



Patterns of Play

Extended Executive Summary Report

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Glossary

Betting: betting generally relates to events external to the gambling environment (e.g., results of cricket matches).

In-play betting: in-play betting is betting on a sports match between the start and end of a particular match, i.e., while the match is taking place. In the case of cricket, where some matches are played over more than one day, 'in-play' refers to bets placed between the start and end of each individual day. *In-play betting* stands in contrast to traditional *pre-match betting* whereby wagers are placed before the match starts.

Virtuals: this product allows bets to be placed on the outcome of a computer-simulated sports event, for example a horse race. It is categorised within betting because it has the same structural characteristics as other betting. However, it also has similarities with gaming in that the outcome is determined by random number generation and the operator itself provides the event.

Gaming: gaming outcomes are generated within the gambling environment (e.g., by the roulette wheel). Gaming covers a range of gambling activities: bingo, live and virtual casino games, poker, slots, and instant wins.

Stake: stake is the amount wagered on the outcome of an individual gamble; for example, on the winner of a horse race or the number selected from one spin of a roulette wheel. Sometimes operators add a bonus to the stake as a promotional device, but here the stake is taken to refer only to the customer's own money put at risk.

Spend: total amount gambled by the customer minus any winnings. If spend is negative, this means that the customer has collected winnings greater than their stakes.

Gross Gambling Yield (GGY): the amount retained by operators from customer stakes after the payment of winnings but before the deduction of the costs of the operation. In this report the terms Gross Gambling Yield and spending/spend losses all refer to the same thing: the customers give some money as stakes and may get back some money in winnings. What the operator then keeps is called Gross Gambling Yield, whereas for consumers it is what they as a group have lost/spent. The terms are used interchangeably depending on the context in which a statistic is presented.

Session: a session refers to the successive play of gambling games, e.g., the customer plays slots games over a period of 20 minutes before going away. In the data, we do not observe exact start and end times because gaming data are summarised over 15-minute windows. For analysis, we define a session as gaming spread over closely adjacent 15-minute windows where there is a reasonable presumption that the whole represented a single block of time dedicated wholly or partly to gambling.

Player/customer/account-holder: These terms have been used interchangeably throughout this report and denotes the user of the online gambling accounts analysed in this report.

1 Introduction

1.1 Background

Recent evidence shows that gambling in its various forms is a well-established leisure activity in Great Britain. In the annual Gambling Commission survey for the year to September 2021, 42% of respondents aged 16+ reported that they had participated in at least one form of gambling in the past four weeks, stable with 2020 data.

Furthermore, while National Lottery draws were the most popular form of gambling, 28% of all respondents participated in some other form of gambling. A significant proportion of this is carried out online, with 25% of adults reporting they had gambled online in the past four weeks.¹ The effects of national lockdowns remain to be fully understood, with some news sources claiming an increase in online gambling during the first year of the lockdown,² while the Gambling Commission suggests that overall gambling participation rates have been stable as offline participation in gambling has decreased while online participation has increased, mostly because of more people buying lottery tickets online.^{3,4}

Most gambling products available online are also available to the offline market, including National Lottery draws, betting on sporting events, casino-type games (e.g. roulette) and bingo. However, aspects of the online gambling market, such as the accessibility that it offers at all times of day and through different electronic devices, are distinctive and potentially the source of additional concerns.⁵

As with most other forms of gambling, online gambling is regulated by the Gambling Commission. The online gambling market in Britain is the largest regulated online gambling market in the world. The annual gross gambling yield pre-pandemic from April 2019 – March 2020 was £5.7 billion (not including online lottery sales), which was 40% of the whole gambling market in Great Britain.^{6,7}

Central to the Gambling Commission's remit is the prevention of harm to consumers and the public. Gambling-related harms affect individuals, their families and friends, and society at large. It is increasingly recognised that the scope and impact of these

¹ Gambling Commission (2021). Statistics on participation and problem gambling for the year to September 2021.

² Online Gambling Market Size Rises Amid COVID-19 Pandemic. The European Business Review. 23 November 2020. Available at: <https://www.europeanbusinessreview.com/online-gambling-market-size-rises-amid-covid-19-pandemic/>. [Accessed 12 April 2021]

³ Gambling Commission (2021). Statistics on participation and problem gambling for the year to September 2021.

⁴ Gambling Commission. Covid-19 and its impact on gambling – what we know so far [Updated July 2020] Gambling Commission. Available at: <https://www.gamblingcommission.gov.uk/news-action-and-statistics/Statistics-and-research/Covid-19-research/Covid-19-updated-July-2020/Covid-19-and-its-impact-on-gambling-%E2%80%93-what-we-know-so-far-July-2020.aspx> [Accessed 12 April 2021]

⁵ Parke, J., Parke, A., & Blaszczynski, A. (2017) Key issues in product-based harm minimisation: examining theory, evidence and policy issues relevant in Great Britain. Prepared for The Responsible Gambling Trust.

⁶ Gambling Commission (2021). Industry Statistics – November 2020.

⁷ Pre-pandemic statistics are used here because Gambling Commission's most recent industry statistics during the pandemic and for the period April 2020 to March 2021 have been affected by the impact of Covid-19 as well as the lack of and quality of data submissions from some operators and resource required for the consequential quality assurance. The 2020/2021 publication only contains figures for Remote Casino, Betting and Bingo (RCBB), the National Lottery, and the numbers of operators and licenses held for the period between April 2020 to March 2021.

harms are insufficiently understood.⁸ Due to there being no accurate measure for harm, we must rely on problem gambling rates. However, problem gambling rates focus solely on gamblers, and therefore underestimate the full the extent and number of people affected by gambling, e.g. via indirect effects such as on children and significant others.

Recent research has focused primarily on the impact of gambling on individuals by exploring markers of harm indicative of problem gambling status. This is defined as a condition “characterised by difficulties in limiting money and/or time spent on gambling which leads to adverse consequences for the gambler, others, or for the community”.⁹ Although most people who gamble do so without adverse effects, for a small proportion this is not the case. In 2018, 0.4% of adults in England were estimated to be problem gamblers according to the Problem Gambling Severity Index (PGSI), with a further 0.8% estimated to be moderate risk gamblers and 2.7% low risk gamblers. This is equivalent to 170,000 problem gamblers, 380,000 at the moderate level of problems leading to some negative consequences and 1,210,000 identified as being at the low level of problems with few or no identified negative consequences.¹⁰ The above statistics from the *Health Survey for England* have yet to be reported on again. In the latest statistics for Great Britain (for the year to September 2021), using a different survey method and design to the England statistic, 0.3% of adults were estimated to be problem gamblers, 0.7% estimated to be moderate risk gamblers and 1.9% low risk gamblers.¹¹

Not all types of individual are equally likely to become problem gamblers, and it is also the case that different gambling activities are associated with different levels of problem gambling prevalence. For example, men are more likely than woman to be at-risk of becoming problem gamblers, and at-risk and problem gambling are most prevalent among younger age groups. In 2018, 1.0% of those who had gambled in the past 12 months in England were classified as problem gamblers, according to the PGSI or the DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, fourth edition). This was lowest among those who played the National Lottery draws (0.9%), and highest among those who played machines in bookmakers (12.7%), followed by those who bet on events other than sports or racing offline (11.1%). Gambling online was not amongst the forms of gambling most associated with problem gambling, but an estimated 3.7% of those who had gambled or bet online were classified as problem gamblers.¹² This is important because online gambling is a far more prevalent activity than the highest risk products cited above.

Earlier research into gambling has provided considerable insight into gambling behaviour, including problem gambling, but is less informative on the detail of how individuals gambled and how this was linked to harm. In 2014, in response to increasing public concern about the impact of gaming machines within bookmakers and other venues, the Responsible Gambling Strategy Board published its *Gaming Machines research framework*.¹³ This demonstrated a need to identify harmful play on these machines and to investigate ways to prevent or reduce such harmful play. A programme of research was launched using data supplied by the industry to

⁸ Wardle H, Reith G, Best D et al. (2018) Measuring gambling-related harms: a framework for action. Gambling Commission, Responsible Gambling Strategy Board, GambleAware.

⁹ Neal, P, Delfabbro, P, & O’Neil, M (2005) Problem gambling and harm: Towards a national definition. Melbourne: Gambling Research Australia

¹⁰ NHS Digital (2019) Health Survey for England 2018: Supplementary analysis on gambling.

¹¹ Gambling Commission (2021). Statistics on participation and problem gambling for the year to September 2021

¹² Combining the PGSI measure of problem gambling with that produced by the DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, fourth edition) screening instrument, produced a slightly higher estimate of problem gambling, but the DSM-IV does not measure at-risk gamblers.

¹³ <http://www.rgsb.org.uk/PDF/Machines-research-framework-March-2014.pdf>

understand patterns of machine play and how these were linked to harm. Insights from these research findings have subsequently been used to inform regulation.¹⁴

There is also a growing body of evidence about online play. As well as the Gambling Commission's surveys of gambling behaviours and attitudes,¹⁵ several pieces of work have been carried out examining patterns of online play. GambleAware has commissioned research into markers and patterns of harmful or risky behaviour, in order to explore ways to mitigate such risks and harms.^{16,17} There is also an existing analysis of aggregated industry data, which explored individuals' gambling on slots and other casino-style games, including the frequency of play, spending patterns, stake size and net losses.¹⁸ The above analysis is the only prior work examining patterns of online play using data from a range of GB operators. This Patterns of Play research, however, which was carried out with data that was less aggregated/more granular and with the inclusion of betting, allowed for a richer analysis to be carried out. An example of a high level of aggregation in this data would be players' monthly losses, which were recorded for the whole month but without detail to show how these losses were accrued: it was not possible to see, for example, if losses were generated in one night or came about due to loss-chasing. This Patterns of Play study will extend and build upon previous work by making use of more detailed data on online gamblers' behaviour across a longer time period than the one month previously used.

A feature of the online environment is that it presents new opportunities to make gambling safer. Firstly, players can be offered tools to help them keep track of and better control their gambling. Secondly, operators can apply behavioural tracking to monitor each account's gambling and flag instances where patterns indicate a risk of present or potential future gambling harm, allowing for appropriate interventions to be attempted.

International evidence shows that take-up of opt-in self-management tools is low, partly because they are perceived as 'for problem gamblers'. Indeed, survey evidence from Australia found that take-up was much higher than average among PGSI moderate risk and problem gamblers.¹⁹ High quality empirical studies of whether use of these tools impact subsequent play are rare, and there is too little evidence to be confident yet that their use is effective, rather than just a marker for problem gambling.²⁰ Behavioural tracking to identify account-holders who are at risk of harm has increasingly employed machine learning techniques, typically using indicators such as number of betting days, and metrics capturing variability in play and gambling trajectory, to predict voluntary self-exclusion (taken to be a proxy for problem gambling). Whether identification of cases and subsequent interventions are effective requires further evaluation, as it has been rare to employ rigorous testing akin to randomised control trials.²¹ Operators

¹⁴ Published by GambleAware at <https://www.gamblingcommission.gov.uk/about-us/statistics-and-research#group>

¹⁵ A comprehensive list of published research can be found in the Gambling Commission's library (see <https://www.gamblingcommission.gov.uk/about-us/statistics-and-research>)

¹⁶ <https://www.begambleaware.org/sites/default/files/2020-12/secondary-data-analysis-of-the-data-reporting-framework-and-the-health-survey-for-england.pdf>

¹⁷ <https://www.begambleaware.org/sites/default/files/2020-12/yougov-covid-19-report.pdf>

¹⁸ Forrest D and McHale I (2018) Analysis of play among British online gamblers on slots and other casino-style games. GambleAware.

¹⁹ Gainsbury SM, Angus DJ, Procter L. et al. (2021) Use of consumer protection tools on internet gambling sites: Customer perceptions, motivators, and barriers to use. *Journal of Gambling Studies*. 36 (1): 259–276.

²⁰ Ivanova E, Magnusson K, Carlbring P. Deposit limit prompt in online gambling for reducing gambling intensity: A randomized controlled trial. *Frontiers in Psychology*, 2019. <https://doi.org/10.3389/fpsyg.2019.00639>.

²¹ Deng, X, Lesch T, Clark, L. Applying data science to behavioral analysis of online gambling. *Current Addiction Reports*, 2019; 6 (3): 159–164.

licensed in Great Britain are obliged both to offer specified safer gambling tools and to monitor accounts to identify those with whom interaction may be required.²²

The Gambling Act 2005 sets out how gambling in Great Britain is regulated and covers arcades, betting, bingo, casinos, gaming machines, society lotteries, and remote gambling (including online gambling). In 2014 it was extended to cover all online gambling companies which offer gambling to customers in Great Britain, wherever they are based. Since then regulatory changes have been made. In April 2019, the maximum stake for fixed-odds betting terminals (FOBT) was decreased from £100 to £2.²³ In March 2020 all online gambling operators were required to participate in GAMSTOP, a scheme allowing customers to self-exclude from all online operators.²⁴ In April 2020, the Gambling Commission announced a ban on gambling companies allowing customers to use credit cards to gamble.²⁵ The Social Responsibility code, set out in the Licencing conditions and codes of practice (LCCP), presents measures for gambling operators that aim to make gambling safer and fairer. The latest updates were in October 2020 and included further measures to prevent access to gambling for children and young persons.²⁶ In November 2021 restrictions on online slot games included banning features that speed up play, slot spin speeds faster than 2.5 seconds and auto play (it should be noted that this date is after the final piece of data collection included in this report).²⁷ The Gambling Act 2006 is currently under review to investigate whether the regulatory framework is effective and whether further protections are needed.²⁸

1.2 Project overview

The project came about as a response to the need to improve understanding of online gambling behaviour, how it may relate to the potential for harm as well as enhancing understanding of the online gambling sector. Therefore, this is a complex and challenging exploratory programme of studies, using an innovative approach to data collection to guide our knowledge.

The Patterns of Play project had the overarching purpose of improving our understanding of how the characteristics of gamblers and patterns of play relate to harmful gambling. Patterns of Play is a mixed methods programme comprising: 1) a scoping qualitative study, 2) collection and analysis of industry data and 3) a survey of gamblers.

The key questions of this project are as follows:

- What are the basic patterns of play within online gambling?
- How do these patterns of play vary for different types of people?
- How do patterns of play vary among different products and characteristics?

²² Gambling Commission (2021). Customer interaction: formal guidance for remote gambling operators. <https://www.gamblingcommission.gov.uk/licensees-and-businesses/guide/customer-interaction-formal-guidance-for-remote-gambling-operators> (Accessed: 06.01.2022)

²³ <https://www.gamblingcommission.gov.uk/licensees-and-businesses/guide/page/b2-gaming-machines>

²⁴ <https://www.gamblingcommission.gov.uk/news/article/online-operators-required-to-participate-in-gamstop-from-march-2020>

²⁵ <https://www.gamblingcommission.gov.uk/news/article/gambling-on-credit-cards-to-be-banned-from-april-2020>

²⁶ <https://www.gamblingcommission.gov.uk/licensees-and-businesses/lccp/online>

²⁷ <https://www.gamblingcommission.gov.uk/news/article/gambling-commission-announces-package-of-changes-which-make-online-games>

²⁸ Gov.uk (2019). Review of the Gambling Act 2005 Terms of Reference and Call for Evidence <https://www.gov.uk/government/publications/review-of-the-gambling-act-2005-terms-of-reference-and-call-for-evidence/review-of-the-gambling-act-2005-terms-of-reference-and-call-for-evidence>

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- What types of behaviours are associated with problem or ‘at-risk’ gambling (for example late night gambling as measured by stake sizes and intensity of spending)?

The research team consisted of social researchers from NatCen Social Research and Professors Forrest and McHale from the University of Liverpool. NatCen led on the data collection and analysis of Stage one (qualitative study) and Stage three (follow-on survey) of the research project while Professors Forrest and McHale led the data analysis of Stage 2 (account-based data from gambling companies).

The three stages of the research are outlined below.

1.2.1 Stage one: Scoping interviews with individuals with experience of online gambling (qualitative study)

Stage one was a small exploratory study that examined patterns of play with participants who gamble online. This informed and shaped the research questions for the analyses in subsequent stages of the project. These interviews covered patterns of gambling over the short and long term, choices of activity, reasons for gambling online, activities undertaken, and gambling companies used.

1.2.2 Stage two: Collection and analysis of account-based data from gambling companies

Stage two consisted of account data from nearly 140,000 accounts from seven different gambling operators (20,000 each) over a 12-month period from July 1 2018 to June 30 2019. The account data were collected and examined at a high level of granularity in order to track behaviour within gambling sessions and over periods of time. Using the data, this report explores overall patterns in online gambling, in addition to individual explorations of the betting and gaming sub-sectors of the online industry. Finally, this report examines the use and impact of safer gambling tools. This report builds on the findings initially published in the Patterns of Play: Interim Report in March 2020.²⁹

1.2.3 Stage three: Follow-on survey of players included in the data sets

The Patterns of Play follow-on web survey formed the final phase of the research project. The aim of this web survey was to collect information (from a sub sample of the players from stage two) that was not available from their account data, to increase our understanding of online patterns of play. In particular, the survey was able to:

- collect socio-demographic characteristics to understand how different types of people play online;
- capture people’s use of multiple online gambling accounts and their offline gambling behaviours;
- and to administer a validated problem gambling screen (PGSI) to investigate the relationship between patterns of play and problematic gambling.

²⁹ GambleAware (2020). Exploring online patterns of play: Interim report.
https://www.begambleaware.org/sites/default/files/2021-03/PoP_Interim%20Report_Short_Final.pdf
(Accessed 31.01.2022).

1.3 Content of reports

A summary of the methodology and main findings from each of the above stages of the project is presented below. More detailed technical reports on each stage of the project have been published in conjunction with this report. These are:

- Technical Report 1: Qualitative Scoping report
- Technical Report 2: Account Data report
- Technical Report 3: Follow-on Survey stage report

This summary report ends with some concluding remarks, recommendations for preventing or responding to gambling harms and future directions for this project and similar account-based data research.

2 Qualitative Scoping Report

2.1 Methodology

This study aimed to explore patterns of online play through individual interviews and inform subsequent research stages.

We carried out 12 in-depth interviews with online gamblers. Participants were recruited using two complementary strategies, moderate and frequent gamblers were identified using PGSI scores from the Health Survey for England (HSE; aged 18+) and who agreed to be contacted for further research; and also snowball/convenience sampling in order to access participants and help maximise sample diversity. Participants were eligible if they had gambled online in the past month at the time of recruitment.

The interviews were conducted using a topic guide that was developed with GambleAware and the Gambling Commission. The guide covered patterns of gambling over the short and long term, choices of activity, reasons for gambling online, activities undertaken, and gambling companies used. Participants were also asked about aspects of their experience that they considered problematic.

Interviews were conducted between June and September 2019 and were digitally recorded, transcribed and analysed using the Framework approach developed by NatCen.³⁰

2.2 Summary of findings

2.2.1 Diversity of gambling backgrounds and patterns of online gambling

There was great diversity in how participants started gambling online. Some had previously gambled offline, some were introduced by family members, friends or colleagues, and others began after seeing advertisements. To be eligible to participate in the research, individuals had to have gambled online in the last month, although there was variability in gaming participation between participants: some were daily gamblers, some weekly.

- Gambling activities included football betting, horse race betting and other sports betting, poker, and some casino games. There were variations in terms of the numbers of gambling companies which individuals engaged with, the levels of loyalty shown to those companies, the length of time spent on gambling and the times and locations where they allowed themselves to place bets. The importance of gambling in participants' lives varied greatly, as did the amount of money gambled. Sports betting behaviour was found to be influenced by sporting events/tournaments, sporting events in the news and speaking with friends and family. In-play behaviour during sports betting was also evident but was not common, as it was perceived to be potentially risky and capable of leading to greater spending than planned.

³⁰ Spencer, L., Ritchie, J., O'Connor, W., Morrell, G. and Ormston, R. Analysis in practice in Ritchie, J., Lewis, J., McNaughton Nicholls, C. and Ormston, R. (Eds.) (2013) *Qualitative Research Practice: A Guide for Social Science Students and Researchers*. London: Sage.

- Most participants bet on only one activity, while others had a main activity and other less-played activities. Both winning and losing in a main activity can lead to further gambling on other activities (e.g. as a means to win even more money or to chase losses). Winning was also accompanied by a temptation to keep on gambling because of the availability of additional funds or because of the excitement. Two main approaches to spending were identified, both of which were set and enforced by the gambler. Some gamblers have fixed rules for themselves, involving a time-specific spending limit, for example “I’ll finish by 9pm and spend a maximum of £30”. Others have variable patterns depending on several factors such as disposable income, type of activity, and time of year, for example “I’ll spend £50 across the Cheltenham Festival” or “I’m saving for a holiday and will reduce my weekly spending to £10 maximum”.

2.2.2 Personal, social and emotional aspects of online gambling

A variety of personal, social and emotional factors were found to motivate and/or relate to online gambling behaviour.

- For some people online gambling was a way of making money, whilst for others, gambling was a leisure activity either enjoyed on one’s own or with friends. Online gambling on football was often found as an activity where being with other people was enjoyable and where gambling enhanced the experience. However, in other instances, online gambling could limit social interactions with friends and partners.
- The emotional aspects of online gambling were viewed as both positive and negative in the short term (i.e. following wins and losses), while longer term they ranged from mildly positive and unproblematic to quite negative.

2.2.3 Perceived impact of gambling and perceptions of harm

Overall, participants expressed a wish to either maintain or reduce their gambling over time. Negative impacts took a number of forms.

- Participants noted costs regarding time and especially money spent on gambling that could have been spent on other activities – including those who only bet what they could afford to lose. Other impacts included relationship tensions and missing out on social opportunities through lack of money.
- Perceptions of harm were most frequently expressed as regret, in hindsight, as well as anxiety and negative feelings during and after play. Financial losses and impacts on relationships were related to such emotional impacts.

2.2.4 Views on reducing gambling harms

Participants held largely negative views about gambling companies. There was support for efforts to limit total stakes and to make losses more visible – even if these did not operate across all companies.

- Participants had a range of suggestions of how the industry might further help to limit harm, such as restricting certain types of play and advertising (particularly for in-play bets), more robust registration processes, and cross-company data sharing to support multi-operator self-exclusion schemes.
- Participants reported approval of the reduced maximum stake for offline fixed-odds betting terminals, and suggested similar caps for online play. Participants thereby favoured “hard” stake limits, with a general consensus that self-imposed limitations

were a “weak measure”. Such hard limits would also need to be consistently applied, or else gamblers could simply switch operators. There was an implication that such measures could ultimately be bypassed, but such “friction” would nonetheless be useful as a means of “doing something”.

2.3 Informing the next phases of Patterns of Play

This stage provided several starting points for investigations in the subsequent stages of the project.

- It was identified that timing, length, frequency and stake of each gambling sessions could all be explored in depth from industry data, and interviews suggested that higher levels of any such measures are viewed as negative by players. These patterns were therefore explored in subsequent stages. Participants also suggested that frequency and amount staked might help to define problem gambling behaviour rather than indicate risk of future development of problems, whereas patterns of play prior to increases in frequency/stake may indicate risk. Participants reported making deposits from their current accounts; the use of credit cards was seen as exceptional.
- It was deemed important to discern out-of-ordinary behaviours for individual players. These might include abnormal amounts staked, abnormal patterns of deposit and win-chasing/failure to cash-out profit, and could indicate harmful behaviours. It was also suggested that monitoring such events could enable points of intervention for gambling operators, and this stage therefore helped inform types of potential interventions that regulators or gambling companies could use to reduce harm.

3 Account Data Stage

3.1 Methodology

Stage two aimed to analyse transactional data from major operators in order to paint a picture of online gambling in Great Britain (please see *Technical Report 2* for detailed methodology, findings and discussion).

Seven gambling operators agreed each to provide records for 20,000 accounts over a one-year period between July 1, 2018 and June 30, 2019. Operators were asked to provide a full list of accounts active during this time period and registered in Great Britain. However, many accounts were not very active, whereas frequent gamblers are of more interest in relation to problem gambling. To ensure that such important sub-groups were adequately represented in the sample, we applied stratified random sampling to select 20,000 account from each operator (please see *Technical Report 2: Account Data Stage* for more details on sampling and weighting). Some of the harvested accounts did not meet the criteria and the final sample comprised 139,152 accounts. Applying appropriate weights which took into account our application of stratified random sampling, we were able to make projections to the whole population of 10.23m accounts held with these operators. Our estimates below, presented to illustrate patterns of play in online gambling, are based on these projections. They are not descriptions of the sample itself because the sample deliberately over-represented particular types of customer.

Betting data recorded the date and time of every individual bet by each customer. Gaming data were less granular, with the year broken down into 15-minute windows recording the number of gambles³¹, the total staked, the amount of any bonus added to stakes by the operator, and the gross pay-outs credited to the player's account during the 15-minute period.

3.2 Summary of findings

3.2.1 Betting

The operators which cooperated in the research accounted for more than 85% of gross gambling yield (GGY- see glossary) in the domestic online betting industry. The operators provided betting opportunities for a broad range of sports and other events, although football and horse racing dominated their revenue streams. Football generated about half of operator revenue and horse racing more than 30%. Whilst it was common for betting-active accounts to have been used to wager on both sports, there was a significant tendency for younger customers to spend mainly on football betting and older customers to focus on horse racing.

- **More than 94% of industry revenue derived from accounts belonging to men.** This was largely explained by much higher participation in betting, but other contributing factors included more frequent wagering and somewhat higher stakes. The prevalence of very high spending was also substantially greater for men.

³¹ A gamble was defined as when money was staked on one play of the game, e.g. one spin of the roulette wheel or, for slots, one game cycle (thus, in roulette, the game cycle is one spin of the wheel and it was treated as only one gamble even if the stake had been split among multiple outcomes).

- By age, patterns of play were broadly similar in both online betting and online gaming markets. In betting, those in **the 25-44 age-groups held more than half of all active accounts and provided more than half of all operator revenue**. The age-groups from 45 upwards had a much lower propensity to take part in online betting, but those who did typically spent significantly more than younger account-holders: although comprising only 25% of bettors, over-45s delivered more than 35% of total revenue. There was **a clear tendency for both spending level and frequency of betting to increase across the age range**.
- **Operator revenue from betting was drawn relatively evenly across different types of area defined by level of deprivation**. Among betting products outside football and horse racing, participation in betting on virtual events was particularly skewed towards the most deprived areas (even if levels of engagement were typically low).
- Online betting was found to be more dependent on a relatively small number of customers compared with most industries. For example, we estimate that **the top-1% of customers ranked by volume of betting (total staked in bets placed over the year) generated 36.4% of operator win and the top-10% generated 79.1% of operator win**. To have qualified for the top-1%, a bettor had to have wagered at least £30,493 over the year and for the top-10% at least £5,639. We found that these 'top' bettors achieved superior outcomes than other bettors (i.e. lost a lower fraction of their stakes) but they still spent to a level such that their contribution to profit was completely disproportionate to their numbers.
- As implied by the high concentration of spending, most account-holders spent to a modest level, but a relatively small fraction incurred what many would regard as significant losses from betting. We estimate that **4.4% of accounts lost more than £1,000 over the year, 2.2% lost more than £2,000, and 0.7% lost more than £5,000**. Though the percentages were low, the implied absolute numbers of accounts incurring such losses were significant. For example, we estimate that the operators in the study held more than 290,000 accounts with betting losses in excess of £2,000.
- **Online bettors with the largest losses over the year were disproportionately likely to be male and their average age was around 40. A significant number had addresses in deprived areas**. For example, 21.9% of those with a loss of £2,000 or more were from the 20% most deprived areas (though it should be noted that not all of these may have been disadvantaged individuals: more wealthy individuals in deprived areas may spend some of their extra income, compared with their neighbours, on gambling). About half of those who lost more than £2,000 incurred the bulk of their loss from 'sports betting' and about one-quarter from 'race betting'.

3.2.2 Gaming

'Gaming' covers a variety of types of gambling: slots games, casino games, bingo, poker and instant wins. According to our estimates, the seven operators included in the project captured 37.5% of the online gaming market in Great Britain during the one-year data period, less than half their market share in online betting. Nevertheless, there was similarity between the proportions of Gross Gambling Yield (GGY) accounted for by each type of game in the operator data and the whole-market data, allowing some confidence that the data set would yield useful general insights into patterns of play in online gaming in Great Britain.

- **Slots games accounted for the majority of spending (60.1%) on gaming activities**, reflecting its dominance in the whole online gambling sector (where its GGY comfortably exceeds that of betting). Within gaming, slots play also used up much more of customers' time than other game types. Casino games generated

33.0% of the operators' yield from online gaming, which leaves bingo with a light share of gaming GGY. On the other hand, in the aggregate, bingo accounted for more hours of play than casino games.

- **On average, players lost £1.17 per minute playing casino games, slots players 31.8 pence per minute, poker players 18.9 pence per minute and bingo players only 7.2 pence per minute.**
- At the level of the individual, it was rare to have allocated a substantial amount of time to gaming over the year as a whole but **1.2% of holders of accounts used for gaming (close to 50,000 individuals) spent the equivalent of eight full days playing over the study year.** More than 70% of this group were players for whom slots accounted for at least 80% of their gaming spend and, on average, they spent nearly £5,000 on online gaming during the year. Female customers were more likely than male customers to fall within this group.
- Similar to online betting, **less than a quarter of casino and poker customers were women. However, in slots, the proportion of females was somewhat higher, about one-third, and women made up the majority (62%) of those who took part in online bingo.** In the cases of slots and bingo, representation of women was higher still if one considers only regular players (defined as those participating once a week or more).
- **For each gaming activity, the proportions of men and women among participants was very close to proportions among participants in the corresponding activity at land venues** (as estimated by the *Health Survey for England, 2018*³²).
- In contrast to betting, we found that **females who participated in gaming activities were typically more active and engaged players compared with men.** Women took part in more and longer sessions. On the other hand, women tended to stake at lower levels than men. Even so, considering all gaming products collectively, their greater activity resulted in the median female player spending half as much again over the year as the median male player.
- **Mean spending by online players increased steeply across our eight age-bands,** to peak in the 55-64 group (and over-65s on average spent only a little less than those 55-64). A similar pattern emerges if one considers median rather than mean values. At the level of the individual product, over-55s consistently made a disproportionately high contribution to operator GGY, especially so in bingo.
- **Whilst online betting is more popular than online gaming among the British population, spending levels per customer tend to be much higher in gaming.** In every one of our eight age-groups, the figure for online spending on gaming was higher than the corresponding figure for betting. The discrepancy increased with age and in each of the three age-groups above 55 years, the average gaming customer spent more than twice as much over the year as the average betting customer.
- **In gaming, both participation and revenue were strongly skewed towards the most deprived areas.** Across gaming, the 20% most deprived areas provided 29.2% of players and 25.2% of operator GGY, whereas the 20% least deprived areas provided 12.9% of players and 15.0% of operator GGY. There was a strong tendency for gaming customers from more deprived areas to be more active than those in less deprived areas, though they also tended to play with a lower stake.
- **The skew in participation towards more deprived areas was observed for all categories of gaming product but was greatest in bingo** where the 20% most

³² NHS Digital (2019) Health Survey for England 2018: Supplementary analysis on gambling.

deprived areas delivered 39% of players. The concentration of players in deprived areas was also particularly high for female slots players. The most deprived areas contributed disproportionately to GGY from bingo and slots but in casino games and poker revenue was fairly evenly spread across the deprivation range.

- **As with betting, the online gaming sector had heavy dependence on a “vital few” customers.** The ‘top-20%’ of customers by volume generated just over 90% of revenue. However, there are structural differences between gaming products such that a given ‘volume’ (amount staked) of play has different meaning in different settings (for example, slots play can be rapid with winnings immediately recycled into further spins; and payback-rates vary considerably by product). Therefore, it is likely to be more meaningful to consider concentration of revenue product-by-product. The most popular product is slots. Here just one percent of players generated a little more than 40% of GGY and in this group the average loss over the year was £10,491. Thus, a large chunk of revenue derived from exceptionally heavy spenders.
- **Concentration of spending was even higher for the second-most popular product, virtual casino games, and lowest for bingo.** Bingo not only had the lowest level of concentration of revenue but also, with its typically low spending levels, the threshold for being counted in the ‘top-10%’ or even ‘top-1%’ of players was fairly modest. Nevertheless, the top one-half of one percent of bingo players, where the threshold to be passed was £6,737 gambled (equivalent to an expected loss close to £1,000), provided 26.5% of bingo GGY. Thus, it could be claimed for every product that the industry was very dependent on a “vital few” customers.
- **We estimate that 5.9% of players lost more than £1,000 over the year, 3.2% lost more than £2,000 and 1.2% lost more than £5,000.** These estimates imply, for example, that the operators in the study had 129,000 customers who lost more than £2,000. Our estimate from the betting data was that 290,000 customers lost more than £2,000. However, findings from the follow-on survey include that gaming customers were more likely to use multiple operators than betting customers. Furthermore, the seven companies in the study captured only 37.5% of the online gaming market (compared with 85.5% of the betting market). Bearing these factors in mind, it is plausible to speculate that the number of ‘heavy losers’ in online gaming in Great Britain may be as high as in online betting notwithstanding that its participation-rate is very much lower.
- **On average, heavy losers tended to be aged in their low- or mid-forties. The probability of a male customer being within a heavy loser group was only a little higher than for females.** However, those who lost more than £20,000 were overwhelmingly male. **Slots games were the principal source of losses among heavy losers.** For example, 54.5% of those who had a one-year loss in excess of £2,000 incurred at least 80% of their loss on slots games. Just over a quarter had all or more than 80% of their loss from casino games. Most of the rest had losses spread over multiple activities.
- **The heavy spending groups included many players from very deprived areas.** For example, 30.4% of players who lost more than £2,000 lived in the 20% most deprived areas and just over one-quarter of those who lost £2,000-£5,000 lived in the 20% most deprived areas.
- Individual sessions where a heavy loss was incurred (for example, more than £1,000) were relatively rare and usually one-offs for the customer. Nevertheless, they merit attention because of the possibility that loss of control resulted in significant financial harm to the player. **1.9% of holders of gaming-active accounts experienced a single-session loss of more than £1,000 at least once during the year and 0.6% of players lost £1,000 at least three times. Such**

instances of high loss on a single occasion were most likely from playing casino games.

- **Intensity of play (loss-per-minute) in gaming, especially in casino games, was higher in the early hours than during the day.** We had similarly found for betting that stake sizes were elevated during the night. It was not possible to establish whether the late night setting itself causes greater risk taking or whether the findings were more due to a selection effect (late night play attracts different sorts of people), but it is clear that late night play merits greater scrutiny by operators to detect possible harm.
- **We note that fast slots play was a strong risk factor for incurring heavy losses from online gaming.** During the data period, fast play was facilitated by the ability of customers to choose 'autoplay'. Since then, new regulation has prohibited autoplay and introduced a restriction on how short the gap between spins can be. From our analysis, this will disproportionately affect those who lose the greatest amount from gambling and the regulatory interventions appears to that extent to have been well-targeted.
- The account data could not determine which customers were experiencing harm but raised several 'red flags' suggestive of greater harm in the gaming part of the market. **Compared with betting, gaming was associated with an appreciably higher probability of incurring heavy losses and, of those who spent to the highest levels, an appreciably higher proportion had addresses in the most deprived neighbourhoods.**

3.2.3 Overall gambling

- **Dual customers (those who participated in both betting and gaming) were particularly profitable for operators.** We estimate that per-account GGY during the one-year data period was £601.93 for dual customers (compared with £296.20 for gaming-only and £134.98 for betting-only). In fact, while comprising only about one-quarter of accounts, 'duals' delivered more than one-half (55%) of operator GGY.
- The greater average spending level of dual customers was reflected in the proportion who qualified as 'heavy losers'. We estimate that **1.6% of betting-only accounts, and 3.0% of gaming-only accounts recorded a one-year loss of more than £2,000 but for dual accounts the proportion was 6.8%.** The relative risk of dual play increased further when we set a £5,000 threshold for defining a high level of spending.
- **Of customers who lost more than £2,000 from all their gambling activity with the sampled account, 83.5% were men and the average age was just over 40, i.e. a little older than the generality of customers. 24.1% had addresses in the 20% most deprived areas.** We regarded customers who had incurred at least 80% of their total loss from betting as 'betting focused' and defined 'gaming focused' similarly. 54.5% of heavy (greater than £2,000) losers were 'betting focused' and 31.7% were 'gaming focused'. However, the proportion of 'betting focused' players in the whole customer base was high and these figures imply a **much greater probability of a high loss among clients whose balance of activity was skewed towards gaming.**
- **The 'top-10%' of gamblers defined by volume delivered 79.0% of operator revenue.** The qualification for entering the top 10% (£4,568 staked) roughly corresponds to an expected one-year loss where (from international evidence) risk of problem gambling begins to increase.

- It should be emphasised that far from all of those who spend above the threshold would be expected to experience harm. Nevertheless, that about four-fifths of the operators' revenue appears to derive from a group with elevated risk highlights the dilemmas faced by the industry and in formulating public policy.
- From the data for 'all gambling', operators in the study drew a somewhat greater revenue share from the most deprived areas than from the least deprived areas but this difference was evident only at the two extremes of the deprivation range.
Across most of the deprivation range, revenue was about the same whether the areas were closer to the very high or to the very low deprivation ends of the spectrum. The contrast between the two ends was associated with higher spend on gaming products in the most deprived areas.

3.2.4 Use of self-management tools

In accordance with Licence Conditions, operators provide customers with tools to help them control their gambling. Reality checks are a facility where a player chooses to receive on-screen pop-ups reminding them at intervals how long their gambling session has lasted. Deposit limits allow customers to set in advance a limit on how much they can deposit into their account per whatever time-period they specify. Time-outs allow account-holders to bar themselves from gambling on the website on a short-term basis, e.g. for one day or for two months. Self-exclusion involves a long-term bar from gambling, from six months upwards.

- Usage of reality checks during the data year was low, under 1% of all accounts. Customers who took part in both gaming and betting, as well as 'high spenders', were much more likely to use the facility. For example, 9.3% of account-holders who lost more than £2,000 over the year opted for reality checks. Thus, **despite low overall take-up, reality checks tended to be invoked more readily by groups for whom a means of controlling their gambling was likely to be more relevant.**
- **Deposit limits were used by far more account-holders than other self-management tools.** 21.5% set a limit during the year studied. In addition, an unknown number will have set a limit prior to the data year and left it unchanged during the year for which we observed activity. About equal numbers set their limit on a per-day, per-week and per-month basis. Take-up was broadly similar across different groups of customers and 'high spenders' were only slightly more likely to set limits than others. A significant proportion of account-holders set extremely high limits, well beyond levels likely to constrain their future behaviour. Relatively high take-up may therefore over-state the proportion of players who were using deposit limits to keep their spending in check.
- **The facility to take a 'time-out' was used by only about 2.5% of account-holders but many of those who did so used it frequently** (one-third more than twenty times in the year). Dual customers (who took part in both betting and gaming) were twice as likely as betting-only or gaming-only customers to have used time-out and take-up was more likely at higher levels of spending. More than 23% of those who lost more than £2,000 over the year had used time-out. Take-up therefore seemed to be concentrated among those where risk of harm was highest.
- **2.3% of account-holders applied a (longer-term) self-exclusion during the year**, about one-half of them opting to bar themselves for five years or more. Self-exclusion was most common among dual customers and very rare among betting-only customers. It was far from the case that all self-excluders had previously recorded activity or spending levels which were unusual in the data set, which is to be expected because having problems is not the only motive for self-exclusion. However, a significant proportion had incurred a high loss in the one month before.

9.5% of self-excluders had lost at least £1,000 in that month and, for a large majority of these, their loss had increased from that incurred in the month before that.

3.2.5 Operator interventions

The Social Responsibility Code, part of the Licence Conditions for online providers of gambling services in Great Britain, requires operators to have procedures in place for tracking play to identify players who “may be experiencing harm” from gambling and for engaging in interaction with such customers. According to the *Health Survey for England, 2018*, about 10% of online gamblers may be experiencing harm from gambling (by virtue of being classified as at least ‘moderate risk’ on the PGSI screen for problem gambling).³³

- **During the one-year period studied, 3.9% of account-holders received a social responsibility contact, usually in the form of an e-mail. Just 0.13% were contacted by telephone.**
- **Relative to other account-holders, dual customers were more than twice as likely to receive a social responsibility contact.** The probability of a contact also increased steeply with spending level. As both breadth of gambling activity and level of spending are known to be strongly correlated with risk of gambling harm, the interventions were, to that extent, well-targeted.
- Nevertheless, of those who spent more than £2,000 during the year (3% of all account-holders), only a little over one-third received any form of intervention and only 0.8% received a telephone call.
- **From raw data, telephone interventions were typically followed by substantial moderation of gambling activity.** While encouraging, further research is required before this can be established as a causal effect. Further, we could not know whether some activity was diverted to other regulated or unregulated websites because the customer wished to avoid further contacts or possible account restrictions.

³³ NHS Digital (2019) Health Survey for England 2018: Supplementary analysis on gambling.

4 Follow-on survey

4.1 Methodology

The third stage aimed to conduct a follow-on survey of players included in the account data, to further our understanding of online patterns of play.

Two operators out of the seven that took part in the account data stage agreed to take part in the survey stage which took place in September 2021. A pilot survey was conducted on 500 accounts to test the study design and processes. For the main survey, 19,500 accounts were targeted from each operator. In total, across the two operators, 16,935 (42.3% of all sampled accounts with these two operators) were eligible (the others were accounts which had been closed or blocked or ineligible for other reasons). The two operators were responsible for contacting the 16,935 eligible account-holders (by email) with an invitation to take part in the survey.

The survey questionnaire asked about current gambling habits, changes in online gambling behaviours since June 2019, past gambling behaviours (overlapping with the account data time period in Stage 2), problem gambling, use of safer gambling tools, and socio-demographic characteristics. It should be noted that the survey took place during the Covid-19 pandemic (September 2021) while the stage 2 account data (July 2018 to June 2019) are pre-pandemic online gambling statistics. In total, we received 1,849 responses (10.9% response rate) that provided full consent for data linkage and analysis. Following some exclusions, the final survey dataset for analysis contained survey responses and corresponding account data for 1,806 accounts (please see Technical Report 3: Follow-on survey stage for more details on methodology).

4.2 Summary of findings

4.2.1 Past gambling behaviours

- Those who had a total spend with their sampled operator account in 2018/19 of between £0.01 and £100 were most likely to report that they only gambled with one gambling company, compared to those who made a profit (spend of £0 or less) and those who had the largest account total spend of more than £700.
- **Survey respondents who gambled on gaming products only with their sampled account in 2018/19 were more likely than those who gambled on betting products only, to report that they gambled with more than one gambling company in 2018/19**, and more likely to report using 5+ accounts. It should be noted that these respondents who gambled on gaming products only with their sampled account in 2018/19 may have used accounts with other operators to bet and therefore should not be interpreted as non-bettors (and vice-versa). Similarly, those who gambled on gaming products only were more likely to report that less than a quarter of their total online gambling activity was with their sampled operator than those who gambled on betting products only or both.
- 21% of respondents did not take part in any offline activities in the sampled period, 22% took part in offline betting and no gaming, 14% took part in offline gaming and no betting, 9% took part in both offline betting and gaming and 34% only took part in other offline activities (e.g. National Lottery Draw, Scratchcards, other lotteries, football pools, private betting or another form of gambling).

- Of survey respondents who took part in offline gambling, 56% said online gambling accounted for more than three quarters of their total gambling activity, whereas 15% said their online gambling accounted for less than a quarter of their total gambling activity. **Of players' who were active on at least 14 days in 2018/19, a large proportion (79%) reported that they also took part in offline gambling activities.**
- Survey respondents who said they were finding it difficult to manage financially or just about getting by financially in 2018/19 were more likely to have a total spend with their sample operator account of more than £700 (25% and 21% respectively) compared to those who said they were living comfortably (12%).

4.2.2 Change in online gambling since 2018/19

- Respondents who had a higher total spend on their sampled operator account were most likely to report that they still took part in online gaming, online betting or betting exchange in the past 4 weeks and were more likely to report an increase in their online gambling since June 2019. Respondents who used their sampled operator account for gaming products only were more likely to report not taking part in any online gambling in the past 4 weeks than those used betting products only and those who used both betting and gaming products.
- Those with the largest account spend in 2018/19 and those who used their sampled operator account for gaming products only were most likely to report that they had tried to stop or cut down the amount of online gambling they did.
- Respondents who said they had taken part in online gaming, online betting or betting exchange in the last 4 weeks and reported that their online gambling had reduced since June 2019 were asked how easy or difficult it was for them to reduce their online gambling. **Those with the largest account spend in 2018/19 were most likely to report it was very difficult or difficult to reduce their online gambling.**
- Those who felt they were managing better financially now than in December 2018 were most likely to have decreased their gambling since June 2019 compared to those who were managing the same or managing worse.
- Looking at gamblers' responses about their gambling activity in the 4 weeks preceding the survey, **there is a pattern for 'heavier' gamblers in the account data (i.e. in 2018/19) to either still be gambling with the same frequency or to have increased their gambling since 2018/19**, suggesting that spend is a good indicator of future patterns of play.

4.2.3 Problem gambling, harms, attitudes and safer gambling

- Amongst survey respondents who gambled on any type of gambling product in the last 4 weeks, **those who spent more money across the account data period in 2018/19 with their sampled accounts were more likely to be identified as problem gamblers** (for their gambling between September 2020 and September 2021) than those who spent less.
- Those who gambled in the last 4 weeks and **who gambled on gaming products only or on both betting and gaming products in 2018/19 with their sampled accounts were more likely to be identified as problem gamblers** (for gambling between September 2020 and September 2021) than those who only gambled on betting products.

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- Those who spent more money in 2018/19 with their sampled accounts were more likely to report at least one of the Short Gambling Harm Screen (SGHS) issues than those who spent less (and were more likely to report a reduction of their available spending money). Similarly, those who gambled on gaming products only in 2018/19 with their sampled accounts were more likely to endorse at least one of these issues than those who gambled only on betting products.
 - The above findings on PGSI and SGHS show that **past account spend in 2018/19 can be seen as a useful predictor of future gambling status and of players' experiencing gambling related of harms two to three years later**. Play type can also be a useful predictor. The above findings add further evidence to account data findings suggesting that gaming is related to higher risk of gambling harms than betting.
 - Similarly, those with higher spend levels in 2018/19 and those who engaged in gaming products only were more likely to use safer gambling tools and self-control strategies.
 - Despite the above findings, a similar proportion of survey respondents agreed to the ATGS-8 statement that people should have the right to gamble whenever they want compared to the general population.³⁴ Survey respondents were less likely to agree that gambling should be discouraged or that gambling should be banned altogether than the general population.

³⁴ Gambling Commission (2021): Gambling behaviour in 2020: Findings from the quarterly telephone survey. <https://www.gamblingcommission.gov.uk/statistics-and-research/publication/year-to-december-2020> (Accessed 10/01/2022).

5 Conclusions, recommendations and future directions

5.1 Concluding remarks

Following the findings from this research project, the following recommendations for preventing or responding to gambling harms are provided:

- Comparing the findings to those from the *Health Survey for England*³⁵, participation in online slots, casino and bingo games is less widespread than participation in online betting but the prevalence of problem gambling among its players is more than twice as high. The account data analysed in the present study did not allow problem gambling to be observed directly. However, findings which were suggestive of greater risk of harm in the industry data were further evidenced in the survey where people identified as problem gamblers were more likely to have spent greater amounts of money as well as to gamble on gaming products only or on both betting and gaming products in 2018/19 with their sampled accounts. In particular, the proportion of players who lost thousands of pounds over the study year in the industry data was sharply higher in gaming (and even higher again among dual customers, those who engage in both types of gambling). Further, compared with bettors, very high spending gaming customers were much more likely to reside in the most deprived areas, raising concerns about affordability.
- Past research has established that breadth of gambling activity is a particularly strong predictor of problem gambling, and so those customers who take part in both betting and gaming merit particular attention. Amongst the operators participating in the study, only 25% of accounts were used for both activities but these accounts generated 55% of operator revenue. The dual customers were heavily over-represented amongst the highest spending accounts, for example they held more than 55% of accounts with a loss over the year in excess of £2,000. They were much more likely than other customers to choose to self-exclude and much more likely to receive the highest level of operator safer gambling intervention. The evidence from the account data is therefore that dual customers are particularly profitable for operators and also particularly at risk of gambling harm. This finding was further evidenced in the survey findings where people identified as problem gamblers in 2021 were more likely to have gambled on both betting and gaming products in 2018/19 with their sampled accounts.
- In line with good practice since embodied in the Social Responsibility Code applicable to suppliers of online gambling services in Great Britain, all operators participating in the project had procedures in place first for tracking play to identify players who “may be experiencing harm” from gambling and for then engaging in interaction with such customers. Such interaction proved typically to be one-sided (an e-mail with a safer gambling theme) but some customers received stronger intervention in the form of one or more telephone calls. Such interventions appear to have been well-targeted. For example, dual customers and the heaviest spenders were particularly likely to have been contacted, according to the account records. Further, raw data indicated that interventions were often followed by moderation of the customer’s gambling behaviour. On the other hand, we were concerned at the low proportion of customers with whom there had been

³⁵ NHS Digital (2019) Health Survey for England 2018: Supplementary analysis on gambling.

interaction. During the study year, 3.9% of account-holders received a social responsibility contact, an e-mail in the large majority of cases. Just 0.13% of account-holders received a telephone call. According to the *Health Survey for England, 2018* where the period of field work overlapped with our study year, 4.2% of past-year online gamblers were classified as ‘problem gamblers’ and were therefore very likely to have been experiencing harm. 5.8% of past-year online gamblers were ‘PGSI moderate risk’, where there is a moderate chance that the player is experiencing harm.³⁶ One might therefore think of the group of customers who “may be experiencing harm” as comprising something of the order of 10% of all account-holders. Over a one-year period studied, the proportion of account-holders contacted was much lower than this.

- Many of those who spent substantially higher amounts than average customers while online gambling in 2018-2019 will not have been people experiencing problems. As with other leisure pursuits, some respondents will have greater enthusiasm than others and a strong preference for the particular activity may be reflected in high commitment in terms of money or time, with harm to no one. On the other hand, spending level on gambling is known to be correlated with problem gambling status. Moreover, high spending may itself create much of the harm associated with problem gambling because so much harm arises from, or is mediated through, financial stress. The follow-on survey reported in this study confirms a relationship between account spending level in 2018-2019 and the probability of recalling problems managing financially and the probability of having ever self-perceived a gambling problem. Given that high spending is such a strong risk factor for gambling harm, we were surprised that the majority of ‘high spenders’ were not recorded as having received a social responsibility contact during the year. Just 3% of accounts recorded a net loss of more than £2,000 during the study year. Of these only about one-third received any sort of intervention (such as a safer gambling message sent by e-mail) and less than 1% were escalated to the point of a telephone call. We acknowledge that some of those not contacted may have received an intervention prior to the data period and satisfactory evidence gathered that the customer was not at risk of harm.

5.2 Recommendations for preventing or responding to gambling harms

Following the findings from this research project, the following recommendations for preventing or responding to gambling harms are provided:

- **Future safer gambling campaigns should give greater weight to the risks of playing casino and slots games online.** Compared with betting, such games appear to be more strongly associated with acknowledged correlates of gambling harm. Several findings in the industry data and the follow-up survey were suggestive of greater risk of harm among gaming customers than among betting customers. Recent high-profile safer gambling campaigns such as BetRegret have focused on risks associated with online betting, with football fans as the most targeted audience.
- **Operators should monitor particularly closely customers who have shifted from betting-only to dual status.** Dual customers were much more likely than other customers to choose to self-exclude and much more likely to receive the highest level of operator safer gambling intervention. The commercial value of dual customers may provide an incentive for operators to recruit bettors in the hope of converting them to dual customers through aggressive cross-selling. In some

³⁶ NHS Digital (2019) Health Survey for England 2018: Supplementary analysis on gambling.

cases, this may amount merely to transfer of activities between operators. On the other hand, aggressive marketing may expand the proportion of players who engage in both activities and therefore expose more individuals to a pattern of activity which is at least associated with harm.

- **Safer gambling public awareness campaigns need to take into account gender differences in patterns of play.** Men provided 94% of operator revenue from online betting. To a large extent, this was explained by much higher participation in betting but other contributing factors were that, on average, male bettors wagered much more frequently than female bettors and at somewhat higher stakes. On the other hand, many women who gamble online eschew betting in favour of gaming activities (slots and bingo in particular) which implies that recent safer gambling public awareness campaigns may have failed to reach out successfully to female gamblers because the campaign content focused on football betting, which will have had little relevance to many women who gamble.
- **Operators need to consider lowering their thresholds for initiating interaction with customers.** Setting systems to be more sensitive (i.e. to encompass a greater proportion of true cases of harm) would be likely to be at the cost of lower specificity, i.e. a greater number of false positives such that more customers would be contacted where no harm is present. Operators might need encouragement to make changes which may lead to non-problem gamblers being inconvenienced by a contact but in fact there is little empirical support for fearing that this would lose customers. Ivanova et al. (2019)³⁷ reported that few 'recreational gamblers' felt irritation at exposure to responsible gambling images presented to them online; and being seen to give attention to safer gambling issues may even enhance the reputation of the company among its players.³⁸
- **Operators should show more curiosity about their customers with the highest spend and adopt internal procedures to guard against suspicion that commercial considerations are allowed to compromise compliance with the Social Responsibility Code.** Given that operators are expected to interact with customers who may be experiencing harm, it is surprising that only a low proportion of high spending accounts triggered an intervention.

³⁷ Ivanova, E., Magnusson, K. and Carlbring, P. (2019) Deposit Limit Prompt in Online Gambling for Reducing Gambling Intensity: A Randomized Controlled Trial, *Frontiers in Psychology*, 10, 639.

³⁸ Gainsbury, S., Parke J. & Suhonen, N. (2013). Consumer attitudes towards Internet gambling: Perceptions of responsible gambling policies, consumer protection, and regulation of online gambling sites, *Computers in Human Behavior*, 29(1), 235-245: <https://doi.org/10.1016/j.chb.2012.08.010>.

5.3 Future directions

This research was able to analyse and assess an unprecedented source of information on how people in Great Britain gamble online. It is among the largest and most detailed data sets from online gambling ever to have been made available for analysis by researchers and has resulted in a greater understanding of online gambling behaviour and the online gambling sector in Great Britain.

- The project has been an innovative exercise in showing the importance of gambling account-based research and an important learning exercise on paving the way for future research with industry/account data. Future research could lead into more complex and sophisticated analysis, if in the future collection of industry data was to be repeated. In addition to the analysis provided by this project, future industry data collection would enable:
 - Taking a **dynamic look** at the way people play, looking at how patterns of play and potentially harmful behaviour evolve across time. Patterns of Play was limited to one-year; a longer time-period would give a better picture about how gambling behaviour fluctuates. Longitudinal and/or trend analysis would also be powerful in showing whether problematic behaviour is maintained across time and identify risk and protective factors that may impact on gambling.
 - Longer time-periods would also give an opportunity to analyse how the gambling behaviour of newly registered gamblers develops across time and whether there are any **early predictors of problematic behaviours**.
 - Annual (or quarterly) data extracts would allow the development of **standard indicators** that could be monitored across time, showing whether gambling behaviour is affected by regulatory changes or the external environment (as it was during the pandemic).
- Patterns of Play data did not allow identification of the same players across different operators. It is however likely that particularly more frequent gamblers have more than one account. A dataset that linked player data across operators would be very powerful in allowing the analysis of online gambling behaviour as a whole. Possible research questions include: whether social responsibility interventions by one operator result in players moving more of their activity to other operators, how players switch activity between operators (e.g. whether they use more than one at the same moment in time), whether they exhibit similar behaviour across all operators, how wins/losses with one operator affect what participants do with other operators.
- The inclusion of the survey stage of the Patterns of Play project was valuable in learning more about players' wider gambling habits (with other online accounts and offline), further demographic characteristics of players' and the relationship between account spend and play type and indicators of problem gambling. A similar project in the future would benefit greatly from the survey taking place at the same time as the account data period and with a wider population of gamblers (e.g. all gambling operators for which account data is collected).
- The evidence from the account data is that dual customers are particularly lucrative for operators and also particularly at risk of gambling harm. Future research should include addressing the question of the extent to which converting online gamblers from betting-only to dual status has a causal effect on risk of gambling harm. Past research has established that breadth of gambling activity is a particularly strong predictor of problem gambling and so customers who take part in both betting and gaming merit particular attention.

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- Although it was out of scope and timelines for this project, the industry data available could provide more detailed analysis of behaviours, for example:
 - Identifying whether players are engaged in **win chasing or loss chasing** either within or across sessions. In particular, the impact of events over the course of an individual's gambling. For example, whether behaviours differ (and how) after the use of a safer gambling tool such as deposit limit, after a big win or a high loss session and before self-excluding.
 - The relationship between gambling, payment frequency and payday or pension-day gambling, as well as whether some products are more closely linked to this behaviour.
 - Depositing behaviour change over a period of time and relationship with loss chasing.
 - Behaviour change from account opening and over the year and its relationship with demographic profiles.
 - Patterns of play in relation to gambling access (e.g. phone, tablet, computer).