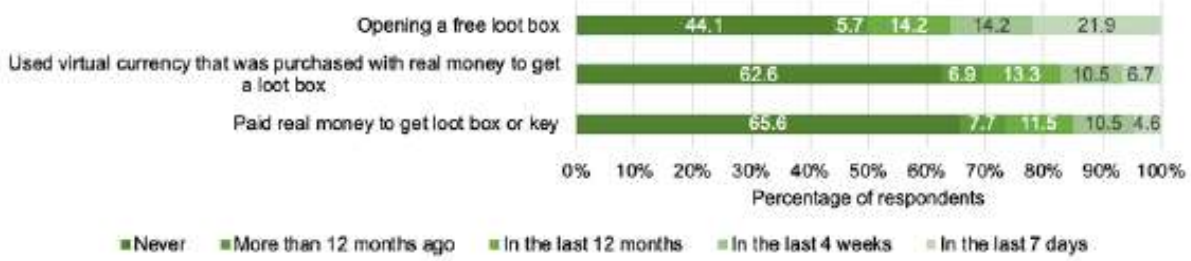


LB1. When, if ever, did you last obtain a loot box in the following ways?

Engagement with loot boxes during the last 12 months, unweighted letterbox drop sample (N = 551)

LB1. When, if ever, did you last obtain a loot box in the following ways?

Engagement with loot boxes during the last 12 months, unweighted Qualtrics sample (N = 826)



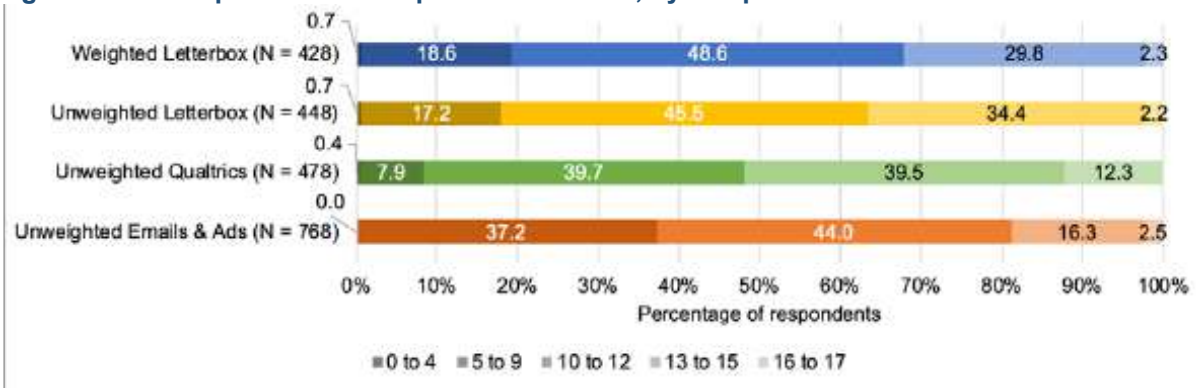
LB1. When, if ever, did you last obtain a loot box in the following ways?

Engagement with loot boxes during the last 12 months, unweighted emails and ads sample (N = 843)

LB1. When, if ever, did you last obtain a loot box in the following ways?

Age of first opening loot boxes

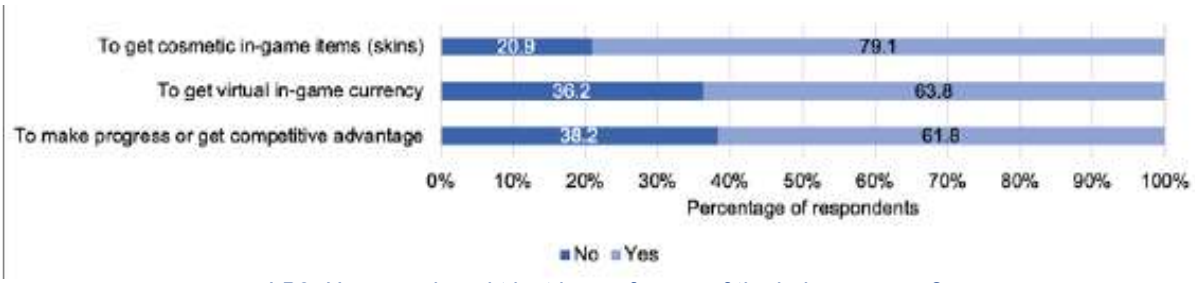
Age at which respondents first opened loot boxes, by sample



LB2. At what age did you first open loot boxes/crates/packs?

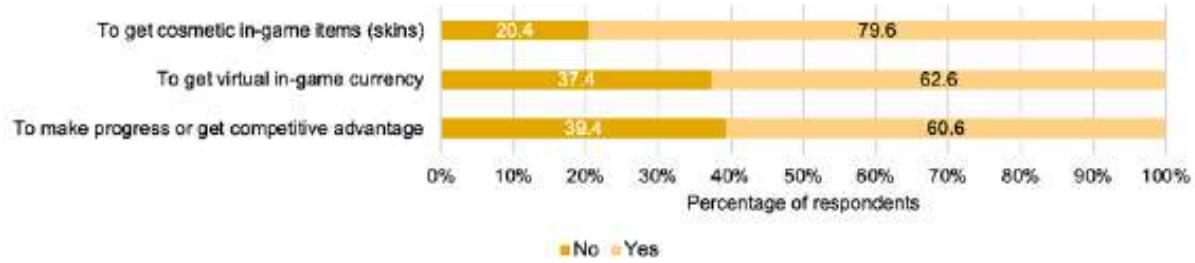
Reasons for purchasing loot boxes

Reasons for purchasing loot boxes, weighted letterbox drop sample (N = 272)



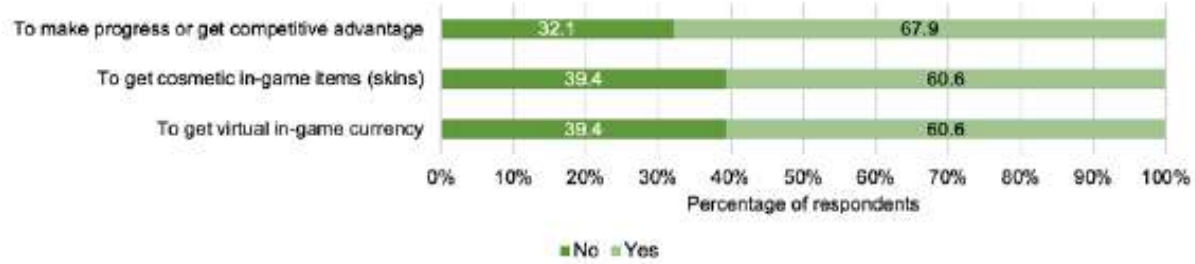
LB3. Have you bought loot boxes for any of the below reasons?

Reasons for purchasing loot boxes, unweighted letterbox drop sample (N = 289)



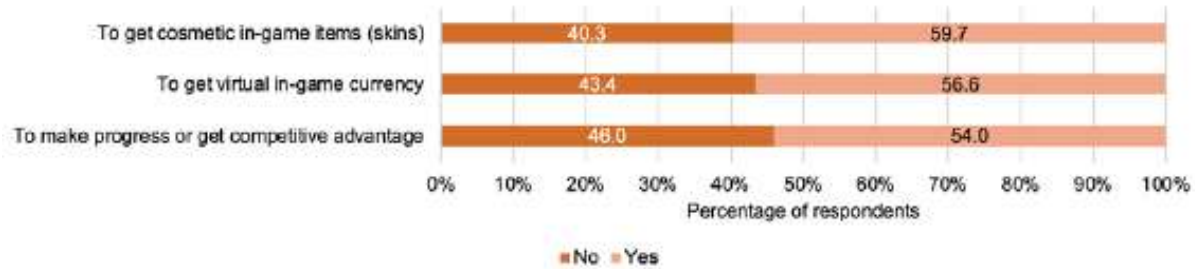
LB3. Have you bought loot boxes for any of the below reasons?

Reasons for purchasing loot boxes, unweighted Qualtrics sample (N = 343)



LB3. Have you bought loot boxes for any of the below reasons?

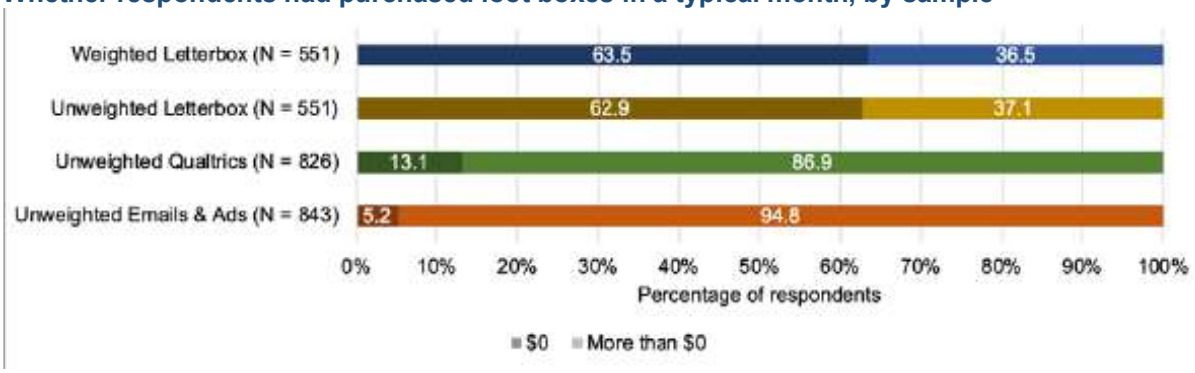
Reasons for purchasing loot boxes, unweighted emails and ads sample (N = 657)



LB3. Have you bought loot boxes for any of the below reasons?

Expenditure on loot boxes

Whether respondents had purchased loot boxes in a typical month, by sample



Calculated from LB1. When, if ever, did you last obtain a loot box in the following ways?

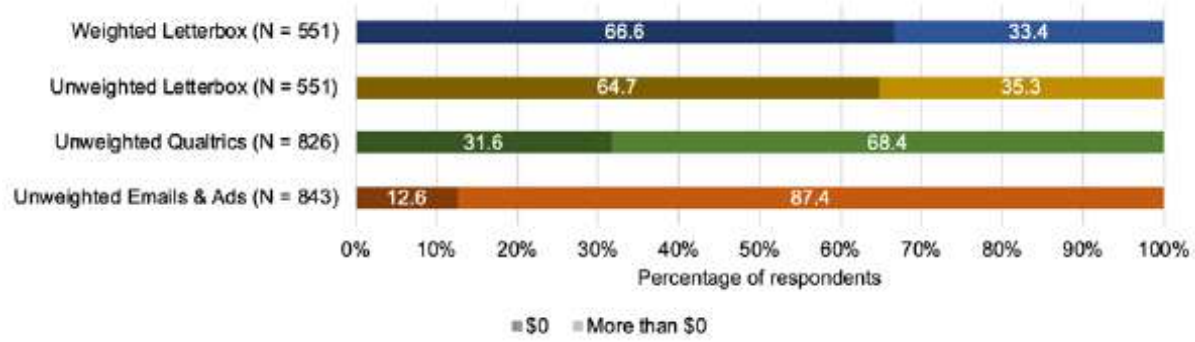
Median monthly expenditure on loot boxes, by sample.

Source	Lootbox monthly expenditure (median)
Weighted Letterbox (N = 142)	10.0
Unweighted Letterbox (N = 152)	10.0
Unweighted Qualtrics (N = 258)	20.0
Unweighted Emails & Ads (N = 569)	80.0

*EIG1. In a typical month, about how much do you spend on **loot boxes** in games, either directly with money or with in-game currency purchased with money?*

Microtransactions in games

Whether respondents had spent money on microtransactions in a typical month, by sample



*Derived from EIG2. In a typical month, about how much do you spend on **microtransactions, such as to get virtual credits,** in games with gambling components (not including loot boxes)?*

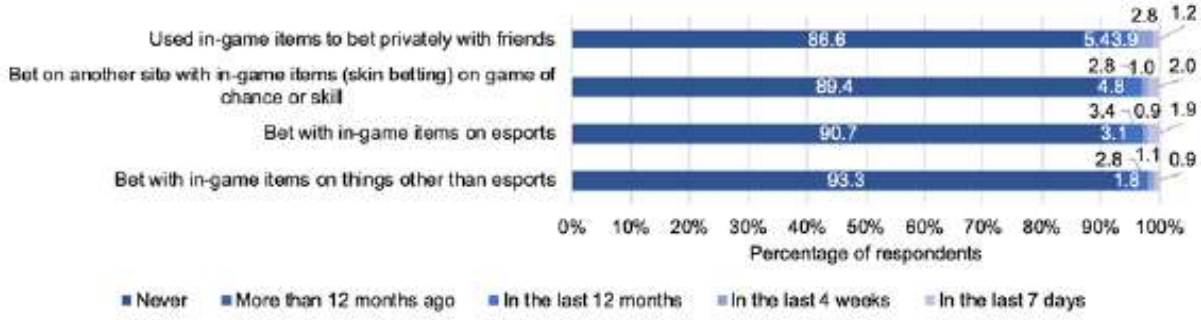
Median monthly expenditure on microtransactions, by sample.

Source	Microtransaction monthly expenditure (median)
Weighted Letterbox (N = 74)	10.0
Unweighted Letterbox (N = 84)	10.0
Unweighted Qualtrics (N = 232)	20.0
Unweighted Emails & Ads (N = 556)	200.5

*EIG2. In a typical month, about how much do you spend on **microtransactions, such as to get virtual credits,** in games with gambling components (not including loot boxes)?*

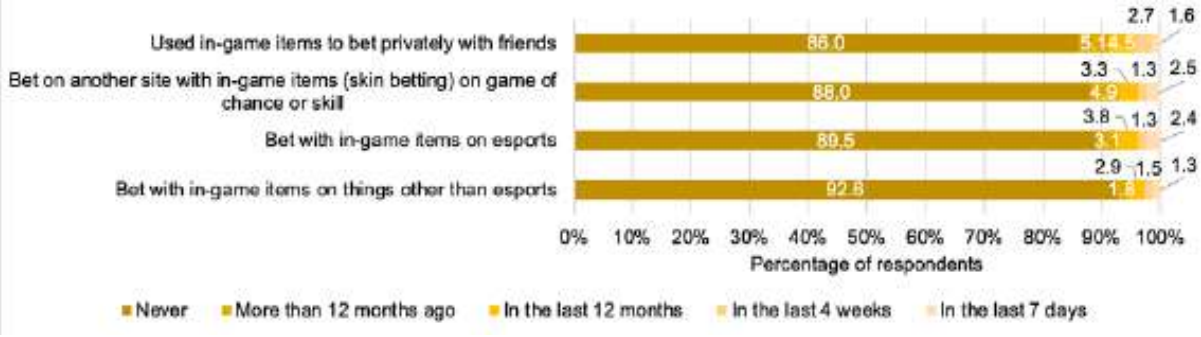
Betting with in-game items

Betting with in-game items, weighted letterbox drop sample (N = 551)



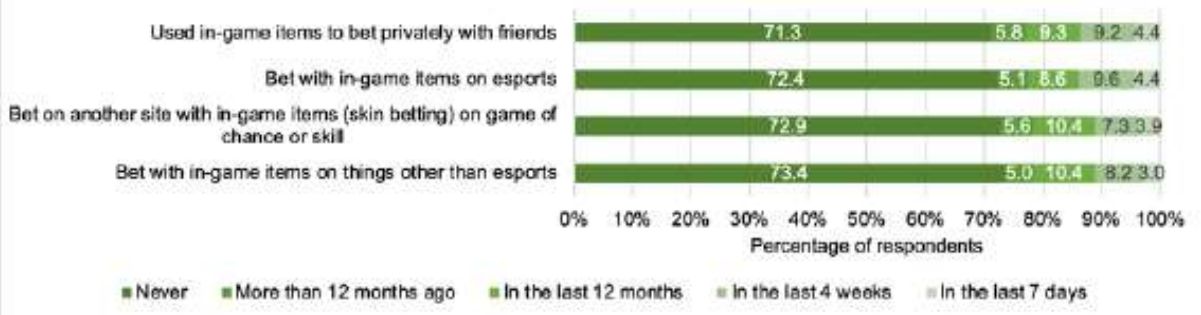
IGI1. When, if ever, did you last use in-game items for betting in the following ways?

Betting with in-game items, unweighted letterbox drop sample (N = 551)



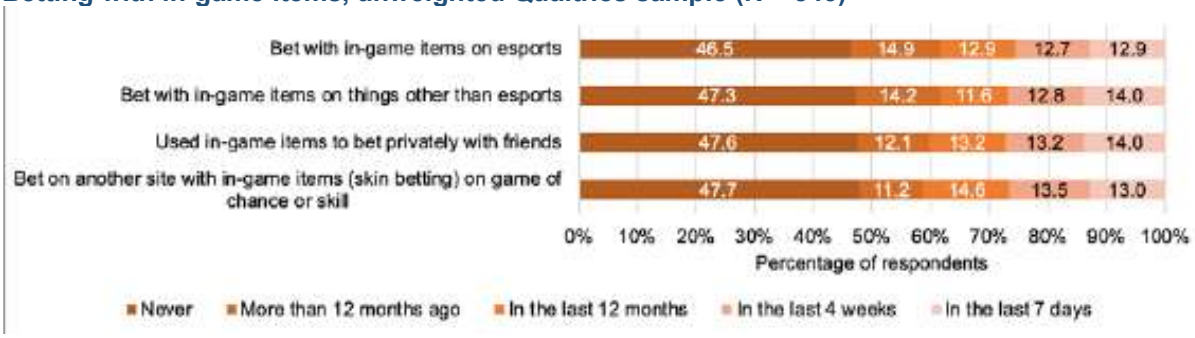
IGI1. When, if ever, did you last use in-game items for betting in the following ways?

Betting with in-game items, unweighted Qualtrics sample (N = 826)



IGI1. When, if ever, did you last use in-game items for betting in the following ways?

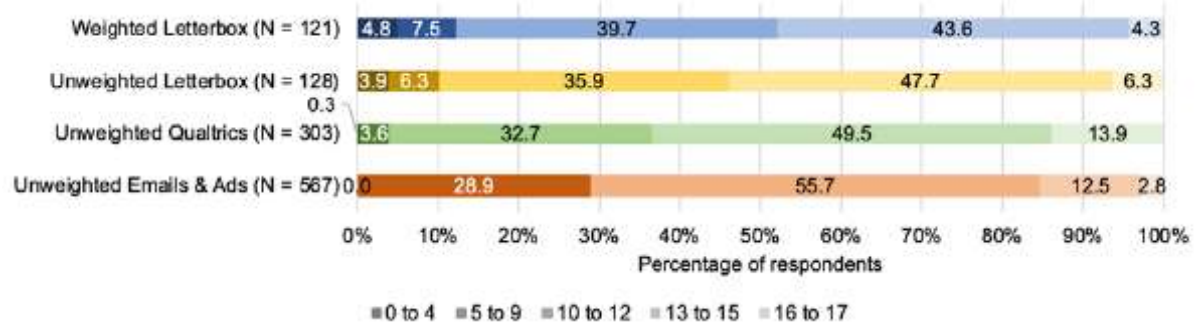
Betting with in-game items, unweighted Qualtrics sample (N = 843)



IGI1. When, if ever, did you last use in-game items for betting in the following ways?

Age of first betting with in-game items

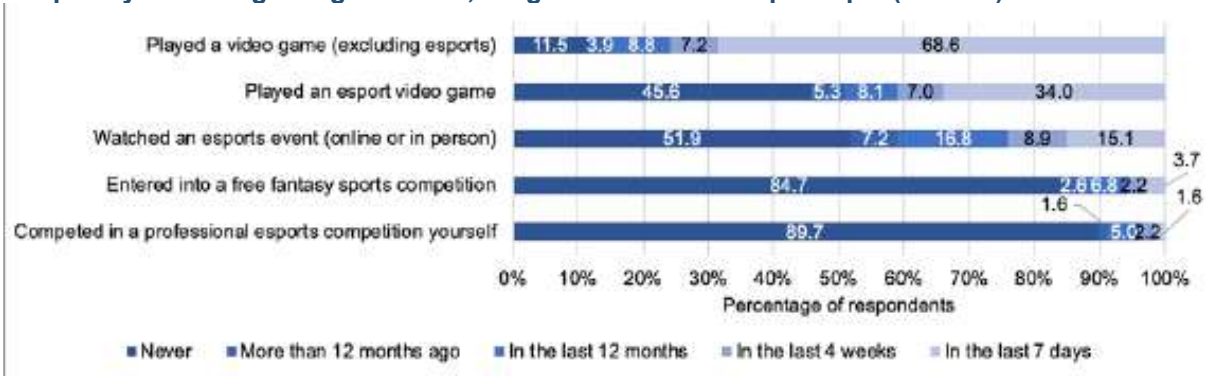
Age at which respondents first bet with in-game items, by sample



IGI2. At what age did you first bet with in-game items?

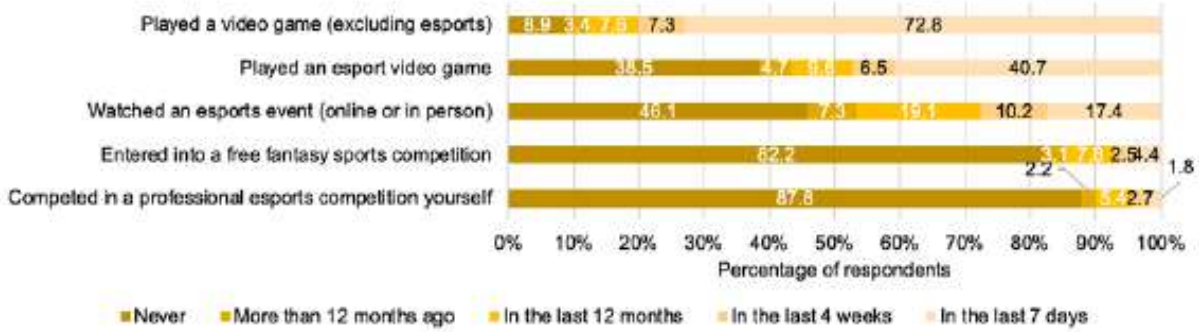
Other gaming activities

Frequency of other gaming activities, weighted letterbox drop sample (N = 551)



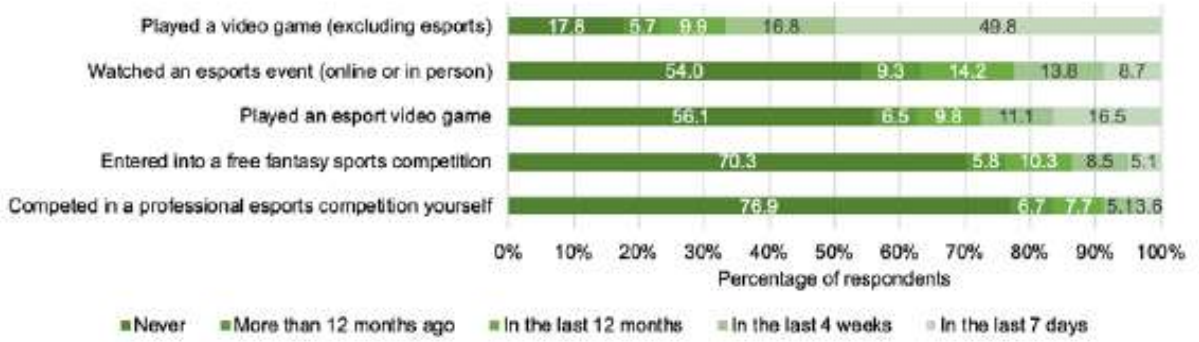
POG1. When, if ever, did you last do any of the following activities?

Frequency of other gaming activities, unweighted letterbox drop sample (N = 551)



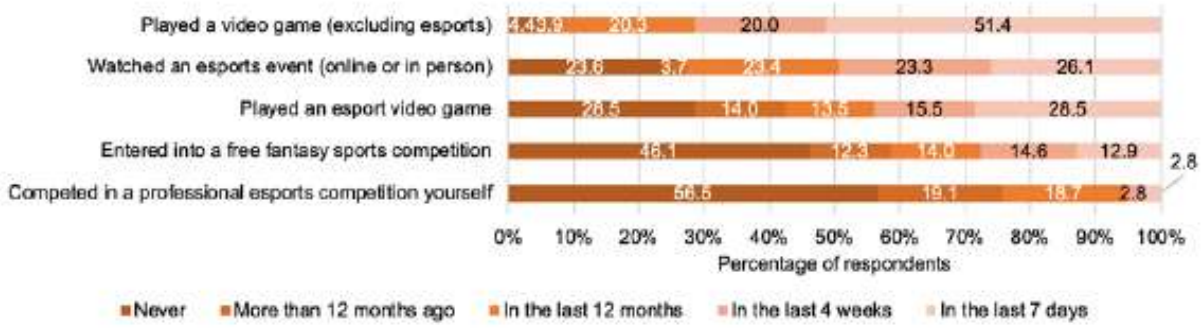
POG1. When, if ever, did you last do any of the following activities?

Frequency of other gaming activities, unweighted Qualtrics sample (N = 826)



POG1. When, if ever, did you last do any of the following activities?

Frequency of other gaming activities, unweighted emails and ads sample (N = 843)



POG1. When, if ever, did you last do any of the following activities?

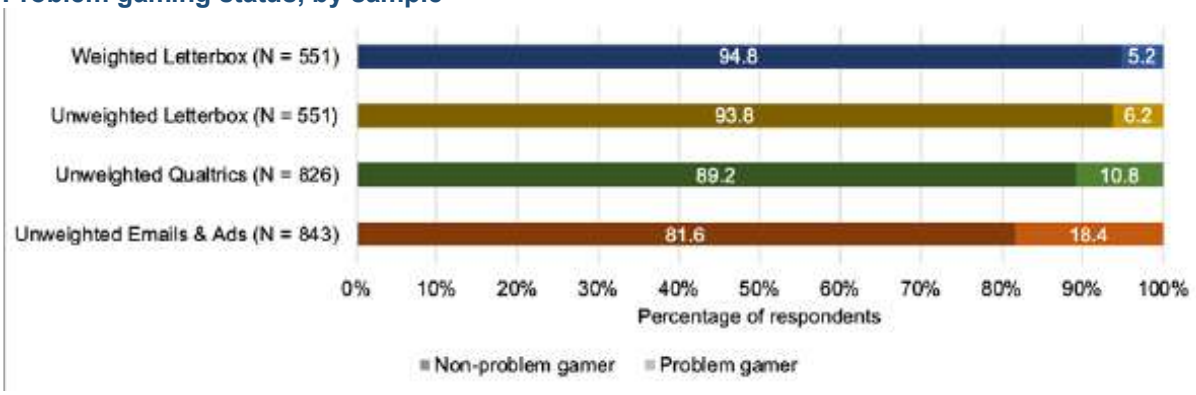
Median hours per month spent on gaming, by sample.

Source	Hours per month (median)
Weighted Letterbox (N = 476)	40.0
Unweighted Letterbox (N = 491)	40.0
Unweighted Qualtrics (N = 661)	24.0
Unweighted Emails & Ads (N = 784)	32.0

POG2. About how many hours per week OR per month do you usually spend on gaming?

Problematic gaming

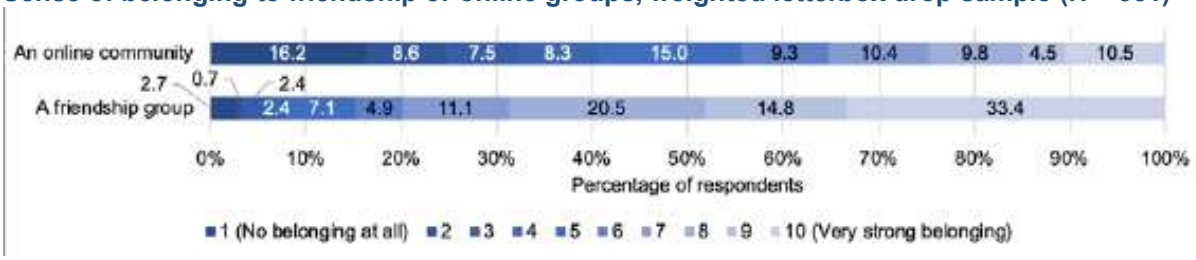
Problem gaming status, by sample



Calculated from IGD1. These questions will ask you about your gaming activity during the past 12 months. They refer to all types of gaming that you do, not just games with gambling components.

Peer friendship and online groups

Sense of belonging to friendship or online groups, weighted letterbox drop sample (N = 551)



PG1. How strongly do you feel you belong to the following?

Sense of belonging to friendship or online groups, unweighted letterbox drop sample (N = 551)

PG1. How strongly do you feel you belong to the following?

Sense of belonging to friendship or online groups, unweighted Qualtrics sample (N = 826)

PG1. How strongly do you feel you belong to the following?

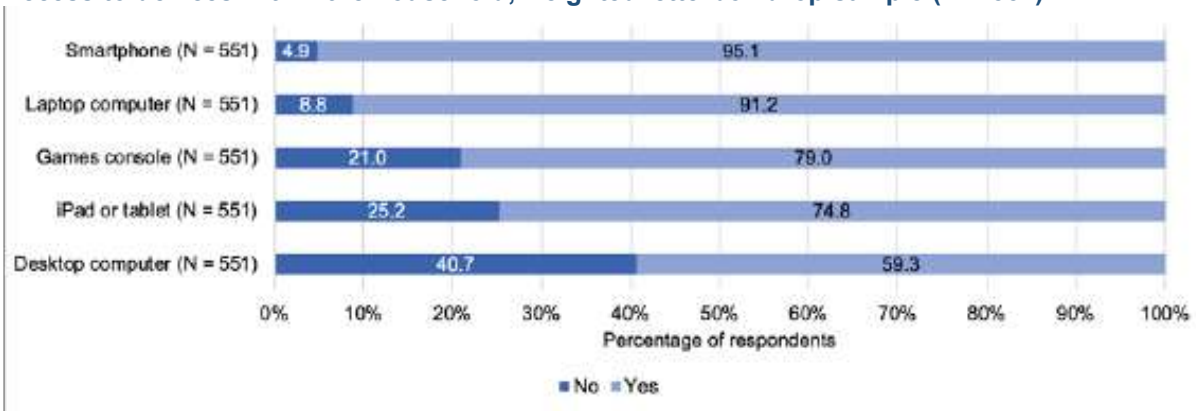
Sense of belonging to friendship or online groups, unweighted emails and ads sample (N = 843)

PG1. How strongly do you feel you belong to the following?

Access to internet-connected devices

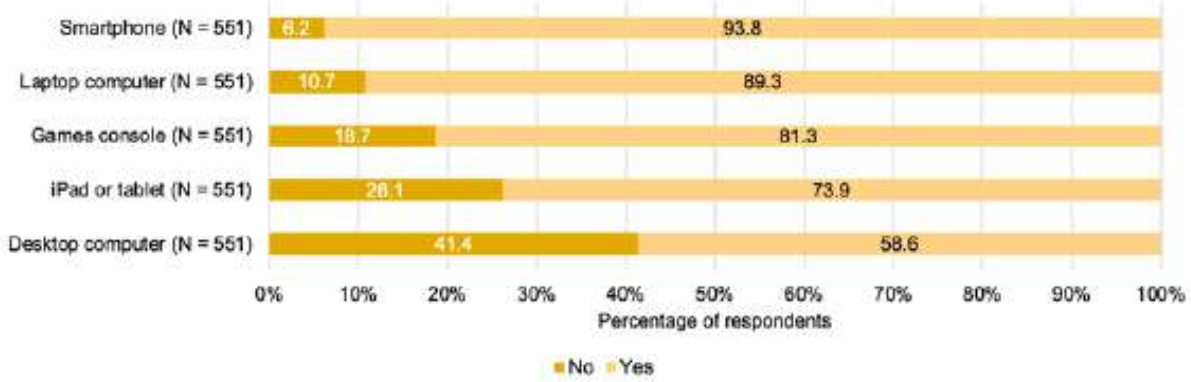
Availability of devices

Access to devices within the household, weighted letterbox drop sample (N = 551)



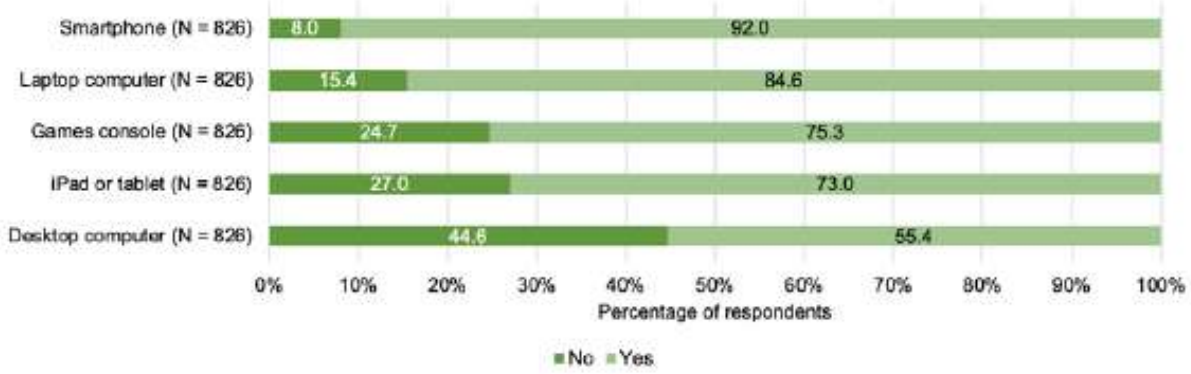
MD1. Which of these devices are available for you to use within your household?

Access to devices within the household, unweighted letterbox drop sample (N = 551)



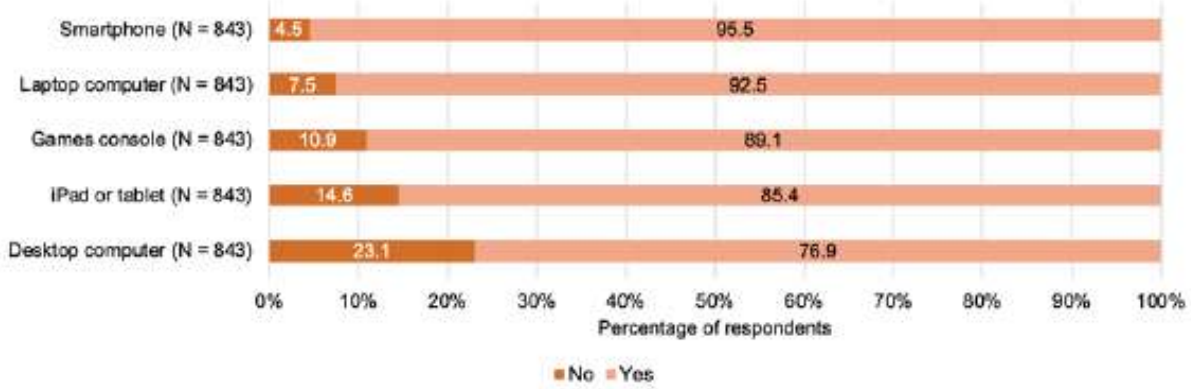
MD1. Which of these devices are available for you to use within your household?

Access to devices within the household, unweighted Qualtrics sample (N = 826)



MD1. Which of these devices are available for you to use within your household?

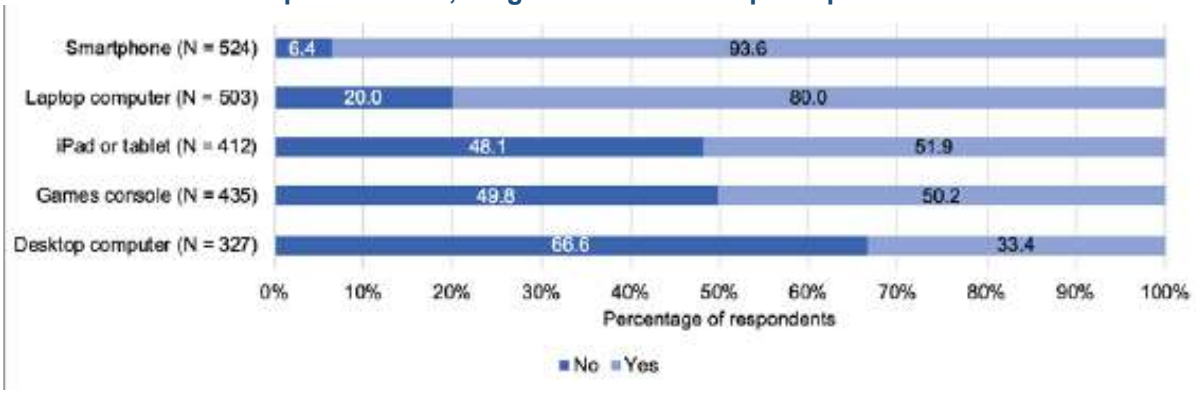
Access to devices within the household, unweighted emails and ads sample (N = 843)



MD1. Which of these devices are available for you to use within your household?

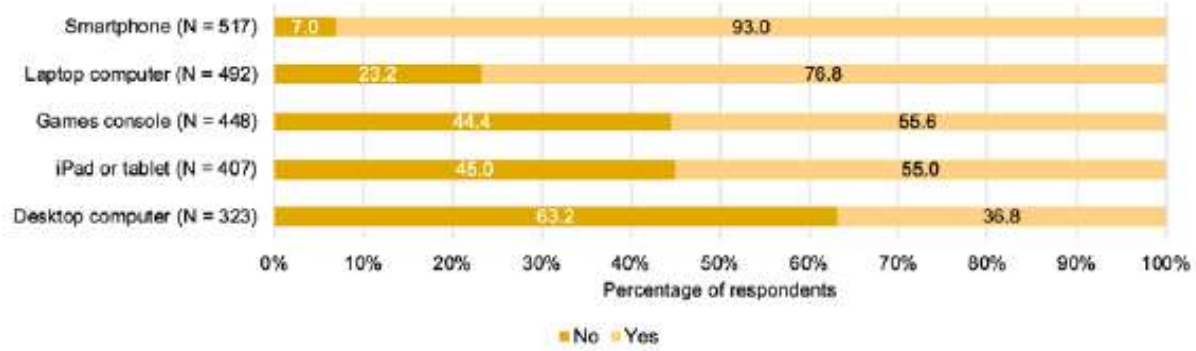
Sole use of devices

Access to devices for personal use, weighted letterbox drop sample



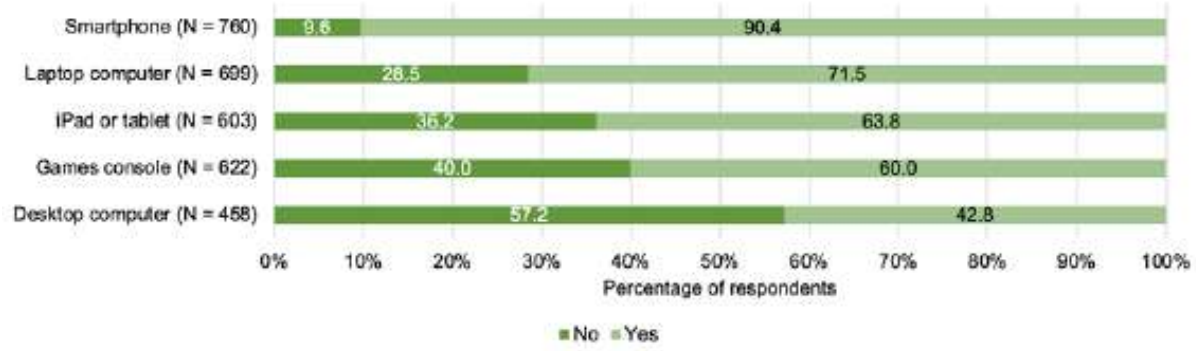
MD2. Which of these devices are for your use only?

Access to devices for personal use, unweighted letterbox drop sample



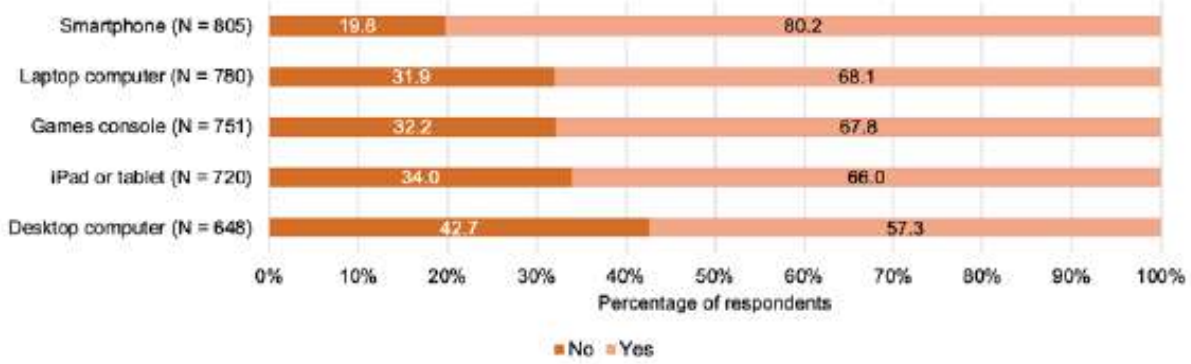
MD2. Which of these devices are for your use only?

Access to devices for personal use, unweighted Qualtrics sample



MD2. Which of these devices are for your use only?

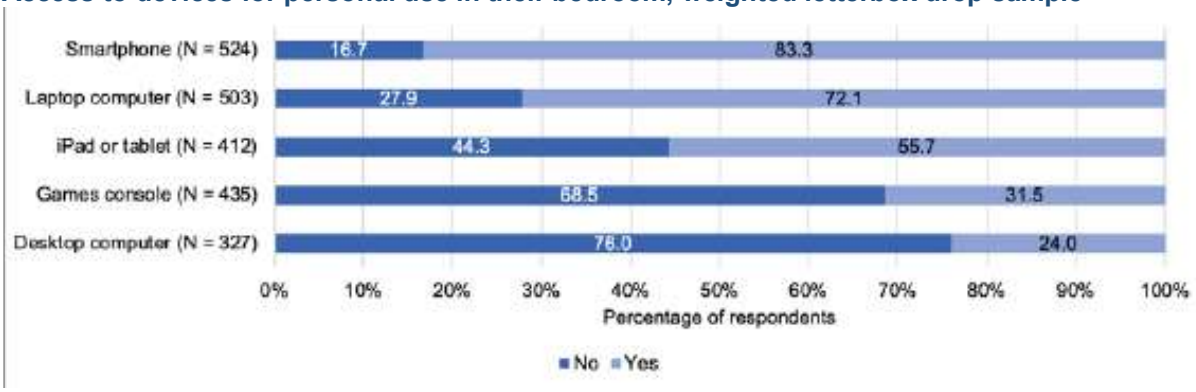
Access to devices for personal use, unweighted emails and ads sample



MD2. Which of these devices are for your use only?

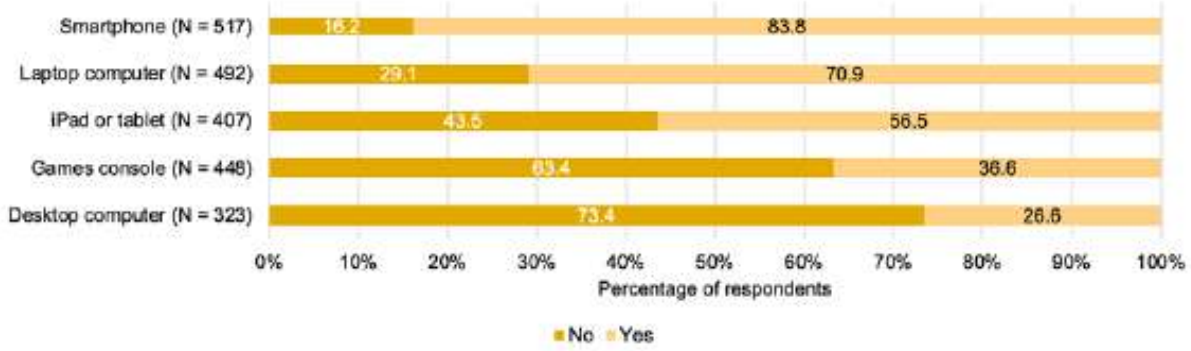
Availability of devices in bedrooms

Access to devices for personal use in their bedroom, weighted letterbox drop sample



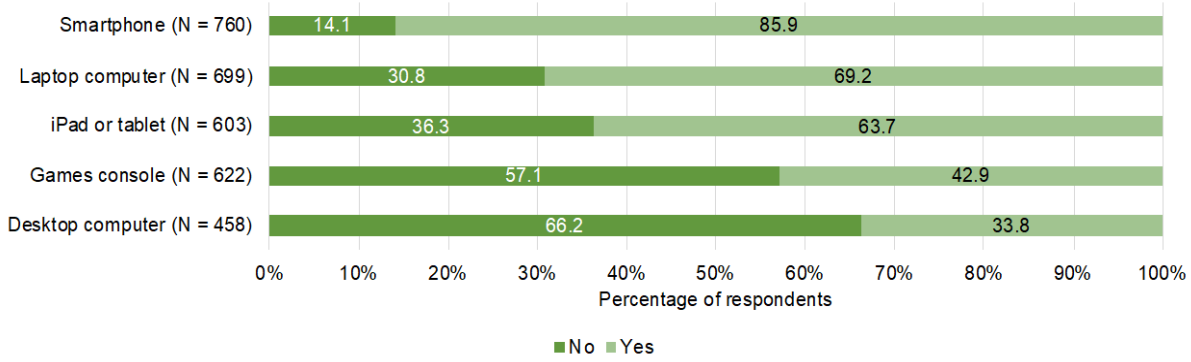
MD3. Which of these devices are available for you to use in your bedroom?

Access to devices for personal use in their bedroom, unweighted letterbox drop sample



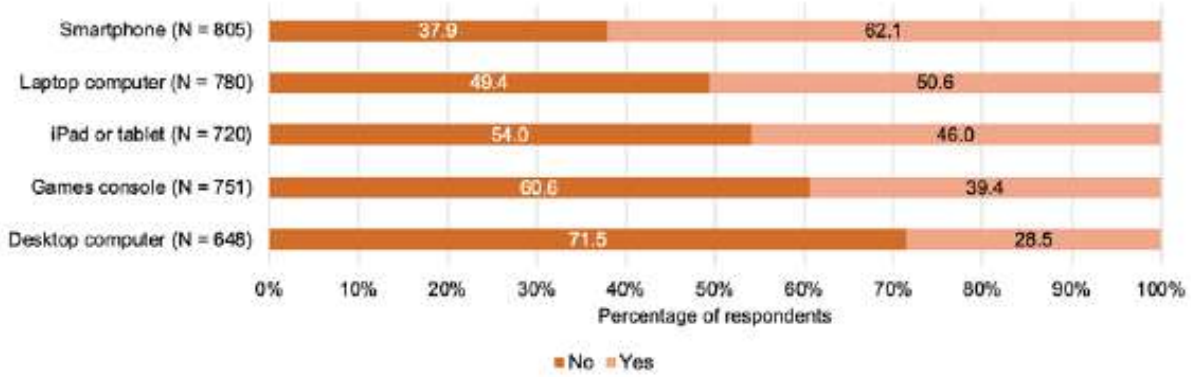
MD3. Which of these devices are available for you to use in your bedroom?

Access to devices for personal use in their bedroom, unweighted Qualtrics sample



MD3. Which of these devices are available for you to use in your bedroom?

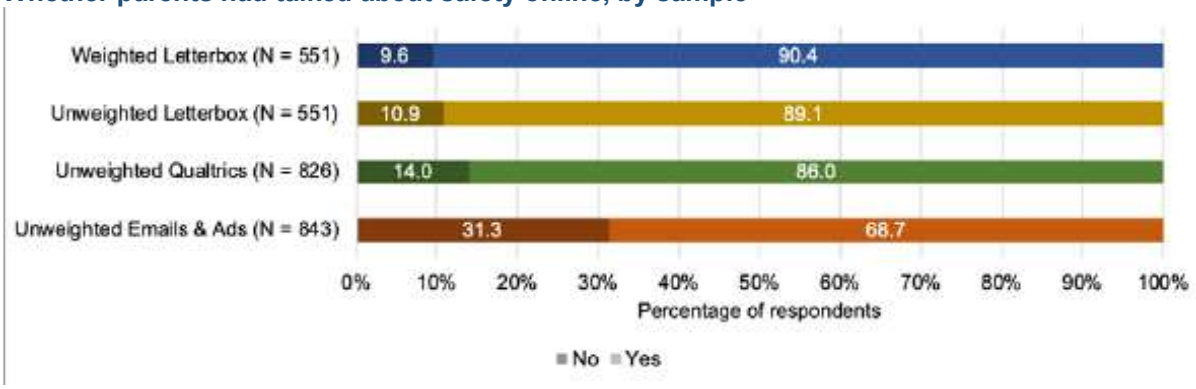
Access to devices for personal use in their bedroom, unweighted emails and ads sample



MD3. Which of these devices are available for you to use in your bedroom?

Parental advice about online safety

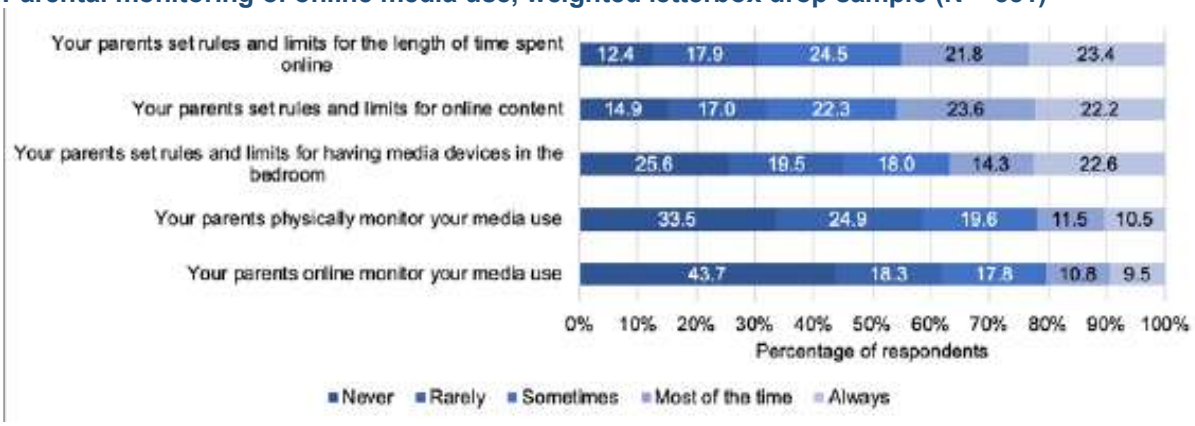
Whether parents had talked about safety online, by sample



MD4. Have your parents talked to you about being safe online (cybersafety)?

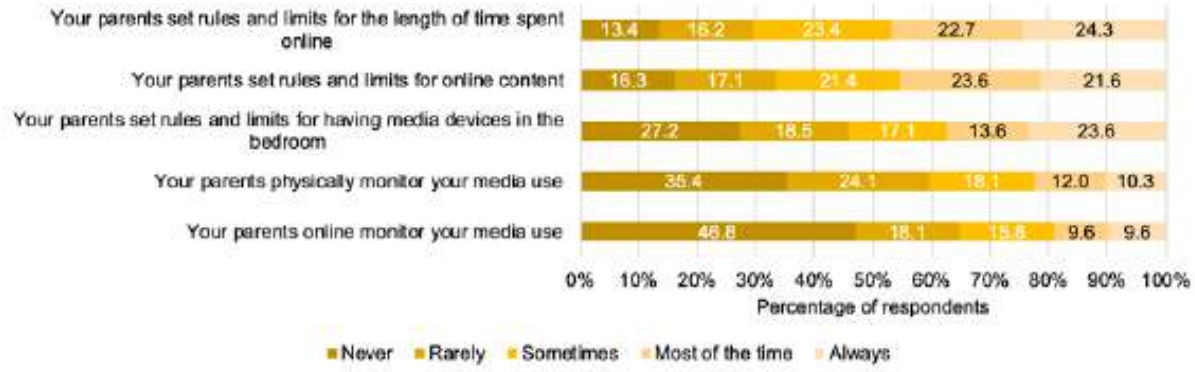
Parental monitoring of online media use

Parental monitoring of online media use, weighted letterbox drop sample (N = 551)



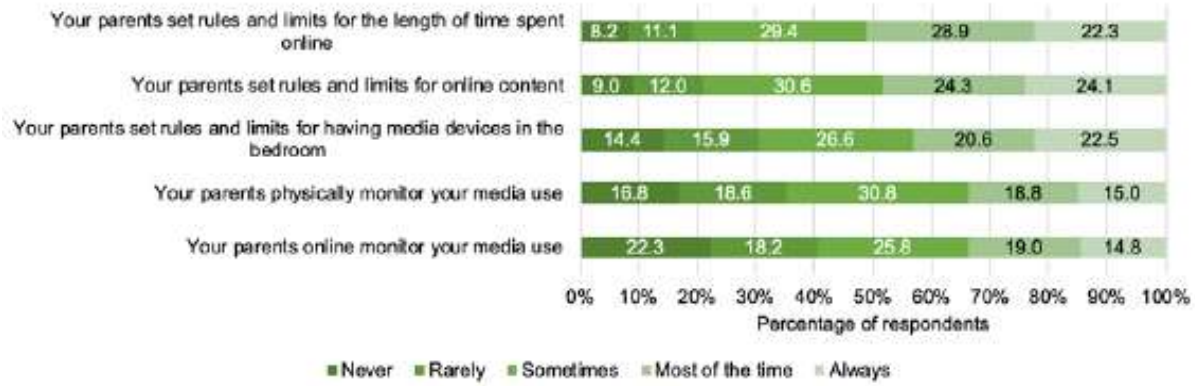
MD5 – MD9. Please answer each question below.

Parental monitoring of online media use, unweighted letterbox drop sample (N = 551)



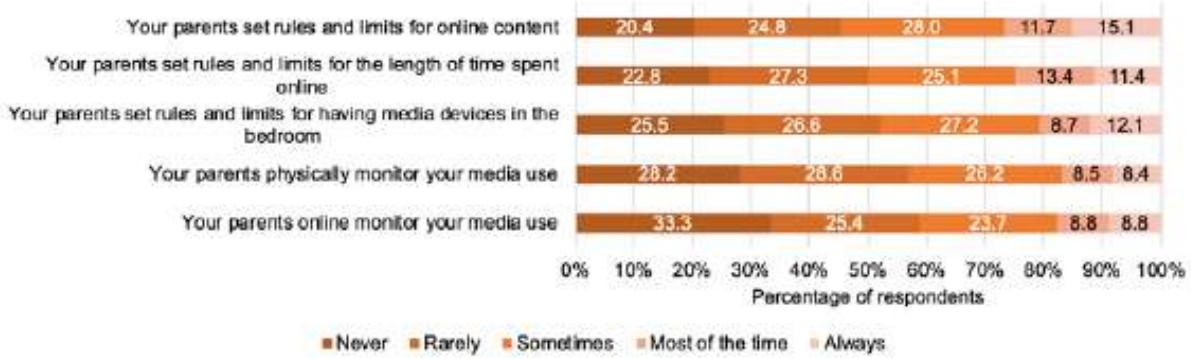
MD5 – MD9. Please answer each question below.

Parental monitoring of online media use, unweighted Qualtrics sample (N = 826)



MD5 – MD9. Please answer each question below.

Parental monitoring of online media use, unweighted emails and ads sample (N = 843)



MD5 – MD9. Please answer each question below.

Appendix H: Results for convergence of monetary and simulated gambling products, controlling for age, gender and location

The analyses that examined relationships between engagement in each simulated gambling product and monetary gambling product were also run while controlling for age, gender and location. The coefficients for the variables of interest are shown below. Coefficients for age, gender and location are not shown in the interests of brevity.

The results are generally similar to those in the Survey results chapter. In most cases, engagement in forms of simulated gambling predicted engagement in monetary gambling, except for playing video games with 'mini' gambling components. However, in the Qualtrics and emails and ads samples, almost all associations were statistically significant.

Unstandardised regression coefficients between past-year participation in simulated gambling and gambling activities, controlling for age, gender and location – weighted letterbox sample (N = 551)

	EGMs	Lottery, scratchies, bingo, keno	Sports or race betting	Poker or casino games	Informal private betting	Esports, fantasy sports betting
Video games with gambling components	0.460	0.081	0.434	0.876	0.433	0.460
	(-0.569, 1.489)	(-0.422, 0.584)	(-0.329, 1.197)	(-0.159, 1.911)	(-0.049, 0.916)	(-0.569, 1.489)
Simulated gambling – demo or practice games	1.057	**0.990*****	**1.343*****	**2.023*****	**1.048*****	1.057
	(-0.019, 2.133)	**(0.438, 1.543)**	**(0.549, 2.137)**	**(0.988, 3.057)**	**(0.504, 1.592)**	(-0.019, 2.133)
Simulated gambling – social network sites	**1.111***	**0.938****	**1.519*****	**1.722****	**1.536*****	**1.111***
	(0.009, 2.213)	**(0.344, 1.532)**	**(0.694, 2.344)**	**(0.654, 2.790)**	**(0.961, 2.111)**	**(0.009, 2.213)**
Simulated gambling – apps	**1.534****	**0.644***	**1.336*****	**1.515****	**1.174*****	**1.534****
	(0.522, 2.546)	**(0.069, 1.219)**	**(0.549, 2.122)**	**(0.488, 2.543)**	**(0.628, 1.720)**	**(0.522, 2.546)**
Bought loot boxes	0.265	**0.762****	0.708	0.714	**0.914*****	0.265
	(-0.762, 1.292)	**(0.285, 1.240)**	(-0.053, 1.470)	(-0.323, 1.752)	**(0.442, 1.385)**	(-0.762, 1.292)
Bet with in-game items (skin gambling)	1.042	**0.895****	**1.174****	**1.500****	**0.869****	1.042
	(-0.051, 2.135)	**(0.324, 1.466)**	**(0.367, 1.980)**	**(0.454, 2.547)**	**(0.308, 1.430)**	(-0.051, 2.135)

Note: * p < .05, ** p < .01, *** p < .001,

Unstandardised regression coefficients between past-year participation in simulated gambling and gambling activities, controlling for age, gender and location – unweighted letterbox sample (N = 551)

	EGMs	Lottery, scratchies, bingo, keno	Sports or race betting	Poker or casino games	Informal private betting	Esports, fantasy sports betting
Video games with gambling components	0.699	0.348	0.478	0.887	0.376	**2.194*****
	(-0.308, 1.706)	(-0.147, 0.842)	(-0.234, 1.189)	(-0.074, 1.849)	(-0.101, 0.852)	**(0.938, 3.449)**
Simulated gambling – demo or practice games	**1.295***	**1.029*****	**1.291*****	**2.123*****	**0.926****	**1.706*****
	(0.248, 2.342)	**(0.464, 1.595)**	**(0.532, 2.051)**	**(1.152, 3.093)**	**(0.368, 1.484)**	**(0.767, 2.644)**
Simulated gambling –social network sites	**1.557****	**1.186*****	**1.535*****	**1.743*****	**1.617*****	**2.712*****
	(0.489, 2.626)	**(0.568, 1.805)**	**(0.735, 2.334)**	**(0.729, 2.757)**	**(1.017, 2.217)**	**(1.732, 3.692)**
Simulated gambling – apps	**1.811*****	**0.939****	**1.668*****	**1.337****	**1.179*****	**1.840*****
	(0.810, 2.813)	**(0.379, 1.500)**	**(0.938, 2.398)**	**(0.376, 2.298)**	**(0.638, 1.721)**	**(0.896, 2.784)**
Bought loot boxes	0.316	**0.708****	**0.729***	0.799	**0.920*****	**2.039****
	(-0.695, 1.328)	**(0.216, 1.200)**	**(0.007, 1.451)**	(-0.170, 1.769)	**(0.440, 1.400)**	**(0.780, 3.299)**
Bet with in-game items (skin gambling)	1.044	**1.154*****	**1.181****	**1.337****	**0.897****	**2.530*****
	(-0.006, 2.095)	**(0.596, 1.712)**	**(0.434, 1.928)**	**(0.370, 2.304)**	**(0.350, 1.445)**	**(1.528, 3.533)**

Note: * p < .05, ** p < .01, *** p < .001,

Unstandardised regression coefficients between past-year participation in simulated gambling and gambling activities, controlling for age, gender and location – unweighted Qualtrics sample (N = 826)

	EGMs	Lottery, scratchies, bingo, keno	Sports or race betting	Poker or casino games	Informal private betting	Esports, fantasy sports betting
Video games with gambling components	**1.751*** (1.332, 2.169)**	**1.577*** (1.248, 1.905)**	**1.963*** (1.594, 2.333)**	**1.907*** (1.463, 2.351)**	**1.464*** (1.114, 1.814)**	**1.863*** (1.477, 2.249)**
Simulated gambling – demo or practice games	**2.008*** (1.584, 2.432)**	**1.967*** (1.610, 2.324)**	**1.866*** (1.497, 2.234)**	**2.150*** (1.702, 2.598)**	**1.554*** (1.198, 1.909)**	**1.733*** (1.351, 2.115)**
Simulated gambling – social network sites	**1.886*** (1.468, 2.304)**	**1.779*** (1.422, 2.135)**	**2.014*** (1.638, 2.389)**	**2.212*** (1.763, 2.660)**	**1.542*** (1.182, 1.902)**	**1.899*** (1.511, 2.286)**
Simulated gambling – apps	**2.039*** (1.611, 2.466)**	**1.746*** (1.407, 2.085)**	**1.997*** (1.628, 2.367)**	**2.284*** (1.821, 2.746)**	**1.444*** (1.095, 1.794)**	**1.668*** (1.288, 2.047)**
Bought loot boxes	**1.724*** (1.293, 2.155)**	**1.542*** (1.225, 1.859)**	**1.709*** (1.345, 2.072)**	**2.035*** (1.558, 2.511)**	**1.471*** (1.122, 1.820)**	**2.083*** (1.673, 2.493)**
Bet with in-game items (skin gambling)	**2.068*** (1.620, 2.515)**	**2.050*** (1.705, 2.394)**	**2.040*** (1.665, 2.416)**	**2.284*** (1.796, 2.771)**	**1.559*** (1.204, 1.914)**	**2.432*** (2.007, 2.857)**

Note: * p < .05, ** p < .01, *** p < .001,

Unstandardised regression coefficients between past-year participation in simulated gambling and gambling activities, controlling for age, gender and location – unweighted emails and ads sample (N = 843)

	EGMs	Lottery, scratchies, bingo, keno	Sports or race betting	Poker or casino games	Informal private betting	Esports, fantasy sports betting
Video games with gambling components	**1.145*****	**1.088*****	**0.635***	**1.112****	**1.033*****	**1.293*****
	(0.837, 1.452)	**(0.793, 1.384)**	**(0.123, 1.147)**	**(0.363, 1.860)**	**(0.730, 1.337)**	**(0.988, 1.599)**
Simulated gambling – demo or practice games	**2.438*****	**2.020*****	**0.900*****	**1.805*****	**2.166*****	**2.644*****
	(2.075, 2.801)	**(1.684, 2.356)**	**(0.401, 1.399)**	**(1.031, 2.579)**	**(1.811, 2.521)**	**(2.264, 3.024)**
Simulated gambling –social network sites	**2.525*****	**2.058*****	**1.199*****	**1.583*****	**2.207*****	**2.676*****
	(2.174, 2.876)	**(1.734, 2.382)**	**(0.666, 1.731)**	**(0.808, 2.358)**	**(1.869, 2.545)**	**(2.319, 3.032)**
Simulated gambling – apps	**2.586*****	**2.092*****	0.464	**1.756*****	**2.501*****	**2.591*****
	(2.226, 2.945)	**(1.766, 2.419)**	(-0.031, 0.959)	**(0.948, 2.564)**	**(2.142, 2.860)**	**(2.233, 2.949)**
Bought loot boxes	**2.721*****	**2.050*****	**0.609***	**2.398****	**2.162*****	**2.815*****
	(2.293, 3.149)	**(1.693, 2.407)**	**(0.031, 1.186)**	**(0.957, 3.838)**	**(1.794, 2.530)**	**(2.399, 3.231)**
Bet with in-game items (skin gambling)	**4.676*****	**3.207*****	**1.225*****	**2.894*****	**3.531*****	**4.681*****
	(4.068, 5.285)	**(2.811, 3.603)**	**(0.632, 1.818)**	**(1.453, 4.335)**	**(3.114, 3.948)**	**(4.123, 5.238)**

Note: * p < .05, ** p < .01, *** p < .001,

Appendix I: The convergence of participation in gambling and simulated gambling amongst youth

The convergence results are presented below for all samples (weighted letterbox drop, unweighted letterbox drop, unweighted Qualtrics, unweighted Emails & Ads). First, descriptive tables show the proportion of respondents who took part in each simulated form, who also took part in each monetary form. Then, logistic regressions were used to determine whether there was a statistically significant association between each simulated form and each monetary form. Note that some monetary forms were collapsed together, due to low ns. The results are generally consistent across samples. However, for the purposes of the report, the weighted letterbox sample has been used for interpretation.

Proportion of respondents who had engaged in each simulated form of gambling, who had also engaged in each monetary form of gambling – weighted letterbox sample

	n	EGMs	Lottery, scratchies, bingo, keno	Sports or race betting	Poker or casino games	Informal private betting	Esports, fantasy sports betting
Video games with gambling components	174	5.7	18.4	9.2	6.3	21.8	8.6
Simulated gambling – demo or practice games	79	8.9	32.9	16.5	11.5	32.9	11.4
Simulated gambling – social network sites	65	10.8	35.4	18.5	10.8	43.1	15.4
Simulated gambling – apps	79	12.7	29.5	17.7	11.4	36.7	13.9
Bought loot boxes	205	3.9	22.9	8.3	4.9	24.9	6.8
Bet with in-game items (skin gambling)	80	10.0	31.3	16.3	11.3	30.4	16.5

Proportion of respondents who had engaged in each simulated form of gambling, who had also engaged in each monetary form of gambling – unweighted letterbox sample

	n	EGMs	Lottery, scratchies, bingo, keno	Sports or race betting	Poker or casino games	Informal private betting	Esports, fantasy sports betting
Video games with gambling components	192	6.3	19.8	9.9	6.8	21.4	9.9
Simulated gambling – demo or practice games	78	10.3	32.1	17.9	14.1	30.8	12.8
Simulated gambling – social network sites	57	14.0	38.6	21.1	14.0	45.6	21.1
Simulated gambling – apps	82	14.6	32.9	22.0	12.2	36.6	14.6
Bought loot boxes	216	4.2	20.8	9.3	5.6	24.5	8.3
Bet with in-game items (skin gambling)	87	10.3	33.3	17.2	11.5	31.0	18.4

Proportion of respondents who had engaged in each simulated form of gambling, who had also engaged in each monetary form of gambling – Qualtrics sample

	n	EGMs	Lottery, scratchies, bingo, keno	Sports or race betting	Poker or casino games	Informal private betting	Esports, fantasy sports betting
Video games with gambling components	245	32.7	62.9	49.4	31.4	44.5	41.6
Simulated gambling – demo or practice games	210	38.1	71.9	51.9	36.7	49.0	43.3
Simulated gambling – social network sites	199	37.7	69.3	54.8	38.2	49.2	46.2
Simulated gambling – apps	228	36.8	67.1	51.8	36.0	46.1	40.8
Bought loot boxes	291	29.9	60.1	43.6	29.6	42.3	40.5
Bet with in-game items (skin gambling)	262	34.4	68.3	49.6	33.2	45.0	46.2

Proportion of respondents who had engaged in each simulated form of gambling, who had also engaged in each monetary form of gambling – Emails & Ads sample

	n	EGMs	Lottery, scratchies, bingo, keno	Sports or race betting	Poker or casino games	Informal private betting	Esports, fantasy sports betting
Video games with gambling components	463	67.0	70.2	10.8	6.5	70.2	71.3
Simulated gambling – demo or practice games	372	83.9	83.6	12.1	8.3	85.2	87.9
Simulated gambling – social network sites	430	82.1	81.6	12.3	7.2	83.5	85.8
Simulated gambling – apps	419	82.8	82.6	10.0	7.6	85.9	85.4
Bought loot boxes	600	70.8	71.8	9.8	6.3	73.3	74.7
Bet with in-game items (skin gambling)	536	83.4	82.6	11.2	7.1	85.3	87.3

Logistic regressions between past-year participation in simulated gambling and gambling activities – weighted letterbox sample

	EGMs	Lottery, scratchies, bingo, keno	Sports or race betting	Poker or casino games	Informal private betting	Esports, fantasy sports betting
Video games with gambling components	0.818	0.114	0.618	**1.159***	**0.482***	**2.712*****
	(-0.090, 1.725)	(-0.354, 0.582)	(-0.073, 1.309)	**(0.203, 2.116)**	**(0.025, 0.939)**	**(1.335, 4.089)**
Simulated gambling – demo or practice games	**1.322****	**1.058*****	**1.402*****	**1.974*****	**1.088*****	**1.877*****
	(0.369, 2.276)	**(0.524, 1.591)**	**(0.670, 2.134)**	**(1.015, 2.933)**	**(0.554, 1.623)**	**(0.909, 2.844)**
Simulated gambling – social network sites	**1.502****	**1.113*****	**1.489*****	**1.756*****	**1.569*****	**2.415*****
	(0.536, 2.469)	**(0.546, 1.680)**	**(0.734, 2.244)**	**(0.778, 2.734)**	**(1.015, 2.124)**	**(1.433, 3.397)**
Simulated gambling – apps	**2.024*****	**0.847****	**1.529*****	**1.920*****	**1.271*****	**2.357*****
	(1.099, 2.949)	**(0.302, 1.391)**	**(0.805, 2.253)**	**(0.962, 2.879)**	**(0.743, 1.798)**	**(1.367, 3.346)**
Bought loot boxes	0.146	**0.575***	0.508	0.673	**0.858*****	**2.037*****
	(-0.776, 1.068)	**(0.131, 1.020)**	(-0.178, 1.194)	(-0.270, 1.617)	**(0.409, 1.307)**	**(0.833, 3.241)**
Bet with in-game items (skin gambling)	**1.473****	**0.932*****	**1.330*****	**1.788*****	**0.928*****	**3.086*****
	(0.534, 2.411)	**(0.394, 1.469)**	**(0.595, 2.066)**	**(0.830, 2.747)**	**(0.388, 1.468)**	**(1.968, 4.205)**

Note: * p < .05, ** p < .01, *** p < .001, Unstandardised coefficients with 95% confidence intervals.

Logistic regressions between past-year participation in simulated gambling and gambling activities – unweighted letterbox sample

	EGMs	Lottery, scratchies, bingo, keno	Sports or race betting	Poker or casino games	Informal private betting	Esports, fantasy sports betting
Video games with gambling components	**1.073***	0.376	**0.676***	**1.159***	**0.472***	**2.567*****
	(0.161, 1.986)	(-0.085, 0.837)	**(0.014, 1.337)**	**(0.260, 2.058)**	**(0.019, 0.925)**	**(1.336, 3.799)**
Simulated gambling – demo or practice games	**1.479****	**1.085*****	**1.409*****	**2.028*****	**0.956*****	**1.732*****
	(0.550, 2.409)	**(0.543, 1.628)**	**(0.700, 2.118)**	**(1.134, 2.922)**	**(0.412, 1.501)**	**(0.855, 2.609)**
Simulated gambling –social network sites	**1.881*****	**1.371*****	**1.569*****	**1.799*****	**1.676*****	**2.558*****
	(0.939, 2.822)	**(0.779, 1.962)**	**(0.819, 2.318)**	**(0.870, 2.727)**	**(1.095, 2.258)**	**(1.665, 3.451)**
Simulated gambling – apps	**2.290*****	**1.152*****	**1.843*****	**1.755*****	**1.313*****	**2.063*****
	(1.361, 3.220)	**(0.620, 1.683)**	**(1.154, 2.531)**	**(0.863, 2.647)**	**(0.791, 1.835)**	**(1.187, 2.939)**
Bought loot boxes	0.247	**0.528***	0.586	0.756	**0.875*****	**2.018*****
	(-0.651, 1.145)	**(0.074, 0.983)**	(-0.075, 1.247)	(-0.125, 1.638)	**(0.422, 1.328)**	**(0.920, 3.116)**
Bet with in-game items (skin gambling)	**1.559*****	**1.195*****	**1.385*****	**1.677*****	**0.998*****	**2.845*****
	(0.645, 2.472)	**(0.674, 1.716)**	**(0.688, 2.081)**	**(0.787, 2.567)**	**(0.475, 1.522)**	**(1.874, 3.816)**

Note: * p < .05, ** p < .01, *** p < .001, Unstandardised coefficients with 95% confidence intervals.

Logistic regressions between past-year participation in simulated gambling and gambling activities – unweighted Qualtrics sample

	EGMs	Lottery, scratchies, bingo, keno	Sports or race betting	Poker or casino games	Informal private betting	Esports, fantasy sports betting
Video games with gambling components	**1.803*****	**1.546*****	**1.980*****	**1.967*****	**1.462*****	**1.920*****
	(1.393, 2.212)	**(1.228, 1.864)**	**(1.625, 2.335)**	**(1.532, 2.402)**	**(1.125, 1.799)**	**(1.544, 2.296)**
Simulated gambling – demo or practice games	**2.104*****	**2.013*****	**1.964*****	**2.263*****	**1.639*****	**1.852*****
	(1.688, 2.521)	**(1.661, 2.364)**	**(1.606, 2.322)**	**(1.821, 2.705)**	**(1.292, 1.986)**	**(1.478, 2.226)**
Simulated gambling – social network sites	**1.987*****	**1.805*****	**2.100*****	**2.317*****	**1.608*****	**2.006*****
	(1.576, 2.398)	**(1.456, 2.154)**	**(1.736, 2.464)**	**(1.875, 2.758)**	**(1.259, 1.958)**	**(1.627, 2.385)**
Simulated gambling – apps	**2.124*****	**1.763*****	**2.059*****	**2.364*****	**1.508*****	**1.749*****
	(1.702, 2.545)	**(1.432, 2.094)**	**(1.701, 2.417)**	**(1.908, 2.820)**	**(1.168, 1.849)**	**(1.379, 2.119)**
Bought loot boxes	**1.777*****	**1.517*****	**1.758*****	**2.106*****	**1.471*****	**2.160*****
	(1.356, 2.198)	**(1.212, 1.823)**	**(1.408, 2.109)**	**(1.638, 2.573)**	**(1.136, 1.807)**	**(1.759, 2.562)**
Bet with in-game items (skin gambling)	**2.131*****	**1.984*****	**2.113*****	**2.372*****	**1.572*****	**2.533*****
	(1.696, 2.565)	**(1.658, 2.310)**	**(1.752, 2.474)**	**(1.896, 2.848)**	**(1.234, 1.910)**	**(2.117, 2.949)**

Note: * p < .05, ** p < .01, *** p < .001, Unstandardised coefficients with 95% confidence intervals.

Logistic regressions between past-year participation in simulated gambling and gambling activities – unweighted emails and ads sample

	EGMs	Lottery, scratchies, bingo, keno	Sports or race betting	Poker or casino games	Informal private betting	Esports, fantasy sports betting
Video games with gambling components	**1.123*****	**1.089*****	**0.500***	**0.941***	**1.036*****	**1.281*****
	(0.840, 1.405)	**(0.805, 1.373)**	**(0.005, 0.994)**	**(0.212, 1.670)**	**(0.752, 1.320)**	**(0.994, 1.568)**
Simulated gambling – demo or practice games	**2.419*****	**2.091*****	**0.669****	**1.540*****	**2.223*****	**2.667*****
	(2.082, 2.757)	**(1.760, 2.423)**	**(0.190, 1.149)**	**(0.785, 2.296)**	**(1.882, 2.564)**	**(2.301, 3.033)**
Simulated gambling –social network sites	**2.561*****	**2.138*****	**0.869*****	**1.249****	**2.299*****	**2.740*****
	(2.231, 2.891)	**(1.820, 2.455)**	**(0.359, 1.378)**	**(0.494, 2.004)**	**(1.973, 2.626)**	**(2.394, 3.086)**
Simulated gambling – apps	**2.573*****	**2.190*****	0.245	**1.459*****	**2.537*****	**2.619*****
	(2.241, 2.905)	**(1.867, 2.512)**	(-0.229, 0.719)	**(0.672, 2.246)**	**(2.195, 2.879)**	**(2.277, 2.961)**
Bought loot boxes	**2.637*****	**2.008*****	0.371	**2.098****	**2.172*****	**2.798*****
	(2.241, 3.032)	**(1.669, 2.346)**	(-0.190, 0.933)	**(0.668, 3.528)**	**(1.825, 2.518)**	**(2.402, 3.193)**
Bet with in-game items (skin gambling)	**4.655*****	**3.198*****	**0.830****	**2.454*****	**3.625*****	**4.766*****
	(4.073, 5.237)	**(2.822, 3.575)**	**(0.259, 1.400)**	**(1.025, 3.883)**	**(3.219, 4.032)**	**(4.214, 5.317)**

Note: * p < .05, ** p < .01, *** p < .001, Unstandardised coefficients with 95% confidence intervals.

Appendix J: Multivariate results – output tables

The multivariate results in the body of the report are based on the Qualtrics (green) and Emails & Ad (red) samples only. This is because the letterbox drop samples did not have enough respondents who were classified as being at-risk for gambling problems, or classified as experiencing problems due to their gaming. The results are interpreted in the chapter based on findings that are statistically significant in both the Qualtrics and Emails & Ads samples.

Bivariate and multivariate predictors of gambling participation during the last 12 months, all samples

	Weighted Letterbox (N = 551)		Unweighted Letterbox (N = 551)		Unweighted Qualtrics (N = 826)		Unweighted Emails & Ads (N = 843)	
	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate
Age	**0.187*** (0.078, 0.296)**	0.076 (-0.080, 0.232)	**0.214*** (0.103, 0.326)**	0.074 (-0.078, 0.226)	**0.254*** (0.167, 0.341)**	0.055 (-0.072, 0.183)	**0.091* (0.003, 0.180)**	-0.062 (-0.238, 0.113)
Gender (ref = female)	-0.246 (-0.616, 0.123)		-0.209 (-0.594, 0.176)		0.207 (-0.068, 0.482)		**-0.491** (-0.824, -0.158)**	-0.395 (-1.053, 0.263)
Parents living together (ref = no)	**0.802*** (0.409, 1.195)**	**0.686** (0.193, 1.179)**	**0.843*** (0.449, 1.237)**	**0.635* (0.149, 1.122)**	-0.086 (-0.411, 0.239)		**0.750*** (0.426, 1.075)**	-0.004 (-0.649, 0.641)
Wellbeing	-0.074 (-0.150, 0.001)		**-0.103** (-0.178, -0.027)**	**-0.017 (-0.125, 0.091)**	**-0.076* (-0.148, -0.004)**	0.005 (-0.100, 0.110)	**-0.338*** (-0.407, -0.268)**	-0.141 (-0.286, 0.004)
Impulsiveness	0.038 (-0.002, 0.077)		0.033 (-0.007, 0.073)		0.0004 (-0.031, 0.031)		**0.121*** (0.083, 0.159)**	**-0.096* (-0.169, -0.022)**
Childhood – gambled with parents (ref = no)	**2.630*** (2.089, 3.171)**	**2.153*** (1.531, 2.775)**	**2.183*** (1.692, 2.674)**	**1.584*** (1.008, 2.161)**	**2.634*** (2.274, 2.993)**	**1.610*** (1.156, 2.064)**	**2.771*** (2.362, 3.181)**	**1.738*** (1.073, 2.403)**
Childhood – adults in house with gambling problems (ref = no)	**1.185*** (0.622, 1.749)**	0.491 (-0.246, 1.228)	**1.251*** (0.678, 1.823)**	0.370 (-0.370, 1.110)	**1.888*** (1.484, 2.293)**	0.118 (-0.466, 0.701)	**2.541*** (2.121, 2.962)**	0.236 (-0.536, 1.008)
Parents talk about safety online (ref = no)	**-0.610* (-1.189, -0.031)**	^	-0.464 (-1.020, 0.093)		**-0.734*** (-1.142, -0.325)**	0.276 (-0.339, 0.892)	**-2.163*** (-2.648, -1.678)**	-0.051 (-0.883, 0.780)
Parents – set rules about internet use (ref = no)	**-0.155*** (-0.290, -0.020)**	0.156 (-0.032, 0.344)	**-0.164*** (-0.298, -0.030)**	0.098 (-0.086, 0.281)	**-0.305*** (-0.421, -0.190)**	-0.028 (-0.199, 0.143)	**-0.808*** (-0.944, -0.673)**	-0.130 (-0.379, 0.119)
Parents – approval of gambling	**0.867*** (0.641, 1.094)**	**0.482*** (0.203, 0.761)**	**0.727*** (0.505, 0.948)**	**0.392** (0.114, 0.669)**	**0.839*** (0.683, 0.996)**	**0.255* (0.045, 0.465)**	**0.882*** (0.720, 1.044)**	**0.527*** (0.231, 0.823)**

Peers – do peers gamble (ref = no)	**1.566*** (1.149, 1.983)**	**1.130*** (0.598, 1.663)**	**1.643*** (1.229, 2.056)**	**1.299*** (0.790, 1.808)**	**2.680*** (2.343, 3.018)**	**1.686*** (1.261, 2.110)**	**3.849*** (3.423, 4.275)**	**2.033*** (1.338, 2.728)**
Peers – sense of belonging to friend group	**-0.131**** (-0.211, -0.052)	-0.029 (-0.128, 0.069)	**-0.096*** (-0.174, -0.018)**	0.038 (-0.071, 0.147)	-0.051 (-0.109, 0.007)		**-0.163*** (-0.230, -0.095)**	0.031 (-0.103, 0.165)
Peers – sense of belonging to online group	0.046 (-0.017, 0.109)		0.061 (-0.002, 0.124)		**0.120*** (0.069, 0.171)**	-0.008 (-0.081, 0.065)	**0.193*** (0.134, 0.253)**	-0.028 (-0.136, 0.079)
Access to devices in bedroom	**0.887**** (0.214, 1.560)**	0.661 (-0.155, 1.478)	**1.049**** (0.354, 1.744)**	0.651 (-0.159, 1.461)	0.344 (-0.132, 0.819)		0.050 (-0.411, 0.510)	
Gambling ads – exposure via traditional media (ref = no)	0.496 (-0.208, 1.200)		0.378 (-0.294, 1.049)		**1.442*** (1.069, 1.815)**	0.220 (-0.345, 0.785)	**1.644*** (1.060, 2.228)**	-0.446 (-1.397, 0.505)
Gambling ads – exposure via digital media (ref = no)	**0.530*** (0.079, 0.981)**		0.343 (-0.106, 0.791)		**1.407*** (1.103, 1.711)**	0.103 (-0.397, 0.603)	**1.534*** (1.139, 1.929)**	-0.312 (-1.100, 0.475)
Gambling ads – think positively about gambling	**0.489*** (0.291, 0.686)**	0.014 (-0.248, 0.276)	**0.452*** (0.253, 0.651)**	-0.019 (-0.283, 0.245)	**0.747*** (0.604, 0.889)**	0.143 (-0.055, 0.342)	**0.718*** (0.577, 0.858)**	0.063 (-0.209, 0.335)
Played games with gambling content – last 12 mths (ref = no)	0.263 (-0.124, 0.649)		**0.450*** (0.072, 0.829)**	-0.482 (-1.012, 0.047)	**1.636*** (1.299, 1.974)**	-0.157 (-0.729, 0.415)	**1.148*** (0.844, 1.453)**	-0.480 (-1.202, 0.242)
Played social casino game demo app – last 12 mths (ref = no)	**1.011*** (0.603, 1.419)**	0.440 (-0.084, 0.963)	**1.147*** (0.739, 1.556)**	**0.711**** (0.179, 1.244)	**1.984*** (1.658, 2.310)**	**0.698**** (0.169, 1.228)	**3.556*** (3.151, 3.961)**	**1.073**** (0.305, 1.841)
Bought loot boxes – last 12 mths (ref = no)	**0.544**** (0.171, 0.916)	^	**0.540**** (0.168, 0.912)	^	**1.569*** (1.255, 1.882)**	^	**2.018*** (1.686, 2.351)**	^
Bet with in-game items (skin gambling) – last 12 mths (ref = no)	**0.905***	0.234	**1.110***	**0.643***	**2.182***	**0.962***	**3.784***	**1.933***

	(0.421, 1.389)	(-0.408, 0.875)	**(0.641, 1.580)**	**(0.011, 1.275)**	**(1.821, 2.542)**	**(0.416, 1.508)**	**(3.349, 4.219)**	**(1.191, 2.676)**
Play other games – hours per month	-0.001 (-0.002, 0.001)		-0.0002 (-0.002, 0.001)		-0.0002 (-0.003, 0.003)		**-0.017*** (-0.021, -0.013)**	**-0.011*** (-0.017, -0.005)**
Gaming problems (ref = no)	0.639 (-0.124, 1.401)		**0.824* (0.124, 1.525)**	0.307 (-0.632, 1.247)	**0.844*** (0.378, 1.310)**	-0.668 (-1.416, 0.079)	**2.011*** (1.379, 2.644)**	0.447 (-0.596, 1.491)
Constant		-4.740*** (-7.397, -2.083)		-4.745*** (-7.427, -2.063)		-3.897** (-6.237, -1.557)		1.924 (-1.782, 5.631)
Observations		551		551		826		842
Log Likelihood		-220.233		-251.164		-335.625		-172.789
Akaike Inf. Crit.		466.466		534.327		705.251		389.578

Note: * p < .05, ** p < .01, *** p < .001, ^ variable could not be included in multivariate analyses because of missing cases or because of multicollinearity concerns. Unstandardised coefficients with 95% confidence intervals. Number of respondents who had gambled in the last 12 months: 164 (weighted letterbox drop sample), 161 (unweighted letterbox drop sample), 407 (Qualtrics sample), 582 (Emails & Ads sample).

Bivariate and multivariate predictors of gambling intention, all samples

	Weighted Letterbox (N = 551)		Unweighted Letterbox (N = 551)		Unweighted Qualtrics (N = 826)		Unweighted Emails & Ads (N = 843)	
	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate
Age	**0.184*** (0.080, 0.288)**	-0.013 (-0.153, 0.127)	**0.132* (0.028, 0.236)**	-0.058 (-0.193, 0.078)	**0.134** (0.035, 0.233)**	-0.051 (-0.175, 0.074)	0.041 (-0.089, 0.170)	
Gender (ref = female)	0.328 (-0.025, 0.680)		0.132 (-0.240, 0.504)		-0.165 (-0.495, 0.165)		-0.222 (-0.705, 0.261)	
Parents living together (ref = no)	**0.512* (0.103, 0.921)**	0.145 (-0.352, 0.642)	**0.471* (0.056, 0.886)**	0.157 (-0.343, 0.657)	-0.161 (-0.541, 0.218)		0.291 (-0.171, 0.753)	
Wellbeing	**-0.086* (-0.163, -0.009)**	0.062 (-0.037, 0.161)	**-0.105** (-0.184, -0.025)**	0.007 (-0.091, 0.106)	-0.050 (-0.138, 0.038)		**-0.351*** (-0.464, -0.238)**	-0.065 (-0.225, 0.094)
Impulsiveness	**0.082*** (0.041, 0.122)**	0.044 (-0.007, 0.094)	**0.070*** (0.029, 0.111)**	0.037 (-0.012, 0.087)	0.016 (-0.021, 0.053)		**0.175*** (0.120, 0.230)**	0.033 (-0.034, 0.099)
Gambling expenditure (log +1)	**0.646*** (0.445, 0.848)**	**0.554** (0.165, 0.943)**	**0.663*** (0.445, 0.880)**	**0.400* (0.057, 0.743)**	**0.534*** (0.418, 0.650)**	0.163 (-0.035, 0.360)	**0.779*** (0.565, 0.993)**	**0.457* (0.070, 0.845)**
Age first gambled	**-0.420* (-0.790, -0.049)**		-0.360 (-0.735, 0.014)		0.078 (-0.242, 0.399)		**-1.162*** (-1.592, -0.732)**	
Childhood – gambled with parents (ref = no)	**2.055*** (1.286, 2.824)**	0.813 (-0.084, 1.710)	**1.937*** (1.189, 2.685)**	0.733 (-0.115, 1.580)	**2.105*** (1.595, 2.615)**	0.534 (-0.091, 1.160)	**2.973*** (2.134, 3.813)**	0.854 (-0.203, 1.911)
Childhood – adults in house with gambling problems (ref = no)	0.532 (-0.100, 1.163)		**0.736* (0.048, 1.423)**	-0.271 (-1.107, 0.564)	**1.587*** (0.997, 2.177)**	0.045 (-0.682, 0.772)	**1.919*** (1.297, 2.542)**	-0.880 (-1.791, 0.031)
Gamble with parents now (ref = no)	**1.416*** (0.791, 2.040)**	-0.431 (-1.493, 0.631)	**1.829*** (1.079, 2.580)**	0.325 (-0.728, 1.378)	**2.128*** (1.498, 2.759)**	0.714 (-0.107, 1.536)	**2.611*** (1.450, 3.771)**	0.645 (-0.960, 2.249)
Parents talk about safety online (ref = no)	-0.507		-0.265		-0.459		**-1.584***	0.785

	(-1.150, 0.137)		(-0.857, 0.327)		(-0.980, 0.062)		**(-2.288, -0.881)**	(-0.353, 1.923)
Parents – set rules about internet use (ref = no)	**-0.346*** (-0.483, -0.209)**	-0.164 (-0.345, 0.017)	**-0.232*** (-0.365, -0.099)**	-0.062 (-0.239, 0.115)	**-0.221** (-0.360, -0.082)**	0.047 (-0.118, 0.212)	**-0.515*** (-0.685, -0.345)**	0.147 (-0.091, 0.386)
Parents – approval of gambling	**0.941*** (0.685, 1.196)**	**0.551*** (0.254, 0.848)**	**0.804*** (0.559, 1.050)**	**0.448** (0.164, 0.732)**	**0.815*** (0.613, 1.017)**	**0.367** (0.136, 0.599)**	**0.795*** (0.548, 1.043)**	0.216 (-0.132, 0.564)
Peers – do peers gamble (ref = no)	**1.350*** (0.839, 1.860)**	0.474 (-0.144, 1.092)	**1.161*** (0.672, 1.651)**	0.387 (-0.206, 0.979)	**1.858*** (1.442, 2.274)**	0.466 (-0.078, 1.009)	**3.121*** (2.471, 3.772)**	0.789 (-0.127, 1.705)
Gamble with peers now (ref = no)	**1.616*** (0.748, 2.483)**	-0.690 (-1.981, 0.600)	**1.799*** (0.864, 2.734)**	0.047 (-1.231, 1.326)	**1.860*** (1.227, 2.492)**	0.017 (-0.891, 0.925)	**2.757*** (1.346, 4.167)**	-0.782 (-2.862, 1.298)
Peers – sense of belonging to friend group	-0.042 (-0.121, 0.038)		-0.026 (-0.105, 0.053)		-0.003 (-0.072, 0.067)		**-0.270*** (-0.384, -0.155)**	**-0.163* (-0.297, -0.030)**
Peers – sense of belonging to online group	**0.118*** (0.056, 0.180)**	0.062 (-0.012, 0.135)	**0.082** (0.020, 0.143)**	0.032 (-0.039, 0.103)	**0.067* (0.008, 0.126)**	-0.036 (-0.106, 0.034)	**0.198*** (0.115, 0.281)**	0.045 (-0.058, 0.148)
Access to devices in bedroom	**0.819** (0.308, 1.330)**	0.228 (-0.390, 0.846)	**0.870*** (0.369, 1.372)**	0.356 (-0.233, 0.946)	0.487 (-0.025, 1.000)		-0.059 (-0.753, 0.635)	
Gambling ads – exposure via traditional media (ref = no)	**0.998*** (0.407, 1.588)**	**0.888* (0.169, 1.606)**	**0.898** (0.327, 1.470)**	**0.808* (0.134, 1.481)**	**1.291*** (0.934, 1.648)**	**0.594* (0.126, 1.063)**	**1.800*** (1.205, 2.395)**	0.455 (-0.349, 1.259)
Gambling ads – exposure via digital media (ref = no)	0.348 (-0.047, 0.742)		0.158 (-0.251, 0.567)		**1.055*** (0.721, 1.389)**	-0.059 (-0.527, 0.409)	**1.729*** (1.263, 2.195)**	0.317 (-0.350, 0.985)
Gambling ads – think positively about gambling	**0.640*** (0.401, 0.879)**	0.224 (-0.042, 0.491)	**0.714*** (0.463, 0.965)**	**0.375** (0.098, 0.652)**	**0.676*** (0.499, 0.853)**	0.167 (-0.051, 0.384)	**1.073*** (0.791, 1.354)**	**0.748*** (0.376, 1.121)**
Played games with gambling content – last 12 mths (ref = no)	**1.059***	0.413	**0.891***	0.316	**2.032***	0.512	**1.073***	-0.316

	(0.637, 1.482)	(-0.117, 0.944)	**(0.487, 1.296)**	(-0.183, 0.815)	**(1.446, 2.618)**	(-0.231, 1.255)	**(0.615, 1.530)**	(-0.995, 0.363)
Played social casino game demo app – last 12 mths (ref = no)	**1.402*** **	**0.640***	**1.174*** **	0.413	**2.184*** **	**0.769***	**3.193*** **	0.454
	(0.887, 1.918)	**(0.019, 1.261)**	**(0.676, 1.671)**	(-0.177, 1.003)	**(1.648, 2.719)**	**(0.079, 1.460)**	**(2.518, 3.869)**	(-0.465, 1.374)
Bought loot boxes – last 12 mths (ref = no)	**0.852*** **	^	**0.872*** **	^	**1.379*** **	^	**1.860*** **	^
	(0.466, 1.238)		**(0.484, 1.260)**		**(0.948, 1.811)**		**(1.399, 2.322)**	
Bet with in-game items (skin gambling) – last 12 mths (ref = no)	**0.882****	-0.153	**1.012*** **	0.200	**1.978*** **	0.234	**4.010*** **	**1.398***
	(0.305, 1.460)	(-0.866, 0.560)	**(0.424, 1.599)**	(-0.502, 0.902)	**(1.426, 2.529)**	(-0.474, 0.941)	**(2.996, 5.024)**	**(0.119, 2.677)**
Play other games – hours per month	**0.003***	0.001	0.002		0.002		**-0.003***	-0.0004
	(0.001, 0.006)	(-0.002, 0.003)	(-0.001, 0.005)		(-0.002, 0.006)		**(-0.006, -0.001)**	(-0.002, 0.002)
Gaming problems (ref = no)	0.872		0.697		**0.800***	0.067	**2.469*****	0.395
	(-0.076, 1.820)		(-0.154, 1.548)		**(0.146, 1.453)**	(-0.736, 0.870)	**(1.057, 3.881)**	(-1.321, 2.110)
Constant		-3.355*		-2.235		-0.310		-1.718
		(-6.211, -0.499)		(-4.977, 0.508)		(-2.325, 1.704)		(-4.214, 0.778)
Observations		551		551		826		843
Log Likelihood		-258.602		-282.166		-333.210		-157.544
Akaike Inf. Crit.		557.204		604.333		702.420		359.089

Note: * p < .05, ** p < .01, *** p < .001, ^ variable could not be included in multivariate analyses because of missing cases or because of multicollinearity concerns. Unstandardised coefficients with 95% confidence intervals. Number of respondents who intended to gamble: 356 (weighted letterbox drop sample), 367 (unweighted letterbox drop sample), 639 (Qualtrics sample), 749 (Emails & Ads sample).

Bivariate and multivariate predictors of problem/at-risk gambling (problem/at-risk gambling vs non-problem gambling), all samples

Important note: The results for the weighted and unweighted letterbox drop samples should be treated with caution for this analysis due to a small number of people classified as being at-risk of gambling problems. However, they are presented here to show comparisons with the other samples.

Independent variables	Weighted Letterbox (N = 164)		Unweighted Letterbox (N = 161)		Unweighted Qualtrics (N = 407)		Unweighted Emails & Ads (N = 582)	
	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate
Age	0.052 (-0.228, 0.333)		0.138 (-0.158, 0.434)		**0.142*** **(0.009, 0.275)**	0.064 (-0.149, 0.278)	0.015 (-0.119, 0.150)	
Gender (ref = female)	0.233 (-0.796, 1.262)		0.532 (-0.554, 1.618)		**0.618**** **(0.219, 1.016)**	-0.159 (-0.810, 0.492)	0.132 (-0.335, 0.599)	
Parents living together (ref = no)	0.786 (-0.159, 1.732)		0.783 (-0.146, 1.713)		0.165 (-0.304, 0.634)		**1.329***** **(0.773, 1.885)**	0.211 (-1.843, 2.266)
Wellbeing	-0.097 (-0.275, 0.081)		-0.104 (-0.272, 0.063)		**-0.127*** **(-0.232, -0.021)**	-0.002 (-0.171, 0.167)	**-0.476***** **(-0.605, -0.347)**	-0.554 (-1.117, 0.010)
Impulsiveness	**0.255***** **(0.122, 0.388)**	0.127 (-0.059, 0.312)	**0.211***** **(0.091, 0.330)**	0.121 (-0.041, 0.283)	**0.105***** **(0.058, 0.153)**	**0.149***** **(0.071, 0.227)**	**0.259***** **(0.188, 0.329)**	0.011 (-0.185, 0.208)
Gambling expenditure (log +1)	**0.602***** **(0.309, 0.894)**	0.368 (-0.129, 0.865)	**0.544***** **(0.269, 0.818)**	0.228 (-0.211, 0.666)	**0.720***** **(0.554, 0.887)**	**0.526***** **(0.290, 0.762)**	**2.007***** **(1.633, 2.381)**	**1.894***** **(1.078, 2.710)**
Age first gambled	**-0.533*** **(-0.975, -0.090)**	^	-0.286 (-0.700, 0.127)		**-0.346***** **(-0.539, -0.153)**	^	**-1.951***** **(-2.312, -1.590)**	^
Childhood – gambled with parents (ref = no)	**1.046*** **(0.064, 2.029)**	-0.580 (-2.264, 1.104)	**1.189*** **(0.219, 2.158)**	-0.585 (-2.096, 0.926)	**1.058***** **(0.631, 1.485)**	0.155 (-0.523, 0.833)	**1.031***** **(0.576, 1.486)**	1.232 (-0.753, 3.218)
Childhood – adults in house with gambling problems (ref = no)	**2.530***** **(1.493, 3.567)**	**2.062**** **(0.560, 3.563)**	**2.464***** **(1.448, 3.481)**	**1.817**** **(0.461, 3.173)**	**2.230***** **(1.743, 2.717)**	**1.236***** **(0.546, 1.926)**	**3.118***** **(2.403, 3.833)**	**2.356*** **(0.296, 4.415)**
Gamble with parents now (ref = no)	-0.524 (-1.465, 0.417)		-0.354 (-1.273, 0.565)		-0.232 (-0.625, 0.161)		**-0.886***** **(-1.340, -0.433)**	-0.207 (-2.069, 1.654)

Parents talk about safety online (ref = no)	-0.163		-0.75		**-1.138*****	-0.793	**-3.050*****	-2.730
	(-1.467, 1.141)		(-1.870, 0.369)		**(-1.686, -0.589)**	(-1.684, 0.098)	**(-4.068, -2.033)**	(-5.552, -0.091)
Parents – set rules about internet use (ref = no)	**-0.456***	-0.391	**-0.386***	-0.105	**-0.254****	0.087	**-0.988*****	0.124
	(-0.836, -0.075)	(-1.012, 0.229)	**(-0.744, -0.029)**	(-0.628, 0.418)	**(-0.420, -0.088)**	(-0.207, 0.381)	**(-1.218, -0.758)**	(-0.562, 0.810)
Parents – approval of gambling	0.212		0.090		**0.214***	-0.290	**0.266****	-0.327
	(-0.298, 0.722)		(-0.400, 0.581)		**(0.016, 0.413)**	(-0.644, 0.065)	**(0.088, 0.444)**	(-1.091, 0.436)
Peers – do peers gamble (ref = no)	**1.160***	-0.354	**1.117***	0.266	**1.536*****	0.258	**3.935*****	0.727
	(0.152, 2.167)	(-2.064, 1.356)	**(0.113, 2.121)**	(-1.263, 1.796)	**(1.009, 2.063)**	(-0.550, 1.067)	**(3.159, 4.711)**	(-1.683, 3.137)
Gamble with peers now (ref = no)	**1.632****	0.842	**1.233***	0.646	**0.871*****	0.274	0.030	
	(0.631, 2.633)	(-0.744, 2.427)	**(0.283, 2.182)**	(-0.790, 2.082)	**(0.473, 1.269)**	(-0.347, 0.896)	(-0.445, 0.504)	
Peers – sense of belonging to friend group	-0.145		-0.140		-0.043		**-0.360*****	-0.187
	(-0.317, 0.027)		(-0.305, 0.025)		(-0.126, 0.041)		**(-0.485, -0.236)**	(-0.669, 0.295)
Peers – sense of belonging to an online group	0.168		**0.195***	0.152	**0.229*****	**0.144***	**0.288*****	-0.012
	(-0.007, 0.342)		**(0.019, 0.371)**	(-0.097, 0.402)	**(0.146, 0.312)**	**(0.014, 0.273)**	**(0.186, 0.390)**	(-0.331, 0.308)
Access to devices in bedroom	0.401		0.318		0.705		-0.655	
	(-1.749, 2.551)		(-1.801, 2.436)		(-0.052, 1.462)		(-1.526, 0.217)	
Gambling ads – exposure via traditional media (ref = no)	-0.324		-0.314		**1.664*****	-0.235	**4.708*****	2.317
	(-2.044, 1.396)		(-1.906, 1.279)		**(0.871, 2.457)**	(-1.533, 1.062)	**(2.677, 6.739)**	(-2.507, 7.141)
Gambling ads – exposure via digital media (ref = no)	0.358		0.061		**1.778*****	0.657	**2.590*****	1.250
	(-0.959, 1.676)		(-1.105, 1.226)		**(1.204, 2.352)**	(-0.291, 1.606)	**(1.951, 3.229)**	(-1.279, 3.778)
Gambling ads – think positively about gambling	**0.653****	0.503	**0.582****	0.267	**0.901*****	**0.445****	**0.523*****	0.245
	(0.218, 1.088)	(-0.265, 1.271)	**(0.165, 0.998)**	(-0.427, 0.960)	**(0.683, 1.118)**	**(0.138, 0.752)**	**(0.337, 0.709)**	(-0.517, 1.007)

Played games with gambling content – last 12 mths (ref = no)	**1.974*****	-0.232	**2.004*****	0.058	**1.668*****	0.270	**1.428*****	0.788
	(0.895, 3.053)	(-2.238, 1.775)	**(0.862, 3.146)**	(-1.721, 1.836)	**(1.242, 2.094)**	(-0.461, 1.000)	**(0.958, 1.898)**	(-0.998, 2.574)
Played social casino game demo app – last 12 mths (ref = no)	**1.934*****	0.252	**2.098*****	0.816	**1.967*****	**0.812***	**4.375*****	0.030
	(0.840, 3.029)	(-1.565, 2.069)	**(0.954, 3.241)**	(-0.806, 2.439)	**(1.518, 2.415)**	**(0.045, 1.578)**	**(3.595, 5.155)**	(-2.466, 2.526)
Bought loot boxes – last 12 mths (ref = no)	0.694		0.629		**1.967*****	^	**2.856*****	^
	(-0.262, 1.651)		(-0.313, 1.570)		**(1.530, 2.405)**		**(2.323, 3.390)**	
Bet with in-game items (skin gambling) – last 12 mths (ref = no)	**2.663*****	**1.708***	**2.259*****	0.980	**2.227*****	**1.293*****	**4.405*****	0.682
	(1.578, 3.747)	**(0.069, 3.348)**	**(1.227, 3.290)**	(-0.447, 2.406)	**(1.775, 2.679)**	**(0.615, 1.972)**	**(3.709, 5.100)**	(-1.478, 2.841)
Play other games – hours per month	0.0004		0.0002		**0.005***	**-0.011****	**-0.021*****	0.0002
	(-0.005, 0.006)		(-0.005, 0.005)		**(0.0003, 0.010)**	**(-0.018, -0.003)**	**(-0.028, -0.013)**	(-0.024, 0.025)
Gaming problems (ref = no)	**1.806****	**2.296***	**1.986*****	1.306	**1.835*****	0.630	2.175	1.667
	(0.555, 3.056)	**(0.455, 4.137)**	**(0.854, 3.116)**	(-0.289, 2.902)	**(1.124, 2.546)**	(-0.254, 1.515)	(1.154, 3.196)	(-0.870, 4.203)
Constant		-8.174***		-8.357***		-8.980***		-6.875
		(-12.523, -3.826)		(-12.435, -4.280)		(-13.494, -4.466)		(-16.615, 2.864)
Observations		161		161		407		582
Log Likelihood		-21.365		-35.524		-148.582		-28.528
Akaike Inf. Crit.		68.73		99.049		341.164		101.055

Note: * p < .05, ** p < .01, *** p < .001, ^ variable could not be included in multivariate analyses because of missing cases or because of multicollinearity concerns. Unstandardised coefficients with 95% confidence intervals. Number of respondents classified as at-risk of gambling problems: 20 (weighted letterbox drop sample), 21 (unweighted letterbox drop sample), 204 (Qualtrics sample), 490 (Emails & Ads sample).

Bivariate and multivariate predictors of participation in simulated gambling, all samples

Independent variable	Weighted Letterbox (N = 551)		Unweighted Letterbox (N = 551)		Unweighted Qualtrics (N = 826)		Unweighted Emails & Ads (N = 843)	
	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate
Age	0.024 (-0.091, 0.139)		0.016 (-0.107, 0.139)		0.070 (-0.017, 0.156)		0.062 (-0.066, 0.190)	
Gender (ref = female)	**1.582*** (1.131, 2.034)**	**1.503*** (1.032, 1.975)**	**1.461*** (1.017, 1.905)**	**1.302*** (0.835, 1.770)**	**0.551*** (0.265, 0.836)**	**0.461** (0.150, 0.773)**	**0.744*** (0.312, 1.175)**	**1.397*** (0.847, 1.947)**
Parents living together (ref = no)	0.160 (-0.289, 0.609)		0.057 (-0.416, 0.531)		0.069 (-0.269, 0.408)		**0.875*** (0.360, 1.389)**	0.568 (-0.037, 1.175)
Wellbeing	**-0.167*** (-0.262, -0.071)**	**-0.145* (-0.257, -0.034)**	**-0.130* (-0.230, -0.031)**	**-0.124* (-0.239, -0.009)**	**-0.203*** (-0.287, -0.119)**	**-0.159*** (-0.250, -0.068)**	**-0.364*** (-0.478, -0.251)**	**-0.162* (-0.293, -0.031)**
Impulsiveness	**0.070** (0.024, 0.116)**	0.040 (-0.015, 0.094)	**0.051* (0.003, 0.099)**	0.013 (-0.042, 0.069)	**0.078*** (0.044, 0.112)**	**0.055** (0.017, 0.092)**	**0.173*** (0.118, 0.227)**	0.059 (-0.001, 0.119)
Gambled during the last 12 mths (ref.= no)	0.129 (-0.308, 0.566)		0.145 (-0.327, 0.617)		**1.082*** (0.786, 1.379)**	**0.946*** (0.631, 1.262)**	**2.377*** (1.865, 2.888)**	**1.779*** (1.160, 2.398)**
Parents talk about safety online (ref = no)	-0.084 (-0.765, 0.596)		0.028 (-0.642, 0.699)		**-0.634** (-1.081, -0.188)**	-0.121 (-0.624, 0.383)	**-1.489*** (-2.161, -0.816)**	0.048 (-0.751, 0.846)
Parents – set rules about Internet use (ref = no)	**-0.171* (-0.320, -0.023)**	-0.072 (-0.239, 0.095)	**-0.230** (-0.390, -0.071)**	-0.118 (-0.295, 0.059)	**-0.292*** (-0.413, -0.170)**	-0.090 (-0.228, 0.049)	**-0.739*** (-0.921, -0.556)**	**-0.312** (-0.524, -0.100)**
Peers – sense of belonging to friend group	-0.012 (-0.101, 0.077)		0.041 (-0.049, 0.131)		-0.053 (-0.115, 0.008)		-0.096 (-0.193, 0.0003)	
Peers – sense of belonging to an online group	**0.206*** (0.132, 0.281)**	**0.162*** (0.082, 0.242)**	**0.217*** (0.137, 0.296)**	**0.170*** (0.085, 0.254)**	**0.135*** (0.082, 0.188)**	**0.115*** (0.058, 0.172)**	**0.266*** (0.182, 0.351)**	**0.155*** (0.064, 0.246)**
Access to devices in bedroom	0.356		0.452		**0.634**	0.410	-0.216	

	(-0.205, 0.918)		(-0.121, 1.024)	**(0.163, 1.105)**	(-0.108, 0.929)	(-0.938, 0.506)	
Constant	0.524 (-1.069, 2.117)		0.987 (-0.641, 2.615)		-0.355 (-1.756, 1.046)		0.203 (-1.861, 2.267)
Observations	543		543		825		842
Log Likelihood	-237.999		-233.251		-481.000		-207.655
Akaike Inf. Crit.	487.998		478.502		980.000		433.311

Note: * p < .05, ** p < .01, *** p < .001, ^ variable could not be included in multivariate analyses because of missing cases or because of multicollinearity concerns. Unstandardised coefficients with 95% confidence intervals. Number of respondents who participated in simulated gambling: 421 (weighted letterbox drop sample), 443 (unweighted letterbox drop sample), 523 (Qualtrics sample), 747 (Emails & Ads sample).

Bivariate and multivariate predictors of problematic gaming, all samples

Important note: The results for the weighted and unweighted letterbox drop samples should be treated with caution for this analysis due to a small number of people classified as experiencing problems due to their gaming. However, they are presented here to show comparisons with the other samples.

Independent variable	Weighted Letterbox (N = 551)		Unweighted Letterbox (N = 551)		Unweighted Qualtrics (N = 826)		Unweighted Emails & Ads (N = 843)	
	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivar
Age	0.044 (-0.175, 0.264)		0.052 (-0.152, 0.256)		0.118 (-0.021, 0.257)		0.004 (-0.101, 0.109)	
Gender (ref = female)	0.795 (-0.044, 1.635)		0.498 (-0.322, 1.318)		**0.580*** **(0.114, 1.046)**	0.131 (-0.403, 0.665)	0.056 (-0.625, 0.437)	
Parents living together (ref = no)	**1.044**** **(0.286, 1.803)**	0.405 (-0.458, 1.269)	**0.902*** **(0.201, 1.604)**	0.241 (-0.580, 1.062)	-0.026 (-0.553, 0.500)		**0.534**** **(0.181, 0.886)**	0.216 (-0.158, 0.591)
Wellbeing	**-0.230**** **(-0.366, -0.093)**	-0.036 (-0.216, 0.145)	**-0.224***** **(-0.350, -0.098)**	-0.019 (-0.190, 0.152)	**-0.127*** **(-0.231, -0.023)**	-0.040 (-0.167, 0.086)	**-0.093**** **(-0.150, -0.036)**	0.023 (-0.042, 0.088)
Impulsiveness	**0.143***** **(0.065, 0.221)**	0.065 (-0.029, 0.160)	**0.182***** **(0.104, 0.260)**	**0.117*** **(0.027, 0.208)**	**0.124***** **(0.074, 0.175)**	**0.132***** **(0.070, 0.194)**	**0.106***** **(0.060, 0.153)**	**0.061*** **(0.006, 0.116)**
Gambled during the last 12 mths (ref.= no)	0.639 (-0.124, 1.401)		**0.824*** **(0.124, 1.525)**	0.093 (-0.737, 0.924)	**0.844***** **(0.378, 1.310)**	-0.235 (-0.842, 0.372)	**2.011***** **(1.379, 2.644)**	**0.863*** **(0.015, 1.710)**
Parents talk about safety online (ref = no)	-0.862 (-1.840, 0.116)		**-1.012*** **(-1.855, -0.169)**	-0.455 (-1.471, 0.561)	-0.334 (-0.914, 0.247)		**-0.873***** **(-1.230, -0.516)**	-0.240 (-0.628, 0.148)
Parents – set rules about Internet use (ref = no)	**-0.378**** **(-0.387, -0.115)**	-0.212 (-0.536, 0.112)	**-0.435**** **(-0.701, -0.169)**	-0.217 (-0.530, 0.095)	**-0.292**** **(-0.468, -0.116)**	-0.042 (-0.256, 0.172)	**-0.298***** **(-0.441, -0.155)**	0.045 (-0.137, 0.227)
Peers – sense of belonging to friend group	**-0.251***** **(-0.387, -0.115)**	**-0.214*** **(-0.379, -0.050)**	**-0.226***** **(-0.351, -0.100)**	**-0.207**** **(-0.365, -0.049)**	-0.065 (-0.153, 0.024)		**-0.121**** **(-0.194, -0.049)**	-0.069 (-0.151, 0.014)
Peers – sense of belonging to online group	**0.178*** **(0.041, 0.314)**	0.141 (-0.007, 0.289)	**0.222***** **(0.091, 0.352)**	**0.204**** **(0.060, 0.348)**	**0.175***** **(0.087, 0.262)**	**0.117*** **(0.012, 0.223)**	**0.099**** **(0.026, 0.171)**	0.001 (-0.085, 0.087)

Access to devices in bedroom	-0.305 (-1.341, 0.731)		-0.147 (-1.130, 0.836)		**2.314* (0.331, 4.298)**	1.894 (-0.134, 3.923)	0.282 (-0.315, 0.878)	
Played games with gambling content – last 12 mths (ref = no)	**1.130** (0.366, 1.894)**	0.222 (-0.816, 1.260)	**1.053** (0.346, 1.760)**	-0.136 (-1.163, 0.892)	**1.430** (0.976, 1.884)***	0.337 (-0.303, 0.977)	0.353 (-0.004, 0.710)	
Played social casino game demo app – last 12 mths (ref = no)	**0.807** (0.033, 1.582)*	-0.140 (-1.109, 0.829)	0.706 (-0.015, 1.427)		**1.535** (1.057, 2.012)***	0.147 (-0.597, 0.890)	**2.104** (1.472, 2.736)***	0.819 (-0.055, 1.692)
Age first played simulated gambling	**-0.634* (-0.194, -0.074)**	^	**-0.593* (-1.089, -0.098)**		-0.004 (-0.302, 0.294)		-0.221 (-0.468, 0.026)	
Played simulated gambling in their bedroom	**1.093** (0.311, 1.875)*	0.331 (-0.694, 1.356)	**1.107** (0.397, 1.817)**	0.380 (-0.585, 1.345)	**1.248** (0.785, 1.711)***	0.216 (-0.363, 0.795)	**0.240 (-0.170, 0.650)**	
Simulated gambling – hours per month	**0.013* (0.002, 0.013)**	^	**0.017** (0.397, 1.817)**	^	0.001 (-0.006, 0.008)		**0.016** (0.006, 0.025)***	^
Bought loot boxes – last 12 mths (ref = no)	**1.914** (1.005, 2.823)***	^	**1.901** (1.051, 2.752)***	^	**1.942** (1.436, 2.449)***	^	**1.453** (0.912, 1.995)***	^
Age first bought loot boxes	-0.108 (-0.255, 0.040)		**-0.137* (-0.273, -0.001)**		0.062 (-0.038, 0.163)		**-0.073* (-0.145, -0.002)**	^
Microtransactions – level of expenditure	**0.025** (0.006, 0.044)**	^	**0.017* (0.002, 0.032)**	^	0.002 (-0.001, 0.005)		-0.001 (-0.0003, 0.001)	
Bet with in-game items (skin gambling) – last 12 mths (ref = no)	**1.271** (0.464, 2.078)**	0.529 (-0.434, 1.493)	**1.449** (0.722, 2.175)***	0.821 (-0.108, 1.750)	**2.069** (1.568, 2.571)***	**1.627** (0.943, 2.310)***	**1.929** (1.375, 2.482)***	0.676 (-0.121, 1.473)
Age first bet with in-game items	-0.095 (-0.230, 0.041)		-0.111 (-0.239, 0.018)		0.052 (-0.073, 0.177)		0.049 (-0.044, 0.142)	
Play other games – hours per month	0.0004		**0.001**		**0.007***	0.004	-0.002	

	(-0.0004, 0.001)		**(-0.0003, 0.002)**		**(0.004, 0.011)**	(-0.001, 0.008)	(-0.006, 0.001)	
Constant		-3.118* (-5.664, -0.573)		-4.119*** (-6.676, -1.562)		-7.889*** (-10.728, -5.051)		-4.268*** (-5.918, -2.619)
Observations		551		551		825		843
Log Likelihood		-82.933		-100.775		-222.254		-354.396
Akaike Inf. Crit.		187.866		225.551		470.508		730.792

Note: * p < .05, ** p < .01, *** p < .001, ^ variable could not be included in multivariate analyses because of missing cases or because of multicollinearity concerns. Unstandardised coefficients with 95% confidence intervals. Number of respondents who were classified as experiencing gaming problems: 29 (weighted letterbox drop sample), 34 (unweighted letterbox drop sample), 89 (Qualtrics sample), 421 (Emails & Ads sample).

Appendix K: Factors predicting problem gambling

The bivariate analyses, based only on the Qualtrics and Emails & Ads samples, found that those who were classified as experiencing problem gambling: were more impulsive, spent more on gambling, first gambled at a younger age, grew up in a household with adults who experienced gambling problems, were less likely to gamble with their parents now, were less likely to have parents who talked about safety online, associated with peers who gamble, felt a stronger sense of belonging to an online community, experienced more exposure to gambling advertisements via both traditional and digital media, thought positively about gambling because of gambling advertisements, played games with gambling content in the last 12 months, played social casino games in the last 12 months, bought loot boxes within the last 12 months, bet with in-game items in the last 12 months, and experienced problems from gaming.

The multivariate analyses found that the unique predictors of experiencing gambling problems were spending more on gambling. The most important predictor was gambling expenditure.

Note that the weighted and unweighted letterbox drop samples included a small number of people experiencing gambling problems, and results should be interpreted with caution.

Bivariate and multivariate predictors of problem gambling problems (non-problem/at-risk gambling vs problem gambling), all samples

Independent variables	Weighted Letterbox (N = 164)		Unweighted Letterbox (N = 161)		Unweighted Qualtrics (N = 407)		Unweighted Emails & Ads (N = 582)	
	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate
Age	0.304 (-0.182, 0.789)		0.292 (-0.193, 0.777)		**0.162*** **(0.015, 0.310)**	0.088 (-0.142, 0.318)	-0.029 (-0.139, 0.081)	
Gender (ref = female)	1.149 (-0.533, 2.831)		1.524 (-0.597, 3.644)		0.384 (-0.047, 0.815)		0.078 (-0.305, 0.461)	
Parents living together (ref = no)	0.393 (-1.019, 1.806)		0.651 (-0.704, 2.005)		0.046 (-0.456, 0.548)		**0.869***** **(0.473, 1.265)**	0.220 (-0.319, 0.759)
Wellbeing	-0.187 (-0.439, 0.066)		-0.114 (-0.353, 0.125)		-0.073 (-0.181, 0.035)		**-0.151***** **(-0.217, -0.085)**	0.046 (-0.043, 0.135)
Impulsiveness	**0.208*** **(0.027, 0.388)**	0.133 (-0.150, 0.416)	**0.199*** **(0.032, 0.365)**	0.102 (-0.151, 0.355)	**0.066**** **(0.018, 0.114)**	0.063 (-0.016, 0.143)	**0.177***** **(0.120, 0.233)**	**0.088*** **(0.009, 0.167)**
Gambling expenditure (log +1)	**0.918***** **(0.466, 1.370)**	**0.806**** **(0.209, 1.403)**	**0.848***** **(0.422, 1.275)**	0.589 (-0.022, 1.200)	**0.743***** **(0.563, 0.923)**	**0.565***** **(0.310, 0.820)**	**1.176***** **(0.962, 1.390)**	**0.858***** **(0.552, 1.164)**
Age first gambled	-0.602 (-1.264, 0.061)	^	-0.208 (-0.809, 0.393)	^	**-0.337***** **(-0.534, -0.139)**	^	**-1.286***** **(-1.566, -1.005)**	^
Childhood – gamble with parents (ref = no)	-0.577 (-2.096, 0.943)		0.122 (-1.231, 1.476)		**1.141***** **(0.637, 1.644)**	0.008 (-0.791, 0.807)	**0.777***** **(0.397, 1.157)**	0.157 (-0.550, 0.865)
Childhood – adults in house with gambling problems (ref = no)	**1.791*** **(0.347, 3.234)**	0.771 (-1.184, 2.727)	**2.367**** **(0.914, 3.820)**	1.078 (-0.766, 2.922)	**2.462***** **(1.968, 2.955)**	**1.997***** **(1.268, 2.727)**	**1.627***** **(1.237, 2.017)**	0.459 (-0.229, 1.147)
Gamble with parents now	-0.869 (-2.342, 0.604)		-0.958 (-2.380, 0.465)		**-0.631**** **(-1.054, -0.208)**	**-1.412***** **(-2.126, -0.699)**	**-0.528**** **(-0.895, -0.161)**	-0.003 (-0.528, 0.523)
Parents talk about safety online (ref = no)	-0.319 (-2.183, 1.545)		-0.578 (-2.216, 1.060)		**-1.084***** **(-1.598, -0.570)**	-0.615 (-1.356, 0.126)	**-1.313***** **(-1.737, -0.889)**	-0.350 (-0.888, 0.189)

Parents – set rules about online use (ref = no)	-0.524 (-1.116, 0.069)		**-0.591*** **(-1.175, -0.006)**	-0.180 (-0.994, 0.634)	-0.154 (-0.329, 0.021)		**-0.522***** **(-0.693, -0.350)**	0.178 (-0.093, 0.449)
Parents – approval of gambling	0.322 (-0.451, 1.095)		0.274 (-0.442, 0.990)		**0.262*** **(0.048, 0.477)**	-0.250 (-0.623, 0.123)	0.042 (-0.095, 0.180)	
Peers – do peers gamble (ref = no)	0.921 (-0.569, 2.411)		0.799 (-0.623, 2.221)		**1.643***** **(0.949, 2.337)**	-0.156 (-1.165, 0.854)	**3.194***** **(2.373, 4.015)**	0.895 (-0.558, 2.348)
Peers – gamble with them now (ref = no)	0.926 (-0.495, 2.347)		0.848 (-0.508, 2.204)		**0.690**** **(0.265, 1.115)**	-0.248 (-0.917, 0.421)	-0.100 (-0.483, 0.283)	
Peers – sense of belonging to friend group	0.048 (-0.254, 0.349)		0.035 (-0.245, 0.315)		-0.064 (-0.151, 0.024)		**-0.179***** **(-0.266, -0.092)**	-0.013 (-0.132, 0.106)
Peers – sense of belonging to an online group	0.068 (-0.184, 0.319)		0.176 (-0.079, 0.432)		**0.251***** **(0.157, 0.345)**	**0.151*** **(0.005, 0.297)**	**0.198***** **(0.116, 0.280)**	0.061 (-0.059, 0.182)
Access to devices in bedroom	-0.664 (-2.890, 1.563)		-0.686 (-2.871, 1.499)		**1.241*** **(0.171, 2.310)**	0.170 (-1.183, 1.522)	-0.248 (-0.858, 0.361)	
Gambling ads – exposure via traditional media (ref = no)	-0.707 (-2.937, 1.523)		-0.471 (-2.639, 1.696)		**2.413***** **(0.978, 3.847)**	0.521 (-1.338, 2.381)	**3.904***** **(1.878, 5.929)**	1.347 (-1.554, 4.249)
Gambling ads – exposure via digital media (ref = no)	0.564 (-1.606, 2.734)		0.718 (-1.398, 2.834)		**1.956***** **(1.151, 2.761)**	0.126 (-1.055, 1.307)	**1.774***** **(1.153, 2.395)**	-0.290 (-1.568, 0.988)
Gambling ads – think positively about gambling	**0.880**** **(0.240, 1.521)**	0.464 (-0.668, 1.596)	**0.903**** **(0.305, 1.501)**	0.333 (-0.758, 1.423)	**0.853***** **(0.626, 1.079)**	**0.500**** **(0.180, 0.821)**	**0.267***** **(0.130, 0.404)**	0.030 (-0.156, 0.217)
Played games with gambling content – last 12 mths (ref = no)	**1.634***	-1.814	**1.653***	-1.926	**1.783*****	0.748	**0.735*****	-0.068

	(0.063, 3.206)	(-4.762, 1.134)	**(0.048, 3.257)**	(-5.486, 1.634)	**(1.314, 2.251)**	(-0.058, 1.5553)	**(0.364, 1.106)**	(-0.630, 0.493)
Played social casino game demo app – last 12 mths (ref = no)	1.534		**1.736***	0.565	**1.975*****	0.595	**3.479*****	0.829
	(-0.037, 3.104)		**(0.130, 3.341)**	(-2.156, 3.287)	**(1.424, 2.527)**	(-0.363, 1.553)	**(2.665, 4.292)**	(-0.448, 2.106)
Bought loot boxes – last 12 mths (ref = no)	0.605		0.799		**1.978*****	^	**2.011*****	^
	(-0.836, 2.047)		(-0.623, 2.221)		**(1.466, 2.490)**		**(1.526, 2.497)**	
Bet with in-game items (skin gambling) – last 12 mths (ref = no)	**3.055****	2.530	**3.250****	2.692	**2.088*****	0.721	**3.561*****	0.859
	(1.136, 4.974)	(-0.115, 5.176)	**(1.137, 5.362)**	(-0.170, 5.554)	**(1.562, 2.614)**	(-0.143, 1.585)	**(2.831, 4.292)**	(-0.272, 1.990)
Play other games – hours per month	-0.002		-0.002		**0.005***	**-0.008***	**-0.015*****	-0.011
	(-0.013, 0.009)		(-0.011, 0.008)		**(0.0004, 0.010)**	**(-0.016, -0.001)**	**(-0.022, -0.008)**	(-0.024, 0.003)
Gaming problems (ref = no)	2.110**	0.657	2.234**	0.513	**1.510******	0.933*	**1.459******	0.873*
	(0.530, 3.691)	(-1.834, 3.147)	(0.793, 3.675)	(-1.708, 2.734)	**(0.937, 2.083)**	(0.059, 1.806)	**(0.888, 2.029)**	(0.177, 1.569)
Constant		-11.035**		-9.224**		-9.166***		-10.357***
		(-18.399, -3.671)		(-16.091, -2.357)		(-13.814, -4.518)		(-14.443, -6.271)
Observations		161		161		407		582
Log Likelihood		-14.010		-18.042		-130.918		-201.771
Akaike Inf. Crit.		44.021		56.084		303.837		445.542

Note: * p < .05, ** p < .01, *** p < .001, ^ variable could not be included in multivariate analyses because of missing cases or because of multicollinearity concerns. Unstandardised coefficients with 95% confidence intervals. Number of respondents experiencing gambling problems: 8 (weighted letterbox drop sample), 9 (unweighted letterbox drop sample), 128 (Qualtrics sample), 421 (Emails & Ads sample).

Appendix L: Relative importance of predictors in bivariate and multivariate analyses

Relative importance for each predictor in both the bivariate and multivariate models is reported below. The tables the Survey results chapter contain unstandardised predictors, which are not directly comparable to each other, because the independent variables are not on the same scale as each other. To compare predictor importance for linear regressions, it would be possible to use measures of variance explained. However, all models were logistic regressions, with binary outcomes, so alternate approaches were required.

For bivariate analyses, we used McFadden pseudo-R^2 values. These can be interpreted in a roughly similar way to R^2 values for linear regression, in that the higher the value, the more explanatory power that independent variable has for that dependent variable.

The strongest bivariate predictor of participation in gambling was gambling with parents during childhood. Current gambling expenditure was the strongest predictor of future gambling intention. For problem/at-risk gambling, the strongest predictor was betting with in-game items, followed by childhood exposure through adults gambling in the household, current gambling expenditure, and impulsiveness, with similar results for predicting problem gambling. Being male was the strongest predictor of participation in simulated gambling. For gaming problems, buying loot boxes was the strongest association, followed by amount of expenditure on microtransactions, and sense of belonging to a peer group.

For the multivariate analyses, the values reported are essentially *t*-values, again with higher scores indicating more importance. These are interpreted in Survey results chapter. It is important to note that the *t*-values and McFadden pseudo-R^2 values cannot be compared to each other.

McFadden pseudo-R^2 for bivariate analyses, and t-values for multivariate analyses – predicting gambling participation during the last 12 months, all samples

	Weighted Letterbox (N = 551)		Unweighted Letterbox (N = 551)		Unweighted Qualtrics (N = 826)		Unweighted Emails & Ads (N = 843)	
	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate
Age	**0.022**	0.955	**0.022**	0.959	**0.030**	0.851	**0.004**	0.699
Gender (ref = female)	0.003		0.002		0.002		**0.008**	1.167
Parents living together (ref = no)	**0.023**	**2.728**	**0.026**	**2.560**	0.000		**0.021**	0.013
Wellbeing	0.003		**0.011**	**0.304**	**0.004**	0.089	**0.117**	**1.904**
Impulsiveness	0.006		0.004		0.000		**0.039**	**2.555.**
Childhood – gamble with parents (ref = no)	**0.177**	**6.785**	**0.127**	**5.386**	**0.234**	**6.953**	**0.243**	**5.122**
Childhood – adults in house with gambling problems (ref = no)	**0.028**	**1.308**	**0.027**	0.981	**0.091**	0.395	**0.195**	0.600
Parents talk about safety online (ref = no)	**0.001**		0.004		**0.011**	0.879	**0.111**	0.121
Parents – set rules about online use (ref = no)	**0.009**	1.629	**0.009**	1.040	**0.024**	0.324	**0.163**	1.021
Parents – approval of gambling	**0.098**	**3.386**	**0.066**	**2.768**	**0.114**	**2.378**	**0.151**	**3.490**
Peers – do peers gamble (ref = no)	**0.082**	**4.163**	**0.094**	**5.004**	**0.262**	**7.779**	**0.439**	**5.736**
Peers – sense of belonging to friend group	**0.014**	0.580	**0.009**	0.681	0.003		**0.023**	0.455
Peers – sense of belonging to online group	0.002		0.005		**0.019**	0.218	**0.041**	0.518
Access to devices in bedroom	**0.014**	1.587	**0.016**	1.575	0.002		0.000	
Gambling ads – exposure via traditional media (ref = no)	0.003		0.002		**0.057**	0.763	**0.032**	0.920
Gambling ads – exposure via digital media (ref = no)	**0.007**		0.003		**0.078**	0.402	**0.057**	0.777
Gambling ads – think positively about gambling	**0.049**	0.105	**0.030**	0.143	**0.110**	1.414	**0.121**	0.454
Played games with gambling content – last 12 mths (ref = no)	0.003		**0.008**	1.787	**0.090**	0.539	**0.055**	1.303
Played social casino game demo app – last 12 mths (ref = no)	**0.034**	1.646	**0.045**	**2.617**	**0.144**	**2.584**	**0.394**	**2.740**
Bought loot boxes – last 12 mths (ref = no)	**0.012**		**0.012**		**0.092**		**0.147**	
Bought in-game items – last 12 mths (ref = no)	**0.021**	0.714	**0.032**	**1.994**	**0.153**	**3.452**	**0.427**	**5.103**
Play other games – hours per month	0.002		0.000		0.000		**0.107**	**3.715**
Gaming problems (ref = no)	-0.000		0.000	0.641	0.000	1.752	**0.006**	0.840

McFadden pseudo-R^2 for bivariate analyses, and t-values for multivariate analyses – predicting gambling intention, all samples

	Weighted Letterbox (N = 551)		Unweighted Letterbox (N = 551)		Unweighted Qualtrics (N = 826)		Unweighted Emails & Ads (N = 843)	
	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate
Age	**-0.000**	0.184	**0.000**	0.831	**0.000**	0.800	0.006	
Gender (ref = female)	0.002		0.001		0.001		0.001	
Parents living together (ref = no)	**0.006**	0.571	**0.007**	0.616	0.001		0.003	
Wellbeing	**0.007**	1.236	**0.010**	0.146	0.001		**0.090**	0.803
Impulsiveness	**0.023**	1.682	**0.017**	1.497	0.001		**0.067**	0.963
Gambling expenditure (log +1)	**0.104**	**2.788**	**0.095**	**2.288**	**0.154**	1.621	**0.338**	**2.312**
Age first gambled	**0.033**		0.020		0.001		**0.156**	
Childhood – gambled with parents (ref = no)	**0.065**	1.776	**0.056**	1.694	**0.111**	1.675	**0.170**	1.584
Childhood – adults in house with gambling problems (ref = no)	0.002		**0.007**	0.637	**0.045**	0.121	**0.089**	1.893
Gamble with parents now (ref = no)	**0.043**	0.795	**0.049**	0.605	**0.082**	1.704	**0.075**	0.787
Parents talk about safety online (ref = no)	0.003		0.001		0.004		**0.047**	1.352
Parents – set rules about internet use (ref=no)	**0.039**	1.777	**0.017**	0.691	**0.011**	0.559	**0.064**	1.209
Parents – approval of gambling	**0.082**	**3.641**	**0.069**	**3.089**	**0.088**	**3.110**	**0.095**	1.217
Peers – do peers gamble (ref = no)	**0.049**	1.503	**0.036**	1.278	**0.111**	1.679	**0.250**	1.688
Gamble with peers now (ref = no)	**0.023**	1.049	**0.031**	0.073	**0.058**	0.037	**0.063**	0.737
Peers – sense of belonging to friend group	0.002		0.001		0.000		**0.043**	**2.401**
Peers – sense of belonging to online group	**0.020**	1.644	**0.010**	0.881	**0.006**	1.011	**0.037**	0.863
Access to devices in bedroom	**0.010**	0.724	**0.016**	1.185	0.004		0.000	
Gambling ads – exposure via traditional media (ref = no)	**0.007**	**2.422**	**0.013**	**2.350**	**0.055**	**2.487**	**0.051**	1.108
Gambling ads – exposure via digital media (ref = no)	0.004		0.001		**0.044**	0.246	**0.082**	0.932
Gambling ads – think positively about gambling	**0.048**	1.651	**0.054**	**2.651**	**0.076**	1.502	**0.156**	**3.935**
Played games with gambling content – last 12 mths (ref = no)	**0.030**	1.526	**0.029**	1.243	**0.082**	1.350	**0.039**	0.912
Played social casino game demo app – last 12 mths (ref = no)	**0.042**	**2.021**	**0.036**	1.372	**0.112**	**2.183**	**0.254**	0.969
Bought loot boxes – last 12 mths (ref = no)	**0.032**		**0.029**		**0.055**		**0.114**	
Bet with in-game items (skin gambling) – last 12 mths (ref = no)	**0.012**	0.419	**0.019**	0.559	**0.085**	0.647	**0.290**	**2.143**
Play other games – hours per month	**0.011**	0.538	0.004		0.001		**0.015**	0.435
Gaming problems (ref = no)	0.001		0.002		0.003	0.164	0.000	0.451

McFadden pseudo-R^2 for bivariate analyses, and t-values for multivariate analyses – predicting problem/at-risk gambling, all samples

Independent variables	Weighted Letterbox (N = 551)		Unweighted Letterbox (N = 551)		Unweighted Qualtrics (N = 826)		Unweighted Emails & Ads (N = 843)	
	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate
Age	0.003		0.007		**0.008**	0.700	0.000	
Gender (ref = female)	-0.002		0.009		**0.017**	0.296	0.001	
Parents living together (ref = no)	0.027		0.022		0.001		**0.052**	0.202
Wellbeing	0.013		0.012		**0.010**	0.166	**-0.169**	**1.924**
Impulsiveness	**0.138**	1.272	**0.114**	1.164	**0.036**	**3.578**	**0.115**	0.114
Gambling expenditure (log +1)	**0.193**	1.052	**0.141**	0.899	**0.173**	**4.457**	**0.731**	**4.550**
Age first gambled	**0.069**		0.015		**0.023**		**0.339**	
Childhood – gamble with parents (ref = no)	**0.033**	0.134	**0.049**	0.443	**0.044**	0.275	**0.038**	1.216
Childhood – adults in house with gambling problems (ref = no)	**0.196**	**2.896**	**0.188**	**2.699**	**0.174**	**3.530**	**0.251**	**2.242**
Gamble with parents now (ref = no)	0.012		0.005		0.002		**0.029**	0.218
Parents talk about safety online (ref = no)	0.000		0.013		**0.032**	1.678	**0.157**	**1.897**
Parents – set rules about online use (ref = no)	**0.078**	0.935	**0.039**	0.282	**0.016**	0.431	**0.170**	0.355
Parents – approval of gambling	0.008		0.001		**0.008**	1.667	**0.018**	0.840
Peers – do peers gamble (ref = no)	**0.027**	0.193	**0.042**	0.335	**0.067**	0.502	**0.280**	0.591
Peers – gamble with them now (ref = no)	**0.101**	0.562	**0.054**	0.665	**0.033**	0.610	0.000	
Peers – sense of belonging to friend group	0.028		0.021		0.002		**0.077**	0.759
Peers – sense of belonging to an online group	0.017		**0.042**	1.218	**0.057**	**2.011**	**0.064**	0.072
Access to devices in bedroom	-0.000		0.001		0.006		0.005	
Gambling ads – exposure via traditional media (ref = no)	0.004		0.001		**0.038**	0.069	**0.114**	0.941
Gambling ads – exposure via digital media (ref = no)	-0.000		0.000		**0.080**	1.201	**0.127**	0.969
Gambling ads – think positively about gambling	**0.082**	1.364	**0.060**	1.006	**0.149**	**3.023**	**0.068**	0.630
Played games with gambling content – last 12 mths (ref = no)	**0.108**	0.042	**0.122**	0.169	**0.114**	0.586	**0.074**	0.864
Played social casino game demo app – last 12 mths (ref = no)	**0.114**	0.543	**0.134**	1.156	**0.149**	**2.253**	**0.373**	0.023
Bought loot boxes – last 12 mths (ref = no)	0.016		0.014		**0.155**		**0.232**	
Bet with in-game items (skin gambling) – last 12 mths (ref = no)	**0.255**	**2.405**	**0.168**	1.312	**0.192**	**3.241**	**0.440**	0.619
Play other games – hours per month	-0.001		0.000		**0.008**	**2.976**	**0.070**	0.020
Gaming problems (ref = no)	**0.043**	**2.281**	**0.042**	0.271	**0.028**	1.865	0.006	1.288

McFadden pseudo-R^2 for bivariate analyses, and t-values for multivariate analyses – predicting problem gambling, all samples

Independent variables	Weighted Letterbox (N = 551)		Unweighted Letterbox (N = 551)		Unweighted Qualtrics (N = 826)		Unweighted Emails & Ads (N = 843)	
	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate
Age	0.018		0.023		**0.009**	0.751	0.000	
Gender (ref = female)	0.039		0.044		0.006		0.000	
Parents living together (ref = no)	0.013		0.012		0.000		**0.029**	0.799
Wellbeing	0.052		0.012		0.003		**0.032**	1.018
Impulsiveness	**0.085**	0.921	**0.090**	0.788	**0.015**	1.571	**0.060**	2.187
Gambling expenditure (log +1)	**0.370**	**2.645**	**0.304**	1.884	**0.176**	**4.341**	**0.341**	**5.501**
Age first gambled	0.075		0.007		**0.022**		**0.152**	
Childhood – gamble with parents (ref = no)	0.012		0.000		**0.044**	0.020	**0.023**	0.436
Childhood – adults in house with gambling problems (ref = no)	**0.097**	0.773	**0.155**	1.146	**0.222**	**5.367**	**0.104**	1.307
Gamble with parents now (ref = no)	0.015		0.027		**0.017**	**3.879**	**0.012**	0.010
Parents talk about safety online (ref = no)	0.002		0.006		**0.034**	1.627	**0.061**	1.274
Parents – set rules about online use (ref = no)	0.063		**0.068**	0.433	0.006		**0.055**	1.289
Parents – approval of gambling	0.018		0.008		**0.012**	1.313	0.001	
Peers – do peers gamble (ref = no)	0.036		0.019		**0.057**	0.302	**0.137**	1.208
Peers – gamble with them now (ref = no)	0.042		0.022		**0.020**	0.727	0.000	
Peers – sense of belonging to friend group	-0.002		0.001		0.004		**0.025**	0.211
Peers – sense of belonging to an online group	0.002		0.029		**0.062**	**2.027**	**0.034**	0.998
Access to devices in bedroom	0.009		0.005		**0.013**	0.246	0.001	
Gambling ads – exposure via traditional media (ref = no)	0.009		0.002		**0.043**	0.550	**0.055**	0.910
Gambling ads – exposure via digital media (ref = no)	0.002		0.008		**0.068**	0.209	**0.048**	0.445
Gambling ads – think positively about gambling	**0.102**	0.803	**0.132**	0.598	**0.133**	**3.060**	**0.022**	0.317
Played games with gambling content – last 12 mths (ref = no)	**0.081**	1.206	**0.072**	1.061	**0.124**	1.819	**0.022**	0.239
Played social casino game demo app – last 12 mths (ref = no)	0.061		**1.080**	0.407	**0.126**	1.217	**0.179**	1.273
Bought loot boxes – last 12 mths (ref = no)	0.009		0.019		**0.139**		**0.103**	
Bet with in-game items (skin gambling) – last 12 mths (ref = no)	**0.245**	1.875	**0.233**	1.844	**0.150**	**1.635**	0.226	1.489
Play other games – hours per month	0.003		0.002		**0.009**	**2.327**	**0.033**	1.562
Gaming problems (ref = no)	-0.003	0.517	0.012	0.453	**0.008**	2.093	**0.007**	2.458

McFadden pseudo-R^2 for bivariate analyses, and t-values for multivariate analyses – predicting simulated gambling, all samples

Independent variable	Weighted Letterbox (N = 551)		Unweighted Letterbox (N = 551)		Unweighted Qualtrics (N = 826)		Unweighted Emails & Ads (N = 843)	
	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate
Age	-0.000		0.000		0.002		0.002	
Gender (ref = female)	**0.090**	**6.249**	**0.081**	**5.461**	**0.013**	**2.903**	**0.019**	**4.976**
Parents living together (ref = no)	0.001		0.000		0.000		**0.021**	1.839
Wellbeing	**0.029**	**2.557**	**0.013**	**2.116**	**0.023**	**3.416**	**0.096**	**2.430**
Impulsiveness	**0.020**	1.436	**0.008**	0.473	**0.020**	**2.859**	**0.067**	1.918
Gambled during the last 12 mths (ref.= no)	0.000		0.001		**0.049**	**5.879**	**0.174**	**5.635**
Parents talk about safety online (ref = no)	0.000		0.000		**0.008**	0.471	**0.044**	0.117
Parents – set rules about online use (ref = no)	**0.009**	0.840	**0.015**	1.309	**0.021**	1.268	**0.123**	**2.890**
Peers – sense of belonging to friend group	0.000		0.001		0.003		0.007	
Peers – sense of belonging to an online group	**0.040**	**3.976**	**0.058**	**3.939**	**0.024**	**3.968**	**0.067**	**3.339**
Access to devices in bedroom	0.002		0.004		**0.006**	1.550	0.001	

McFadden pseudo-R^2 for bivariate analyses, and t-values for multivariate analyses – predicting gaming problems, all samples

Independent variable	Weighted Letterbox (N = 551)		Unweighted Letterbox (N = 551)		Unweighted Qualtrics (N = 826)		Unweighted Emails & Ads (N = 843)	
	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivar
Age	-0.000		0.001		0.005		0.000	
Gender (ref = female)	0.013		0.006		0.011	0.480	0.000	
Parents living together (ref = no)	0.029	0.920	0.024	0.575	0.000		0.011	1.132
Wellbeing	0.047	0.386	0.044	0.216	0.010	0.624	0.012	0.698
Impulsiveness	0.045	1.351	0.088	2.536	0.042	4.173	0.027	2.179
Gambled during the last 12 mths (ref.= no)	0.001		0.020	0.220	0.024	0.760	0.078	1.994
Parents talk about safety online (ref = no)	0.010		0.019	0.878	0.002		0.028	1.214
Parents – set rules about online use (ref = no)	0.025	1.285	0.043	1.365	0.019	0.382	0.022	0.481
Peers – sense of belonging to friend group	0.073	2.555	0.044	2.573	0.004		0.013	1.632
Peers – sense of belonging to online group	0.014	1.861	0.048	2.784	0.029	2.177	0.009	0.021
Access to devices in bedroom	0.005		0.000		0.021	1.830	0.001	
Played games with gambling content – last 12 mths (ref = no)	0.037	0.419	0.034	0.259	0.069	1.032	0.005	
Played social casino game demo app – last 12 mths (ref = no)	0.020	0.283	0.014		0.078	0.386	0.086	1.837
Age first played simulated gambling	0.037		0.033		0.000		0.004	
Played simulated gambling in their bedroom	0.032	0.633	0.034	0.771	0.046	0.731	0.002	
Played simulated gambling in their bedroom	0.008		0.094		0.000		0.016	
Bought loot boxes – last 12 mths (ref = no)	0.107		0.096		0.119		0.046	
Age first bought loot boxes	0.016		0.016		0.004		0.005	
Microtransactions – level of expenditure	0.082		0.034		0.004		0.002	
Bet with in-game items (skin gambling) – last 12 mths (ref = no)	0.023	1.077	0.053	1.733	0.136	4.662	0.086	1.663
Age first bet with in-game items	0.046		0.026		0.002		0.002	
Play other games – hours per month	0.002	1.550	0.005		0.023	1.463	0.002	

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