# DEVELOPING EVIDENCE FOR THE '*BESPOKE-RISK ENVIRONMENT*' WITHIN THE EVOLVING LANDSCAPE OF GAMBLING

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# Abstract

**Background**: Due to regulatory liberalisation and technological advancement, the gambling environment of the UK has rapidly evolved in recent years. Gambling advertisements are now complex, diverse, and pervasively disseminated via various formats and across numerous spheres such as television, sporting events, and social media. Similarly, gambling products have correspondingly increased in complexity whereby the accessibility, availability, diversity, and speed of such products have escalated significantly. These factors possess the potential to facilitate bespoke gambling-related harm if they interact and align with specific consumer vulnerabilities (or personal risk-factors). However, there is a need to develop illustrative evidence of these interactions within the 'bespoke-risk environment' of gambling by recognising the corporate determinants of such harm (i.e. advertising and product design) rather than focusing exclusively upon the personal risk-factors of consumers. **Methods:** A rapid-review was conducted upon the recent literature (2015-2020) in order to provide a taxonomy of emergent gambling advertising strategies. Two qualitative studies were also conducted to investigate the perceptions and experiences of young adult gamblers within the UK towards gambling advertising, gambling regulation, gambling product preferences, and currently utilised harm-reduction strategies. With the aim of evidencing the bespoke-risk environment of gambling, a quantitative cluster analysis was employed within the fourth study in order to distinguish profiles of sports bettors in terms of emotional and cognitive dysregulation alongside their use of various sports betting product features. Lastly, a brief intervention aimed at inoculating consumers against the persuasive elements of gambling advertising was designed. **Findings:** Numerous gambling advertising strategies were identified including positively framing gambling, not adequately displaying harm-reductive content within such advertisements, and utilising subtle forms of online marketing whereby the promotional intent is not made explicit. Qualitative inquiry highlighted predominantly negative perceptions towards such practices in which they were often deemed to be misleading, unethical, and deceptive. Participants also reported a wide range of product preferences that were each associated with bespoke risks in light of the supporting literature. Despite this, the general awareness of the sample towards currently utilised harm-reductive measures was low alongside such measures often being deemed ineffective or hard to find. An example of the bespoke-risk environment was observable amongst sports bettors where a sizeable cohort of the sample reported maladaptive gambling that was facilitated by emotional/cognitive dysregulation and specific sports betting product features. However, this cohort were not consciously aware or able to accurately identify these instances of maladaptive gambling. **Conclusions:** This thesis contributes to a better understanding of the bespoke-risk environment of gambling and highlights the need for a regulatory overhaul alongside the more ethical redesign of gambling advertising and product features. Furthermore, this thesis also emphasises the necessity of effective interventions that help consumers make more autonomous and well-informed decisions in response to gambling advertising and to better understand the harmful properties of gambling products.

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# III) Glossary

| Term | Definition & context |
|---|---|
| Cash-out | Cash-out is a product feature that allows you to get money back on your bet before the event you are betting on is over. The amount of money you get back is determined at the time of cashing out and will depend upon the current likelihood of the bet winning – so it could be greater or less than the initial stake. |
| Cognitive distortion | An exaggerated, irrational, or erroneous thought pattern. For example, the 'gamblers fallacy'. |
| Custom sports bets | Bets that have been uniquely created by gamblers. For example, 'request-a-bet' and 'build-a-bet'. |
| Embedded live stream | Most gambling operators offer a live stream of the sporting event for bettors to watch as they place bets. This live stream is typically embedded within the in-play betting page. |
| Embedded promotion | A form of product placement that incorporates brands or products into another domain with promotional intent. Within the context of the current thesis, this typically involves gambling advertising in and around the area of play within sports. |
| Financial incentive | Monetary (or value) benefit offered to encourage behaviours or actions which otherwise would not take place. In the context of the current thesis, this may involve inducements such as '£10 free bets' offered by operators. |
| Fixed Odds Betting Terminal/ Electric Gaming Machine (FOBT/EGM) | Types of electronic gaming machine on which players may bet on the outcome of various simulated games and events. |
| Gambling Disorder (GD) | Characterized by a persistent, recurrent pattern of gambling that is associated with substantial distress or impairment. |
| Gambling operator | A company or bookmaker that holds an operating license from the gambling commission. For example, Paddy Power, Betfred, Camelot, and Bet365. |
| GAMCOG - PGS | A subscale within a larger self-report scale that measures perceived gambling skill amongst bettors. |
| In-play betting | Betting while the event is actually taking place. |
| Inoculation | Within the context of the current thesis, inoculation refers to the process of exposing individuals to weakened forms of attempted persuasion in order for them to build resilience against future 'persuasive attacks'. |
| Online Poker Tilting Scale (OPTS-9) | A nine-item self-report scale that measures the severity of 'tilting' behaviours. The scale addresses two broad constructs that are encompassed by 'tilting'; cognitive and emotional regulation whilst gambling. |
| Problem Gambling Severity Index (PGSI) | A nine-item scale used to measure the severity of maladaptive or harmful gambling behaviours. Total scores can be summed to allocate recipients into either the non-problem gambler (0), low-risk gambler (1-2), moderate-risk gambler (3-7), or problem gambler (8+) categories. |
| Product feature / structural characteristic | The inherent attributes and elements that a particular gambling product or gambling mode are comprised of. |
| Responsible gambling | A range of social responsibility initiatives set by the gambling industry that aim to encourage consumers to better control their own gambling behaviours. |
| Sludge | Content or practices that make a process more difficult with the goal of creating friction, which makes consumers less likely to continue a particular process. Essentially, sludge is the opposite of a behavioral 'nudge'. For example, esoteric and complicated processes involved with shutting a betting account down. |
| Statistics board | During a live sporting event, operators will display related information via a statistics board on the in-play betting page. This information will typically involve a match/game summary (number of goals, corners, points etc) as well as more specific information such as kicking accuracy or throw-ins. |
| SUPPS-P | A shorter version (20-items) of a larger self-report scale (59-items) that measures trait impulsivity. |
| Tilting | Whilst gambling, 'tilting' refers to a state in which bettors become aggressive, aggravated, and impulsive in relation to negative outcomes. Subsequently, this is likely to involve placing rapid and strategically weak bets out of frustration or desperation. |
| Virtual live updates | Alongside (or instead of) a live stream of the sporting event, operators will often display live updates via a virtual reconstruction. These virtual updates notify the bettor of the events that unfold during a sporting event. For example, a free kick in football or a point won in tennis. |
| Virtual lottery machine (VLT) | Similar to FOBTs and EGMs, this is a particular type of electronic gambling machine that are typically operated by a region's lottery, and situated at licensed establishments such as bars and restaurants. |

# IV) Funding

# V) Ethics

Ethical Approval for the studies within this project (except those without participants) were given by the School of Psychology and Therapeutic Studies ethics panel at the University of South Wales. All procedures were in accordance with the standards of the University of South Wales and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. All of the involved participants gave informed written consent to participate and gave permission for their anonymised data to be utilised within study reports, peer-reviewed publications and displayed via open science data sharing platforms. Participation was voluntary and respondents were not financially incentivised. The documents outlining ethical approval for Study 2/3 (combined), and 4 are listed in the appendices (Appendix A, and C respectively).

# VII) Statement of contribution

Numerous studies within this thesis are the product of collaborative efforts involving other researchers. The current author declares that his contribution was principal, substantial, and original. The current author took lead authorship on all published studies followed by his supervisors who are listed as second and third authors respectively. All other co-authors contributed to the methods and analysis (e.g. screening and coding) in order to increase the methodological rigor of the respective study.

# VIII) Candidate declaration
**Graduate School**
**Ysgol Graddedigion**

_This is to certify that, except where specific reference is made, the work described in this thesis is the result of my own research. Neither this thesis, nor any part of it, has been presented, or is currently submitted, in candidature for any other award at this or any other University._

_Signed_ _____ _(Jamie Torrance)_

_Date_ _11/11/22_

# IX) Project outputs

## Thesis publications

Torrance, J., Roderique-Davies, G., Thomas, S. L., Davies, N., & John, B. (2020). 'It's basically everywhere': young adults' perceptions of gambling advertising in the UK. *Health Promotion International*, *36*(4), 976-988. https://doi.org/10.1093/heapro/daaa126

Torrance, J., John, B., Greville, J., O'Hanrahan, M., Davies, N., & Roderique-Davies, G. (2021). Emergent gambling advertising; a rapid review of marketing content, delivery and structural features. *BMC public health*, *21*(1), 1-13. https://doi.org/10.1186/s12889-021-10805-w

Torrance, J., Roderique-Davies, G., Greville, J., O'Hanrahan, M., Davies, N., Sabolova, K., & John, B. (2022). Conceptualising emotional and cognitive dysregulation amongst sports bettors; an exploratory study of 'tilting' in a new context. *PloS one*, *17*(2), e0264000. https://doi.org/10.1371/journal.pone.0264000

## Related publications

Roderique-Davies, G., Torrance, J., Bhairon, T., Cousins, A., & John, B. (2020). Embedded gambling promotion in football: an explorative study of cue-exposure and urge to gamble. *Journal of Gambling Studies*, *36*(3), 1013-1025.

Davies, N. H., Roderique-Davies, G., Drummond, L. C., Torrance, J., Sabolova, K., Thomas, S., & John, B. (2022). Accessing the invisible population of low-risk gamblers, issues with screening, testing and theory: a systematic review. *Journal of Public Health*, 1-15.

## Conference presentations

Torrance, J. (2020). 'It's basically everywhere'. Young adults' perceptions of gambling advertising in the UK. In *SSA Annual Conference*. Online. Retrieved from https://www.addiction-ssa.org/wp-content/uploads/2020/11/TorranceJ-Poster-It%E2%80%99s-basically-everywhere-Young-Adults-Perceptions.pdf

Torrance, J. (2021). The bespoke risk environment of gambling - trends in advertising and structural features. In 8$^{th}$ *Annual Conference on Treatment of Gambling Harms: Collaborating on a Long-Term Plan*. Online: GambleAware.

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## News articles

Torrance, J. (2021). Can we bet our children aren't gambling? *The National*. Retrieved from https://www.thenational.wales/news/19510961.can-bet-children-arent-gambling/

Torrance, J. (2021). Personalised gambling adverts: a troubling new trend. *The Conversation*. Retrieved from https://theconversation.com/personalised-gambling-adverts-a-troubling-new-trend-166287

Torrance, J. (2022). Sports betting: how in-play betting features could be leading to harmful gambling – new research. *The Conversation*. Retrieved from https://theconversation.com/sports-betting-how-in-play-betting-features-could-be-leading-to-harmful-gambling-new-research-177872

## Evidence submissions and consultancy

Roderique-Davies, G., Davies, N., Torrance, J., Greville, J., Sabolova, K., & John, B. (2020). Written evidence: Submission to the DCMS Review of the 2005 Gambling Act Call for Evidence

Expert adviser on the BAFTA-nominated and RTS award-winning consumer rights show "Joe Lycett's Got Your Back", broadcasted on Channel 4 (S3, Ep 7 - 30/09/21). My contribution involved consultancy on the psychological methods and strategies employed within gambling advertisements.

# X) Acknowledgements

# XI) COVID-19 statement

Throughout the majority of the thesis timeline, the UK government and institutions across the UK imposed strict conditions that prohibited physical interaction in an attempt to minimise the spread of COVID-19. Subsequently, the originally planned studies that were based around physical participation needed to be reconceptualised in order to allow for online-based research instead (see *Conducting internet-based research*). Due to the reorganisation and redesign of the entire thesis after the project had already commenced, the final chapter is conceptual (Chapter 4) and focuses upon the development of a brief inoculative intervention to reduce gambling advertising persuasion. It is envisaged that following the completion of this thesis, the current author will pilot this brief intervention using physical participation alongside investigating its acceptability via (in-person) focus groups. This statement is outlined here in order to provide a broader context to the overall thesis in consideration of these governmental and institutional conditions that created many barriers and delays to the project.

# 1. Chapter 1 – Introduction and literature review

## 1.1 Thesis introduction

### 1.1.1 The transformation of gambling

Traditionally, gambling has been defined as the act of placing money (or something of monetary value) upon a chance-based outcome that may result in either a win or a loss (King et al., 2015). Within the UK, gambling via private casinos and off-course betting was legalised in 1960 via the Betting and Gaming Act which was later repealed by the Betting, Gaming, and Lotteries Act of 1963, the Gaming Act of 1968, and the Lotteries and Amusement Act of 1976. During this period (until 2005), legalised gambling throughout the UK was rudimentary and often took the form of lottery bets, simplistic bets placed on sports, and table games. With the subsequent introduction of the 2005 Gambling Act, the UK generated one of the most liberal, diversified, and accessible gambling markets in the world (Banks & Waters, 2021). As a result of this act, land-based gambling within the UK has expanded alongside a significant increase in the availability and complexity of online gambling (St-Pierre et al., 2014; van Schalkwyk, Petticrew, et al., 2021). These developments are intrinsically connected to the liberalisation facilitated by the 2005 Gambling Act as well as advancements in relation to communication technology and digital infrastructure (Banks & Waters, 2021; Reith, 2005). Not only does this expansion relate to the access, availability, and variety of both offline and online gambling products, but also the rapid expansion and diversification of gambling-related advertisements in the UK (Torrance et al., 2021; Torrance et al., 2020).

### 1.1.2 The transformation of gambling products

In relation to the advancement of gambling-related products available within the UK, each mode of gambling has undergone its own transformation. Prior to the 2005 Gambling Act, sports betting was a relatively uncomplicated mode of gambling that was governed by book-maker opening times and primarily involved placing bets before a match commenced in relation to a potential winning team, horse or greyhound (Kuypers, 2000). At present, sports betting is a predominantly online product that offers a vast array of betting opportunities throughout an event and is populated with a broad spectrum of structural features (Killick & Griffiths, 2019). These include embedded live streams of events, the ability to instantly deposit cash, and being accessible 24-hours a day (Torrance et al., 2022). Online casino gambling has undergone similar development within the UK where hundreds of sites are now accessible and host a variety of games that include; bingo, poker, slot games, blackjack, and roulette (Edson et al., 2022). In relation to land-based advancements, a particularly harmful mode of gambling

has arisen within the UK (and other jurisdictions) known as fixed-odds betting terminals (FOBTs) or electric gaming machines (EGMs). FOBTs are classified as 'B2' gaming machines within the 2005 Gambling Act which permits up to four terminals to be sited on betting premises (including bars and pubs). Prior to regulatory intervention, the maximum potential stake that could be placed on FOBTs was £100 per bet. Although the Gaming Machine Regulations of 2018 lowered this maximum stake to £2 in an attempt to minimise the harm associated with these machines, they are consistently associated with high levels of gambling related-harm (Järvinen-Tassopoulos et al., 2021; Rogers, 2020). This is due (in-part) to the complex design of these machines that possess reinforcement schedules that may encourage prolonged gambling sessions alongside aesthetic features that may be perceived as being captivating or engrossing (Woodhouse, 2019).

### 1.1.3 The transformation of gambling advertisements

In congruence with the transformation of gambling products over the previous two decades, gambling advertising has also undergone rapid growth in terms of both prevalence and complexity (Torrance et al., 2021). Prior to the 2005 Gambling Act, gambling advertising within the UK primarily involved the promotion of the National Lottery (Griffiths & Wood, 2001). In the early stages following the implementation of this act, gambling advertising was disseminated via traditional media sources such as bookmaker shop windows (Newall, 2015), billboards, and infrequently via television (Friend & Ladd, 2009). However, current gambling advertisements, promotions and marketing strategies are diverse and extend far beyond the traditional sources that have previously been utilised (Newall, Moodie, et al., 2019; Torrance et al., 2021). This includes pervasive social media advertising either directly by gambling operators or via paid affiliates (Houghton et al., 2019), sports sponsorship and embedded gambling promotion within sports (Bunn et al., 2019; Djohari et al., 2019; Roderique-Davies et al., 2020), unsolicited 'pop-up' advertisements online (McMullan & Kervin, 2012), and frequent television advertisements aimed at bingo players, sports bettors, and casino game players (Newall, Moodie, et al., 2019; Torrance et al., 2021). This expansion has resulted in a significantly larger portion of the population being exposed to such advertisements in comparison to audiences prior to the implementation of the 2005 Gambling Act. Furthermore, this increased exposure amongst a larger audience now includes potentially vulnerable individuals such as children (Djohari et al., 2019). The expansion of gambling advertising has been so significant, that published literature associated with its contents and effects has been highlighted for not being able to keep pace (Torrance et al., 2021).

### 1.1.4 UK policy, regulation, and the Gambling Act of 2005

As discussed within the opening sections of this introduction, the UK 2005 Gambling Act facilitated the rapid expansion and liberalisation of gambling within this jurisdiction. This act was underpinned by the notion that gamblers are valuable consumers and should be awarded consumer choice in how they spend their time and money in relation to 'leisure' activities. Following a governmental review, the 2005 Gambling Act replaced previous policy that was formulated to obstruct any development in opportunities for consumers to gamble, with policy that allowed unconstrained commercial competition. Therefore, within this permissive act, the gambling industry may be licensed to deliver opportunities and facilities to gamble as it considers commercially sustainable. Under this regulatory framework, gambling within the UK is overseen by the Department for Digital, Culture, Media, and Sports (DCMS) alongside the Gambling Commission. Subsequently, regulation is encompassed by three licensing objectives that are outlined within the 2005 Gambling Act. These are '(1) *preventing gambling from being a source of crime or disorder, being associated with crime or disorder or being used to support crime,* (2) *ensuring that gambling is conducted in a fair and open way*, and (3) *protecting children and other vulnerable persons from being harmed or exploited by gambling*' (DCMS, 2002). However, due to the oversight of the DCMS (rather than a health-related governmental department) alongside mounting research that provides contradictory evidence to the utility of the three licensing objectives mentioned above, there are widespread academic and political calls for appropriate regulatory reform (David, Thomas, Randle, & Daube, 2020; Goyder et al., 2020; van Schalkwyk, Petticrew, et al., 2021; Wardle et al., 2020)

Currently (as of the time of writing) a review of the 2005 Gambling Act is underway following a critical assessment of the Gambling Commission by the National Audit Office (National Audit Office, 2020), the House of Lords Select Committee Enquiry (House of Lords, 2020) and calls for regulatory change from a gambling-harm related All Party Parliamentary Group. The review was launched in the last quarter of 2020 as well as an official 'call for evidence' that contained over 45 questions within the associated terms of reference (DCMS, 2020). Correspondingly, open letters to ministers in relation to the Gambling Act Review from academics, service providers and experts by experience have been published (Banks, 2022; Wardle et al., 2020). In combination, these letters call for seven key reforms in relation to the Gambling Act Review. These include; 1) A return to the tight restrictions on gambling that were present before the introduction of the 2005 Gambling Act; 2) Prevent gambling operators from exploiting player data in order to increase participation; 3) The introduction of mandatory and independent safety checks on gambling structural features and promotions; 4) Restricting commercial gambling to individuals over the age of 18; 5) Enact protocols that inhibit consumers from

experiencing financial harm caused by gambling; 6) The introduction of a statutory levy that covers prevention, research, and treatment that is administered by an independent body; 7) The introduction of a national system that aims to identify early signs of gambling harms alongside supporting those who are currently experiencing these harms (Banks, 2022; Wardle et al., 2020). It is clear that the gambling sphere has diversified far beyond the scope of the 2005 Gambling Act alongside gambling-related harm becoming more prevalent and complex. Therefore, the key reforms mentioned above are also recommended by the current author. However, as with research associated with nicotine products, alcohol, or substance misuse, regulatory reform does not warrant a discontinuation of gambling-related research.

### 1.1.5 Gambling industry initiatives, legislation, and research

The gambling industry within the UK is a powerful economic force. Therefore, the industry's influence upon the empirical study of gambling and gambling-related legislation is (and has been) of great concern. This is especially true for those who recommend that gambling should be independently addressed as an issue of public health (Cassidy, 2014; van Schalkwyk, Petticrew, et al., 2021). Industry influence upon research and legislation has been covered extensively in relation to other harmful, addictive, or unhealthy products such as tobacco (Bero, 2005; Savell et al., 2014), alcohol (McCambridge et al., 2018), and fast-food (Campbell et al., 2020; Maspons, 2012). Specifically, industry initiatives have been identified in relation to these products that broadly involve the funding of research that is favourable to these industries, industry-lobbying against regulations that would better protect consumers, and the utilisation of strategies aimed at silencing critics or delaying critical research (Delobelle, 2019). Similar strategies have been identified in relation to the gambling industry (Cowlishaw & Thomas, 2018) and are worth consideration in the current section to highlight this issue and to outline the positionality of the current project for the sake of transparency (that is funded by GambleAware).

It has been suggested that industry-favoured research on gambling appears to spotlight studies that focus upon disordered or 'problem gambling' situated at the furthest end of the harm-spectrum (Cowlishaw & Thomas, 2018). This approach has been criticised for diverting academic and political attention away from the vast amounts of harm that are experienced amongst 'low-moderate' risk gamblers, and harms that are experienced by families and wider communities (Browne & Rockloff, 2018). The framing of gambling harm as a phenomenon experienced only by a small number of people is therefore beneficial to the reputation of the gambling industry and remains a topic of contention

within the empirical literature. Irrespective of academic discrepancies surrounding the appropriate methodological approaches to assessing gambling harm (see The harm spectrum of gambling and The Prevention Paradox)., the primary focus upon 'problem gambling' as an industry-favoured agenda is far less contentious. For example, the term 'problem gambler' (and conversely, 'responsible gambler') are undeniably rife within industry discourse (Miller et al., 2016) and industry-influenced 'harm-reduction' messages (see Inadequacy of harm-reduction messages). These industry-favoured terms frame gambling harm as an issue of individual responsibility that encourages support against both population-level investigations of harm and studies of industry accountability (Shaffer & Ladouceur, 2021). From a broader perspective, the gambling industry has also been criticised for favouring (and funding) research that is overly specific, narrow, and lacking in practical utility in order to over-populate the evidence base that encourages effective policy and more global reductions in gambling-harm (Cowlishaw & Thomas, 2018).

In relation to the industry's influence upon policy and regulation, there are numerous examples specific to the UK that demonstrate resistance and lobbying against measures that are designed to protect consumers. For example, the UK gambling industry has lobbied against the introduction of stricter advertising regulations, mandatory self-exclusion schemes, and restrictions placed upon fixed-odds betting terminals (van Schalkwyk, Petticrew, et al., 2021). Similarly, during a time in which a regulatory overhaul is underway within the UK, the gambling industry has mobilised arguments against stricter regulations that are apparent within political and mainstream media. These industry arguments primarily focus upon the threat of an emergent gambling 'black market' that subsequently encourages the protection of the current 'regulated market' (Wardle et al., 2021). Moreover, this industry discourse is underpinned by the notion that increased regulation leads to an increased growth in the 'black market' that results in economic loss and reductions in consumer protection. Overall, it has been proposed that the UK gambling industry has had a significant impact upon gambling-related research/policy and should be a central-issue for consideration in any work that seeks to reduce gambling-related harm.

The current thesis is funded by GambleAware, a UK charity that receives voluntary donations from the gambling industry. Therefore, it is imperative that the positionality of this work is outlined here in order to provide context and insight regarding the research questions and findings that underpin this project. Other than providing funding, GambleAware had no input in the design, data collection, analysis, decision to publish, or the preparation/writing up of this project and the associated studies. As outlined extensively throughout this thesis, the current author recognises (and addresses) the harms

experienced across the entire harm-spectrum with a significant focus upon the industry's role in facilitating gambling-related harm via advertising and product design. Furthermore, the ineffectiveness of industry-influenced 'harm reduction' messaging is also extensively discussed which culminates in an alternative intervention that focuses primarily on decreasing industry persuasion amongst consumers. Therefore, this thesis was formulated and conducted independently from industry influence and aims to draw an emphasis away from personal-responsibility and towards industry accountability. The intervention proposed in Chapter 4 was designed to be comprehensive rather being aimed at a narrow cohort of consumers. Furthermore, this intervention was not constructed to divert efforts away from restricting or prohibiting gambling advertising in the UK; measures that the current author welcomes in order to reduce harm.

### 1.1.6 Overarching thesis aims

Due to the transformation of the gambling sphere mentioned above, there is considerable need for continued research that focuses upon the nuanced instances of gambling-related harm within the UK. Indeed, Gambling Disorder sits at the higher end of the harm spectrum and is related to clinically significant symptoms of maladaptive gambling (Potenza et al., 2019). However, due to the complex and varied nature of gambling advertisements and products, there is a need to also establish and demonstrate potential harms that occur across the entire harm-spectrum of gambling. It should be acknowledged that investigating all possible instances of gambling-related harm across all possible gambling modes falls outside of the remit and scope of the current thesis. However, it is envisaged that providing individual snapshots of the complex nature of the current gambling environment alongside examples of the associated harms would be an insightful contribution to the literature.

There has been a political and industry-based focus upon the higher end of the gambling-harm spectrum over the past decade which facilitates a dichotomous perception of pathological and non-pathological gambling within the UK and other jurisdictions (Abbott, 2020; Goyder et al., 2020). Conversely, the current thesis aims to demonstrate that gambling-related harms are experienced not only by those who do not meet the clinical criteria of Gambling Disorder, but by a far greater number of individuals compared to this clinically significant population (see *The Prevention Paradox* below). There is a growing yet underdeveloped literature base in relation to this topic, especially in regards to gambling advertising and specific product features (Bouguettaya et al., 2020; Roderique-Davies et al., 2020). Furthermore, the normalisation of gambling-related harm and associated advertising has been covered briefly within the academic literature yet there is a paucity of research that demonstrates this

in relation to the UK (Djohari et al., 2019). This corresponds with the need for empirical research that appropriately recognises and highlights the role of the industry within the complex gambling environment of the UK.

Due to the points mentioned above, the overarching aims of this thesis can be categorised into four key domains:

**1)** providing evidence of the rapid expansion and increased complexity of modern gambling advertisements and product features from a psychological perspective.

**2)** providing original and novel insight in relation to how these advertisements and product features are perceived by potentially vulnerable audiences.

**3)** to provide evidence of bespoke pathways to gambling-related harm that have not yet been researched.

**4)** to provide a conceptual framework that underpins the development of a brief-intervention aimed at reducing gambling advertising persuasion.

These domains are encompassed by the concept of the 'bespoke-risk environment' of gambling (see *Modernising Korn and Shaffer's public-health view of gambling* below). Developing evidence of this concept forms the overarching *purpose* of the current thesis and is discussed in detail within the subsequent sections.

### 1.1.7 Thesis structure

This thesis is divided into five connected chapters (see Figure 1). This chapter outlines the thesis aims, structure, methods summary, and contains a literature review that addresses key gambling-related topics that provide a background and contextualisation for the current thesis.

Chapter 2 relates to the bespoke risks associated gambling advertising and marketing. Specifically, chapter 2 focuses upon industry advertising strategies and consumer perceptions from a public health perspective and is encompassed by two studies (study 1 & 2). Study 1 involves a rapid-review of emergent literature (2015-2020) that focuses upon the content, delivery and structural features of gambling advertising. Study 2 involves a qualitative investigation of the perceptions of young adult gamblers towards gambling advertising in the UK. Each of these studies is accompanied by an interim discussion, conclusions and a chapter discussion.

Chapter 3 contains two studies (study 3 & 4) that relate to the bespoke risks associated with gambling game-mechanics, structural features, and consumer vulnerabilities. Study 3 is a qualitative investigation of young adult perceptions towards the aspects of their preferred gambling modes and awareness of gambling-related harm. Study 4 takes an explorative approach in re-conceptualising the poker-related phenomenon of 'tilting' (Browne, 1989) by mapping it onto the sports betting environment. Specifically, this study investigates the in-play sports betting product preferences of three profiles of sports bettors based upon levels of emotional and cognitive dysregulation. Each of these studies is also accompanied by an interim discussion, conclusions, and chapter discussion.

Chapter 4 relates to the development and content of a brief intervention aimed at reducing harm associated with gambling advertising. This intervention will take an inoculation and educational approach with the aim of building resilience against marketing persuasion and increasing gambling advertising scepticism. The thesis culminates in chapter 5 which incorporates an integrated discussion of all chapters/studies alongside conclusive points.
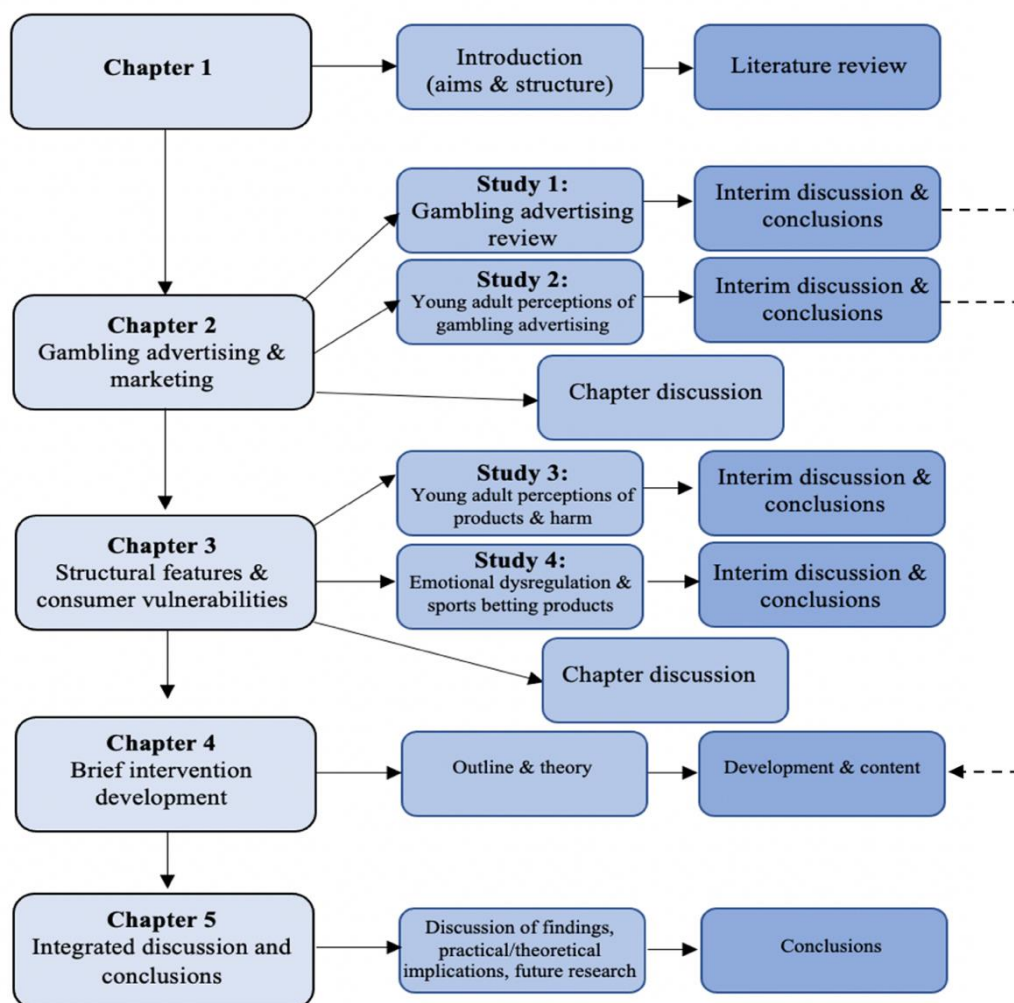


**Figure 1.** Structure of thesis chapters

## 1.2 Thesis methodology

### 1.2.1 The quantitative approach in gambling research

In relation to researching and subsequently increasing our psychological understanding of gambling-related harm (and harm reduction), the quantitative and qualitative approaches can each offer unique benefits to researchers if conducted with appropriate rigor. The general advantages of rigorous quantitative research include objectivity, the opportunity for larger sample sizes, increased generalisability, the opportunity to conduct analyses in a timely manner, and an increased opportunity for replication (Gorard, 2001; McKeganey, 1995). With a specific focus upon gambling research, the quantitative approach has therefore allowed for the production of some significantly insightful research that has greatly increased our understanding of gambling-related harm. For example, large scale Gambling Disorder prevalence studies (Gambling Commission, 2019, 2020b, 2021; May-Chahal et al., 2017; May-Chahal et al., 2012; Wardle et al., 2011), studies that utilise the behavioural data of active gamblers (Hodgins & Stevens, 2021), studies that examine the behavioural impacts of industry constructed 'harm-reduction' messages ((P. W. Newall, L. Weiss-Cohen, H. Singmann, L. Walasek, et al., 2022), and the (re)validation of gambling-related psychometric scales across other jurisdictions (Loo et al., 2011). Conversely, there are also generally accepted disadvantages to the quantitative research approach which primarily involve but are not limited to researcher-detachment (from the participants or studied phenomena) and a lack of richness or insightful detail within the data. These disadvantages have particular pertinence to the empirical study of gambling-related harm as the perceptions, insights, and motivations of gamblers in relation to their own behaviour, policy, advertising, and interventions is not only an important avenue of research, but one that is necessary in this context (Cassidy, Pisac, et al., 2013).

#### 1.2.1.1 Cluster analysis

Within the current thesis, Cluster Analysis forms the primary method of quantitative analysis utilised (in Chapter 3, Study 4). Cluster analysis involves the statistical method of grouping (or clustering) objects or items into groups (clusters) based upon their close association according to specific variables (Frades & Matthiesen, 2010). In brief, this process has been described as grouping the data in a way that attempts to make the groups more homogenous *within* themselves, but heterogenous *between* each other (Szekely & Rizzo, 2005). Given that cluster analysis is widely recognised as an unsupervised learning algorithm, it is most often used when there is little assumption made about the possible relationships between the prospective

clusters. However, it is possible to gain a more accurate assumption of the potential clusters that should be utilised within a particular cluster analysis via the implementation of hierarchical clustering. This process involves iteratively forming clusters by successfully linking or dividing groups based upon specified variables. In the case of the current thesis, these variables relate to self-reported 'tilting' frequency and awareness that were measured both directly (consciously) and indirectly (unconsciously) amongst sports bettors. The concept of tilting relates to episodes of irrational, aggressive, emotional, and strategically weak betting decisions in response to unfavourable gambling outcomes (Browne, 1989). The goal of the hierarchical cluster analysis is to create a nested sequence of partitions which starts with the entire dataset in one cluster and then progressively divides the dataset into smaller groups based upon association (Köhn & Hubert, 2014). Specifically, the current thesis utilised the agglomerative method of hierarchical clustering in order to produce a dendrogram (tree diagram) that displays the most appropriate number of clusters to use within the cluster analysis. Once this appropriate number of clusters was established, K-means clustering was adopted within the current thesis (see *'Study 4 – Data analyses'* for further details). Within the K-means clustering algorithm, each observation is clustered based upon the nearest mean (or centroid).

### 1.2.2 The qualitative approach in gambling research

As mentioned above, adopting the qualitative approach within the context of gambling research can offer very insightful data that involves the perceptions, opinions, motivations, and viewpoints of participants (Cassidy, Pisac, et al., 2013). As with the quantitative approach, qualitative research possesses various advantages and disadvantages that require consideration. Overall, the well-known advantages of qualitative research include the potential to obtain rich and personally meaningful data, the ability to be flexible whilst incorporating epistemological positions within the methodology, and a deeper level of interaction between researcher and participant (Silverman, 2020; Vishnevsky & Beanlands, 2004). In relation to gambling-related research, the qualitative approach has allowed researchers to produce attitudinal investigations of various gambling trends and policies (Bestman et al., 2016; Nyemcsok et al., 2018; Pitt et al., 2016; S. L. Thomas et al., 2018), thematic and content-related studies of gambling advertising (Newall, Walasek, et al., 2019), and qualitative explorations of the motivations that underpin gambling behaviour (Kim et al., 2017). The overall disadvantages of the qualitative research approach are congruent with the advantages of the quantitative approach. These primarily involve longer and more resource heavy analyses (such as transcription after interviews), often small sample sizes, a lack or absence of generalisability, and a reliance upon researcher

interpretation at the cost of objectivity (McKeganey, 1995; Silverman, 2020; Strauss & Corbin, 1990; Vishnevsky & Beanlands, 2004).

### 1.2.2.1 Thematic analysis

The primary method of qualitative analysis utilised within the current thesis involves Thematic Analysis. In brief, this process involves searching across a qualitative dataset in order to establish, analyse, and discuss repeated themes (Braun & Clarke, 2006; Clarke & Braun, 2018). A primary feature of Thematic Analysis relates to its malleability. For example, this method of qualitative analysis can be used in conjunction with a wide range of epistemological and theoretical frameworks, and within many different research designs and sample sizes (Kiger & Varpio, 2020). Although described in some instances as falling under the classification of phenomenological or ethnographical analysis (Aronson, 1995; Sundler et al., 2019), Thematic Analysis is more widely accepted as being both an appropriate standalone form of analysis as well as one that can be integrated into other qualitative research methods (Braun & Clarke, 2006; Clarke & Braun, 2018; Kiger & Varpio, 2020). Given its practical utility alongside being recognised as a powerful (yet straightforward) form of qualitative analysis, the methodological steps of Thematic Analysis have been clearly laid out for other researchers to utilise (Braun & Clarke, 2006; Clarke & Braun, 2018). These steps include; 1) familiarisation with the data; 2) initial coding (labelling or highlighting meaningful data); 3) searching for themes across the coded data; 4) reviewing and establishing themes; 5) defining and naming these themes; 6) producing the thematic report or manuscript (Braun & Clarke, 2006; Clarke & Braun, 2018). Within the current thesis, Thematic Analysis has been used across two studies (Chapter 2, study 2 and Chapter 3, study 3). As described in the 'Thesis structure' section, these studies investigate the self-reported perceptions of young adult gamblers in the UK towards gambling advertising and gambling products/harm respectively. Overall, Thematic Analysis was adopted in relation to these studies due to its flexibility and the need to produce insightful yet accessible data that supplements the quantitative analysis and rapid review methodologies used within this thesis.

### 1.2.3 The mixed-methods approach in gambling research

The mixed-methods approach is defined by a purposeful and appropriate combination of both quantitative and qualitative research within the same study or project (Doyle et al., 2009; Johnson et al., 2007). Within mixed-methods projects, the primary aim is data linkage or data integration between the methods utilised in order to produce a more holistic or insightful understanding of a particular topic

or phenomenon (Johnson et al., 2007). Conducting research in this manner often provides a panoramic view of the research landscape with the mixture of methodologies reducing the overall shortcomings associated with standalone quantitative or qualitative research. From this perspective, the adoption of a mixed-methods approach should be underpinned by research questions that quantitative or qualitative methodologies could not answer on their own. In relation to the empirical study of gambling and gambling-related harm, the mixed-methods approach can provide the opportunity the produce findings that are more objective whilst being supplemented by rich and personally meaningful data. For example, Cornil et al. (2018) aimed to investigate gambling-related cravings via the elaborated intrusion theory of desire (see '*Mechanisms associated with gambling advertising effect'*) using a mixed-methods approach. Among 31 non-clinical gamblers, the authors utilised questionnaires that were analysed quantitatively and distinguished the primary self-reported triggers of gambling craving (spontaneous thoughts and visual cues). In order to supplement these findings, open-ended questions were utilised in order to investigate the personal and perceptual experiences of the participants in relation to gambling cravings that were constructed around the elaborated intrusion theory of desire. Six conceptual categories emerged as a result of the qualitative analysis that included; positive affect, negative affect, mental imageries, external cues, physiological sensations, and thoughts. In combination, the mixed-methods approach adopted within this example highlights the well-rounded insight that can be gained in relation to specific gambling-related phenomena by utilising both quantitative and qualitative methods. Within the current thesis, an overall mixed-methods approach has been adopted for the aforementioned reasons. Gambling is a complex and multifaceted phenomenon that requires both quantitative and qualitative insights. As discussed in Chapter 3 for example, it is the current author's recommendation that gambling product features and structural characteristics should be investigated via a mixed-methods approach (through quantitative and qualitative questioning). In congruence with the research mentioned above by Cornil et al. (2018), adopting this strategy is more useful, holistic, and complete in comparison to quantitative or qualitative methodologies alone.

### 1.2.4 Conducting internet-based research

Due to the restrictions imposed by the UK government and the University of South Wales during the COVID-19 pandemic, 'physical' recruitment and experimentation within the current thesis was unfeasible (see *COVID-19 statement*). Therefore, all of the studies within this thesis were conducted exclusively via the internet. Although there a generally accepted advantages to 'in-person' research,

internet-based research also possesses numerous advantages that are worth consideration. These include but are not limited to:

- Utilising the internet for psychological research purposes encourages researchers to think creatively and intuitively (Skitka & Sargis, 2006).

- Recruitment methods can be diverse and more fruitful compared to physical recruitment.

- The internet can provide a more efficient alternative to in-person research by requiring fewer physical resources (Skitka & Sargis, 2006). This also relates to the use of technology associated with internet-based research such as the automatic transcription of qualitative interviews.

- Web-based surveys and questionnaires are often lower in measurement error and social desirability bias compared to in-person questioning (Skitka & Sargis, 2006). In addition, participants have the chance to adjust or edit their responses before final submission if using web-based surveys therefore increasing accuracy and validity.

- Recruitment via the internet can provide global access to underrepresented, low-incidence, or socially inexperienced samples that may otherwise be difficult to engage with (Skitka & Sargis, 2006).

### 1.2.5 The rapid-review methodology

Rapid reviews have become a legitimate and widely adopted method of evidence synthesis within psychological research; particularly within the field of Health Psychology (Harker & Kleijnen, 2012). Rapid reviews are typically conducted for the purpose of gaining insight and understanding in relation to emergent topics in a timely manner when systematic reviews are not practical (Haby et al., 2016). Traditional systematic reviews often aim to collate all (or a significant amount) of empirical evidence in order to synthesize a clear set of answers to specific research questions. Systematic reviews should be conducted transparently using systematic methods that are utilised for the sake of minimising potential bias (Henderson et al., 2010). However, despite being considered the gold standard of evidence synthesis, systematic reviews can be time consuming and resource intensive; often taking anywhere from 6-24 months to conduct and complete (Aromataris & Pearson, 2014). In relation to rapidly evolving topics and in situations where stakeholders or policymakers require timely evidence, systematic reviews may often be unfeasible. This is especially true in relation to topics and constructs within the gambling-research sphere. As outlined within the introduction to the current thesis, many areas of gambling such as advertising and product features are swiftly evolving and transforming in a way that the academic literature may struggle to keep pace with (Torrance et al., 2021). Therefore, in certain contexts rapid reviews may be more applicable if conducted with the appropriate amount of

methodological rigor. Given that rapid reviews generally follow the same structure as systematic reviews but with limitations placed upon the length (time taken) and breadth (databases searched) of the methodology, they are sometimes criticised for lacking transparency and validity (Khangura et al., 2012). However, researchers can limit the potential bias within a rapid review methodology by preregistering the protocol, assessing included records in terms of quality/bias, and including multiple researchers during the screening and extraction phase (Khangura et al., 2012).

### 1.2.5.1 Narrative synthesis

When heterogeneity is too high between studies within a systematic, rapid, scoping, or mapping review, or when a particular topic is too complex with poorly understood interactions between findings, a statistical meta-analysis may be unachievable. Within these contexts, narrative synthesis can be conducted by researchers in order to provide a thematic framework within which the data is structured and discussed by the author (Lisy & Porritt, 2016). Although sometimes criticised due to a lack of transparency, narrative synthesis is widely recognised as a legitimate form of evidence synthesis (Siddaway et al., 2019). The process of narrative synthesis is not clearly defined within the literature and there is no universally accepted method of conducting it (Rodgers et al., 2009). However, within the rapid review conducted in this thesis, the steps taken within the narrative synthesis generally adhere to those proposed by Popay et al. (2006). These steps include; 1) developing a relevant theoretical framework and conducting a preliminary synthesis; 2) tabulating the data in order to establish groupings or clusters of studies/findings; 3) exploring relationships and patterns between and within these clusters of studies; 4) assessing the robustness of the synthesis. Within the current thesis, narrative synthesis was utilised in order to gain a detailed and structured understanding of the content, delivery, and structural features of gambling marketing/advertising. This method proved to be an applicable and suitable form of evidence synthesis within this context as the rapid review primarily focused upon studies that used content analyses and thematic analyses in relation to gambling advertising (see *Chapter 2 study 1*).

## 1.2.6 Methodology summary

The current thesis has utilised a mixed-methods approach with the aim of establishing a holistic and multifaceted understanding of the bespoke-risk environment (interaction between gambling advertising, product features, and demographic factors). This was achieved by conducting a rapid review that utilised narrative synthesis (study 1), two qualitative investigations of perceptions towards

gambling advertising (study 2) and product features/harm (study 3) using thematic analysis, and a quantitative study that incorporated cluster analysis in order to establish profiles of sports bettors based upon their self-reported tilting occurrence and awareness. All of these studies were conducted via a 'distanced' or internet-based format due to COVID-19-related restrictions imposed upon physical participation and data collection.

## 1.3 Literature Review

### 1.3.1 Harmful gambling – A brief review of the literature

### 1.3.1.1 Outline of Gambling Disorder

Although Gambling Disorder (GD) is not inherently central to the scope or aims of the current thesis, it appears rational to first review the literature in relation to the prevalence, epidemiology, screening, and treatment of GD as to provide some preliminary context relating to harmful gambling. GD is characterised within the fifth edition of the Diagnostic Statistical Manual (DSM-5) by recurrent and persistent maladaptive gambling behaviour that leads to distress or impairment that reaches clinically significant levels (American Psychiatric Association, 2013). It is important to note that GD encompasses gambling-related harm but those experiencing gambling-related harm may not necessarily meet the criteria of GD. These criteria include; 1) relying on others to provide money as a result of financial issues caused by gambling, 2) repeated unsuccessful attempts to control or abstain from gambling, 3) becoming irritable when trying to abstain from gambling (withdrawal), 4) a preoccupation with gambling, 5) increasing stakes to achieve desired levels of excitement (increased tolerance), 6) chasing losses, 7) gambling when feeling distressed, 8) lying about or concealing ones' involvement in gambling, 9) jeopardising or losing relationships, careers, or educational opportunities due to gambling (American Psychiatric Association, 2013).

GD was reclassified within the DSM-5 as an addictive behavioural disorder rather than the impulse-control disorder classification it received within the previous edition of the DSM (DSM-4). This reclassification primarily relates to GD sharing more characteristics with substance use disorders (e.g. tolerance and withdrawal) in comparison to other impulse control disorders such as Obsessive Compulsive Disorder (Leckman et al., 1997). It is not uncommon for individuals to experience gambling-related harm where some of the aforementioned criteria are met. However, four of the nine potential criteria points must be met within a 12-month period to constitute a diagnosis of GD.

### 1.3.1.2 Prevalence of Gambling Disorder

Within the UK population of approximately 50 million, the Gambling Commission has conservatively estimated a current GD prevalence rate of 0.4% (Gambling Commission, 2021). Indeed, literature from the previous decade had suggested a projected increase in GD due to the increasing availability of gambling alongside regulatory and cultural liberalisation (Cowlishaw & Kessler, 2016; Shaffer & Hall, 2001). However, in relation to the UK, higher rates of GD within the general population have previously been proposed by the Gambling Commission and researchers over the past decade (Gambling Commission, 2019, 2021). For example, a GD prevalence rate of 0.9% was previously proposed by Wardle et al. (2011) who utilised the British Gambling Survey in 2010. The Gambling Commission (2019) also published a report in which the UK GD prevalence rate was estimated at 0.7%. It should be noted that this apparent decrease in relation to the current GD prevalence rate (0.4%) does not necessarily indicate decreasing levels of gambling-related harm across the UK. This stipulation warrants acknowledgement as industry efforts may be directed towards a focus upon this decrease in GD prevalence as a means of perpetuating a 'decrease in harm' fallacy (see *Gambling-related harm* below). When reviewing the associated literature on the topic of decreasing GD prevalence estimations, it is necessary to also consider the recent decrease in gambling participation within the UK (Gambling Commission, 2021). This decrease in estimated GD prevalence and gambling participation may be due (in-part) to a mounting group of abstaining individuals who have a past diagnosis of GD, yet who are still susceptible to relapse and gambling-related harm (Abbott, 2020).

Our understanding of GD prevalence is further complicated by research that indicates higher prevalence rates within certain clinical or vulnerable populations in comparison to the general population. For example, Cowlishaw and Hakes (2015) proposed an estimated GD prevalence rate of approximately 4.4% amongst those who are in receipt of substance misuse-related treatment. Similarly, May-Chahal et al. (2017) estimated the prevalence rates of GD within the UK prison population and proposed a rate of 12%. In relation to children and adolescents, the Gambling Commission (2020b) estimated the rate of GD to be 1.9% amongst 11–16-year-olds in England and Scotland. In contribution to our already unclear and incomplete understanding of GD prevalence, many studies that have aimed to assess this topic within the UK have utilised screening tools and instruments (Gambling Commission, 2019, 2020b, 2021; May-Chahal et al., 2017; May-Chahal et al., 2012; Wardle et al., 2011). In some instances, the use of such tools to establish GD in large populations has been associated with inflated estimations and false-positives (see *Screening* below). Due to these issues within the literature and our lack of understanding in this area, there is a clear need for

independent, large-scale longitudinal studies with expert input that aim to assess the prevalence of GD within the UK (Bowden-Jones et al., 2022).

### 1.3.1.3 Risk-factors for Gambling Disorder

Mounting research has identified a multitude of risk-factors that form a complex network of features that may increase the likelihood of experiencing GD. This section will consider the psychological and sociodemographic risk-factors (Menchon et al., 2018; Potenza et al., 2019).

In relation to psychological risk-factors, the literature indicates that higher trait impulsivity, sensation seeking, and maladaptive decision making also increase the risk of developing GD (Menchon et al., 2018; Mestre-Bach et al., 2020). These factors have been proposed in line with the neurobiological risk-factors mentioned above (Balodis & Potenza, 2020). Research that focuses upon cognition also highlights the potential role of gambling-related cognitive distortions in both the facilitation and maintenance of GD (Billieux et al., 2012; Goodie & Fortune, 2013; Mallorquí-Bagué et al., 2019). Such distortions include (but are not limited to) illusions of control (de Stadelhofen et al., 2009) and the gamblers fallacy (Clark et al., 2013). The role of these cognitive distortions have been identified in the continuation of gambling despite losses which is a primary behavioural facilitator of GD (Billieux et al., 2012).

From a sociodemographic perspective, being male, having a low educational status, being an adolescent, and belonging to Black, Asian, or minority ethnic (BAME) groups are all primary risk-factors for developing GD (Dowling et al., 2017a). There are indeed intricacies and contextual considerations in relation to these factors and they are not exhaustive. For example, women have a high likelihood of developing GD via the use of gambling modes that are not classified as strategic in nature such as FOBTs or EGMs (Potenza et al., 2001). Furthermore, with the emergence of a greater variety of personalised gambling products alongside a wider normalisation of gambling within many jurisdictions, the gender gap in relation to GD risk is likely decreasing (McCarthy et al., 2019). The literature also highlights additional (and more broad) sociodemographic risk-factors associated with GD. For example, cultural factors that relate to acculturation, gambling-related beliefs, and culturally orientated help-seeking behaviours have all been identified as risk-factors for GD (Oei et al., 2019; Okuda et al., 2016). In addition, parental influences have been discussed in relation to the development of GD. Specifically, the literature highlights the facilitating role of parental gambling (Winters,

Stinchfield, et al., 2002) and substance misuse (Hardoon et al., 2004) as significant risk-factors for GD.

### 1.3.1.4 Screening

Currently, the associated DSM-5 criteria (see *Outline of Gambling Disorder*) remain the gold standard for identifying and diagnosing GD. However, numerous screening tools have been developed and have undergone varying degrees of psychometric evaluation for this purpose. It should be acknowledged that the majority of these screening tools are not fit for purpose in measuring gambling-related harm amongst low-risk populations (Davies et al., 2022). The most widely utilised GD screening tools include the South Oaks Gambling Screen (SOGS) (Lesieur & Blume, 1987), Massachusetts Gambling Screen (MAGS) (Shaffer et al., 1994), Diagnostic Interview for Gambling Schedule (DIGS) (Winters, Specker, et al., 2002), National Opinion Research Centre DSM-IV Screen for Gambling Problems (NODS) (Gerstein et al., 1999), the Victorian Gambling Screen (VIGS) (Ben-Tovim, 2001), and the (Canadian) Problem Gambling Severity Index (PGSI) (Ferris & Wynne, 2001). Although these screening tools differ in terms of their development, conceptualisation, and definitions of maladaptive gambling, there is considerable overlap in relation to the questions that are assimilated within them. Within clinical settings, the DSM-5 criteria is almost always utilised to diagnose GD with the aforementioned screening tools primarily being utilised within research studies (Caler et al., 2016). Within the literature, only three of these screening tools have been validated against an adequate reference standard (semi-structured clinical interview) which highlights the relatively low quality of the associated literature within this area. Only the SOGS, MAGS and PGSI have been validated via this method and are suggested to be fit for purpose across large scale health systems (Otto et al., 2020).

### 1.3.1.5 Interventions

In a similar fashion to alcohol and substance misuse, treatments directed towards GD take various forms that include psychological and pharmacological intervention (Petry et al., 2017). Despite there being no drug officially approved for the treatment of GD, there are three main categories of pharmacological treatments that have been utilised and studied within this context; mood stabilisers, antidepressants and opioid antagonists such as Naltrexone (Menchon et al., 2018). The preliminary literature concerning the efficacy and practical utility of these treatments is mixed and highlights the need for further research in this area (Di Nicola et al., 2020; Lupi et al., 2014). However, these pharmacological approaches to treating GD appear to be most effective and successful when the recipient is experiencing comorbid disorders that would otherwise be treated by these drugs such as

substance misuse or Bipolar Disorder (Di Nicola et al., 2020; Kraus et al., 2020). There also exists numerous support groups such as Gamblers Anonymous and Gamcare. These groups offer counselling underpinned by peer-support and acceptance in order to encourage abstinence. There is evidence for the effectiveness of such interventions but there is a need for larger-scale studies within the literature that assess their efficacy using randomised-controlled trials (Hickman et al., 2021; Schuler et al., 2016). Psychological interventions currently appear to be the most efficacious approach (in both the short and long-term) and typically involve Motivational Interviewing and Cognitive Behavioural Therapy (CBT) (Ginley et al., 2019). However, numerous barriers exist in relation to both of these psychological interventions that highlight the need for increased access alongside preventative brief-interventions that can be delivered up-stream (Suurvali et al., 2009).

### 1.3.1.6 Gambling Disorder summary

GD is complex and is responsible for significant instances of harm on both an individual and societal level (Potenza et al., 2019). There are numerous risk factors associated with its aetiology and our understanding of the disorder and its treatment is indeed progressing but limited. Although research in this area is certainly warranted, it is necessary to also recognise that a greater portion of the UK population experiences gambling-related harm compared to just those who experience 'pathological' levels of gambling (John et al., 2020; Johnstone & Regan, 2020). This includes (but is not limited to) those who fall short of meeting the diagnostic criteria for GD alongside those who experience minor harms at a high frequency. It is important that gambling-related harm is also discussed within the current literature review to provide a wider context in relation to the multifaceted nature of the risks and negative impacts associated gambling.

### 1.3.1.7 Gambling-related harm

Within the literature (and regulatory terminology), gambling-related harm is ill-defined, and the term is often subject to discipline-specific definitions (Currie et al., 2009; Gambling Commission, 2020a; Neal et al., 2005). From a rational perspective, the term gambling-related harm may appear intuitive by implying detrimental effects and impairment. In previous years, the notion of harm being related to maladaptive, uninhibited, problematic, or disordered gambling behaviour has been implied based upon clinical or self-assessment measures (Abbott et al., 2013). However, with a lack of a detailed and specific definition that utilises explicit terminology, there is great difficulty in operationalising and measuring the impact of this concept (Delfabbro & King, 2019; Neal et al., 2005). Therefore, due to the heterogeneity in relation to its definition across the literature, it appears necessary to outline the

current authors' stance on defining gambling-related harm for the sake of clarity and to distinguish the phenomenon from the strict criteria of GD.

There have been previous attempts within the associated literature to formulate concrete definitions of gambling-related harm in order to reduce any ambiguity associated with the term (Browne et al., 2017; Browne & Rockloff, 2017; Delfabbro & King, 2019; Goyder et al., 2020; Hilbrecht et al., 2020; Rawat et al., 2018). Although these attempts differ slightly in their conceptualisation of harm alongside their specific wording, the vast majority are in agreement concerning the range or categories of harms that may be experienced. These include; personal harms (psychological or physical health), social harms (negative impacts on family, friends or relationships), legal harms, occupational harms (adverse effects upon work or education), and financial harms (Delfabbro & King, 2019). A functional definition of gambling-related harm was proposed by Langham et al. (2015) that encompasses experiences of harm across people's lives, the inter-relationships between harms and the sources of harms, and the potential interactions between gambling and other comorbidities. The authors therefore defined gambling-related harm as *'any initial or exacerbated adverse consequence due to an engagement with gambling that leads to a decrement to the health or wellbeing of an individual, family unit, community or population'* (Langham et al., 2015, pg. 4). This definition recognises that harm can be experienced by any individual at any given time rather than at a diagnostic point exclusively. Similarly, the definition considers the wider impacts of gambling-related harm in relation to the individual all the way up to a population level in line with a public-health perspective.

Within the current thesis, gambling-related harm is recognised as a construct that is experienced by those who meet the clinical criteria for GD but also by a wider population who do not meet this criteria – including individuals, significant others, wider communities and populations in line with the definition provided by Langham et al. (2015). As previously discussed, this thesis adheres to the current paradigm shift that moves away from a dichotomous perspective involving pathological and non-pathological gamblers. Rather, the work presented in the following chapters has been conducted in recognition of harms that are experienced across the entire harm-spectrum of gambling. There has been some disagreement within the literature relating to this concept in previous years (Browne & Rockloff, 2017; Delfabbro & King, 2017). Therefore, it is necessary to review the literature in relation to both the harm spectrum of gambling as well as the associated 'prevention paradox' of gambling.

### 1.3.1.8 The harm spectrum of gambling and the Prevention Paradox

In contrast to a focus upon prevalence rates of GD when investigating the concept of gambling-related harms, the emergent literature has emphasised the notion that a larger proportion of gambling-related harm is experienced within the earlier sections of the spectrum or continuum of harm (Browne et al., 2021; Browne & Rockloff, 2018; Langham et al., 2015). This phenomenon was originally highlighted in relation to cardiovascular disease and is known as the 'prevention paradox' (Rose, 1981) within the literature. A current consensus does not exist in relation to the application of the prevention paradox to gambling-related harms. The associated literature is mixed and there is considerable debate concerning the methodologies utilised in providing evidence of the prevention paradox in a gambling context.

In relation to the UK, Canale et al. (2016) utilised data derived from participants ($n = 7756$) of the British Gambling Prevalence Survey (2010) that assessed gambling harm via adapted versions of the DSM-IV pathological gambling criteria and the PGSI. The authors indicated that gambling-related harms were reported by the majority of low-moderate risk gamblers and were not limited to 'problem gamblers' exclusively. The low-moderate risk group of gamblers within this study ($n = 567$) represented a much larger proportion of the sample compared to those categorised as 'problem gamblers' ($n = 57$) by the PGSI. This study provided preliminary evidence for the prevention paradox in relation to gambling but some limitations in methodology hinder the reliability and validity of the findings. For example, Delfabbro and King (2017) provided critique of the study conducted by Canale et al. (2016) alongside disagreeing with the application of the prevention paradox in gambling by highlighting the use of an adapted form of the PGSI that assigned more individuals to the low-risk category compared to the moderate-risk category. Delfabbro and King (2017) suggested that this would likely increase the apparent relative contribution of these categories. Furthermore, the use of the DSM-IV criteria and the PGSI was criticised for not adequately addressing the full range of gambling-related harms (although this would likely lead to an *underestimation* of harm). Nonetheless, Delfabbro and King (2017) propose that the prevention paradox will always be supported if the threshold of measuring harm is set to a relatively low-level.

Browne and Rockloff (2018) addressed some of the methodological limitations of Canale et al. (2016) by conducting an online survey study ($n = 1524$) that incorporated a large and diverse measure of 72 gambling-related harms. Participants were categorised as either no-risk, low-risk, moderate-risk, or problem gamblers. In support of the prevention paradox, a significantly higher number of harms were experienced within the low and moderate-risk categories (combined) compared to the problem

gamblers category. The authors indicated that these harms were concentrated within the low and moderate risk group and included harms such as loss of occupation, needing to sell personal items, and needing temporary accommodation. This finding underpins the conceptual framework of the current thesis although some considerations must be made when applying this framework. For example, Delfabbro and King (2017) propose a primary criticism of conceptualising gambling-related as a 'liquid' concept that sits on a wider continuum of harm. Delfabbro and King (2017) disagree that it is possible to compare mild adverse effects of a condition with more severe effects, proposing that these states are qualitatively distinct and are therefore incomparable. As highlighted by Browne and Rockloff (2017), the World Health Organisation operates on the fundamental premise that hundreds of condition-related harms are conceptualised on a continuum. It is acknowledged that some harms may have a significant impact on an individual and those around them, whilst others may be trivial and have little to no impact by comparison (Browne & Rockloff, 2017). Focusing only on the higher end of the harm spectrum is not only a restrictive approach to understanding and treating gambling-related harm, but it is an approach that does not match the research and treatment that underpins many other issues of public health such as alcohol consumption or substance misuse (Compton et al., 2009; Saha et al., 2006).

### 1.3.1.9 Theories of maladaptive or harmful gambling

There are numerous theories and models across the literature that have been conceptualised with the aim of better understanding the aetiology of maladaptive or harmful gambling as well as the facilitation of gambling-related harm. As with many areas of Psychology and health promotion that seek to theoretically identify the causal pathways to harm, there are varying perspectives that include (but are not limited to) cognitive theories, multifactorial models, and population-level models. The current section will outline and discuss some of these theories from a bottom-up approach, beginning at the individual-level and broadening in scope to the population-level.

### 1.3.1.9.1 Cognitive theories

Numerous researchers have highlighted the role of cognition within disordered or maladaptive gambling in terms of both its aetiology and maintenance (Blaszczynski & Nower, 2002; Mallorquí-Bagué et al., 2019; Mathieu et al., 2020; Toneatto & Gunaratne, 2009). Specifically, there is a focus across the literature upon erroneous, distorted, or irrational cognitions that operate as significant drivers of harmful gambling and have also been commonly reported by those categorised as maladaptive, disordered, or pathological gamblers (Bonnaire et al., 2022; Joukhador et al., 2003). There are various examples of such cognitive distortions that include:

- Primarily recalling wins rather than losses (Wagenaar, 2016).

- Illusions of control whereby gamblers believe their success probability is unjustifiably high (Langer, 1975).

- Representative heuristics such as the 'gambler's fallacy' whereby future gambling outcomes (or events) are misperceived in terms of probability due to previous outcomes (Kahneman & Tversky, 1972).

- Impaired control whereby gamblers believe that they have no control over maladaptive gambling behaviours.

- Illusory correlations whereby gamblers (mis)perceive an influential relationship between their gambling outcomes and elements not otherwise associated with gambling (Goodie & Fortune, 2013)

Overall, the role of (distorted) cognitions in relation to harmful gambling has garnered significant attention across the associated literature and is a central element that gambling-related interventions often aim to rectify (Fortune & Goodie, 2012; Mathieu et al., 2020; Toneatto & Gunaratne, 2009). There is a clear need for the empirical study within this area to continue and develop in order to keep pace with the rapid expansion of gambling advertising and associated products that may be facilitators of emergent cognitive distortions.

### 1.3.1.9.2 The Pathways Model of Pathological Gambling

This typological model developed by Blaszczynski and Nower (2002) incorporates biological, cognitive, and environmental factors that provide three aetiological pathways of problematic or pathological gambling. According to the model, these three pathways are associated with heterogenous subgroups of gamblers that include behaviourally conditioned gamblers (subgroup 1), emotionally vulnerable gamblers (subgroup 2), and antisocial-impulsivist gamblers (subgroup 3). Each of these subgroups are associated with specific gambling-related motivations, risk-factors, and resulting outcomes. It is proposed that the behaviourally conditioned subgroup will display no premorbid psychopathology and fluctuate between normative and maladaptive (excessive) gambling behaviours as a result of conditioning and cognitive distortions (see Cognitive theories mentioned above). According to the model, the emotionally vulnerable subgroup displays premorbid psychopathology (such as mood disturbances and poor problem-solving skills) where their motivations to gamble are often underpinned by efforts to alleviate negative affective states. Biological factors risk-factors are also associated with this subgroup such as dopaminergic or serotonergic imbalances. Lastly, the antisocial-impulsivist gamblers are suggested to possess the same psychological and biological

susceptibilities as the emotionally vulnerable subgroup in addition to antisocial behaviours, high impulsivity, neuropsychological disturbances such as ADHD, and substance misuse. However, in an attempt to clarify and update the pathways model, the authors removed the likely presence of ADHD and substance misuse from subgroup 3 and replaced them with the likelihood of gambling as a stress-coping mechanism (Nower et al., 2022).

Across the literature, there is supporting empirical evidence for the validity and application of the pathways model and its associated subgroups of gamblers (Allami et al., 2017; Nower et al., 2013). However, there are some inconsistencies within the literature primarily relating to the emotionally vulnerable subgroup. For example, there is an assumption that this subgroup predominantly consists of women (Blaszczynski & Nower, 2002). Numerous studies do not entirely support this claim (Devos et al., 2020; Dowd et al., 2019) and suggest that it is more applicable in relation to pathological gamblers exclusively rather than amongst samples with less severe gambling overall. Despite these inconsistencies, the pathways model is an influential framework that has been a significant driver of insightful clinical research surrounding the heterogeneity of gambling populations and the aetiology of pathological gambling (Kurilla, 2021).

### 1.3.1.9.4 The Total Consumption Model

From a societal perspective, The Total Consumption Model (TCM) proposed by Ledermann (1956) can be appropriately adapted from the alcohol-related literature to offer a broader understanding of the potential risks associated with a shift from low/moderate-risk gambling into maladaptive or disordered gambling (Lund, 2008). Alcohol related research has consistently demonstrated the positive relationship between the mean alcohol consumption of the wider population and the respective quantity of alcohol dependent or excessive drinkers within that society (Rossow & Norström, 2013). Given that an increase in gambling accessibility has been reported to positively correlate with an increase in participation on a public-level (Rossow, 2019); the model assumes a corresponding increase in disordered or maladaptive gambling amongst consumers across the wider population. Specifically, as the frequency of gambling increases amongst individuals across the continuum of consumption, those who fall short of being classified as 'disordered gamblers' will be more likely to shift into the ranges of this classification. Across the literature, there is empirical support for the validity of the TCM for gambling where a positive correlation between the population gambling mean and presence of disordered (or maladaptive) gambling has been identified (Abbott, 2006; Lund, 2008; Markham et al., 2017; Rossow, 2019). Therefore, although the prohibition of gambling has been discouraged (Weinberg, 2005), it has been suggested that the TCM supports the need for broad

interventions that reduce the gambling frequency at the population level in order to reduce gambling-related harm overall (Rossow, 2019).

### 1.3.2 Gambling advertising – A brief review of the literature

### 1.3.2.1 The content and features of gambling advertising

The literature surrounding the content and features of gambling advertising generally aims to interpret what gambling operators want the audience to perceive. This process is typically elucidated via qualitative methods such as content or thematic analysis in an attempt to highlight reoccurring topics and noticeable themes within such advertisements (Deans et al., 2016; Lemarié & Chebat, 2015). Within the associated literature, it has been suggested that a common narrative utilised within gambling advertising relates to the positive framing of gambling as an activity where bettors are almost exclusively shown to be winning. This positive framing is not localised to one jurisdiction as studies from the UK (Lopez-Gonzalez, Guerrero-Solé, & Griffiths, 2018), Canada (Lemarié & Chebat, 2015), and Australia (Deans et al., 2016) highlight this advertising content strategy. Similarly, this positive framing of gambling within marketing strategies and advertising has also been utilised aesthetically via the use of bright and attractive colours (Abarbanel et al., 2017; Johns et al., 2017).

In relation to sports betting advertising specifically, the associated literature highlights the positive framing of this gambling mode via the incorporation of themes such as peer bonding, male comradery, sports fan loyalty, and success (Deans et al., 2016; Lopez-Gonzalez, Estévez, Jiménez-Murcia, et al., 2018; Lopez-Gonzalez, Guerrero-Solé, Estévez, et al., 2018). These positive themes are more often utilised within advertisements that are masculinised, arguably due to males being the target demographic of sports betting operators (Lopez-Gonzalez, Guerrero-Solé, & Griffiths, 2018). Conversely, there is also evidence within the literature of positively framed 'feminine' or female-orientated content within gambling advertisements. For example, the promotional content of UK bingo websites has been highlighted for utilising 'feminine' colour schemes alongside the use of themes that relate to fun, reassurance, and community (Stead et al., 2016).

Within gambling advertising, financially incentive content has also been emphasized throughout the literature. This content relates to promotional deals, bonuses and inducements that are disseminated for the purpose of encouraging engagement with a specific gambling brand. Numerous studies have highlighted the variability and versatility of financially incentive content where 15 different types of offers have been classified (Hing, Sproston, et al., 2017). This type of content has been identified

within the literature as being disseminated via text-messaging, emails, social media, and television (Håkansson & Widinghoff, 2019; Rawat et al., 2020; Thomas et al., 2015). In general, positively framing gambling and attempting to encourage engagement (via inducements) appear to be the main categories of content incorporated into gambling advertising. However, to date, no researchers have attempted to produce a systematic and detailed taxonomy of gambling advertising content, features and delivery methods. Therefore, gambling advertising content is investigated and discussed in greater detail within the subsequent sections of the current thesis (*see Chapter 2, Study 1*).

### 1.3.2.2 Perceptions towards gambling advertising

Previous studies have aimed to assess the self-reported perceptions of individuals towards gambling advertising often as a means of gaging the attitudinal reception of such advertisements in relation to their reported impacts. As a whole, the literature in this area is culturally homogenous with the majority of studies being conducted in Australia (Abarbanel et al., 2017; Deans et al., 2017; Gordon & Chapman, 2014; Hing, Cherney, et al., 2014; Hing et al., 2015; Hing, Russell, et al., 2017; Lamont et al., 2016). These Australian studies highlight various perceptions from a range of audiences. For example, Hing, Cherney, et al. (2014) indicated that 'problem gamblers' were sometimes concerned about free-bets or financial incentives to gamble that were disseminated to them via email or through mobile phone notifications. Such promotions were deemed detrimental by individuals who were attempting to better control their gambling behaviours (Hing, Cherney, et al., 2014). However, within the Australian literature, 'problem gamblers' who are not aiming to reduce their gambling frequency generally appear to be more approving of gambling advertising compared to casual bettors (Hing et al., 2015). In relation to social casino advertising in Australia, it has been suggested that young people are particularly approving of such promotions yet they may misinterpret the persuasive aspects of the odds-related information portrayed within them (Pitt et al., 2017b).

Despite instances of approval across some studies, much of the Australian literature in this area indicates that both adults and young people are generally quite critical of the pervasive and misleading nature of gambling advertising (Pitt et al., 2016; S. L. Thomas et al., 2018; Thomas et al., 2012). These sentiments are also generally reflected across Finnish (Salonen et al., 2018) and UK studies (Djohari et al., 2019) although there is a considerable paucity of conducted research outside of Australia. In relation to the UK, this paucity is surprising given the high gambling advertising prevalence and large annual industry-advertising spends in this jurisdiction (Gambling Commission, 2018b). Research regarding public perceptions towards gambling advertising offers considerable insight that is indeed

warranted. As outlined within the previous subsection, content analyses of gambling advertisements aim to elucidate what the sender (the industry) aims for the audience to perceive. Whereas directly investigating audience perceptions of gambling advertising can often be more accurate in this context. Several methods can be utilised to achieve this goal such as interviews (Hing, Cherney, et al., 2014), focus groups (Korn et al., 2005), and survey studies (Nyemcsok et al., 2018). Gaining such insight via these methods can help inform more appropriate regulation of gambling advertisements that will help ensure their ethical design and encourage a desaturation of such advertisements across the many forms of media through which they are typical presented. Although samples of potentially vulnerable audiences have been utilised for this purpose in Australia, they primarily involve either 'adults' or 'young people'. There appears to be a paucity of literature on this topic in relation to 'young adults'; a population who possess many of the demographic and cognitive vulnerabilities of 'young people' whilst being of legal age to actually engage with the gambling environment. Therefore, gambling advertising perceptions amongst this population are investigated and discussed in greater detail within the subsequent sections of the current thesis (see *Chapter 2, Study 2*). As previously stated, perceptions of gambling advertising are particularly useful when coupled with findings regarding the reported impacts of such advertising.

### 1.3.2.3 Gambling advertising effect on gambling behaviour

The literature surrounding the effect or impact of gambling advertising on gambling behaviours is more complex and less clear in comparison to the literature surrounding the content of and perceptions towards such advertising. The reason for this complexity and lack of clarity relates to the subjective and ubiquitous nature of advertising, difficulties in establishing causation, and specific cognitive biases within studies that incorporate self-reported effects (Bouguettaya et al., 2020). Despite these difficulties, it is generally accepted that the key purpose of gambling advertising is to encourage gambling behaviours amongst consumers (Binde, 2014; Torrance et al., 2021). Within the literature, numerous studies have employed a cross-sectional approach to investigate the relationship between gambling advertising and gambling behaviours via self-report measures (Alhabash et al., 2016; Derevensky et al., 2010; Hanss et al., 2015; Hing et al., 2015; Lee et al., 2008; Parrado-González & León-Jariego, 2020; Roderique-Davies et al., 2020; Yazdi & Katzian, 2017). Other studies have adopted experimental designs that incorporated more naturalistic methods to investigate the relationship between gambling advertising and gambling behaviours (Holtgraves, 2009; Lund, 2009). All of the aforementioned studies suggest a statistically significant link between gambling advertising and the gambling behaviours of adults and adolescents indicating a positive relationship between these

factors overall. In other words, although the effect sizes across these studies vary, they suggest that increased exposure to gambling advertising leads to increased gambling behaviours.

This positive relationship between gambling advertising exposure and gambling behaviours/gambling frequency has also been demonstrated within a recently conducted systematic review and a meta-analysis of the associated literature (Bouguettaya et al., 2020; Newall, Moodie, et al., 2019). These studies indicate that the complexity and lack of clarity within the literature mentioned above also relates to the lack of methodological rigor within the associated studies alongside a lack of longitudinal and experimental research. Furthermore, gambling advertising is often marketed towards populations in which gambling behaviours are considerably higher (e.g. young men) compared to other populations (e.g. young women). The potentially biased sample selection within the aforementioned studies may suggest that reverse-causation could be hindering the results (Bouguettaya et al., 2020). However, the pattern of results in which a dose-response relationship has been suggested between gambling advertising and increased gambling behaviours is consistent with the results of research that focuses upon tobacco and alcohol advertising (Anderson et al., 2009; Lovato et al., 2011). Although these results are insightful, it is also useful to discuss the psychological mechanisms that underpin advertising effect.

### 1.3.2.4 Mechanisms associated with gambling advertising effect

In relation to gambling advertising (and the advertisement of other potentially addictive products) there are numerous mechanisms that offer insight into the associated effects and impacts. One of the key mechanisms utilised across the literature in relation to advertising effect involves the concept of classical conditioning (Smith et al., 1998; Stuart et al., 1987). From this perspective, the advertising content and narratives that have been outlined within the empirical literature (Torrance et al., 2021) may operate as a conditioned stimulus that produces the conditioned response of urges to gamble. This classical conditioning effect can also be explained (in-part) by the way in which gambling advertising generally aims to facilitate positive associations towards gambling amongst consumers (Abarbanel et al., 2017). For example, many gambling advertisements utilise celebrity endorsement in order to juxtapose positive emotions held in relation to certain celebrities with the gambling brand. Over time and after numerous exposures, the gambling brand may operate as a neutral stimulus that subsequently produces the positive emotions held in relation to the celebrity (Ford, 2018; Lamont et al., 2016). This process may be strengthened via the repeated exposure of such advertisements that often undergo cosmetic alteration in order to avoid advertising wear-out. It is therefore suggested that there are numerous classical conditioning mechanisms at play in relation to gambling advertising. These

mechanisms include the promotion of gambling as a conditioned stimulus, urges to gamble as a conditioned response, and positive associations made about gambling via the way it is generally presented to consumers within such advertisements.

### 1.3.2.4.1 Cue-induced craving

The concept of craving has been subject to longstanding debates regarding its definition and classification (Anton, 1999; Cornil et al., 2018; Rankin et al., 1979; Vuković et al., 2008). Craving has often been used interchangeably with the term 'urge' within the addiction literature (Tiffany, 1992). It is clear that both of these terms are multidimensional; often being used to describe stable and fluctuating states, physiological and psychological responses, alongside varying degrees of dependence symptomology that have an unclear relationship with withdrawal and relapse (Anton, 1999; Tiffany, 1992). Given that there is no academic consensus regarding the use of the term craving (or urge), it appears rational to outline the current author's contextual definition within this subsection for the sake of clarity and consistency. Therefore, within this context, craving is defined in line with the definition offered by Raylu and Oei (2004b); '*a motivation to seek out a particular object or feeling, involving a need, want, or desire to gamble*'.

There are various factors that influence craving such as mood states, abstinence (from addictive substances/behaviours) and cues. Focusing upon the latter, the empirical literature indicates that a significant determinant of drug use or participation in addictive behaviours within the natural environment are the subjective cravings elicited by related stimuli or 'exteroceptive cues' (Roderique-Davies, 2008). Cue-exposure research has consistently demonstrated the cue-induced craving effect of numerous drug and alcohol related stimuli (Garavan et al., 2000; Schacht et al., 2013; Yalachkov et al., 2012). Overall, this process can be explained via the classical conditioning effect mentioned in the previous subsection with an exclusive focus upon the conditioned response of cravings. Recent research has indicated that this effect is observable in relation to subjective self-reports of craving amongst gamblers who are exposed to gambling advertising (Roderique-Davies et al., 2020). Similarly, a recently conducted systematic review of neural-cue reactivity in response to gambling advertising has highlighted that such advertisements are associated with the activation of brain areas associated with reward (accumbens nucleus), memory (hippocampus), and executive function often leading to gambling-related cravings (García-Castro et al., 2022).

### 1.3.2.4.2 Elaborated intrusion-theory of desire

As an extension of the above, the elaborated intrusion-theory of desire (EIT) offers a theoretical explanation of cravings by proposing that this state is underpinned by high-level cognitive processes (or mental elaborations) (Kavanagh et al., 2005). According to EIT, craving is the result of cognitively elaborating upon the potential positive outcomes (e.g. pleasure) of engaging with a particular behaviour or consuming a specific substance via mental imageries (e.g. imagining the joy of winning a bet). This elaboration is suggested to consume ones' attentional focus as it is initially pleasurable. However, if the craving (or desire) cannot be satisfied then the dominating elaboration becomes unpleasant as the conflict between a lack of the desired behaviour/substance and the goal of engaging with the behaviour/consuming the substance becomes more noticeable. When one cannot physically satisfy this conflict, they may experience worsening mood states that are amplified by further mental imageries via a downward 'cognitive spiral'. Eventually, this cognitive spiral must be broken by either seeking out the substance/behaviour or cognitively distracting oneself (Kavanagh et al., 2005). According to EIT, there are numerous factors that influence the instigation of the initial cognitive elaboration; anticipatory responses, intrusive thoughts, and external cues. Focusing upon external cues, gambling advertising has been highlighted as a primary factor within this domain given its pervasive and persuasive nature (Cornil et al., 2018). Therefore, EIT proposes that gambling advertisements may encourage consumers to cognitively elaborate upon the positive aspects and outcomes associated with gambling. This elaboration may continue until consumers engage with gambling behaviours to satisfy the unpleasant nature of the downward cognitive spiral associated with gambling craving.

### 1.3.2.4.3 The third-person effect

In relation to measuring advertising effect, numerous studies utilise self-report in order to gain a subjective understanding of specific gambling marketing strategies. However, there are numerous barriers, biases, and issues of validity when such methods are employed. One of the primary difficulties within this area relates to the 'third-person effect' (Davison, 1983). In essence, this effect involves individuals perceiving themselves to be more protected against media or advertising messages compared to others. According to Davison (1983), the third-person effect is underpinned by two main components; 1) perception (how individuals perceive their protection against media messages); 2) behaviour (as a reaction to their perception, the rectifying actions individuals take). There is supporting evidence for the third-person effect

amongst consumers in relation to pornographic (Lo & Wei, 2002), political (Meirick, 2004), and other controversial forms of messaging and content (such as gambling advertising) (Torrance et al., 2020). There are various psychological processes that are suggested to underpin and facilitate the third-person effect. Namely, ego-involvement (Perloff, 1989), social comparison (Atwood, 1994), and optimistic bias (Gunther & Mundy, 1993). Therefore, although there are numerous theoretical foundations that have been proposed to better understand the effects of gambling advertising, the third-person effect may hinder this understanding if self-report is the only method utilised.

### 1.3.2.5 Gambling advertising summary

In summary of this section, the empirical literature indicates that gambling advertising content is underpinned by two main advertising strategies; 1) portraying gambling (or the gambling brand) positively; 2) incorporating financial incentives within gambling advertising in order to engage new and existing consumers (Hing, Sproston, et al., 2017; S. L. Thomas et al., 2018; Thomas et al., 2015). However, more research is warranted in order to better understand how such advertising strategies have expanded and diversified. The perceptions towards such advertising varies depending on the demographic cohort studied. However, critical perceptions towards gambling advertising are common where consumers often express that it is pervasive and misleading (Newall, Moodie, et al., 2019). Most of this research has been conducted in Australia which highlights the need for UK-based (and other jurisdictions) perceptions towards gambling marketing strategies. The literature associated with gambling advertising effects is complicated and somewhat unclear given the unconscious nature of advertising impact and the associated difficulties in measurement (Bouguettaya et al., 2020). However, there appears to be reliable and consistent evidence to suggest a dose-response effect where a higher exposure to gambling advertising leads to a higher engagement in gambling behaviours; particularly amongst those are experiencing maladaptive or disordered gambling (Bouguettaya et al., 2020). Numerous theories exist that offer insightful explanations for gambling advertising effect such as classical conditioning, cue-induced craving, and EIT (Cornil et al., 2018; Roderique-Davies et al., 2020). However, researching the impacts of gambling advertising via these theoretical pathways may be hindered be particular biases associated with self-report methodologies. Namely, the third-person effect where consumers may overestimate the protection they possess in response to gambling advertising messages compared to other consumers (Guerrero-Solé et al., 2017).

### 1.3.3 Product features and structural characteristics – a brief review of the literature

Within the current thesis, the terms 'product features' and 'structural characteristics' are used interchangeably to denote the inherent attributes and elements that a particular gambling product or gambling mode are comprised of. Overall, it has been argued that alongside the personal susceptibilities of the individual, the specific product features that are associated with the particular gambling mode(s) that consumers engage with represent a very important factor when considering the facilitation of gambling-related harm (Blaszczynski et al., 2005; Delfabbro & Parke, 2021b; Leino et al., 2015; Philip Newall, Alex MT Russell, et al., 2021; Rehbein et al., 2021). This reasoning has underpinned academic and political efforts to better regulate and more ethically design specific gambling product features for the sake of harm-reduction (Gainsbury & Blaszczynski, 2020; Newall, 2022a; Siu et al., 2021). Similarly, it is the opinion of the current author that gambling products are not immutable and their appropriate (re)design should be underpinned by clear and rigorous psychological research. However, as discussed within the introduction to this thesis (see *Transformation of gambling products*), the product features and structural characteristics of gambling rapidly evolve and transubstantiate. Therefore, in a similar fashion to the study of tobacco and alcohol product design and the related harms, there is a need for the empirical focus upon gambling product features to continue in step with the ongoing transformation (and emergence) of gambling modes (Pham et al., 2018; Wayne & Connolly, 2002).

Three primary gambling product features and structural characteristics are discussed within this section alongside the related empirical literature that highlights the potential gambling-related harm associated with such features. These include; 1) aesthetic and auditory elements); 2) speed of play and outcome frequency; 3) the incorporation of near miss events.

### 1.3.3.1 Aesthetic and auditory elements

The aesthetic elements of gambling products involve factors such as lighting and colour schemes whilst auditory elements relate to sound effects and music utilised within the games. In relation to the combination of these aesthetic and auditory elements (the aura), Griffiths (1990) conducted a qualitative interview study involving a sample of 50 adolescent fruit machine gamblers. The results indicated that 30% of the participants reported the machines' aura being one of the most attractive elements. It was also found that nine of the participants met DSM-III-R criteria for pathological gambling. These nine participants were attracted to the aura of fruit machines to a significantly higher degree compared to non-pathological gamblers within the sample.

In relation to online roulette, Spenwyn et al. (2010) conducted an experimental study and investigated the speed of bets placed depending on participants being allocated to one of four conditions. These included 1) slow tempo music under red light; 2) slow tempo music under normal light; 3) fast tempo music under red light; 4) fast tempo music under normal light. The findings indicated that the condition that gambled whilst listening to fast tempo music under red light resulted in significantly faster gambling compared to all other conditions. There also appears to be supporting evidence in relation to the colour red being perceived as more exciting and stimulating compared to other colours amongst consumers in relation to retail purchasing (Bellizzi & Hite, 1992) and general attention (Yoto et al., 2007). This is also true for faster tempo music in retail settings (Caldwell & Hibbert, 1999; Milliman, 1986). Alongside music and colour, screen brightness also appears to have an effect upon gambling behaviours. Delfabbro et al. (2005) investigated screen brightness in relation to EGMs and indicated that a brighter screen was more likely to encourage a higher number of games being played alongside an increased time spent gambling compared to lower levels of brightness.

Event-related sound effects within digitised forms of gambling have also been highlighted to perpetuate gambling sessions when the particular sound is associated with a win (Griffiths & Parke, 2005; Parke & Griffiths, 2006). It has been suggested that such sound effects influence the salience and memorable nature of wins whilst operating as reinforcers given that losses are usually accompanied by an antagonising or unpleasant sound effect (Parke & Griffiths, 2006). In summary, specific sound effects, colours and music are now commonly utilised across numerous forms of gambling given that operators can tailor products in order to make them more engrossing, enticing, and arousing via these aesthetic and auditory elements (Armstrong et al., 2017).

**1.3.3.2 Speed of play and outcome frequency**
Within the literature, speed of play or outcome frequency remain the structural characteristics that have garnered the most academic attention over the previous two decades. The concept of speed of play is intrinsically connected to the concept of outcome frequency as they relate to the time interval between 'events' within a given gambling mode alongside the number of these events respectively (Auer & Griffiths, 2013). For example, the outcome frequency and speed of play of an FOBT or EGM that spins 5 times per minute is 1 outcome per 12 seconds. Several experimental studies have been conducted that investigate the effects of speed of play or outcome frequency; primarily in relation to FOBTs, EGMs, and video lottery terminals (VLTs). Several experimental studies have highlighted

that games with faster speeds of play lead to more games being played overall in comparison to games with a slower speed of play. This was demonstrated by Delfabbro et al. (2005) who utilised simulated EGMs amongst Australian gamblers ($n = 24$) in a laboratory setting alongside Ladouceur and Sevigny (2006) who utilised simulated VLTs amongst regular and disordered Canadian gamblers ($n = 43$). These results however, are perhaps to be expected given that faster speeds of play provide more opportunities to place bets within a specific time period in comparison to slower speeds of play.

Additional findings have been produced in which faster speeds of play or higher outcome frequency within FOBTs, EGMs, or VLTs have resulted in higher levels of self-reported arousal, excitement, and enjoyment; particularly amongst disordered gamblers (Blaszczynski et al., 2005; Linnet et al., 2010; Loba et al., 2001). In relation to the potential facilitation of gambling-related harm, the literature that surrounds the impact of speed of play and outcome frequency upon maladaptive gambling behaviours is particularly insightful. For example, in utilising a sample of 60 VLT players (28 of whom were disordered gamblers), Loba et al. (2001) indicated that when using commercially available VLT machines, disordered gamblers found it harder to stop gambling (via a stop button) during faster speeds of play in comparison to 'non-disordered' gamblers. This finding was also observable in a similar study conducted by Linnet et al. (2010) who utilised a sample of 15 disordered and 15 'non-disordered' gamblers in a laboratory setting whilst also using commercially available VLTs. Correspondingly, Mentzoni et al. (2012) highlighted how disordered gamblers significantly increased their bet-size when playing simulated slot games that had a higher outcome frequency compared to slot games that had a lower outcome frequency. It should be acknowledged that numerous studies have demonstrated little to no differences between varying speeds of play in relation to time spent gambling and number of bets placed (Ladouceur & Sevigny, 2006; Mentzoni et al., 2012; Sharpe et al., 2005). However, one potential reason for these results could relate to inconsistencies in the tempo of speed of play manipulated across the studies (e.g. 'fast' conditions involving 5 second or 3 second speeds of play across various studies).

There are complementary findings from a qualitative study that investigated the interactions between the structural characteristics of EGMs and gamblers that offer additional insight in relation to this topic (Thompson et al., 2009). The participants within this study expressed that higher speeds of play were metaphorically comparable to higher potency drugs, were a particularly favoured feature, and were responsible for driving further gambling behaviours. However, there is a general paucity of qualitative research in relation to speeds of play and outcome frequency which warrants further research in this area; especially in relation to other modes of gambling such as sports betting (*see Chapter 3, Study 3*).

Outside of EGMs, FOBTs, and VLTs, roulette-based research has indicated that limits placed upon speeds of play reduce gambling expenditure. For example, P. W. Newall, L. Weiss-Cohen, H. Singmann, W. P. Boyce, et al. (2022) utilised a commercially available online roulette game amongst 1,002 gamblers. Participants were either allocated to a 'normal speed' or a 'reduced speed' (1 spin per minute) condition where they could bet with a £4 endowment set to a £2 per spin limit. The amount gambled amongst the participants within the reduced speed condition was significantly lower than those made by those within the normal speed condition. In relation to sports betting, there has been an empirical focus upon how this form of gambling is evolving into a more rapid and continuous mode due to the emergence of in-play, micro, and custom bets (Parke & Parke, 2019; Russell, Hing, Browne, et al., 2019). However, there is currently a general paucity of research in relation to sports betting and speed of play within the empirical literature although this is likely to increase over the next few years. Overall, the literature indicates that faster speeds of play increase expenditure, are deemed more enjoyable and exciting by gamblers across the entire harm spectrum, and may cause particular difficulties for disordered gamblers.

### 1.3.3.3 The incorporation of 'near miss' events

It is generally accepted across the psychological literature that successful outcomes or 'wins' operate as the primary reinforcer for continued gambling behaviours (Ramnerö et al., 2019). However, some gambling modes incorporate features or events that utilise potential reinforcers without 'wins' being necessary (Parke & Griffiths, 2004). The prototypical example of such a feature is known as the 'near miss' (or near win) (Griffiths, 1991). Near misses involve outcomes that appear as though the gambler was *close* to winning, despite other potential outcomes often being subject to the same statistical probability (Clark et al., 2009). These events can happen organically within gambling modes such as (in-person) roulette; e.g., the roulette ball falling into a slot next to the slot that was bet on. Conversely, near miss events can be algorithmically programmed into digitised modes of gambling such as EGMs or slot machines alongside being implemented within predetermined modes of gambling such as scratch cards (Barton et al., 2017; Stange, Brown, et al., 2017; Stange, Graydon, et al., 2017; Sundali et al., 2012). For example, two identical symbols across the pay-line of a slot machine or scratch card with a third identical symbol either falling short or going beyond the pay-line (Ramnerö et al., 2019).

Within a gambling context, near miss events contradict reinforcement theory as technically, these events are losses (or non-reinforcement trials). Near miss events may actually operate in an opposite

way as they are actually more likely to decrease the rate of extinction. For example, Côté et al. (2003) demonstrated that video lottery players who are exposed to near miss events prolonged their gambling for a significantly longer amount of time compared to players who were not exposed to such events. These results have specific harm-related implications when consideration is given to FMRI studies that indicate near misses may activate brain regions that are associated with winning (rather than losing) amongst disordered gamblers (Dixon et al., 2015). Similarly, near miss events are associated with the physiological responses that are usually associated with gambling wins such as skin conductivity and increased heart rate (Dixon et al., 2011). Overall, there is mounting research to suggest that near miss events motivate continued gambling (Barton et al., 2017; Pisklak et al., 2020). Such features are likely to be purposefully implemented within gambling products as from an economic standpoint, it is less costly for gambling operators to reinforce prolonged play without foregoing financial pay-out. Preliminary research has emerged where near miss events have been considered within a sports betting context (Philip Newall et al., 2021). For example, close but unsuccessful goals in football may operate in the same way as 'close calls' in roulette. However, more research is warranted in this area as sports betting and the associated products evolve.

### 1.3.3.4 Product features and structural characteristics summary

The three primary product features outlined within this subsection have been incorporated into varying modes of gambling since their respective conception. Principally, aesthetic features, high speeds of play, and near miss events are common in relation to EGMs, casino games, and to a lesser degree scratch cards. However, emergent literature has identified the use of these features in other modes of gambling such as sports betting (Philip Newall, Alex MT Russell, et al., 2021). Based upon the empirical literature discussed, it appears rational to suggest that gambling operators utilise these product features for specific economic reasons although their implementation may also be driven by market demand. However, the primary economic underpinning to the incorporation of these features is likely the incentivisation of prolonged gambling sessions (leading to increased revenue for the industry). Significant time and resources are spent in the design of gambling products in order to ensure that customers remain engaged due to attractive colour schemes, auditory elements, engrossing speeds of play, and reinforcement without winning (e.g. near miss events). Prolonged gambling sessions and an engrossed play style have been highlighted for their facilitation of gambling related harm where more time spent increases the potential for more money lost (Marionneau et al., 2022; Oakes et al., 2020). This is also true for gambling modes with higher outcome frequency and speeds of play where the opportunity to rapidly and continuously place bets increases the overall likelihood of losing (Harris

& Griffiths, 2018). In summary, it should be acknowledged that gambling product features play a significant role in the facilitation of harm. However, these features are not immutable and there is a clear need to encourage the ethical design of such features in order to reduce the potential for gambling-related harm. There is mounting research on this topic in relation to EGMs and casino games, but further studies are warranted regarding other evolving modes of gambling such as sports betting and bingo.

### 1.3.4 Modernising Korn and Shaffer's public-health view of gambling

The seminal paper by Korn and Shaffer (1999) made an insightful contribution to our understanding of gambling-related harm by framing the issue via a public health lens.. Korn and Shaffer (1999) were among the first to propose that taking a public health perspective in relation to gambling has the potential to address all levels of harm-reduction alongside promoting the welfare of the individual. The authors highlighted the need for a conceptual continuum of gambling-related harm alongside acknowledging the biological, economic, psychological, and social determinants of such harm. In congruence with the emergent literature associated with this topic, Korn and Shaffer (1999) made intuitive comparisons between gambling and other addictive behaviours such as alcohol and cigarette consumption. These points formed the basis of the authors' proposal to address gambling as an issue of public health rather than just a potentially risky activity. Despite being published over two decades ago, calls for gambling-related harm to be considered as an issue of public health are still currently emerging (Abbott, 2020; Atherton & Beynon, 2019; Bunn et al., 2020; David, Thomas, Randle, & Daube, 2020; John et al., 2020; Livingstone & Rintoul, 2020; McGee, 2020). There has been a slow adoption of the public health perspective towards gambling since it was proposed by Korn and Shaffer (1999). This is primarily due to the governance and regulation of gambling industries often orientate finance, justice, or consumer affairs as their principal government authorities, rather than ministries relating to health (see *UK policy, regulation, and the Gambling Act of 2005*).

Most relevant to the current thesis is how the authors reframe the classic public health model of communicable diseases into an application that highlights the possible determinants of gambling-related harm. The original model focuses upon the interaction between 'agent', 'environment', and 'host' alongside outlining how a combination of these factors can produce a variety of adverse outcomes for individuals. The proposed reframed model was termed the 'Public health model of

gambling' and conceptualises the interactions between 'gambler', 'environment', and 'game' as displayed in Figure 2. The 'environment' factor of this reframed model relates to the physical gambling environment such as the configuration and placement of casinos or other gambling-related venues. The 'game' factor relates to the physical properties of the respective gambling mode although this is not outlined in detail within the model by Korn and Shaffer (1999). It should be noted that the authors focus more upon the potential vectors in which to deliver appropriate interventions within this reframed model rather than placing an emphasis upon specific interactions of gambling-harm created by these factors. The current thesis therefore proposes a reconceptualization of this model that is applicable to the complex and varied nature of the current gambling environment. This reconceptualization has been termed 'the bespoke-risk environment' of gambling by the current author and is outlined in detail below.
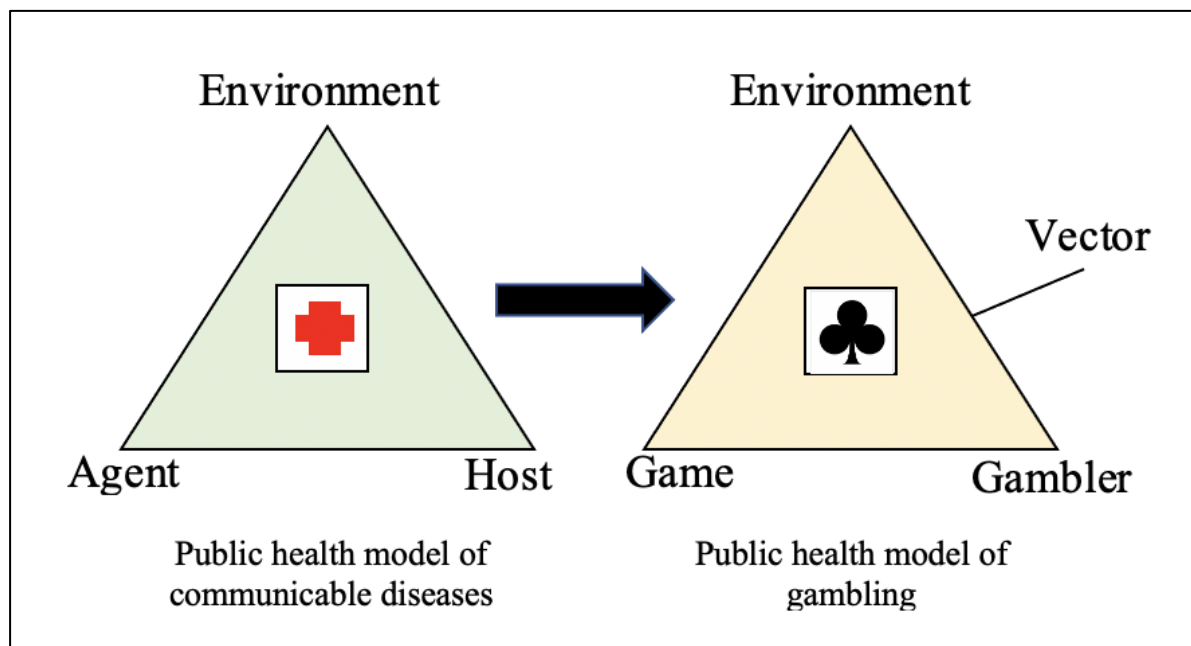


**Figure 2.** The public health model of gambling (Korn & Shaffer, 1999)

### 1.3.4.1 The bespoke-risk environment of gambling
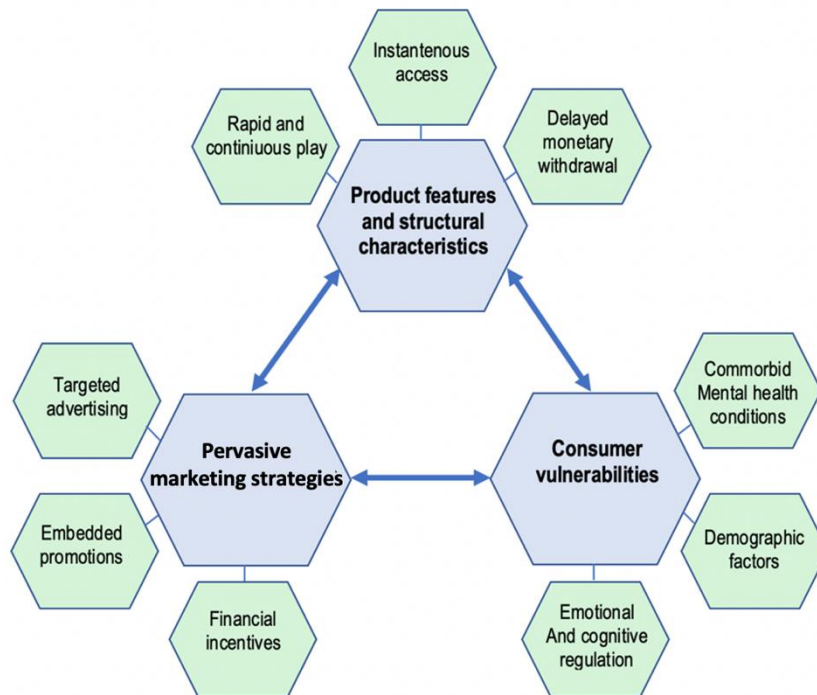


**Figure 3**. The bespoke risk environment of gambling and example components

The bespoke risk environment of gambling is a conceptual framework that involves an alignment between marketing strategies, harmful product features and the contextual vulnerabilities of the consumer, e.g., age, gender, impulsivity, affective state, or certain cognitive fallacies (see Figure 3). It is conceptualised that these factors are the key facilitators of maladaptive or harmful gambling, and an alignment between them creates unique and multifaceted risks for the consumer. Overall, the bespoke risk environment model adheres to the notion that consumer vulnerabilities are integral to the facilitation of gambling-related harm. However, it places a larger emphasis upon the corporate determinants of harm (advertising and product features) that primarily fall outside of consumers' locus of control. This emphasis aligns with the literature that recognises industry accountability and corresponds with the perspective that experiencing gambling-related harm or 'gambling irresponsibly' is not due to a failing on consumers' behalf (Livingstone & Rintoul, 2020).

As stated within the previous subsection, the public health model of gambling involves an '*environment*' factor that primarily relates to the geolocations and layouts of venues such as casinos. However, in light of the incorporation of the digital sphere into the current gambling environment (Banks & Waters, 2021), the bespoke-risk environment model of gambling replaces the 'environment' factor with '*pervasive marketing strategies*'. It is acknowledged that physical gambling venues are

still prevalent within the UK (John et al., 2020). However, the prevalence and complexity of gambling advertising and other marketing strategies (such as app/website design) have increased exponentially over the previous decade and can reach individuals at any location in comparison to brick and mortar venues (Torrance et al., 2021). This is especially pertinent given the causal sequence associated with government-imposed COVID-19 restrictions that has led to a shift towards online gambling compared to attending a physical venue (even after restrictions have been lifted) (Brodeur et al., 2021).

Similarly, the public health model of gambling involved a '*game*' factor that related generally to the properties and characteristics of gambling modes. However, within the bespoke-risk environment model, this factor has been updated and termed '*product features and structural characteristics*'. This factor is underpinned by the literature that has highlighted the specific harmful qualities and components of gambling over the previous two decades. These harmful qualities were not incorporated into the public health model of gambling or explicitly discussed within the paper (Killick & Griffiths, 2019; Korn & Shaffer, 1999; McAuliffe et al., 2021; Philip Newall, Alex MT Russell, et al., 2021; Parke & Parke, 2019; Rogers, 2020; Torrance et al., 2022; Woodhouse, 2019). Please see the previous subsection entitled '*Product features and structural characteristics – a brief review of the literature*' for further detail regarding the product features of modern gambling products.

The final factor of the '*gambler*' within the public health model of gambling remains largely the same within the bespoke-risk environment model. Although within this modernised model, more specificity has been included to encompass consumer vulnerabilities such as demographic factors and cognitive distortions. Furthermore, within the modernised 'bespoke-risk environment' model, this factor is now underpinned by the emergent empirical literature into the risk-factors associated with harmful gambling that has been conducted since the original model was first published in 1999 (see *Risk-factors of Gambling Disorder* and *Gambling-related harm*).

In relation to interactions between the factors of the bespoke-risk environment model, findings from the previous literature can provide insightful examples of instances of gambling-related harm. For example, a potential interaction between '*consumer vulnerabilities*' and '*product features*' has been highlighted by Billieux et al. (2012) who explored the relationship between the product feature of 'near misses' on slot machines and trait cognitions of gamblers. Near misses are characterised by unsuccessful outcomes that are close to a jackpot or successful bet (see *Product features and structural characteristics – a brief review of the literature*). Billieux et al. (2012) found that reported cognitive distortions (such as illusions of control) amongst gamblers predicted a higher desire of continued play after experiencing a near miss outcome on slot machine tasks.

An example interaction between the '*product feature*' and '*pervasive marketing strategies*' factors of the bespoke-risk environment model has been highlighted by Lopez-Gonzalez, Estévez and Griffiths (2018). The authors conducted a grounded-theory content analysis upon 102 UK sports betting advertisements and proposed that many of these pervasive advertisements aimed to align sports betting product features (such as in-play betting) with the ease of winning. It was proposed that such advertisements may encourage harmful gambling by overemphasising the advantageous effects of sports betting product features. Specifically, by facilitating an unrealistic perception that these features increase control over bets and lower bet-related risks (Lopez-Gonzalez, Estévez, & Griffiths, 2018).

Lastly, an example interaction between the '*pervasive marketing strategies*' and '*consumer vulnerability*' factors of the bespoke-risk environment has been highlighted by Roderique-Davies et al. (2020). The authors investigated the effect of embedded promotion within football (pitch-side advertisements) upon the gambling craving levels of students who studied sports-related subjects compared to students who studied non-sports related subjects. The results indicated that students who studied sports-related subjects reported significantly higher gambling craving scores when exposed to a video containing embedded gambling promotions compared to the non-sports students. These findings offer some preliminary insight into the potentially harmful interaction between pervasive gambling advertisements and consumer vulnerabilities. In this case, such vulnerabilities were sociodemographic and related to the close association the students had with sports alongside the potential perceived advantage that their sports-related knowledge would give them within the gambling environment.

Ultimately, the concept of the bespoke risk environment adheres to the theory that at-risk gamblers do not represent a homogenous group. Rather, each game-type and marketing strategy possess numerous unique harms that facilitate corresponding harmful behaviours for a wide range of consumers. It is acknowledged that certain advertising and product features will have very little effect (if any) upon some individuals, whereas others will successfully align with consumers' vulnerabilities, demographic factors and motivations potentially producing a riskier (and more harmful) gambling environment. Within the subsequent chapters of the current thesis, each study will relate directly to a specific segment of the bespoke-risk environment model with the aim of demonstrating its utility and usefulness in understanding unique instances of gambling-related harm within the modern UK gambling environment. Although some examples of the bespoke-risk environment model have been outlined above, more research in this area is warranted to highlight the unique and context-specific nature of gambling-related harm via this model.

### 1.3.5 Literature review summary

In summary, the empirical literature indicates that GD is multifaceted and is associated with a range of harms at the individual and societal level (Potenza et al., 2019). The prevalence rates associated with this disorder are unclear due to discrepancies between the methodologies adopted to investigate this issue (Cowlishaw & Kessler, 2016; Gambling Commission, 2019, 2021; Shaffer & Hall, 2001). Even more unclear is the literature surrounding the definition of gambling-related harm, whether conceptualising this construct should operate on a continuum, and the notion that more harm is experienced overall by the larger cohort of those classified as low-moderate risk compared to those who are further along the harm continuum or have a diagnosis of GD. This lack of clarity is also associated with the varied methodologies utilised in measuring and defining gambling-related harm (Browne & Rockloff, 2018; Delfabbro & King, 2017). Based upon the current review of the literature, this thesis adheres to the harm-continuum concept alongside acknowledging the prevention-paradox as s legitimate theory. In addition, the current thesis is theoretically underpinned by the 'bespoke-risk environment' model. In brief, this model operates as an updated version of the public health view on gambling originally proposed by Korn and Shaffer (1999). The bespoke risk environment model is a conceptual framework that involves an alignment between marketing strategies, harmful product features and the contextual vulnerabilities of the consumer. Considering the vast expansion, diversification, and increased complexity of modern gambling advertising and products outlined throughout the current literature review, there is a need to provide empirical evidence for this bespoke-risk environment model. It is envisaged that doing so will provide much needed insight into the interactions between the components of this model in order to highlight areas in need of effective and public health-related intervention. There are clear gaps identified within the associated literature that need to be addressed in order to provide evidence of the bespoke-risk environment model. These gaps include a lack or absence of empirical literature in relation to 1) clear and synthesised findings relating to the content, delivery, and structure of emergent gambling advertising; 2) qualitative inquiry that explores the perceptions towards gambling advertising in the UK; 3) the product preferences of UK gamblers and their awareness of harm-reduction strategies; 4) contextual instances of bespoke harm caused by consumer vulnerabilities and specific product features. Therefore, the current thesis will address these gaps within the literature alongside designing a prospective brief intervention that aims to reduce a bespoke form of gambling-related harm associated with advertising.

# 2. Chapter 2 – The bespoke risks of gambling advertising and marketing; Industry strategies and consumer perceptions
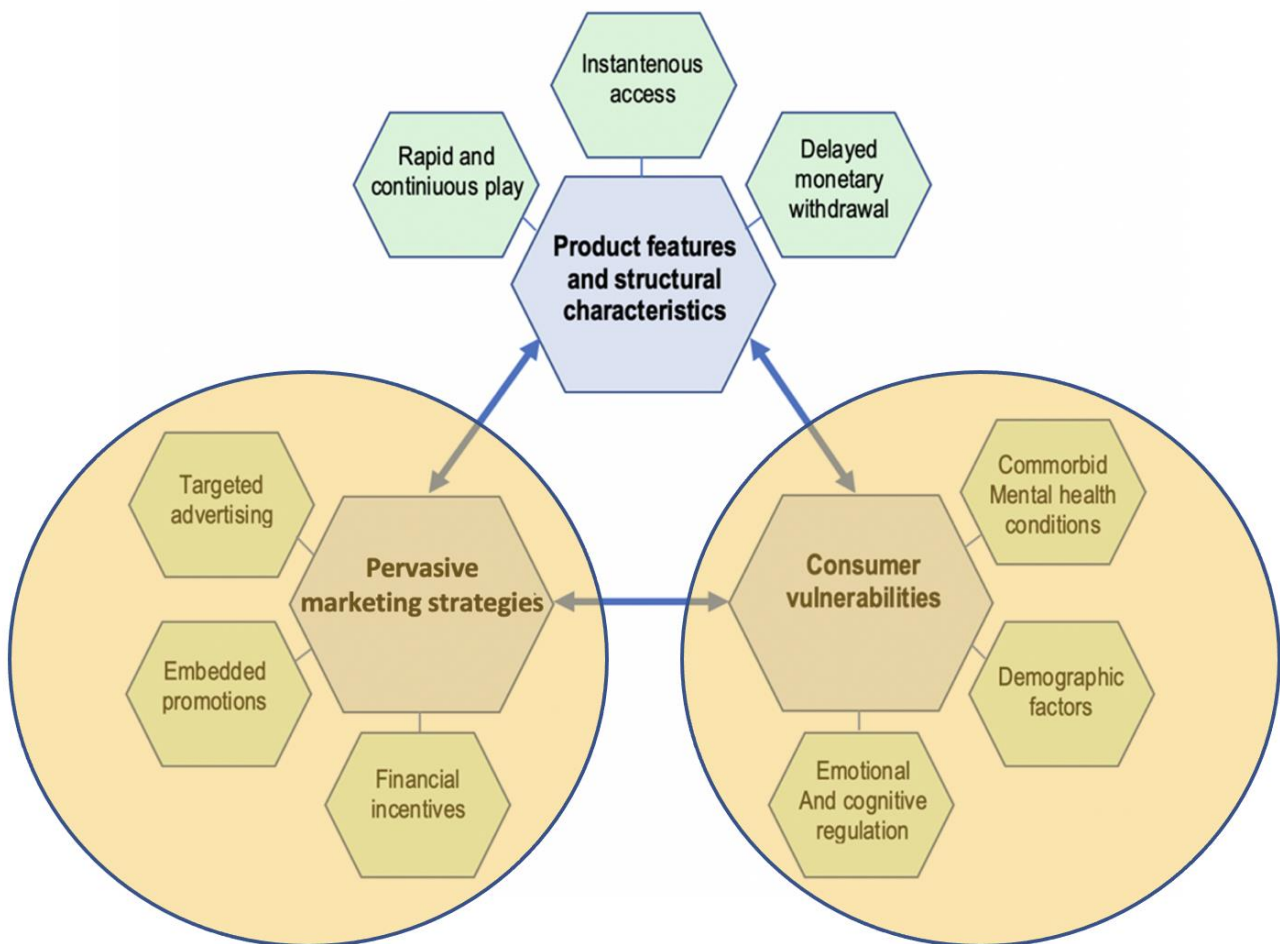
## 2.1 Chapter 2 introduction

Within the original public-health view of gambling proposed by Korn and Shaffer (1999), '*the environment*' was utilised as a cornerstone of this model given the prevalence of venue-related gambling (such as casinos and bookmakers) at the time. Subsequently, gambling advertising was not primarily addressed within Korn and Shaffer's (1999) model. However, when modernising this perspective within the current thesis, advertising and marketing constitutes an integral part of the bespoke-risk environment of gambling. The reasoning that underpins this revision relates to the ubiquity, pervasiveness, and behavioural complexity of modern gambling advertisements across many jurisdictions (especially the UK) (Abarbanel et al., 2017; Binde, 2014; Bouguettaya et al., 2020; Deans et al., 2016; Djohari et al., 2019; Hörnle & Carran, 2018; Newall, 2017). Furthermore, preliminary research indicates that gambling advertising is a likely facilitator of gambling-related harm due to financial inducements, the normalisation of gambling amongst the young/vulnerable, and the deceptive portrayal of gambling as a harmless activity (Bouguettaya et al., 2020; Lopez-Gonzalez, Estévez, & Griffiths, 2018; Lopez-Gonzalez, Guerrero-Solé, & Griffiths, 2018; Nyemcsok et al., 2018; Parke et al., 2014; Parrado-González & León-Jariego, 2020). Therefore, it is imperative to address the relevant gaps within the gambling advertising literature in order to better understand its content, structure, delivery and its place/meaning within the lives of consumers. Gaining such insight is significant in informing policy-makers in relation to more ethical and transparent gambling marketing strategies. In addition, this insight is also particularly useful in underpinning public-health related interventions that aim to reduce the harms associated with gambling advertising.

In relation to gambling advertising content, structure, and delivery, conducting empirical research into this area is important and useful for a number of reasons. Although gambling advertising is often subject to various regulatory stipulations, it is far less regulated compared to the commercial promotion of alcohol and tobacco (Jones, 2010; Jones & Gordon, 2013) . With the gambling industry having more (inadequately regulated) freedom over how specific products are marketed, the content and structure of such marketing has been highlighted as misleading, deceptive, and harmful (McGee, 2020; Pitt et al., 2016). Similarly, the marketing efforts of the gambling industry have expanded into areas such as sports sponsorship and social media (Bradley & James, 2019; Bunn et al., 2019; Djohari et al., 2019; Houghton et al., 2019; Jones et al., 2020; Killick & Griffiths, 2020; Rossi et al., 2021). This expansion warrants academic (and political) attention as there are considerable harm-related and ethical concerns associated with the promotion of an addictive product within areas that contain vulnerable or inexperienced audiences (Djohari et al., 2019; Thomas et al., 2015). From a psychological and harm-

reduction perspective, mounting research has aimed to empirically address these issues in order to understand the impacts of gambling advertising (see *Gambling advertising – A brief review of the literature*). However, these emergent studies have been conducted in relation to various forms of gambling advertisements (such as TV, billboards, Twitter posts) that promote a wide range of gambling modes (e.g. sports betting, roulette, bingo). There is a significant gap within the literature in relation to a clear and systemised taxonomy of gambling advertising strategies (content, structure, and delivery) that would allow researchers, policy-makers, and consumers to better understand the gambling advertising landscape alongside recognising its expansion and complexity. Within the current chapter, Study 1 will address this gap within the literature via a rapid-review methodology.

Another considerable gap within the literature relates to the perceptions, experiences, and opinions of consumers towards modern gambling advertisements in the UK. As discussed within the literature review of this thesis (see *Perceptions towards gambling advertising*), the majority of the existing literature in this area has been conducted in Australia (Pitt et al., 2017b; Pitt et al., 2016; S. L. Thomas et al., 2018; Thomas et al., 2012). Considering the unique and particularly liberalised gambling environment of the UK, there is a surprising paucity of literature in relation to gambling advertising perceptions in relation to this jurisdiction. Specifically, to the best of the current author's knowledge (and at the time of writing), no other empirical study has attempted to qualitatively investigate this topic to better understand the place and meaning of gambling advertising amongst the lives of UK consumers. This approach would likely yield insightful findings in line with the benefits of investigating perceptions towards the advertisement of other addictive products (McDaniel & Malone, 2007). These benefits include understanding how consumers critically engage with gambling advertisements, how they believe such advertisements impact them and those around them, and what strategies would be best implemented to address the consequences of such advertisements. As seen within qualitative explorations of service users and service providers of psychological intervention (Khan et al., 2019; Thompson et al., 2022), qualitative research in the area of gambling advertising will supplement the existing quantitative research to offer a multifaceted picture where the related implications are clearer and better supported. Therefore, following Study 1 within this chapter, Study 2 will investigate qualitatively the perceptions and experiences of young adults towards UK gambling advertisements.

## 2.2 Study 1 - Emergent gambling advertising; a rapid review of marketing content, delivery, and structural features

### 2.2.1 Introduction

The complexity and availability of gambling continues to grow on an international scale (Lawn et al., 2020; Winters & Smith, 2019). In recent years, there has also been a corresponding increase in the prevalence, diversity and intensity of gambling advertising (Browne et al., 2019; Newall, 2017). This expansion is facilitated by significant industry expenditure; especially within jurisdictions that have previously liberalised gambling such as the United Kingdom (UK) and Australia. Estimates indicate that Australian gambling industry spending on marketing and promotion has increased by 33% per year since 2011 to $273 million in 2018 (Victorian Responsible Gambling Foundation, 2019). UK industry spending grew over 17% per year from 2014-2018, reaching an estimated total of £1.5 billion (GambleAware, 2018b). This advertising expenditure represents 10.34% of the £14.5 billion gross yield of the UK gambling industry in 2018 (Gambling Commission, 2018a). Such funding has led to the development of sophisticated advertising campaigns that are disseminated across traditional media such as television (Håkansson & Widinghoff, 2019) and via sports sponsorship (Newall, 2017). In addition, these campaigns have resourcefully adapted to the digital sphere via online and social media marketing (Houghton et al., 2020; S. L. Thomas et al., 2018). This shift towards the online environment has granted gambling operators uninterrupted advertising space; especially during the Covid-19 pandemic. Therefore, attempts to curtail TV gambling advertising (as seen within the UK) during periods of lockdown may have little effect on reducing overall exposure amongst young or vulnerable audiences (Rossi et al., 2021).

Emerging literature has highlighted gambling as a compounding issue of public health (David, Thomas, Randle, & Daube, 2020; John et al., 2020). The harmful effects of gambling and associated advertising have been suggested to extend beyond populations of disordered gamblers and are apparent across the entire harm-spectrum; including children and young people (Browne et al., 2019; Clark et al., 2020; Muggleton et al., 2021). Comparable to previously conducted reviews of alcohol and tobacco (Anderson et al., 2009; Paynter & Edwards, 2009), two recently published systematic reviews (Bouguettaya et al., 2020; Newall, Moodie, et al., 2019) and one narrative review (Sulkunen P, 2019) have indicated that gambling advertising is facilitative of induced gambling intentions or cravings, increased participation and riskier (more impulsive) betting. However, these reviews also identify

many of the methodological gaps within the existing gambling advertising research. Within the literature there is an emphasis placed upon the self-reported effects of gambling advertising exposure, especially amongst disordered gamblers. An empirical concentration upon disordered gamblers may pathologize the issue of gambling-harm induced by advertising. This may draw attention away from advertising-induced harm experienced by low-moderate risk gamblers (Bouguettaya et al., 2020). Furthermore, the self-reported effects of gambling advertising are often hindered by recall and self-report bias. This may be due (in-part) to the Third Person Effect (Davison, 1983; Torrance et al., 2020) where individuals are more likely to perceive the impacts of marketing amongst others rather than themselves. In contrast, there is a paucity of research that focuses upon the specific characteristics and mechanisms that underpin emergent gambling advertisements.

There is a growing academic consensus that gambling advertising may incorporate content that is deemed misleading, utilises demographic targeting and uses embedded promotion (McGee, 2020; Roderique-Davies et al., 2020; Torrance et al., 2020). However, to date, no review has aimed to provide a taxonomy of gambling advertising characteristics. As observed in the movement towards increased control of tobacco advertising (Hastings & MacFadyen, 2000; Pollay, 1995; WHO, 2013), studies that aim to investigate the specific marketing methods utilised by the industry offer an insightful contribution in the shift towards regulatory reform and industry marketing that is more ethical and transparent. Therefore, the current review of gambling advertising characteristics seeks to complement the existing reviews of advertising effect as well as the future literature. This contribution is also warranted in order to appropriately inform the decisions of policymakers and researchers regarding effective harm-reduction strategies.

Due to the fluctuating methods of gambling advertising that largely remain free from effective regulation (Hörnle et al., 2019), this review aimed to examine the empirical evidence concerning the nature and characteristics of emerging (2015-2020) gambling advertisements. Specifically, this review aimed to investigate:

- The content and narratives incorporated within gambling advertising.
- The methods of gambling advertising delivery and placement.
- The mechanics and structural features of gambling advertising e.g. design, usability and complexity.

### 2.2.2 Methodology:

Due to the fluidity and constant development of the gambling advertising sphere, a rapid review methodology was utilised throughout the literature search. Although there is no single accepted approach, the rapid-review process typically involves the same components as a systematic literature review with limitations imposed on the length (e.g. time spent) and depth (e.g. extent of searching) of the methodology (Khangura et al., 2012). Despite the variation in approaches, rapid reviews have been reported to produce equivalent findings to systematic reviews if screening, bias/quality appraisal and data synthesis are addressed with appropriate methodological rigor (Haby et al., 2016; Tricco et al., 2015). The protocol for the current review was registered via Prospero (*ID: CRD42020184349*).
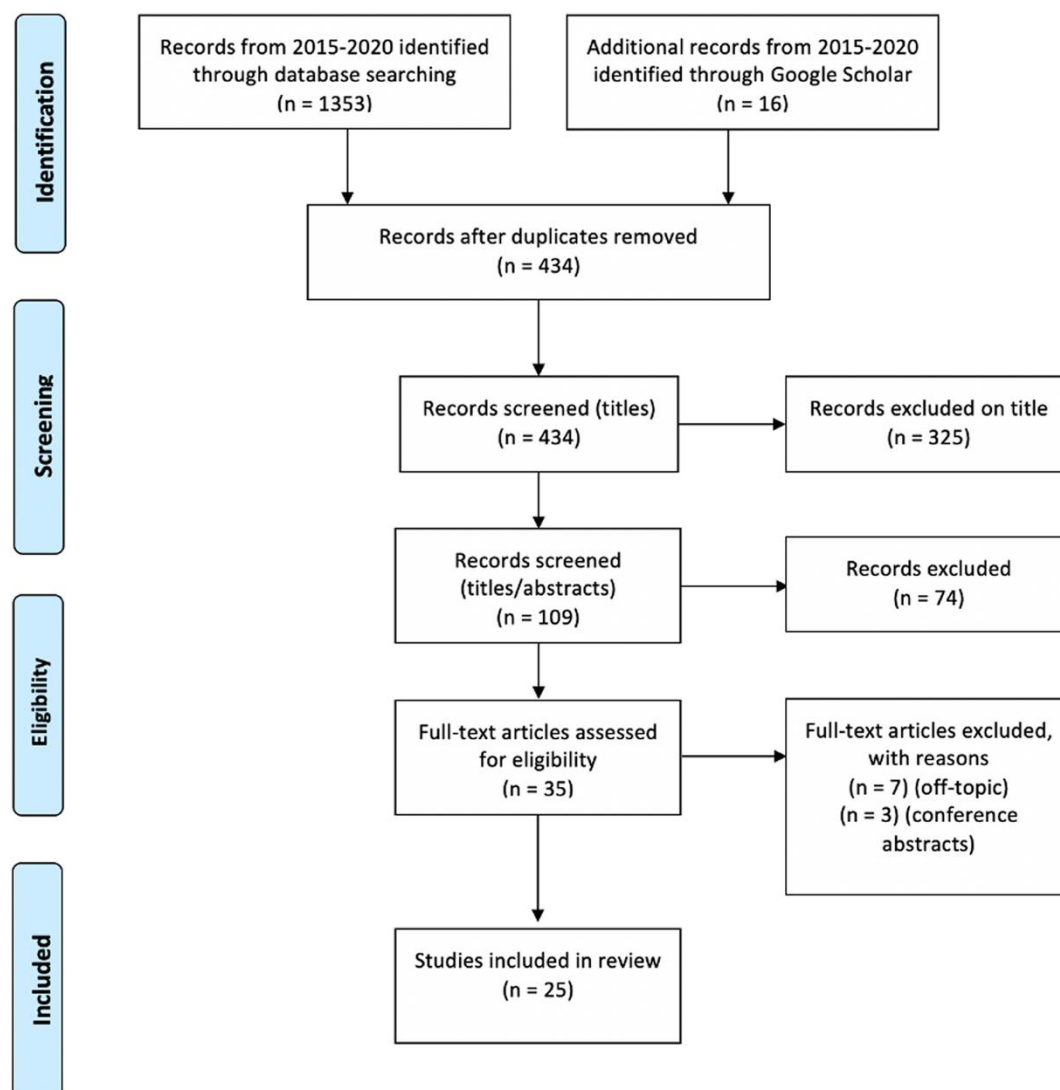


**Figure 4.** Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram (Moher et al., 2015).

## 2.2.2.1 Search Strategy

Following PRISMA guidelines (Moher et al., 2015), a literature search for peer-reviewed articles published since 2015 (completed June 2020) exploring the content, delivery and characteristics of emergent gambling advertising was conducted (see Figure 4). Within the search strategy, operational definitions were created for the terms "advertising", "marketing" and "promotion". Advertising was defined as any industry financed communication that utilises varying media sources (such as TV or internet ad space) to encourage engagement with a gambling brand or product. Marketing and promotion were operationalised interchangeably and were defined by broader strategies that aim to encourage gambling brand awareness or indirectly influence user engagement (such as sporting sponsorship or affiliate marketing). Therefore, non-industry funded sharing of gambling-related material (such as the independent social media posts of bettors) were not included in the current search strategy. Two academic literature databases were utilised during the search strategy including PsycInfo (via Proquest) and Web of Science (Science Citation Index Expanded & Social Sciences Citation Index). A further set of records were also accrued using Google Scholar. Boolean operators (AND/OR) were used interchangeably during the search strategy in conjunction with the following terms: gambl*, bet*, casino, sport*, market*, advert*, promot*, content* and strateg*. The details of this search strategy can be found in the Search Strategy Report (see Figure 5). An inclusive approach was undertaken given the general paucity of literature and the heterogeneity of the methodologies across emergent studies. Due this heterogeneity, a meta-analysis was not conducted.

| Search strategy: Databases, filters and search terms – conducted 02/06/20 | |
|---|---|
| **PsychInfo (via proquest)** – *advanced search* | |
| Filters:<br>From 01 January 2015 to 06 June 2020<br>Scholarly Journals<br>Empirical Study<br>Language: English<br><br>Terms: ((gambl* OR betting OR casino* OR sports*) AND (market* OR advert* OR promot*) AND (content OR strateg*)) | **418 results** |
| **Web of Science (Science Citation Index Expanded & Social Sciences Citation Index)** – *advanced search* | |
| Filters:<br>From 2015-2020<br>Document type: article<br>Language: English<br><br>Terms: ((gambl* OR betting OR casino* OR sports*) AND (market* OR advert* OR promot*) AND (content OR strateg*)) | **935 results** |
| **Google Scholar** – *free searching* | |
| Filters:<br>From 2015-2020<br>Patents and citations excluded | **16 results** |

**Figure 5.** Database search strategy report

## 2.2.2.2 Inclusion/exclusion criteria

Empirical studies (quantitative, qualitative and mixed methods) in the English language were included within the rapid review if they addressed the components, designs, incorporated mechanisms and/or delivery of gambling advertising or marketing. The search was conducted in English as the translation of non-English language articles was unfeasible due to time and economic constraints. Eligible studies were also required to have been published between 01/01/2015 and 02/06/2020. This timeframe was implemented due to the current review focusing upon the characteristics of emergent or recent gambling advertising given how rapidly advertising trends shift and fluctuate. Due to the typical limitations that are placed on the length (time spent) of the rapid review methodology, a practical limit of five years was therefore placed on the inclusion criteria. All samples of advertising were eligible for inclusion in order to provide a broad range of synthesised narrative findings. Records were excluded if they were published prior to 2015, were discussion or commentary articles, were not published in the English language, or focused primarily on the self-reported effects of and/or perceptions towards gambling advertising.

## 2.2.2.3 Screening and quality assessment

Following the retrieval of records via database searching ($n$ = 1353) and Google Scholar ($n$ = 16), duplicates were removed, and an initial title screening process was undertaken ($n$ = 434) in order to exclude records that were irrelevant or not applicable. The remaining record title and abstracts ($n$ = 109) were screened by three reviewers (JT, MOH and ND). To ensure fidelity during this process, the reviewers regularly met to discuss their individual decisions and reasoning behind including or excluding records until consensus was reached. Following this, full-text screening of 35 records took place against the inclusion/exclusion criteria, with consultations carried out among the wider research team. Any disagreements were also addressed by this team until a general consensus had been attained. The research team included (but was not limited to) three senior researchers with experience in both the subject matter and the review process. Full-text screening led to the exclusion of ten records due to them being off-topic ($n$ = 7) or conference abstracts ($n$ = 3). A final set of empirical records ($n$ = 25) underwent quality assessment via the Mixed Methods Appraisal Tool (MMAT) 2018 (Hong et al., 2018). The research team determined that all of the final empirical records were conducted to a good methodological standard according to the MMAT and were subsequently included for full data extraction.

### 2.2.2.4 Analysis/synthesis

In order to distinguish appropriate and salient themes within the included articles, narrative synthesis was conducted. This process involved repeated readings of the literature, extracting relevant content, and summarizing this content in tabular format (see Table 1). This information was then synthesised and organised in order to produce a thematic framework. This framework was used to structure the findings according to themes in line with the research aims of the current review. Narrative synthesis was conducted by JT with regular consultation among the co-authors to ensure the applicability and pertinence of the final themes.

### 2.2.3 Findings:

Twenty-five studies were included in the review: 6 qualitative studies; 15 that employed a mixed-methods approach and 4 quantitative studies (see Table 1). The studies were conducted across four jurisdictions that included the United Kingdom ($n = 12$), Australia ($n = 9$), Sweden ($n = 1$) and cross-culturally between the United Kingdom and Spain simultaneously ($n = 3$). The included studies were categorised across three overarching themes (see Table 2) in line with the research aims of the current review: 1) Content and narratives 2) Delivery and placement; 3) Structural features and mechanics.

**Table 2.** Summary of themes that emerged as a result of narrative synthesis

| Overarching theme | Sub-theme |
|---|---|
| **Content and narratives** | • Targeted content that positively frames gambling<br>• Odds-related content and promoting complex bets<br>• Financially incentivising content<br>• 'Responsible gambling' and harm-reductive content |
| **Delivery and placement** | • The expansive placement of gambling advertising in and around sports<br>• Disseminating promotional gambling content via social media platforms |
| **Structural features and mechanics** | • Utilising digitally interactive features for marketing purposes<br>• Conditions and requirements of advertised bets and offers |

**Table 1**. Summary of included study characteristics and findings.

| Study | Authors | Date | Setting | Study Design | Type of advertising investigated | Aims and Objectives | Quality Assessment (MMAT)[a] | Advertising Content Highlighted | Delivery Strategies Highlighted | Mechanics and Structural Features Highlighted |
|---|---|---|---|---|---|---|---|---|---|---|
| Abarbanel et al, 2017 | Abarbanel, Gainsbury, King, Hing & Delfabbro | 2017 | Australia | Qualitative content and textual analysis. | Social casino advertisements ($n = 115$) disseminated via social media. | To understand the compositional elements of social-casino marketing materials and how this messaging is being targeted towards young adults. | ★★★★ | 1) The use of content and imagery that is likely to appeal to young adults including depictions of young adults and references to pop-culture. 2) The incorporation of themes such as encouragement to participate, the glamorisation and normalisation of gambling. 3) A significant lack of 'responsible gambling' messaging within the advertisements. | Predominantly delivered via Facebook through unsolicited advertisements. | Embedding an 'activity' button within the advertisements that provides the opportunity to directly download the social casino app or accessing the web interface for the game. |
| Bestman et al, 2016 | Bestman, Thomas, Randle, Pitt, Daube & Pettigrew | 2016 | Australia | Mixed-methods interpretative content analysis. | Promotions used on 65 social club websites that advertise both gambling and non-gambling activities. | 1) To determine the extent and nature of activities promoted via social club websites. 2) To hypothesise how such promotions may shape attitudes / behaviours. | ★★★★★ | 1) The utilisation of narratives that emphasise better value and increased chances with gambling activities. 2) Endorsing the idea that customers could ease their own financial stress through cash-prizes from gambling. 3) Framing the gambling venue as comfortable and accommodating. | Embedding gambling-related advertisements into the same webpages that advertise family-orientated social club venues. | N/A |
| Bradley & James, 2019 | Bradley & James | 2019 | UK | Mixed-methods involving quantitative (frequency) analysis and sentiment analysis. | The twitter-based marketing activity of 22 UK gambling operators. | To investigate how large gambling companies engage with customers and advertise their products via Twitter. | ★★★★★ | 1) Predominantly using words and narratives that are associated with positive emotions such as trust and joy. | 1) Posting between 89 and 202 tweets a day. 2) Posting tweets at 'peak' times such as 11:00, 15:00 and 16:00. 3) Tweeting more on particular days, possibly in relation to current sporting events. | 1) Embedding a direct link to the gambling operator/betting page within the advertisement. 2) Utilising unique hashtags that reference sporting events or promote specific offers. 3) Utilising the ability for the operator to engage with customers by replying to their user-requests about bets and odds. |
| Bunn et al, 2019 | Bunn, Ireland, Minton, Holman, Philpott & Chambers | 2018 | UK | Quantitative (frequency) analysis. | Gambling related football shirt sponsorship between 1992 and 2018. | To investigate the prevalence of gambling sponsorship in English and Scottish premier league football. | ★★★★★ | N/A | 1) Significantly increasing the amount of gambling-related shirt sponsorship in English and Scottish Premier League football between the introduction of the UK 2005 Gambling Act and 2017. | N/A |
| Critchlow et al, 2020 | Critchlow, Moodie, Stead, Morgan, Newall & Dobbie | 2020 | UK | Mixed-methods interpretative content analysis. | A range of UK gambling advertisements disseminated via print-press, television, internet websites and email. | To examine the presence and visibility of age-restriction warnings, harm reduction messages and T&Cs within paid-for gambling advertising in the UK. | ★★★★ | 1) The avoidance of including any age restriction warnings, harm reduction messaging or T&Cs in advertisements. 2) When age restriction warnings, harm reduction messages or T&Cs were displayed, the vast majority had very poor visibility due to small font, colour schemes or being positioned outside of the main frame. 3) Specifically, T&Cs contained complex or technical language and stipulations. | N/A | N/A |
| Deans et al, 2016 | Deans, Thomas, Daube, Derevensky & Gordon | 2016 | Australia | Mixed-methods interpretative content analysis. | Sports betting wagering advertisements delivered via television, Youtube and on websites. | To explore and interpret the symbolic appeal strategies used in wagering advertisements that may facilitate the normalisation of gambling. | ★★★★ | The incorporation of content that contain appeal strategies aimed primarily at men. These included; thrill and risk, gender stereotypes, peer bonding, patriotism, sexualised imagery, enhancing social status, winning, happiness, power/control and sports fan rituals. | N/A | N/A |

| Study | Authors | Year | Country | Methodology | Sample | Aim | Quality | Findings (Marketing) | Findings (Platform/Placement) | Findings (Inducements) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Gainsbury et al, 2016** | Gainsbury, Delfabbro, King & Hing | 2016 | Australia | Mixed-methods involving quantitative (frequency) analysis and qualitative (thematic) analysis. | Social media marketing utilised by 101 gambling operators. | To comprehensively appraise the extent of and latent messages conveyed within social media being utilised by the Australian gambling industry. | **** | 1) Using social media to promote content relating to products, offers, customer engagement, tips, and features that assist betting. 2) The incorporation of latent messages such as glamorisation, emphasising ease of use, encouraging brand engagement (like/follow/comment) and gambling participation. 3) Lack of conspicuous harm reduction messaging within the social media posts. | Predominantly advertising gambling products and communicating with customers via Facebook and Twitter. These social media platforms were most frequently used by sports-wagering websites. | N/A |
| **Gainsbury et al, 2015** | Gainsbury, King, Hing & Delfabbro | 2015 | Australia | Qualitative interviews – analysed thematically. | Gambling marketing and promotion via social media as described by individuals who work for the industry. | 1) To explore how gambling operators are using social media to engage with users and promote their products. 2) To understand the considerations and strategies that underpin these actions. | **** | 1) Interweaving odds related content into 'news' broadcast posts that provide users with sports and betting information. 2) Placing an emphasis on engaging with users in a 'non-commercial' manner to build positive customer relationships. 3) Sharing stories of winning customers. 4) Posting content that encourages brand-engagement (like/follow/comment) | 1) Utilising social media platforms for various strategic uses. Facebook primarily used for information and customer feedback; Twitter used for broadcasting news and promotions. 2) Paying for advertising space that is targeted rather than blanket-media marketing. | 1) Maximising brand exposure by utilising the 'like' button on social media platforms. 2) Utilising the ability for the operator to engage with customers by replying to their user-requests about bets and odds. |
| **Håkansson & Widinghoff, 2019** | Håkansson & Widinghoff | 2019 | Sweden | Mixed-methods involving quantitative descriptive and content analysis. | 144 hours of various gambling advertisements ($n = 891$) disseminated via Swedish television. | To describe the extent and content of televised gambling adverts in relation to placement and potential public-health components such as the targeting of specific audiences. | ***** | 1) Predominantly advertising online casino betting. 2) Incorporating a female-specific theme within the online casino adverts by depicting significantly more female gambling behaviours compared to male gambling behaviours. 2) Un-licensed operators more likely to air content relating to free-bets and offers. | 1) Delivering the most amount of televised gambling advertising within the 10pm-2am slot followed by the 6pm-10pm slot (nights and evenings). 2) Airing gambling advertisements after movies aimed at adults and family. | N/A |
| **Hing et al, 2017** | Hing, Sproston, Brook & Brading | 2017 | Australia | Quantitative (frequency) analysis and descriptive categorisation. | Wagering inducements ($n = 223$) offered across the websites of 30 gambling operators. | To characterise and document the structural features of wagering inducements and analyse their alignment with the goals of 'responsible gambling'. | ***** | 1) The use of inducement related content comprised of incentivising offers such as; sign-up offers, refer-a-friend offers, refund offers, happy hours, free bets and competitions. 2) Significant lack of 'responsible' gambling messaging within the advertisements.3) T&Cs were almost always displayed outside of the inducement in a separate location on the website. These T&Cs were difficult to find and used complex language. | N/A | 1) Bonus bets and offers that have specific play-through requirements before winnings can be withdrawn. |
| **Houghton et al, 2019** | Houghton, McNeil, Hogg & Moss | 2019 | UK | Mixed-methods summative content analysis. | The twitter activity ($n = 8315$ tweets) of 5 UK gambling operators and affiliates. | 1) To address what content is being posted on Twitter by the UK gambling industry. 2) To provide an understanding of the marketing strategies gamblers encounter on social media. | ***** | 1) Disseminating content that contains; direct advertising, sports content, humour, updates of current bet status and promotional content. Gambling affiliates more likely to post direct advertising and betting tips. 2) Gambling operators more likely to take an indirect approach using humour to build brand awareness. 3) Significant lack of safer gambling messaging within the tweets. | Gambling affiliates posting around 594 tweets a day on average, with gambling operators posting around 362 tweets. | 1) Encouraging user engagement via features such as online polls. 2) Utilising the ability for the operator/affiliate to engage with customers by replying to their user-requests about betting assistance and odds. |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Killick & Griffiths, 2020** | Killick & Griffiths | 2020 | UK | Mixed-methods content analysis. | The twitter activity ($n =$ 3375 tweets) of UK gambling operators during the opening weekend of 2018-2019 premier league football. | 1) To examine how gambling operators advertise their products on Twitter. 2) How operators engage with their followers. 3) Implications for the regulation of sports betting advertising. | **** | I) Disseminating promotional content such as user-requested odds, free-bet offers, boosted odds and in-play betting information. 2) Significant lack of 'responsible' gambling messaging within the tweets. | Posting between 33 to 398 tweets a day. | 1) Utilising unique hashtags that reference/link to sporting events or promote specific offers. 2) Encouraging user engagement via features such as online polls. 3) Utilising the ability for the operator to engage with customers by replying to their user-requests about bets and odds. |
| **Lopez-Gonzales, Estévez & Griffiths, 2017** | Lopez-Gonzales, Estévez & Griffiths | 2017 | UK | Qualitative content analysis using a grounded theory approach. | Televised UK sports betting promotions ($n =$ 102) from 2014-2016 | To distinguish the themes and narratives that are utilised by gambling operators within sports betting promotions. | **** | 1) The incorporation of content and narratives within sports betting advertisements that orientate themes of reduced risk. These include 'free money' (offers) and depictions of fun. 2) Content that orientates themes of increased control such as knowledge, data analysis, masculinity and experience. 3) These themes are framed by depictions of technological features (i.e. mobile gambling use) that are depicted to be control enhancers within the adverts. | N/A | N/A |
| **Lopez-Gonzales et al, 2018a** | Lopez-Gonzales, Estévez, Jiménez-Murcia & Griffiths | 2018 | Spain / UK | Mixed-methods content analysis. | Televised sports betting advertisements ($n =$ 135) that aired in both the UK and Spain between 2014-2016. | To explore how sports betting advertisements present gambling, low nutritional food and alcohol in association with emotionally charged situations and notions of friendship building. | **** | 1) Content that visually aligns drinking alcohol with sporting culture. 2) Combining depictions of drinking alcohol with emotionally charged situations such as celebrating goals. Friendship bonding linked with alcohol drinking in the context of sports betting. | N/A | N/A |
| **Lopez-Gonzales, Guerrero-Solé & Griffiths, 2018** | Lopez-Gonzales, Guerrero-Solé & Griffiths | 2018 | Spain / UK | Qualitative content analysis. | Televised sports betting advertisements ($n =$ 135) that aired in both the UK and Spain between 2014-2016. | To understand how advertising normalises betting behaviour by depicting specific behaviours and actions while underrepresenting others. | **** | 1) Content primarily containing small groups of male characters –however when these characters are shown to be betting, they are often alone. 2) Content that advertises 'in-play' betting by depicting it's use via smart phones and laptops. 3) Depicting characters staking small amounts for large returns (longer odds). | N/A | N/A |
| **Lopez-Gonzales et al, 2018b** | Lopez-Gonzales, Guerrero-Solé, Estévez & Griffiths | 2018 | Spain / UK | Qualitative content analysis. | Televised sports betting advertisements ($n =$ 133) that aired in both the UK and Spain between 2014-2016. | To examine the structural metaphors that underpin sports betting advertising that may shape the way bettors think about their own betting behaviour and betting in general. | **** | Four conceptual metaphors that underpinned the televised adverts for online sports betting were highlighted. 1) aligning the core concept of love for a team with betting on that team. 2) portraying sports betting as a 'market' that is rational, regulated and overseen. 3) Presenting betting as a 'natural' environment in which the smart succeed. 4) betting is a sport in which bettors are active players. | N/A | N/A |

| Study | Authors | Year | Country | Methodology | Data source | Aim | Quality | Key findings | Implications | Additional notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Newall, 2017** | Newall | 2017 | UK | Mixed-methods; content analysis and observational/experimental | Televised 'live-odds' advertisements shown during English premier league football between January-February 2016 | To investigate the content of 'live-odds' football bets in terms of their complexity and how this may impact bettors' ability to judge the associated probability of such bets. | ***** | The incorporation of 'live odds'-related narratives and incentives within the adverts. Specifically, content that is skewed towards advertising more complex bets (containing numerous events) rather than simple bets. Complex bets within the advertisements were seen to have longer odds (and higher potential wins) therefore productive of higher profit margins. | Embedding 'live-odds' gambling advertising before, during or after televised UK Premier League football matches. | N/A |
| **Newall, 2015** | Newall | 2015 | UK | Quantitative involving observations of advertisements and analysis of bet probability | UK bookmaker advertisements shown in shop windows ($n = 179$) and on television ($n = 103$) during the 2014 football World Cup. | To distinguish how bookmakers herd with the special bets they offer customers via advertisements and the probability of such bets. | ***** | The advertisement of 'special' or complex bets (longer odds) rather than simple bets. Such content almost exclusively containing depictions and descriptions of bets with high expected losses and framing sporting events via these bets. | Advertising specific complex bets at a higher frequency via TV and bookmaker shop windows during the 2014 World Cup. | N/A |
| **Newall et al, 2019** | Newall, Thobani, Walasek & Meyer | 2019 | UK | Mixed-methods involving quantitative descriptive and content analysis. | Televised 'live-odds' advertisements aired during the 2018 football World Cup. | To measure the extent and explore the key features of 'live-odds' gambling advertising in terms of the sense of "urgency" and 'impulsiveness' represented within them. | ***** | The incorporation of 'live odds'-related narratives and incentives within the adverts. Specifically, content that appears to make advertised 'live-odds' bets more impulsive via a qualitative trend skewed towards advertising more complex bets (containing numerous events). | Embedding 'live-odds' gambling advertising before, during or after televised World Cup football matches. | Many 'live-odd' bets could be determined before the football match had ended alongside bets improving in odds (flash-odds) for a limited time only. Suggests such mechanics are designed to create a sense of urgency. |
| **Newall, Walasek & Ludvig, 2019** | Newall, Walasek & Ludvig | 2019 | UK | Mixed-methods involving quantitative descriptive and content analysis. | Televised 'request-a-bet' advertisements ($n = 46$) aired during the 2018 football World Cup. | 1) To review the content of 'request-a-bet' gambling advertising in relation to UK BCAP regulations. 2) How this content frames the illusion of control and overweighted small probability bets. | ***** | The incorporation of odds-related narratives and incentives within the adverts. Specifically, it is suggested that this content is likely designed to nudge gamblers through multiple channels toward bets with larger potential payoffs. | Delivering 'request-a-bet' gambling advertising before, during or after televised World Cup football matches. | Utilising unique hashtags on Twitter such as #getaprice that allow users to create their own bets by requesting odds for combined events of their choice (longer odds). |
| **Pitt et al, 2018** | Pitt, Thomas, Bestman, Randle & Daube | 2018 | Australia | Mixed-methods interpretative content analysis. | Australian gambling advertisements from a range of formats that were disseminated between 2008-2015. | 1) To explore the attention strategies utilised within gambling advertising. 2) To inform future research aimed at identifying how such strategies shape the attitudes and behaviours of children. | ***** | The incorporation of various attention strategies across advertisements. These included the strategic use of audio, depictions of technology, humour, animations, colour schemes, characters and animals, concepts of winning, social benefits of gambling, celebrities or teams, depicting reduced risk and highlighting sporting success. | N/A | N/A |
| **Purves et al, 2020** | Purves, Critchlow, Morgan, Stead & Dobbie | 2020 | UK | Quantitative (frequency) analysis | Gambling marketing in televised broadcasts across a range of professional sports in the UK. | To examine the extent and nature of gambling promotion (verbal and visual) in UK sports following the voluntary ban on such advertising. | ***** | 1) Visual sponsorship almost always consisted of the gambling brand logo. 2) Significant lack of 'responsible' gambling or harm reduction messaging within the advertisements. | 1) Utilising sponsorship rather than commercials to disseminate gambling promotion within boxing, football, rugby, and tennis. Gambling sponsorship appears to be most prevalent in boxing followed by football. 2) Gambling advertising references were usually displayed within the area of play or around the pitch. | N/A |

| Study | Authors | Year | Country | Methodology | Data/Sample | Aims | Quality | Findings | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Rawat, Hing & Russel, 2019** | Rawat, Hing & Russel | 2019 | Australia | Mixed-methods; ecological momentary assessment and content analysis | Emails and text (*n* = 931) messages sent to customers by gambling operators during sports and racing events | To explore the content of direct messages sent to customers by gambling operators during sporting events. | ***** | 1) Saturating texts and emails with betting incentives and inducements. Incentives included bonus bets, rewards points, better odds/winnings, and reduced risk. Inducements included bonus or better winnings, refund/stake back offers, and match your stake/deposit. 2) Texts were short and concise while emails were longer and contained more information/graphics | N/A | | Embedding a direct link to the gambling operator/betting page within the text/email. |
| **Stead et al, 2016** | Stead, Dobbie, Angus, Purves, Reith & Macdonald | 2016 | UK | Qualitative content analysis and interviews | The webpages (*n* = 230) of 10 UK online bingo sites. | 1) To identify and analyse in detail the characteristics of online bingo websites. 2) To explain the potential appeal of online bingo in the UK to bingo players | ***** | 1) Incorporating an easy to navigate, unsophisticated design that is structured to present online bingo as fun, light-hearted, and reassuring. 2) Content and narratives that are aimed at first time users and creating a sense of belonging (tips on 'bingo-lingo', use of feminine colours and inclusive language). 3) Content that encourages users to play bingo on the go. | N/A | | N/A |
| **Thomas et al, 2015** | Thomas, Bestman, Pitt, Deans & Randle | 2015 | Australia | Mixed-methods interpretative content analysis. | The marketing content of sports wagering operators distributed by across Youtube, Twitter and Facebook. | 1) To identify the extent and nature of marketing tactics used by gambling operators on social media. 2) To construct a typology of these tactics to inform future research. | ***** | 1) Utilising content within marketing strategies that contain humorous videos/memes and language associated with winning. 2) The co-branding of wagering promotions by sporting organisations, codes and athletes. 3) Posting material that often contains information about wagering or sports-related information. 4) Dissemination of incentives and inducements (offers, bonus bets, tips). | 1) Merging corporate responsibility initiatives (i.e. cancer awareness) with gambling promotion. 2) Utilising videos on Youtube, Facebook posts and Twitter to promote gambling both directly and indirectly. | | 1) Utilising unique hashtags on Twitter that reference sporting events or promote specific offers. Similarly, using these hashtags to embed the tweet into existing feeds about sporting events. |

### 2.2.3.1 Content and narratives

The content and narratives that are incorporated into gambling advertising were outlined in 23 studies. Four sub-themes emerged that included: 1) Targeted content that positively frames gambling; 2) Odds-related content and promoting complex bets; 3) Financially Incentivising content; 4) 'Responsible gambling' and harm-reductive content.

### 2.2.3.1.1 Targeted content that positively frames gambling

A number of content analyses highlighted the themes and latent messages that were utilised across a range of gambling advertisements that portray gambling as a desirable, trustworthy and fun activity. In relation to casino gambling, a study of UK online casino marketing identified the use of language within advertisements that predominantly orientated positive emotions such as trust and joy (Bradley & James, 2019). In-venue casino advertisements were also positively framed. For example, Australian social club (casino) endorsements were found to portray the venues as being accommodating, comfortable and well-equipped (Bestman et al., 2016). These advertisements often aimed to emphasise better value for money and attempted to accentuate an increased chance of success in relation to the gambling activities they offered. Potential customers were encouraged to bring their family (including children) to such establishments due to the availability of non-gambling related amenities provided inside (Bestman et al., 2016). This positive framing was also observed within online social casino (free-to-play gambling) advertisements where bright colour schemes and themes associated with glamour and financial success were employed (Abarbanel et al., 2017). Such advertisements were deemed likely to appeal to young people due to the incorporation of cartoon animal characters and novel pop-culture references (Abarbanel et al., 2017). Additional studies of wagering advertising supported this finding by citing the use of content that contained animations, memes, humour and celebrity endorsement within advertisements that may have particular appeal to children and young people (Pitt et al., 2018; Thomas et al., 2015).

In relation to gendered content, one Swedish study of TV marketing indicated that female casino gamblers were visually overrepresented within potentially targeted advertising content compared to males (Håkansson & Widinghoff, 2019). Female-orientated content was also observed in relation to the marketing of UK-based bingo websites (Stead et al., 2016). Such websites included the use of 'feminine' colour schemes alongside light-hearted, fun and reassuring content that aimed to create a sense of belonging for new customers. Bingo was also predominantly portrayed as a benign activity to engage with regularly (Stead et al., 2016).

Contrastingly, numerous studies of sports betting advertising highlighted the male-orientated focus of incorporated content (Deans et al., 2016; Lopez-Gonzalez, Estévez, Jiménez-Murcia, et al., 2018; Lopez-Gonzalez, Guerrero-Solé, Estévez, et al., 2018). For example, Australian operators positively framed sports betting via themes such as thrill, peer bonding, power/control and sports-fan rituals (Deans et al., 2016). This trend was also observable across other jurisdictions such as the UK and Spain where televised football betting advertisements were male-dominated and visually combined gambling participation, drinking alcohol and emotionally charged situations such as celebrating a goal and peer bonding (Lopez-Gonzalez, Estévez, Jiménez-Murcia, et al., 2018; Lopez-Gonzalez, Guerrero-Solé, & Griffiths, 2018). A further study conducted by Lopez-Gonzales et al (Lopez-Gonzalez, Guerrero-Solé, Estévez, et al., 2018) re-examined these British and Spanish advertisements in terms of their conceptual metaphors and concluded that operators aimed to align love for a team with betting on that team and portrayed sports betting as a rational market where the smart succeed. In addition, the positive framing of sports betting within UK advertisements may also be facilitated via the use of a dual-persuasive strategy that aims to reduce perceived risks whilst increasing perceptions of increased control. This persuasive content strategy was highlighted in one study that distinguished the incorporation of positive themes that oriented around 'free' money and fun whilst emphasising the advantageous effects of knowledge and sports-related data analysis within a masculine context (Lopez-Gonzalez, Estévez, & Griffiths, 2018).

From a broader perspective, the current review revealed a less overt positive framing of gambling by operators who utilised social media to build brand awareness amongst audiences and form positive relationships with customers. Studies conducted in both the UK and Australia highlighted the online posting of less commercial content by operators. This included posting related news and upcoming events as a means of positively normalising gambling within a broader social context (Gainsbury et al., 2016; Houghton et al., 2019). In a qualitative interview study of Australian gambling industry employees, participants disclosed sharing stories of customer wins and posting interesting news content with the aim of targeting specific audiences; sometimes this audience included young adults, while on other occasions content was directed towards higher profile social media users for the sake of brand exposure (Gainsbury et al., 2015).

### 2.2.3.1.2 Odds-related content and promoting complex bets

Several studies highlighted the dissemination of specific odds or betting-related information and content by operators within the context of sports betting. One Australian study identified that the

indirect or non-commercialised approach utilised on social media platforms used to build brand awareness was often interwoven with specific odds-related content with the aim of keeping customers informed (Gainsbury et al., 2015). Other studies focused upon the betting and odds-related content disseminated via televised sports betting advertisements. For example, in an investigation of UK and Spanish advertising depictions of betting behaviour, it was determined via qualitative content analysis that bettors were frequently shown to be partaking in 'in-play' betting via the use of smart-phones and laptops (Lopez-Gonzalez, Guerrero-Solé, & Griffiths, 2018). This emergent form of betting refers to the placement of wagers on an ongoing event that is yet to finish; bets can be modified by the user as the event progresses meaning they are often more complex and have longer odds compared to more conventional forms of sports betting (Lopez-Gonzalez, Guerrero-Solé, & Griffiths, 2018).

The current review revealed a skewed representation towards such complex bets as well as other 'exotic', 'special' or high stakes wagers within UK televised football betting advertisements. Specifically, such advertisements were more likely to depict and promote these complex bets in comparison to more simple bets during matches throughout the English Premier League (Newall, 2017) and during the 2018 World Cup (Newall, Thobhani, et al., 2019; Newall, Walasek, et al., 2019). The authors argued that this was facilitated via a qualitative trend amongst the advertisements that is theoretically designed to nudge bettors through multiple channels towards more impulsive and high-risk bets with larger potential payoffs (Newall, 2017; Newall, Thobhani, et al., 2019; Newall, Walasek, et al., 2019). This was also observable amongst conventional gambling advertisements within UK bookmaker shop windows during the 2014 World Cup (Newall, 2015). It was found that odds-related content associated with complex bets was advertised almost exclusively via this method (Newall, 2015). No included studies focused on comparing the depiction of complex vs simple sporting bets within other jurisdictions such as Australia or Sweden. It appears this topic has most thoroughly been investigated in the UK thus far. However, it is acknowledged that studies published in languages other than English may have also examined this topic but were subsequently excluded from the current review during the literature search.

### 2.2.3.1.3 Financially incentivising content

The current review identified a prominent theme of operators incorporating financial incentives into advertising content that took a wide range of forms. Within the included studies financial incentives were characterised by their intended purpose of encouraging gambling amongst consumers by providing them with inducements, offers and promotional deals such as 'free bets', bonuses and

matched deposits (Hing, Sproston, et al., 2017). In comparison to traditional media sources such as television, financial incentives are often disseminated digitally via mobile and social media sources that do not typically adhere to established advertising restrictions (Hing, Sproston, et al., 2017). Although financial incentives are distributed within the context of various gambling types (Håkansson & Widinghoff, 2019; Stead et al., 2016), they are most commonly associated with sports betting (Hing, Sproston, et al., 2017; Houghton et al., 2019; Killick & Griffiths, 2020; Rawat et al., 2020).

The extensive variability of gambling-related inducements and offers was highlighted within an Australian study that identified 15 different types of incentivising content (Hing, Sproston, et al., 2017). This included; sign-up offers, refer a friend offers, happy hours, refund (stake back) offers, odds-bonuses and winnings paid back to the consumer despite an unsuccessful bet (Hing, Sproston, et al., 2017). Such content was often disseminated by Australian sports betting operators via social media (Gainsbury et al., 2016; Thomas et al., 2015), direct emails, and texts (Rawat et al., 2020). Similarly, UK gambling operators often included inducement and offer-related content within their Twitter posting (Houghton et al., 2019; Killick & Griffiths, 2020) as well as televised gambling advertisements within a sports betting context (Lopez-Gonzalez, Estévez, & Griffiths, 2018). To a lesser degree, televised Swedish casino advertising (Håkansson & Widinghoff, 2019) and UK-based bingo websites (Stead et al., 2016) were also identified for their use of financially incentivising content aimed at prompting customer engagement.

### 2.2.3.1.4 'Responsible gambling' and harm-reductive content

Several studies identified a significant lack of 'responsible gambling' (RG) and harm-reduction messaging within the advertisements disseminated by gambling operators across a range of formats. This type of messaging typically takes the form of age restriction information, terms and conditions (T&Cs), signposting towards support services and warnings of the negative consequences of gambling (Critchlow et al., 2020). The included studies focused upon such content assimilated into or presented alongside the marketing or promotion of gambling brands, products and offers. Investigations of standalone harm-reduction or RG campaigns that fall outside of the commercial advertising efforts of the industry were not included.

In a study of Australian social casino advertisements distributed via social media, it was determined that little provision was given to such messaging where nearly 90% of all analysed adverts ($n = 115$) contained no content aimed to protect consumers from gambling-related harm (Abarbanel et al., 2017).

Similarly, this lack of harm-reductive messaging was also observed amongst other social media advertisements for Australian casino venues, lottery venues, electric gaming machine (EGM) venues and sports betting operators (Gainsbury et al., 2016). Individual inducements and offers on Australian wagering websites were also highlighted for their significant lack of RG messaging alongside lengthy T&Cs that often incorporated complicated legalistic language (Hing, Sproston, et al., 2017). Although 95% of the analysed websites ($n = 223$) displayed some form of RG message on the home page, they were characterised by their lack of prominence and visibility (Hing, Sproston, et al., 2017).

UK-based studies of gambling advertising produced comparable findings whereby Twitter posts from operators and affiliates (third parties) contained very few RG and harm-reduction messages (Houghton et al., 2019; Killick & Griffiths, 2020). In relation to UK televised sporting events, one study highlighted that only 1% of visual and verbal promotional gambling advertising references within boxing and 3% in football contained age restriction or harm-reduction messaging (Purves et al., 2020). Correspondingly, a comprehensive analysis of printed, radio, internet and televised gambling advertising in the UK ($n = 300$) found that one in seven adverts did not feature age restriction or harm reduction messages whilst one in ten did not contain T&Cs (Critchlow et al., 2020). Within adverts that did contain this content, such messages and information were characterised by very poor visibility and were unlikely to be displayed within the main frame of the advert. The majority of harm-reduction messages within the analysed advertisements failed to explicitly mention gambling-related harm (Critchlow et al., 2020).

### 2.2.3.2 Delivery and placement

The emergent delivery and placement of gambling advertising was outlined within 15 studies. Two sub-themes emerged that included: 1) The expansive placement of gambling advertising in and around sports; 2) Disseminating promotional gambling content via social media platforms.

### 2.2.3.2.1 The expansive placement of gambling advertising in and around sports

The reviewed studies primarily focused upon the more emergent developments between gambling advertising and televised sports over the past five years (Newall, 2015, 2017; Newall, Thobhani, et al., 2019; Newall, Walasek, et al., 2019; Purves et al., 2020). Only one study retrospectively assessed the prevalence of gambling within sports over the previous two decades. This was conducted via an investigation that tracked the frequency of gambling-related shirt sponsorship within English and Scottish Premier League football matches between 1992-2018 (Bunn et al., 2019). The authors

concluded that over the measured period, the gambling industry had significantly increased the frequency of gambling-related shirt sponsorship; especially within the English Premier League. The beginning of this rapid increase coincided with the introduction of the Gambling Act of 2005 whereby UK gambling rules and regulations were liberalised (Bunn et al., 2019).

The prominence of gambling advertising broadcasted around UK televised football was also highlighted in other studies that investigated the presence of commercial-break gambling advertisements that aired during 2016 Premier League matches and the 2018 World Cup (Newall, 2017; Newall, Thobhani, et al., 2019; Newall, Walasek, et al., 2019). During the 2018 World Cup, 69 televised 'live odds' advertisements were shown across 32 matches by five bookmakers on British television (Newall, Thobhani, et al., 2019). In comparison, 63 instances of 'live odds' betting were depicted within televised gambling advertisements across 2 months (28 matches) of 2016 Premier League football matches (Newall, 2017). It should be noted that these analyses focused specifically upon 'live odds' advertisements and did not include the other forms of televised football betting advertisements that also aired during this period (Newall, 2017; Newall, Thobhani, et al., 2019).

Due to such high levels of commercial-break advertising, UK gambling operators agreed to a voluntary 'whistle-to-whistle' ban on such promotions before 21:00 in 2019 (Purves et al., 2020). However, in an investigation of embedded (within play) gambling advertising that falls outside of the 'whistle-to-whistle' criteria, significant numbers of visual and verbal promotional gambling references were found in televised football and boxing (Purves et al., 2020). A total of 358 promotional gambling references were recorded over one boxing match with an average of 4.70 references per broadcast minute; 2595 promotional gambling references were recorded over five football matches with an average of 2.75 references per broadcast minute. In boxing, gambling-references were most frequently displayed within the ring, whilst in football they were most frequently displayed around the pitch (Purves et al., 2020).

### 2.2.3.2.2 Disseminating promotional gambling content via social media platforms

In congruence with the increasing prevalence and evolution of social media, numerous studies have highlighted the various delivery and placement methods employed via digital platforms to increase the exposure of gambling advertisements amongst online audiences (Abarbanel et al., 2017; Bradley & James, 2019; Gainsbury et al., 2016; Gainsbury et al., 2015; Houghton et al., 2019; Killick & Griffiths, 2020; Thomas et al., 2015). Traditional media sources such as television and printed media are still

being utilised by the gambling industry to promote products (Critchlow et al., 2020; Håkansson & Widinghoff, 2019; Newall, 2015). However, the global reach of social media platforms may provide operators the opportunity to significantly increase brand awareness, attract new customers and provide efficient customer relationship management (Houghton et al., 2019).

The platforms used by operators and affiliates to post gambling advertising and promotions included Facebook (Abarbanel et al., 2017; Gainsbury et al., 2016; Gainsbury et al., 2015; Thomas et al., 2015), YouTube (Thomas et al., 2015) and most notably Twitter (Bradley & James, 2019; Gainsbury et al., 2016; Gainsbury et al., 2015; Houghton et al., 2019; Killick & Griffiths, 2020; Thomas et al., 2015). An Australian interview study of gambling industry employees found that these social media platforms were utilised for specific purposes; Facebook was used primarily for providing rapid feedback to customer queries whilst Twitter was predominantly used for broadcasting gambling-related news and information (Gainsbury et al., 2015). Interviewees also stated that it was common practice to pay for targeted advertising space on social media rather than utilising the broader approach of blanket advertising (Gainsbury et al., 2015).

It has been previously noted that sports betting operators and affiliates maintain a prominent online social media presence for promotional and marketing purposes (Gainsbury et al., 2016). Three studies in the current review focused specifically upon the marketing activity and delivery methods of gambling operators and affiliates on Twitter (Bradley & James, 2019; Houghton et al., 2019; Killick & Griffiths, 2020). The authors highlighted the potentially high volume of promotional tweets that were posted on a daily basis. In relation to large gambling operators, two studies concluded daily tweeting frequencies ranging between 89-202 tweets (Bradley & James, 2019) and 33-398 tweets (Killick & Griffiths, 2020). Tweets were found to be distributed at peak times during the day and more often on specific days of the week; possibly in synchrony with particular sporting events (Bradley & James, 2019). Affiliates were shown to tweet more often with an average of 594 tweets per day (Houghton et al., 2019). Affiliate marketing involves promotion by third-parties who are financed by gambling operators to direct customers towards particular offers or gambling products. This growing technique is mostly utilised via social media where seemingly independent 'influencers' or 'tipsters' provide betting suggestions and recommendations (Houghton et al., 2019).

### 2.2.3.3 Structural features and mechanics

The structural features and mechanics that are incorporated into emergent gambling advertising were outlined in 11 studies. Structural features were characterised by the utilisation of design elements or properties that determine how the advertisements are engaged with by users. Mechanics were characterised by the rules, procedures and specifications associated with game types or particular bets. Two sub-themes emerged that included: 1) Utilising digitally interactive methods for marketing purposes; 2) Specific conditions and requirements of advertised bets.

### 2.2.3.3.1 Utilising digitally interactive features for marketing purposes

Emergent gambling advertisements have begun to utilise digital features that require user engagement in order to interact with the advertisement, respond to it or share it (Abarbanel et al., 2017; Bradley & James, 2019; Gainsbury et al., 2015; Houghton et al., 2019; Killick & Griffiths, 2020; Newall, Walasek, et al., 2019; Rawat et al., 2020; Thomas et al., 2015). These methods are often facilitated by the functionalities provided by social media. For example, Facebook advertisements for social casino games often utilise the 'activity' button within their posts (Abarbanel et al., 2017). This interactive feature allows the user to directly download the social casino app or automatically opens the web-browser interface of the game (Abarbanel et al., 2017). A similar characteristic was also highlighted within the promotional tweets, direct emails and texts from UK and Australian gambling operators where direct URL links to the associated betting websites were often embedded within the promotional messages sent to consumers (Bradley & James, 2019; Rawat et al., 2020).

Two Australian studies also distinguished gambling advertisements that encouraged user-interaction via social media (Gainsbury et al., 2016; Gainsbury et al., 2015). Audiences were often prompted to use the 'comment', 'like' and 'share' functions in relation to operator posts for the sake of brand-exposure (Gainsbury et al., 2016; Gainsbury et al., 2015). Another strategy of increasing brand-exposure involved the utilisation of specific Twitter hashtags that reference particular sporting events or promote certain bets (Bradley & James, 2019; Killick & Griffiths, 2020; Thomas et al., 2015). By doing so, sports betting operators could embed their promotional tweets into popular or trending threads relating to upcoming sporting events that were otherwise non-gambling related (Thomas et al., 2015).

Alongside brand-exposure, hashtag functionality was also offered to potential customers by UK gambling operators as a means of increasing user-engagement (Newall, Walasek, et al., 2019). Users

could take advantage of hashtags such as '#getaprice' and '#yourodds' that allow them to create their own bets by requesting odds for combined events (complex bets) of their choice. The gambling operator then replies back to the user with the odds for their requested bet (Newall, Walasek, et al., 2019). This interchange was also commonly performed on a more personal level where Twitter users could send public or direct messages to operators regarding their customer queries about specific bets, odds and other gambling-related information (Bradley & James, 2019; Houghton et al., 2019; Killick & Griffiths, 2020). Less overt interactions were also observable via Twitter where UK operators aimed to increase customer engagement by utilising the ability to embed online-polls into their tweets (Houghton et al., 2019; Killick & Griffiths, 2020). These polls often posed seemingly innocuous sports-related questions to users where the promotional intent of the post is not made explicit (Houghton et al., 2019; Killick & Griffiths, 2020). Examples of such polls include '*Will Harry Maguire score against Manchester United?'* (posted by Bet365 in 2018: (Killick & Griffiths, 2020) and '*What's been the best goal of the World Cup so far*?' (posted by SkyBet in 2018: (Houghton et al., 2019). Although the use of digitally interactive features of marketing was evident across numerous gambling formats (Abarbanel et al., 2017; Gainsbury et al., 2015), the evidence suggests they were overwhelmingly utilised within a sports betting context. This is likely due to the incorporation of live (sports-related) information and high level of customisation observable within sports betting. Currently, such elements appear to drive operator use of interactive features and therefore prompt interactive engagement amongst audiences more than other forms of gambling.

**2.2.3.3.2 Conditions and requirements of advertised bets and offers**

The mechanics involved with advertised bets and offers were highlighted in two studies that focused upon sports betting in both the UK (Newall, Thobhani, et al., 2019) and Australia (Hing, Sproston, et al., 2017). It was determined that many advertised sports betting incentives and inducements had specific conditions, stipulations and play-through requirements that restrict when tangible winnings can be withdrawn from a betting account. These conditions were highlighted for their abstruse and complex nature (Hing, Sproston, et al., 2017). For example, a particular sign-up incentive highlighted by Hing et al (Hing, Sproston, et al., 2017) offered bettors a 100% matched bonus up to $200 on the condition that they deposited $20 upon opening a new betting account. The conditions also stipulated that bettors needed to stake the deposit amount combined with the amount equivalent to the bonus bet at odds of 1.5 or greater. Bettors were required to do this three times over 3 months. As indicated by Hing et al (Hing, Sproston, et al., 2017), "*These play-through requirements meant that it would cost bettors $1000 of their own money for a chance to win from a $200 bonus bet*" (p. 11). Similarly, 'live-

odds' advertisements disseminated by UK bookmakers have also been shown to possess specific conditions (Newall, Thobhani, et al., 2019). During the 2018 football World Cup many 'live-odds' bets were advertised that were limited in terms of both time and quantity. Furthermore, bets were sometimes shown to be 'improving' in odds. The authors suggested that these mechanics may have been strategically designed to make 'live-odds' bets appear more urgent than necessary (Newall, Thobhani, et al., 2019).

## 2.2.4 Study 1 discussion and conclusions

This rapid review aimed to contribute to the international literature by improving understanding of emergent gambling advertising content, delivery methods and structural features. The evidence suggests that overall, gambling advertising has increased in both complexity and interactivity. In relation to content, previous reviews have highlighted advertising that positively frames or glamorises gambling in a broad sense (Binde, 2014; Parke et al., 2014). However, the current review suggests that this positively framed content has evolved and diversified beyond general glamorisation. This development is especially prominent within male-orientated sports betting advertisements that align gambling with emotionally charged situations, team loyalty and peer bonding (Deans et al., 2016; Lopez-Gonzalez, Guerrero-Solé, Estévez, et al., 2018). The evidence suggests there may also be an additional form of positive framing within this content that represents themes of increased control whilst underrepresenting themes of risk via a dual persuasive strategy (Lopez-Gonzalez, Estévez, & Griffiths, 2018). Positively framed advertising content may also be orientated towards young adults (Abarbanel et al., 2017), parents (Bestman et al., 2016) and women (Stead et al., 2016); although further research is warranted with regards to these groups.

The pattern of results also points towards the depiction and promotion of complex, in-play and exotic bets compared to simple bets within the content of UK football betting advertisements. There may be an economic underpinning to this marketing technique as complex bets are subject to longer odds, equating to potentially higher profit margins for the gambling industry (Newall, Thobhani, et al., 2019). In addition, such bets may facilitate the emergent transformation of sports betting into an accelerated, continuous and more impulse-driven form of gambling (Newall, Thobhani, et al., 2019; Parke & Parke, 2019). The current review also suggests that the dissemination of incentivising gambling content such as inducements and offers continue to remain prominent methods of encouraging potential customer engagement. These incentives now take many forms (Hing, Sproston, et al., 2017), are increasingly complicated, and are pervasively advertised (Killick & Griffiths, 2020;

Lopez-Gonzalez, Estévez, & Griffiths, 2018). Contrastingly, much less provision is given to content that contains RG or harm-reductive messaging within gambling advertisements. The included studies indicated that such content is inconsistent, characterised by low visibility and sometimes completely absent (Critchlow et al., 2020; Gainsbury et al., 2016). In their current form, such messages have been highlighted for their likely inadequacy in reducing gambling-related harm. For example, a recent eye-tracking study of bettors and non-bettors demonstrated that very few visual fixations are placed on these messages in comparison to other wagering information displayed within sports betting advertisements (Lole et al., 2019). Moreover, when specific RG messages are in fact actively perceived by bettors, the messages may fail in terms of their supposed purpose. An example of such message includes the popular UK RG slogan 'when the fun stops, stop!". This specific message was identified in approximately two-fifths of the advertising sample utilised by Critchlow et al (Critchlow et al., 2020). A recent study of 3000 gamblers, indicated that this particular message either showed no beneficial effect of curtailing gambling behaviour or produced a backfire effect that influenced increased betting participation (Philip Newall, Leonardo Weiss-Cohen, et al., 2021).

Within UK sports in particular, the placement and delivery of gambling advertising has intensified over the previous 15 years. Sports betting promotions now extend beyond conventional methods of commercial break advertising and into the area of play (Bunn et al., 2019). Consequently, shirt sponsorship (Bunn et al., 2019), verbal references made by commentators and embedded (ring/pitch side) advertisements (Purves et al., 2020) are now saturated with gambling-related stimuli. This is likely due to the unique and liberal nature of the 2005 UK Gambling Act. Although this legislation is set for review (Department for Digital Culture Media & Sport, 2021), it is unlikely that gambling-related sponsorship will be completely prohibited within UK sports. However, there is a political and academic consensus that the UK should follow nations like Spain where gambling sponsorship within football has been prohibited by law (Minsterio de Consumo, 2020). Future research should seek to investigate the emergent placement of gambling advertising within sports across jurisdictions other than the UK that are set to liberalise sports betting such as North America. In the context of the UK, further research is warranted to investigate the online areas into which gambling advertising may be diverted in response to increasingly restrictive and more effective legislation (APPG, 2020; Purves et al., 2020). This transition has already commenced to a certain extent, as evidenced by the increasing presence of gambling advertising across social media platforms (Gainsbury et al., 2016; Killick & Griffiths, 2020). The regulation of advertising across social media is likely to prove difficult given the direct and indirect promotion of gambling within these online spaces. For example, the findings of the current review indicate an emerging trend whereby operators utilise seemingly innocuous content to

build brand awareness (Gainsbury et al., 2016) and finance affiliate promotion to implicitly market gambling online (Houghton et al., 2019). The promotional intent of these methods is not often made explicit. Furthermore, affiliate marketing has been recently questioned in terms of its transparency, sincerity and true benefit to consumers (Houghton et al., 2020). Due to this increased use of third-parties, affiliate marketing may also operate as a buffer that shifts or obscures the social responsibility of the gambling industry (Houghton et al., 2019).

From a structural perspective, conventional means of disseminating gambling advertising such as television, radio and billboards have necessarily adopted a linear approach whereby advertising is a one-way process of stimuli exposure with minimal user-interaction. By comparison, the recent evidence indicates that emergent gambling advertisements have begun to utilise digitally interactive features that provide the opportunity for a more collaborative interchange between the operator and the public (Bradley & James, 2019; Houghton et al., 2019; Rawat et al., 2020). Therefore, the current review recommends the empirical study of the mechanisms and impacts associated with these emergent structural features as a future research priority. This includes promotional URL links sent directly to bettors, gambling-related 'polls' posted by operator social media accounts and gambling-related hashtags utilised by consumers.

In relation to the completeness and applicability of these findings, it appears the available evidence is sufficient but not comprehensive in addressing the present research aims. As seen within the sphere of tobacco and alcohol marketing, internal information concerning gambling industry marketing is not made readily available to the public and is therefore difficult to obtain (Anderson et al., 2006; Cassidy, Loussouarn, et al., 2013; Hastings et al., 2010). There is also a corresponding paucity of qualitative interview studies that explore marketing techniques involving gambling industry employees (Gainsbury et al., 2015). This lack of internal information results in empirical studies primarily taking an interpretative approach with researchers investigating the nature of gambling advertising via content or sentiment analysis. Although these forms of analysis are legitimate methods of elucidating subjective themes and messages within media content, appropriate measures must be taken to ensure trustworthiness (Elo et al., 2014). However, amongst such studies in the current review ($n = 20$), only 11 reported the use of numerous coders. Such methodological limitations reduce the reliability of the associated studies and impede the quality of the research area.

The included studies typically included large samples of televised gambling adverts that were representative of those aired to the public. Although the content of televised adverts may be targeted,

they are not disseminated based on the personalised data of the audience, thus individuals who watch the same television broadcast will be presented with the same advertisement. In contrast, representative online advertisements may be more challenging to obtain and investigate due to the industry trend of moving away from the use of online blanket marketing and towards the utilisation of individually targeted advertisements that utilise the digitised personal data of the user (Gainsbury et al., 2015). Theoretically, individuals could visit the same web page but be presented with different gambling advertisements. Furthermore, although mentioned anecdotally throughout the associated literature, there is a noticeable lack of research that investigates unsolicited pop-up advertising disseminated online and within mobile apps. These advertisements may be difficult to study empirically due (in-part) to their unpredictable and context-specific nature. This review therefore proposes investigation into online gambling advertisements that use personalised data as an additional future research priority in line with this popular marketing strategy.

It also appears the gambling advertising sphere may evolve at a speed that the academic literature struggles to keep pace with. The current review indicates that the literature base surrounding the nature and characteristics of gambling advertising has slowly expanded between 2015 and 2020 but remains underdeveloped in terms of scope and methodological diversity. In contrast, much more research has been conducted in relation to the similar areas of tobacco, alcohol and fast-food marketing (Hastings et al., 2005; Rosenberg & Siegel, 2001; Story & French, 2004). The majority of available evidence has been conducted in either the UK or Australia. Therefore, alongside the general paucity of existing research, even less information has been produced in relation to other jurisdictions where gambling and associated advertising have also been liberalised. Without insight into the unique gambling advertising characteristics of jurisdictions other than the UK and Australia, the associated literature remains culturally homogenous. In addition, there is a corresponding paucity of cross-cultural studies that compare the characteristics of gambling marketing based on varying regulatory approaches between jurisdictions. The current review therefore recommends the growth of such studies within the future literature in line with the global expansion of the gambling sphere.

### 2.2.4.1 Limitations:

The findings of the current review should be considered in light of some potential limitations. Firstly, only studies that were published in the English language were included. Gambling advertising is prevalent across numerous jurisdictions where English is not the primary language such as Sweden, Spain and France. Therefore, insightful and pertinent studies may have been excluded during the

search strategy. Secondly, due to the rapid review methodology utilised, limitations were placed upon the number of databases searched alongside the time dedicated to screening. For example, although the MMAT is a widely used and reputable quality assessment tool (Hong et al., 2018), it is acknowledged that more in-depth yet time consuming tools are available. Despite these potential limitations, numerous coders were involved in the screening and quality assessment process in order to reinforce the rigor of the current methodology. Furthermore, the protocol for the current review was registered online alongside the inclusion of a search strategy report (see Figure 5) to increase transparency and trustworthiness.

### 2.2.4.2 Conclusions:

There is limited research that focuses upon the content, delivery and structural features of emerging gambling advertising. The associated literature base between 2015 and 2020 has slowly expanded but is lacking in volume and diversity. This may be problematic given the findings here suggesting that as digital communication and the liberalisation of gambling advance, so do the intensity and complexity of gambling advertising. Furthermore, the online evolution of gambling advertising has resulted in more interactive adverts where the promotional intent is less conspicuous than more conventional marketing strategies. There are numerous barriers that hinder empirical investigation into these topics. A deeper understanding and further research into gambling advertising characteristics are therefore warranted in order to effectively minimise potential harm, appropriately regulate gambling advertising and encourage more ethical marketing.

## 2.3 Study 2 - *'It's basically everywhere'*. Young Adults' Perceptions of Gambling Advertising in the UK

### 2.3.1 Introduction

The effect of gambling advertising and marketing upon consumer behavior has gained increased attention within the international literature (Deans et al., 2017; Newall et al., 2018). Overall, research based on predominantly self-reported findings typically recognizes that in adult populations, disordered gamblers are the most aware of and most influenced by gambling advertising (Newall, Moodie, et al., 2019). These influences include increased involvement (Hanss et al., 2015) and riskier (more impulsive) gambling (Hing, Russell, Rockloff, et al., 2018; Hing, Russell, Li, et al., 2018). However, a recent study which tracked the marketing exposure and betting behavior of active gamblers five times a week for 3 weeks, found that marketing exposure was associated with an increase in participation and influenced riskier expenditure amongst high-risk gamblers, but also amongst low and moderate-risk gamblers, illustrating gambling marketing's effect across all gambling groups (Browne et al., 2019)

Alongside studies incorporating disordered gamblers, emerging literature has highlighted the impact of gambling advertising upon the attitudes, perceptions and intentions of young people (Nyemcsok et al., 2018). Recent studies have demonstrated that young people report high rates of exposure to gambling advertising (David, Thomas, Randle, Pitt, et al., 2020; Pitt et al., 2016), may misinterpret gambling related risks due to messages within advertising (S. L. Thomas et al., 2018), and appear particularly vulnerable to financial incentive marketing (Pitt et al., 2017a). Such findings also appear to be consistent with the reported experiences of young adult gamblers, although there is a noticeable lack of data regarding this particular group in the international literature (especially the UK), despite being perceived as a key demographic for the gambling industry (Deans et al., 2017; Kim et al., 2017).

UK gambling advertisements are overseen by the Gambling Commission and the Department for Digital, Culture, Media & Sport (DDCMS) and must comply with the UK Advertising Codes issued by the Committees of Advertising Practice (CAP) administered by the Advertising Standards Authority (ASA). According to the ASA guidelines, gambling advertising must be "socially responsible", with specific emphasis placed upon the protection and safeguarding of 'children', 'young people under 18' and 'other vulnerable groups' (Committee of Advertising Practice, 2014). Although

these guidelines have been considered ambiguous (Carran, 2018), much less regulated are the gambling-related advertisements that are disseminated across the online environment within the UK. Unlike jurisdictions such as Australia and America that prohibit online interactive gambling (such as online casinos), current UK legislations have permitted such forms of gambling since the Gambling Act of 2005. The UK has also seen a rapid shift away from advertising gambling via traditional media such as television, and towards the online sphere via targeted pop-up advertising and social media marketing. This trend creates a unique and complex issue specific to the UK given the noticeable lack of policies that regulate the online advertising of gambling and the sizeable user-base of younger generations that frequent the online environment (Hörnle et al., 2019).

Statutory definitions of gambling-related vulnerability in the UK almost exclusively include children and adolescents. Although protective measures amongst this audience are indeed warranted, the transition from childhood into adulthood is a gradual process. Although young adults can gamble from 18 years of age within the UK, previous research suggests gambling often requires cognitive capabilities and comprehension that fully develop around 21-25 years of age (Cassotti et al., 2011; Smith et al., 2012). Consequently, it is possible that a sizeable number of young adults may possess a cognitive vulnerability to gambling-related harm (Carran, 2018). Longitudinal research indicates that gambling participation during late adolescence/early adulthood is a more reliable antecedent of increased future engagement than childhood participation (Carbonneau et al., 2015; Delfabbro et al., 2009). Correspondingly, UK prevalence surveys consistently classify 16-24-year olds followed by 25-34-year olds as the groups with the highest levels of disordered gambling (Gambling Commission, 2019).

These factors, amongst the ever-changing technological and regulatory landscape of gambling, warrant particular attention concerning the impact of gambling upon the experiences and lives of young adults in the UK. Due to the vast expansion of the online gambling sphere in terms of access, availability and associated advertising, the gambling environment in the UK is uniquely distinct in comparison to other jurisdictions. For example, during the 1990s UK football bettors had limited choice in placing bets before the match commenced and could only do so at licensed premises ('bookies') or via telephone (Kuypers, 2000). However, the UK now has the world's largest regulated online gambling environment enabling the placement of numerous bets before and during an event both online and via mobile gambling apps (Gambling Commission, 2018b). Furthermore, estimates indicate that the UK gambling industry spent £1.5bn on advertising and marketing in 2017, which has grown at 17% per year from 2014 (GambleAware, 2018a). It is therefore important to develop meaningful insight into

the ways in which environmental and commercial determinants, such as gambling advertising, may impact the initiation, maintenance, and facilitation of risk amongst young adults in the UK. Qualitative studies help to elucidate the meaning and behaviors of gambling among this population, and the contextual factors that impact and frame these experiences.

While emerging research focusing upon the potential impacts of gambling advertising amongst young adults has been primarily conducted in Australia and New Zealand, much less research in this area has been conducted in the UK. The current study therefore aims to contribute to the international literature regarding the influence and impacts of gambling advertising amongst young adult gamblers. This was conducted by exploring the self-reported perceptions and experiences of young adults who are exposed to and engage with gambling advertising within the UK. The research was guided by three research questions:

- What are the attitudes and opinions of young adults towards gambling advertising in the UK?
- What are their perceptions about the influence of gambling advertising upon gambling behaviors?
- What are young adults' perceptions about current measures in the UK to minimize the potential risks and harms associated with gambling advertising?

## 2.3.2 Methodology

### 2.3.2.1 Participants & Recruitment:

A convenience sample of 62 young adult respondents was recruited. Data collection was discontinued once this sample size had been reached as saturation was evident. A robust and valid understanding of the research phenomena had been attained. It was therefore determined that additional participant responses would yield no new information relevant to the research questions (Saunders et al., 2018). Participants were recruited online by posting calls for participation via gambling, gaming, and UK orientated forums within networks of online communities (Reddit); the University of South Wales home page and relative social media websites (Twitter and Facebook). Recruitment took place between April 2019 and June 2019. Based on the UK Office for National Statistics (Office for National Statistics, 2019) classification of young adults, potential respondents needed to be between the ages of 18 and 34 as well as having gambled at least once in the previous month on any form of gambling. Following an initial information sheet, consent to participate was approved digitally within the opening section of the survey. Participants were also provided with information about gambling-related help

services upon completion of the survey. No incentives were offered. Ethical approval for the study was obtained from the Faculty Ethics Committee of the University of South Wales.

### 2.3.2.2 Survey Procedure:

Due to the lack of research into this area within the UK, a qualitative descriptive approach was adopted (Sandelowski, 2000). This approach enabled the team to pragmatically explore attitudes and behaviors (Yvonne Feilzer, 2010) and provide insights into future research and policy (Seixas et al., 2018). An online survey allowed for the rapid recruitment of an adequately sized and representative sample, whilst still generating reflective and descriptive data (James & Busher, 2006). Much like interview-based methods, survey research has developed into a rigorous and legitimate research approach with the potential to be both credible and authentic (Ponto, 2015).

The opening section of the survey required respondents to provide demographic and gambling data which included; age, gender, ethnicity, residing region and gambling behaviors/frequency. The qualitative questions were presented within the survey via an open-ended format with a 'no-limit' text box in which to answer. Participants were asked a range of qualitative questions that were consistent with the research questions of the current study. These questions orientated three main themes that included: 1) Gambling advertising exposure. Examples include: '*Where do you typically see gambling advertisements*' and '*How often do you typically see gambling advertisements*. 2) Attitudes towards or moral judgements of gambling advertising, for example: '*Please let us know in your own words, how you feel / what your stance is regarding gambling advertising that young people like yourself encounter*'. 3) Perceptions of advertising impact, for example '*In what ways (if any) do you think these advertisements influence you*?'. Following these questions, participants were directed to an additional set of questions that are separate from the current study (see *chapter 3 – study 3*). The themes that framed the qualitative questions were developed in line with emerging literature that evaluates gambling advertising via three separate constructs consisting of delivery and frequency, potential effect and the subsequent attitudes towards advertising (Bouguettaya et al., 2020; Newall, Moodie, et al., 2019). See Appendix B for the full survey.

The decision was made to avoid the implementation of gambling-related screening tools such as the Problem Gambling Severity Index (PGSI) (Ferris & Wynne, 2001), to categorize respondents into non-problem, low-risk, moderate-risk or problem-gambler classifications. Rather than framing perceptions according to a problem gambling screening tool, this study sought to understand participants'

interactions and observations about gambling advertising in their everyday environments via their own descriptive narrative and self-reported gambling frequency.

### 2.3.2.3 Data Analysis:

An inductive thematic analysis was undertaken using the guidelines provided by Braun and Clarke (2006). This method was selected, (1) based on the paucity of any existing UK-based literature that specifically addressed the research topics, and (2) to avoid integrating the analyses with previously explored issues associated with perceptions towards gambling advertising and advertising impact. JT conducted the main analysis, with ND, GRD and BJ providing credibility checks of the coding, categorization, and thematic reports (see [Positionality and reflexive account](#) for further context).

The process began with the researchers familiarizing themselves with the data. This involved repeated readings whilst noting initial ideas and observations concerning any general patterns within the data. The length of the qualitative responses varied between participants although the majority consisted of a succinct paragraph presented for each question. However, some responses were comprised of singular sentences while others took the form of numerous paragraphs. To distinguish anything of relevance to the research questions, the data was subsequently broken down via a process of open coding (Strauss & Corbin, 1990). This was conducted upon the individual survey responses line-by-line to also address the variance in response length between participants. This process of open coding was used to produce as many codes as necessary to capture the general essence of the data, but involved minimal interpretation at this stage (Braun & Clarke, 2006; Patton, 2014). Second-cycle coding was then undertaken as part of the constant comparison of data, with interpretations being made at the semantic level (Braun & Clarke, 2006; Charmaz, 2006). This involved re-examining the codes, adjusting them and creating the higher-order categories allowing for the emergence and development of wider themes until data saturation had been reached (Clarke & Braun, 2018; Fereday & Muir-Cochrane, 2006). Lastly, selective coding was completed to solidify and appropriately label the main themes consistent with the research questions. Inductively generated sub-themes were produced that are encompassed by these main themes (Fereday & Muir-Cochrane, 2006). Regular meetings took place to summarize and discuss these themes/subthemes among the wider research team to ensure relevance, salience and workability before the report was produced.

The themes and subthemes were developed based on meaningful aspects throughout the data. That is, relevance to the research questions rather than ranking and analyzing how many times topics were

mentioned. Despite this, quantifiers (a small number = 1% – 25%, several = 26% – 50%, many = 51% – 75%, and most = 76% – 100%) were used in a systematic way in order to provide insight regarding the salience of experiences and perceptions among the participants.

### 2.3.3. Results

### 2.3.3.1 Participant Characteristics:

General demographics and gambling frequencies are detailed in Table 4. A total of 62 young adults participated in the study. The sample was aged 18-29, had a mean age of 23.69 (*SD* = 3.46), and most (*n* = 49, 79%) were male. Despite the inclusion criteria, no potential participants between the ages of 30 and 34 submitted responses. In relation to gambling frequency, 19 (30.6%) participants gambled monthly, 21 (33.9%) participants gambled weekly, 15 (24.2%) participants gambled a few times a week and 7 (11.3%) participants gambled every day.

Self-reported gambling behaviors are presented in Table 3. Participants reported engagement with a wide range of gambling types. Within the sample, 47 participants (75.8%) reported engaging with multiple gambling products. The majority of participants (*n* = 51, 82.3%) engaged with online sports betting. This was also reflected amongst male participants (*n* = 49) who reported participation in online sports betting with the highest frequency (*n* = 45, 91.8%) compared to other gambling types. Amongst female respondents, participation in the National Lottery draw was the most frequently reported gambling behavior (*n* = 8, 65%).

**Table 3.** Self-reported gambling behaviours of the sample

| | Gender | | Gambling Frequency | | | | Total |
|---|---|---|---|---|---|---|---|
| **Gambling Behaviour** [a] | **Male** | **Female** | **E** | **F-W** | **W** | **M** | |
| | (n = 49) | (n = 13) | (n = 7) | (n = 15) | (n = 21) | (n = 19) | (n = 62) |
| Online Sports Betting | 45 (91.8%) | 6 (46.2%) | 6 (85.7%) | 14 (93.3%) | 15 (71.4%) | 16 (84.2%) | 51 |
| Sports Betting at venue (bookmakers, event etc.) | 13 (26.5%) | 1 (7.7%) | 1 (14.3%) | 4 (26.7%) | 6 (28.6%) | 3 (15.8%) | 14 |
| Online Poker | 8 (16.3%) | 1 (7.7%) | 3 (42.9%) | 1 (6.7%) | 1 (4.8%) | 4 (21.1%) | 9 |
| Online Casino Games (roulette, slots etc.) | 18 (36.7%) | 0 | 5 (71.4%) | 5 (33.3%) | 6 (28.6%) | 2 (10.5%) | 18 |
| Casino Venue | 9 (18.4%) | 0 | 1 (14.3%) | 3 (20.0%) | 3 (14.3%) | 2 (10.5%) | 9 |
| Online Bingo | 2 (4.1%) | 4 (30.8%) | 1 (14.3%) | 0 | 3 (14.3%) | 2 (10.5%) | 6 |
| Bingo Venue | 1 (2.0%) | 2 (15.4%) | 0 | 0 | 2 (9.5%) | 1 (5.3%) | 3 |
| Esports | 3 (6.1%) | 0 | 0 | 0 | 3 (14.3%) | 0 | 3 |
| FOBT | 1 (2.0%) | 1 (7.7%) | 0 | 0 | 1 (4.8%) | 1 (5.3%) | 2 |
| National Lottery | 2 (4.1%) | 8 (65.0%) | 0 | 2 (13.3%) | 3 (14.3%) | 5 (26.3%) | 10 |

*Note:* [a] *respondents could choose more than one answer, (%) = percentage of column*

*E = everyday, F-W = few times a week, W = weekly, M = monthly*

**Table 4**. Demographic characteristics and self-reported gambling frequencies of the sample.

| Demographic Category | ($n$ = 62) (%) |
|---|---|
| **Gender** | |
| Male | 49 (79) |
| Female | 13 (21) |
| | |
| **Age** | |
| Mean | 23.69 ($SD$ = 3.46) |
| Range | 18-29 |
| | |
| **Ethnicity** | |
| White | 33 (52.8) |
| White British | 21 (33.6) |
| Scottish White | 2 (3.2) |
| British Asian | 2 (3.2) |
| Latin | 1 (1.6) |
| Romanian | 2 (3.2) |
| Mixed Ethnicity | 1 (1.6) |
| | |
| **Residing Region** | |
| Wales | 15 (24.2) |
| Scotland | 6 (9.7) |
| Northern Ireland | 3 (4.8) |
| Yorkshire & The Humber | 2 (3.2) |
| West Midlands | 5 (8.1) |
| Southwest England | 2 (3.2) |
| Southeast England | 5 (8.1) |
| Northwest England | 6 (9.7) |
| Northeast England | 4 (6.5) |
| Greater London | 10 (16.1) |
| East of England | 3 (4.8) |
| East Midlands | 1 (1.6) |
| | |
| **Gambling Frequency** | |
| Every day | 7 (11.3) |
| A few times a week | 15 (24.2) |
| Weekly | 21 (33.9) |
| Monthly | 19 (30.6) |

### 2.3.3.2 Research Themes

Three main themes emerged from the participants' responses. These included a) The awareness and perception of gambling advertising strategies; b) The perceived impact and influence of gambling advertising, and c) The need for improved public health measures. The main themes are encompassed by numerous sub-themes (Table 5) that are discussed with reference to corresponding participant quotes.

**Table 5.**

Summary of research themes that captured the perceptions and experiences of young adults towards gambling advertising

| Main theme | Sub-theme |
| --- | --- |
| Awareness and perceptions of gambling advertising strategies | • Advertising saturation<br>• Exposure amongst the vulnerable<br>• Amalgamating gambling and the young-male identity<br>• Misleading and disingenuous content |
| The perceived influence and impact of gambling advertising | • Increased participation or gambling intentions<br>• Normalisation<br>• Misinterpretation<br>• Third-person effect |
| The need for improved public health measures | • Tokenistic 'responsible gambling' messages<br>• A need for tighter regulation or advertising prohibition |

### 2.3.3.2.1 Theme one: Awareness and perceptions of gambling advertising strategies

### 2.3.3.2.1.1 Advertising saturation

Many participants perceived an increase in volume, frequency, and intensity of gambling advertising that in their view had become unnecessarily high in the UK. With many participants reporting daily exposure, such high frequencies of gambling advertisements were widely deemed to be immoderate and unwarranted. Participants felt that their day-to-day experiences were '*saturated*' with gambling advertisements where '*every other ad is gambling-related*'. Amongst these participants, constant and unnecessary marketing exposure was perceived to be an infringement upon autonomy. Operators were therefore viewed unfavorably when advertising content pervasively infiltrated online privacy.

> 'If anything, it just makes me hate the companies who pay for advertising to shove it down people's throats constantly. I'm more likely to avoid a company whose ad I've had to hide from my social media feeds.' (25-year-old-female, gambles weekly)

### 2.3.3.2.1.2 Exposure amongst the vulnerable

Not all individuals were perceived to possess the ability to *'mentally resist'* the high levels of gambling advertising in the UK. Several participants therefore provided moral judgements indicating that it was not only unethical, but also '*manipulative*' to expose gambling-related advertising to those considered particularly susceptible to advertising influence. Those with maladaptive gambling behaviors, the financially underprivileged, inexperienced customers, and children/young people, were amongst those considered vulnerable to industry exploitation and manipulation.

> 'It's [*gambling advertising*] basically everywhere and that's completely wrong. The surge in big-brand free-to-play slots and spin-games that are directly targeting youth via mobile apps are most concerning. It isn't technically recognized as advertising, but it's worse! It's free to play to teach the risk and reward.' (29-year-old male, gambles monthly).

The only group to discuss a vulnerability to gambling advertising with reference to themselves included four participants who openly disclosed their own disordered gambling. One participant described how the inducing effect of gambling advertising may sometimes be indirect, but detrimental nonetheless:

> 'I believe that for those with a recurrent gambling issue such as myself, that gambling advertising can be especially enticing. For these reasons I opine that gambling advertising can contribute to the detriment of a person's mental wellbeing and can indirectly persuade people (especially those with previous gambling difficulties) to gamble. In essence I see gambling advertising as highly problematic.' (27-year-old male, gambles everyday)

### 2.3.3.2.1.3 Amalgamating gambling and the young-male identity

A small number of female participants with less frequent gambling behaviors and males who were higher in age were more likely to provide an overall negative perception of advertising campaigns that were perceived to intentionally exploit the relationship between gambling and the young masculine identity. In this context young men were perceived as being enticed into '*a toxic environment*' that was being strategically '*pushed onto lads in particular*' via content constructed solely to resonate with young males.

'I feel it's [*gambling advertising*] quite cruel and unethical at present. Lots of the promo deals and "new customer deals" are designed to lure in mostly men who are trying to find their way and prey on human nature to get people addicted.' (25-year-old female, gambles monthly)

This same level of criticism for gambling ads, promotions and '*lad culture*' was not offered within the accounts of younger male participants with a higher gambling frequency. This group were more likely to express little ethical concern regarding the gambling industry stating that they '*we're not bothered*' and possessed the agency to '*make their own decisions*'. Promotional offers that were disseminated to this group were perceived to be useful, helpful and ultimately advantageous to utilize throughout or during the initiation of a gambling session. It was stated by these respondents that such offers facilitated increased betting involvement, but this was not viewed negatively. One participant defended the industry against claims of underage exposure:

'I think it's absolutely fine as gambling companies have every right to advertise. The consumer has the power to choose whether to take action from an advert they see. Marketing is a key way for a company to sell their goods. Only people aged 18+ can gamble so operators would be wasting their money if they targeted anyone under the age of 18.' (19-year-old male, gambles every day)

### 2.3.3.2.1.4 Misleading and disingenuous content

Many participants commented on how marketing content utilized by gambling operators in the UK was deliberately tempting, yet '*grossly misleading*' and '*disingenuous*' in actuality. Incentivized promotions such as free bets or 'odds boosts' were often described as dishonest and deceptive means of '*hooking customers in*' via '*fake treats*' or '*free money*' that ultimately yielded little to no tangible returns. It was stated that the intended purpose of such marketing techniques was to '*abuse the loopholes of language*' and deliver '*false promises*' in order to deceptively persuade customers to engage with specific gambling services.

'When I hear such ads like "deposit £10 and we'll give you £40 free to play with" I can see why people get pulled in. The small print often states that there are a lot of hoops to jump through before you get this "free money". It'll state that you need to win a certain amount before you can withdraw; meaning you can't get the money outright.

This means you keep gambling with your own money once you're there' (24-year-old female, gambles weekly).

### 2.3.3.2.2 Theme two: The perceived influence and impact of gambling advertising

### 2.3.3.2.2.1 Increased participation or gambling intentions

Many participants stated that they perceived gambling advertising to be constructed and disseminated for two fundamental purposes; '*the adverts are geared towards capturing new customers into their service*' alongside '*keeping existing customers involved*'. It was therefore suggested that gambling advertising can be attributed to an increased intent or induced participation amongst audiences. Personal accounts of this direct advertising effect were reported amongst the participants who described the interaction between exposure and subsequent behavior/cognition in various ways. Primarily, increased intent to participate was described as a '*subliminal instillation of interest*' via gambling advertisements that operate as impulse driven '*reminders*' for new or existing customers. A small number of participants conveyed how increased intent was more than likely the precursor to participation. This effect was considered intentional for obvious economic reasons, with some participants offering particularly insightful experiences with such advertising at high frequencies.

'As someone who used to work in a *[popular high-street bookmakers]*..I would sit in work all day surrounded by the adverts. Because of this, my own gambling increased greatly so I think they *[adverts]* work well at what they are aiming to do.' (23-year-old female, gambles monthly).

### 2.3.3.2.2.2 Normalization

Amongst many of the accounts provided by the sample, gambling advertising was deemed responsible for facilitating the overall '*normalization*' of gambling behavior across the UK in recent years. Due to the influx in such advertising, participants described how gambling was often portrayed as something '*normal that all adults do*'. In addition, the use of celebrity endorsement was seen to be adding to this normalization by '*making gambling seem like something cool to be involved with*'. Gambling advertising was considered the primary catalyst in deeply embedding gambling into British culture due to widespread normalization, depicting ease of use and publicizing increased accessibility. Amongst several male participants, this normalization effect was recognized as permeating the world of sporting culture via a particularly noticeable interaction. Gambling advertising was described as

'*infiltrating*' sports to the point where gambling and spectating sports had often become synonymous with each other within an ever-strengthening symbiotic relationship.

> 'I can't watch a sports game without continuously applying odds to the gameplay due to the constant gambling advertising throughout' (29-year-old male, gambles weekly).

### 2.3.3.2.2.3 Misinterpretation

Several respondents stated that gambling adverts only '*show the fantastic points of gambling*' in a '*glamorous*' or '*glorified*' manner rather than also including more realistic representations such as loss, frustration or addiction; '*They never show people losing money and they don't mention gambling is like a drug*'. This perceived misrepresentation within the advertisements was deemed responsible for audiences (mis)perceiving the levels of risk and control associated with gambling and depicting the behavior as '*a way of making easy money*', especially when engaging with the gambling environment as a novice user. The following 18-year-old male described that he only realized the true influence of marketing after he started to experience problems with his own gambling:

> 'Until I started losing and realizing what a mess gambling was getting me into, the ads were making it all look so easy to earn quick cash as a guaranteed win.' (18-year-old male gambles a few times a week).

### 2.3.3.2.2.4 Third-person effect

Although many respondents were able to self-report and discuss direct advertising effect, others reported little to no observable effect when asked how the ads impacted them personally. For this group, the effects of gambling advertising were deemed powerful and effective; but only in reference to others rather than themselves. This perception was expanded upon by respondents who highlighted that self-related gambling advertising impact is difficult to recognize given its nuanced and unconscious nature. Amongst this group, gambling advertising was deemed complicated and difficult to pin down in terms of its effects where the ads '*do and don't*' influence them. Respondents stated how the impact is '*hard to measure*' but accepted that there was indeed a resulting effect; primarily involving a cueing effect that did not operate at the conscious level.

'They [*gambling advertisements*] don't consciously influence me, at the time I'm watching them I don't think much of them. But I'm sure whenever I'm thinking about gambling, those ads have been creeping around.' (23-year-old male, gambles weekly).

### 2.3.3.2.3 Theme three: The need for improved public health measures

### 2.3.3.2.3.1 Tokenistic 'responsible gambling' messages

Several participants indicated that the disingenuous narrative utilized to '*misguide*' audiences towards the gambling environment was also apparent within the compulsory 'responsible' gambling messages that are displayed within UK gambling advertisements. Given that gambling was described as being '*highly addictive*' and was perceived to be promoted to audiences at a high frequency via methods deemed '*predatory*', participants described these messages as contrived, superficial and ineffective. From this perspective, the industry was seen to be doing the bare minimum in a '*token*' attempt to simply '*tick a box rather than actually meaning anything*' with such messages. The narrative disseminated within the 'responsible' gambling messages was described as so '*half-hearted*' and hypocritical that participants deemed them '*almost a joke*' that appeared to be '*taking the mick*'. Participants considered it unfortunately ironic that such messages were the most fruitless amongst those who needed them the most.

### 2.3.3.2.3.2 Tighter regulation or advertising prohibition

A need for the reduction, prohibition, or heavier regulation of gambling advertising strategies across the UK was described by several participants. It was highlighted how the promotion of other addictive products such as tobacco and alcohol were either strictly regulated or simply prohibited. Participants stated that gambling possessed an '*addictive nature, with the highs of winning being as powerful as any drug*' leaving participants frustrated as to why gambling was not treated accordingly. Older participants with less frequent gambling behaviors were more likely to provide such accounts (alongside four young males openly disclosing current or previous gambling issues), proposing a zero-tolerance approach to gambling ads where they should be '*banned all together*':

'It's basically bad; there's absolutely no reason gambling adverts should be tolerated, while smoking and other addictive products are not allowed to be advertised. Especially as gambling has been shown to be bad for mental health, as well as the wallet.' (27-year-old male, gambles monthly)

### 2.3.4 Study 2 discussion and conclusions

This qualitative study explored the opinions, beliefs and experiences of young adult gamblers in an effort to better understand the perceptions and reported effects of gambling advertising amongst this group. The findings of the study indicate that respondents deemed gambling advertising to be unethically frequent and pervasive. The recent increase and expansion of UK gambling advertising corresponds with participants reporting their lived experiences to be saturated with such content (GambleAware, 2018a). In the case of the young adult sample, the facilitation of gambling-related risk appears likely given the literature suggesting a positive correlation between frequent advertising exposure and increased gambling participation (Bouguettaya et al., 2020; Hing, Russell, Li, et al., 2018). Specific advertising strategies were also deemed unethical if they orientated notions of 'masculinity' targeted towards young male bettors. The female and older male gamblers of the current study perceived and denounced such methods in line with the literature that suggests industry attempts to amalgamate the young masculine identity with participation in gambling (Deans et al., 2017). Unique challenges arise due to the notion that several young male sports bettors regarded the ads targeted towards them to be completely ethical and advantageous. The young male sports bettors who expressed such acquiescent opinions towards advertising also reported participating in gambling at higher frequencies compared to other participants within the sample. Numerous studies indicate a positive correlation between gambling frequency and experiencing gambling-related harm (Currie et al., 2006; Salonen et al., 2018). These findings therefor raise potential harm-related and risk-perception implications amongst young male sports bettors given the literature that suggests sports-betting advertising often incorporates content aimed to resonate with young males; offering them an increased sense of control and lowered risk (Deans et al., 2016; Deans et al., 2017).

The present findings also indicate that young adults deemed advertising exposure amongst vulnerable audiences to be highly unethical. Aligning with emerging notions of vulnerability that are more comprehensive and adaptable (Carran, 2018), the respondents perceived the vulnerable to encompass disordered gamblers, inexperienced and naïve customers, the financially underprivileged (Van der Maas, 2016), those desperate to recuperate losses (Hing, Russell, Rockloff, et al., 2018) and most notably, children and young people (Sharman, Butler, et al., 2019). A joint WHO–UNICEF–Lancet commission has stated that the commercial marketing of products that are harmful to children represents one of the most underappreciated risks to their health and wellbeing (Clark et al., 2020) and raises concerns about the exposure of children to gambling-related adverts and the inability of the gambling industry to appropriately self-regulate. Furthermore, with many participants reporting daily

exposure and a subsequent difficulty in avoiding current levels of gambling advertising, further complications are highlighted surrounding the realistic utility and efficacy of self-regulation within the UK gambling sphere in general. The perceptions of the respondents are consistent with the emerging literature that rejects the false dichotomy of 'safe' vs 'problem' gamblers (Carran, 2018; John et al., 2020). Rather, the critical perception was provided by the young adults where particularly 'at-risk' or vulnerable individuals represent a sizeable yet fluid cohort who are open to communication from gambling advertising and marketing.

Respondents also described the unethical nature of utilizing misleading language and deceptive stipulations within gambling-related marketing in order to 'entrap' consumers. It is suggested that components such as misleading promotions facilitate engagement and eventual monetary deposit via an interaction with various online product features that provide the constant opportunity to extend gambling sessions (Parke & Parke, 2019). Many of the young adults recognized the ethical issues associated with such marketing strategies. This recognition typically came after experiencing this behavioral loop for themselves, which warrants concern for inexperienced young adults who wish to engage with the gambling environment via financial incentivization.

Participants commented that unrealistic depictions within advertising content could cause misinterpretations related to gambling. These responses correspond with recently conducted content-analyses on UK gambling advertising (Bradley & James, 2019). Such literature highlights the emergence of an intentional dual-persuasive strategy within gambling advertisements where control and odds-related cognitive distortions are likely to be facilitated amongst audiences. This is particularly concerning in relation to the young adult sample of the current study given the potential cognitive vulnerability to gambling-related harm associated with this population (Carran, 2018). It is suggested that advertising narratives that enhance perceived control yet reduce perceived risk, combined with new technology and structural product features that supposedly aid that process, magnify bettors' perceived advantages, persuading them to bet more recklessly (Lamont et al., 2016).

Overall, various negative issues associated with gambling advertising were discussed by the participants including misleading content, the facilitation of increased gambling participation, the proliferation of gambling-related misinterpretation and the persistent advertisement of a product that was deemed 'highly addictive'. Respondents therefore negatively perceived the pervasive depiction of gambling as a 'normal' behavior via advertising and promotion. Such widespread depictions were deemed responsible for propagating and embedding gambling across UK culture. These findings

supplement the international literature base whereby consumers appear to provide relatively negative perceptions towards to the overall normalization of gambling behavior (Salonen et al., 2018; S. Thomas et al., 2018). Awareness of this normalization was particularly noticeable amongst males who engaged with sports betting. The 'gamblification' of sports has garnered a growing amount of academic attention over the previous decade as the convergence between sports culture and betting develops via an ever-strengthening relationship (Jones et al., 2020; Purves et al., 2020).

In order to alleviate these various negative advertising effects, several participants called for tighter regulation or prohibition of gambling advertising. These narratives align with the wider political and academic debate observable in relation to the UK as well as other jurisdictions (Djohari et al., 2019; Hörnle & Carran, 2018). Highlighted within this debate is the growing need for much stronger and more appropriate regulation of gambling advertising (and sports sponsorship) requiring a complete overhaul of the 2005 UK Gambling Act (APPG, 2020). A review of the Gambling Act was scheduled for 2021 (Department for Digital Culture Media & Sport, 2021). However, numerous delays and a lack of clarity in relation to specific areas of need (such as gambling advertising) suggest that this 'regulatory reform' may not meet the required levels of effectiveness. UK-based 'responsible gambling' messages were also deemed ineffective by several of the participants. The notion of responsible gambling is suggested to offset the responsibility of gambling-related harm upon the consumer, ignoring the potentially harmful features of gambling products and related advertising (Livingstone & Rintoul, 2020).

It is clear within the areas of alcohol and tobacco that harm prevention is possible, but to do so in relation to gambling may require the rejection of responsible gambling messages and implementation of a public health approach that incorporates vast (and timely) regulatory reform. Given that gambling has been inextricably associated with behavioral addiction (Brooks et al., 2020; Clark et al., 2013; Potenza et al., 2019), it appears much improvement is needed in terms of providing the public with an experience that is underpinned by ethical conduct, recognizing gambling as an issue of public health (Atherton & Beynon, 2019) and implementing effective harm reduction strategies. For example, the voluntary ban on gambling advertising broadcast during televised sport before 21:00 in the UK (whistle-to-whistle ban) is considered to have little effect on advertising exposure as gambling sponsorship rapidly extends beyond commercial break advertising (Purves et al., 2020; Roderique-Davies et al., 2020). It is unlikely that the UK will follow nations such as Italy and Spain, who have completely prohibited gambling advertising (Kelly, 2018). However, the perceptions of the current sample suggest a structural and regulatory overhaul is warranted in an attempt to minimize consumer

deception, advertising bombardment and advertising exposure amongst vulnerable audiences within the UK.

### 2.3.4.1 Limitations

It is important that the findings, discussion, and conclusions of the present study are acknowledged in light of its limitations. Firstly, despite flexibility being a core advantage of the qualitative approach, this is potentially at the cost of methodological rigor. To increase the trustworthiness and practical utility of the current findings, a thematic analysis was used (Braun & Clarke, 2006) alongside a second coder to ensure inter-rater reliability. It should also be noted that although respondents were recruited from every region of the UK, the study incorporated only 13 female participants. It is possible that additional women could have revealed more gender-specific experiences. Further research is therefore warranted with regards to female gamblers and advertising within the UK gambling environment.

### 2.3.4.2 Conclusions

The accounts provided by the young adults of the current study indicate that they perceive numerous negative effects of gambling advertising at both the individual and societal level. Such narratives offer experiential evidence in contribution to the international debate surrounding the recognition of gambling as an issue of public health. This transformation is indeed warranted given that the young adults of the sample often perceived the previously imposed 'responsible' gambling messages within promotions to be tokenistic and ineffective. Future research is warranted to ensure support for measures to promote ethical industry marketing in accordance with those implemented or proposed for tobacco and alcohol.

## 2.4 Chapter discussion

The overarching purpose of the current chapter involved addressing two of the overall thesis research aims; 1) To provide evidence of the rapid expansion and increased complexity of modern gambling advertisements from a psychological perspective; 2) To provide original and novel insight in relation to how these advertisements are perceived by potentially vulnerable audiences. These aims were respectively addressed by two studies that utilised a rapid-review methodology in relation to gambling advertising strategies (Study 1) and a qualitative investigation of young adults' perceptions towards gambling advertising within the UK (Study 2).

Each of these empirical studies were also underpinned by more specific research aims and questions. For example, Study 1 aimed to investigate 1) The content and narratives incorporated within gambling advertising; 2) The methods of gambling advertising delivery and placement; 3) The mechanics and structural features of gambling advertising e.g., design, usability and complexity. Study 2 was underpinned by three specific research questions; 1) What are the attitudes and opinions of young adults towards gambling advertising in the UK? 2) What are their perceptions about the influence of gambling advertising upon gambling behaviors? 3) What are young adults' perceptions about current measures in the UK to minimize the potential risks and harms associated with gambling advertising? In combination, these studies provide a holistic view of the current gambling advertising landscape that supplements the existing quantitative literature in this area. In comparison to the separate interim discussions of these studies, the current chapter discussion will briefly summarize their findings in combination and will discuss the associated implications more broadly in relation to the bespoke risk environment. Specifically, the findings of Study 1 and 2 are underpinned by an interaction between two components within the bespoke risk environment model; *pervasive marketing strategies* and *consumer vulnerabilities*.

In regards to Study 1, the findings of this rapid review indicated that the positive framing of modern gambling advertising content has diversified beyond the simple glamorisation highlighted within previous reviews (Binde, 2014; Parke et al., 2014). For example, the results indicated that sports betting advertisements often positively align gambling with team loyalty and male comradery (Deans et al., 2016; Lopez-Gonzalez, Guerrero-Solé, Estévez, et al., 2018). Female and older respondents within Study 2 were more likely to express negative views towards these advertising strategies that were perceived to unethically amalgamate betting with the young male identity. This concept has also been highlighted within alcohol advertisements where the male identity is interwoven with alcohol consumption in a way that encourages misconceptions of the associated risks (Strate, 1992). Within a gambling context, such an alignment has the potential to facilitate bespoke gambling risks for young males via the depiction of 'symbolic consumption' behaviours that involve this addictive product (Deans et al., 2016). Specifically, young males' risk-perception towards sports betting products may be hindered by advertising narratives that promote this gambling mode as an innocuous component of being male. However, recent research involving male treatment-seeking disordered gamblers has highlighted that conformity to masculine norms (as often portrayed in sports betting advertising) facilitates maladaptive gambling and creates barriers to help-seeking (Hunt & Gonsalkorale, 2018).

The pattern of rapid review findings also suggests that there may be an emergent positive framing within gambling advertisements that (over)emphasises skill whilst underrepresenting risk via a dual-persuasive strategy (Lopez-Gonzalez, Estévez, & Griffiths, 2018). This was supported via the reported perceptions of several respondents from Study 2 who expressed that such advertising strategies were responsible for audiences 'misperceiving' the harmful nature of gambling. In relation to the facilitation of bespoke risk, this dual persuasive strategy has been highlighted for its potential role in the formation of cognitive distortions. Specifically, illusions of control (Langer, 1975) whereby sports bettors disproportionately judge their own betting success as higher than objective probability would warrant. There is also evidence to suggest that sports betting advertisements commonly depict riskier, complex, and exotic bets in comparison to simplistic bets that may encourage the shift of this gambling mode into a more rapid, continuous, and more harmful form of gambling (Newall, Thobhani, et al., 2019; Parke & Parke, 2019).

The rapid review also indicated that gambling advertisements incorporate a vast array of financial incentives that encourage engagement with the brand, but are often subject to esoteric and strict playthrough requirements which make tangible winnings less likely (Hing, Sproston, et al., 2017). It is therefore unsurprising that respondents from Study 2 perceived these incentives to be '*disingenuous*', '*grossly misleading*', and expressed that they often '*abuse the loopholes of language*'. In relation to the bespoke risks associated with these financial incentives, mounting research indicates that such promotions are unlikely to be fully understood by young or vulnerable consumers (Hing, Sproston, et al., 2017). Specifically, such incentives often encourage risky and more impulsive betting whilst regularly failing the basic requirements of informed choice (Hing, Sproston, et al., 2017). Despite these findings, the rapid review indicated that the presentation of 'harm-reductive' content within modern gambling advertisements is generally inconsistent and is often inconspicuous, out of frame, or absent (Critchlow et al., 2020; Gainsbury et al., 2016). Correspondingly, many of the young adult respondents in Study 2 called for the tighter regulation or prohibition of gambling advertising in the UK and deemed industry constructed harm-reduction messages to be '*tokenistic*' or ineffective.

There are bespoke risks associated with messages that do not adequately serve the purposes of harm reduction. For example, various gambling advertisements are often aimed at specific target demographics such as young males (Lopez-Gonzalez, Guerrero-Solé, & Griffiths, 2018), women (Stead et al., 2016), or prospective customers who have little/no gambling experience (Bradley & James, 2019). With this in mind, individuals who align with these target demographics are exposed to the persuasive (and potentially harmful) elements of the advertisement without being appropriately

informed of the risks and harms associated with gambling. Some of these risks and harms can be generalised across all gamblers/gambling modes to an extent; e.g. the potential of financial loss or mental health problems. However, as highlighted within Study 1 and Study 2, there are also bespoke advertising risks and harms associated with specific groups of consumers. Therefore, an alternative approach to vague, poorly displayed, and generic messages could involve realistic harm reduction messages that are specific to the gambling mode or demographic associated with the advertisement. For example, *some* bespoke-risk could be mitigated amongst young male sports bettors via an advertising message such as "*Sports betting is associated with significant harms such as financial loss and misperceiving the control over your bets*". However, it is acknowledged that most harm-reductive messages will place an inevitable onus upon the consumer to better control their own gambling behaviour (van Schalkwyk, Maani, et al., 2021). Therefore, consideration should be given to harm-reductive strategies that appropriately address industry accountability such as the tighter regulation of gambling advertising content and delivery.

The rapid review also highlighted that the delivery and placement of gambling advertising has become ubiquitous within the sporting sphere and has extended into the area of play via sponsorship, commentary, and embedded promotions (Bunn et al., 2019; Purves et al., 2020). Similarly, although traditional media is still commonly utilised for promotional purposes, the rapid review indicated that gambling advertising has also extended into the social media sphere via overt marketing strategies alongside more subtle advertising methods such as the posting of memes and polls for the sake of brand exposure and customer engagement (Houghton et al., 2019; Houghton et al., 2020). This extension of covert gambling advertising into sports and on social media often leads to a veiling of its promotional intent. This is especially pertinent in relation to the rise of social media advertisements that require interaction between consumers and gambling operators (Bradley & James, 2019; Rawat et al., 2020). By encouraging users to 'like' and 'share' gambling brand-related posts, users may no longer just be the recipients of gambling advertising but may also be 'distributors' of such content (Rossi & Nairn, 2022). In line with these findings, the qualitative results of Study 2 highlighted that the young adult sample deemed such advertising practices to be unethical and pervasive to the point where their day-to-day experiences were reported to be '*saturated*' with such content.

In conclusion to this chapter, the combined findings of the associated studies are indicative of the vast expansion and increased complexity of gambling advertising alongside the predominantly negative perceptions that young adults hold towards such advertising. The findings demonstrate that gambling advertising now takes various forms with each posing bespoke risks to specific groups of consumers

as well as more general risks to consumers as a whole (Torrance et al., 2021). There is a clear need to mitigate these risks given that consumers are likely to feel bombarded by such advertisements, perceive them to be unethical, or may not fully understand the esoteric and complicated conditions associated with them (Hing, Sproston, et al., 2017; Pitt et al., 2016; Torrance et al., 2020). This need is emphasised when consideration is given to the ineffective and perceived '*tokenistic*' nature of currently utilised harm reduction messaging within gambling advertisements in the UK (Torrance et al., 2020).

As observable in relation to the advertisement of tobacco products (and subsequently, vaping products), stricter regulation may also encourage more subtle marketing strategies or drive advertising practices into more unregulated areas such as the internet or related markets (Daniel Jr et al., 2018). This is already occurring to an extent via the ubiquitous presence of gambling advertising within the sporting sphere. For example, whistle-to-whistle bans in the UK have done little to reduce the amount of shirt sponsorship, pitch-side, and match day program promotion of gambling within football (Purves et al., 2020; Sharman et al., 2022). Therefore, (alongside stricter regulation) brief psychological intervention is warranted in order to assist consumers in making more autonomous and informed decisions when exposed to the persuasive and complex gambling advertising strategies utilised currently. If consumers possess the cognitive skills to identify, understand, and resist the persuasive narratives and strategies incorporated within gambling advertising, they will be more likely to avoid the associated negative impacts. The results of Study 1 indicate that this may be a difficult task given the vast array of messages and marketing techniques associated with the promotion of each gambling mode. However, the results of Study 2 are promising as there appears to be an appropriate amount of critical evaluation amongst young adults towards gambling advertising. These evaluative perceptions could be extended via interventions that aim to inoculate consumers against gambling advertising persuasion.

# 3. Chapter 3 – The bespoke risks associated with game mechanics, structural features, and consumer vulnerabilities
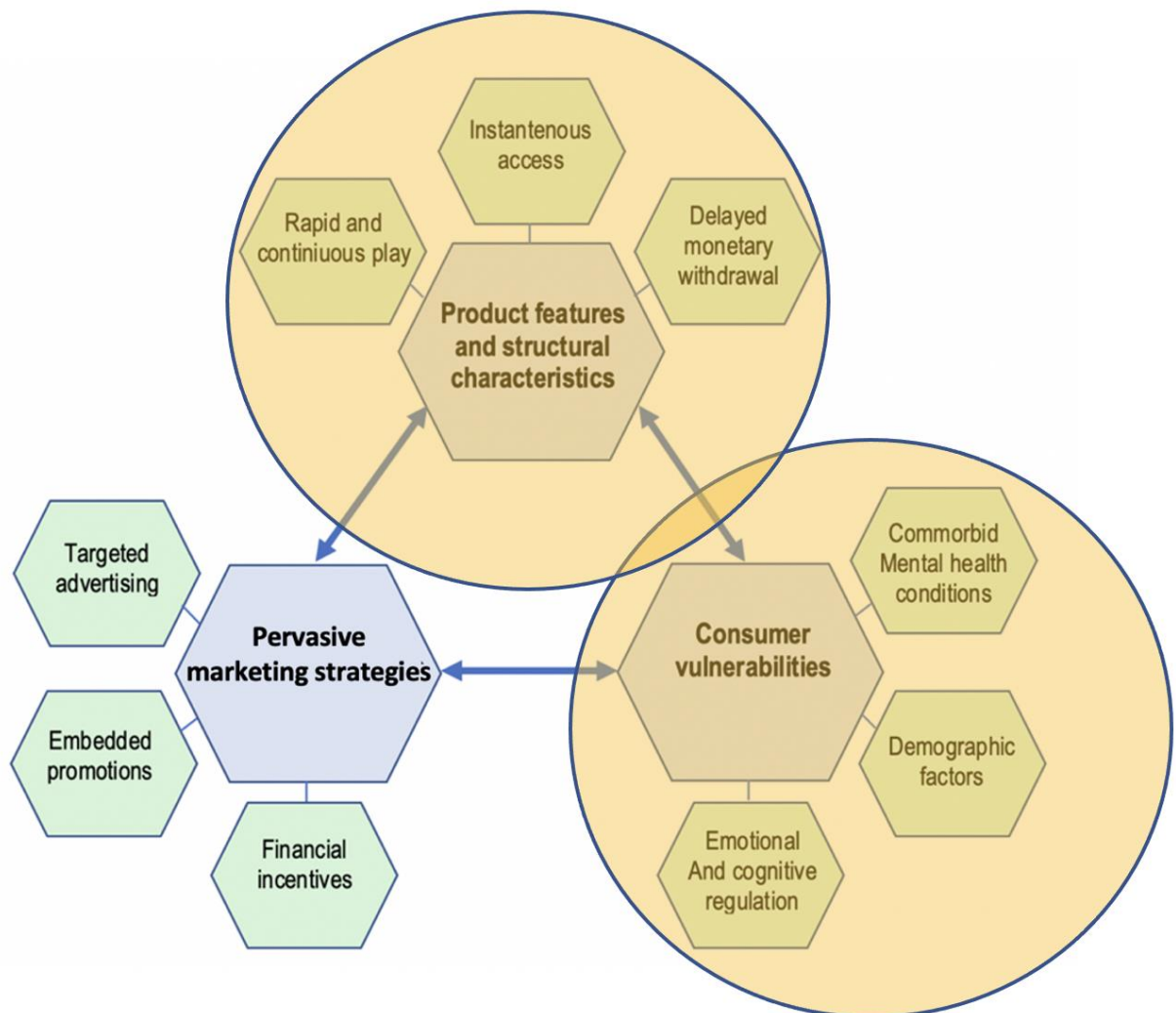
## 3.1 Chapter 3 introduction

As briefly discussed within the literature review of the current thesis (see *product features and structural characteristics – a brief review of the literature*), gambling product features and structural characteristics are a central component in the facilitation of gambling-related harm (Leino et al., 2015). Due to this, gambling product features and structural characteristics are also incorporated into the bespoke-risk environment model that theoretically underpins the current thesis. From this perspective, the empirical study (both quantitative and qualitative) of gambling product features allows for the context-specific understanding of harmful gambling compared to global explanations such as the 'addictive personality' (McCormack & Griffiths, 2013). Many of the product features outlined within the empirical literature (such as visual/auditory reinforcements, high outcome frequency and near miss events) are responsible for prolonged and engrossing gambling sessions amongst consumers (Leino et al., 2015). However, there is a paucity of literature relating to other product features such as those that relate to bingo or sports betting (Kathleen Maltzahn, Mary Whiteside, et al., 2022; Parke & Parke, 2019).

Within industry and some political narratives, the onus of 'responsible gambling' typically falls upon the consumer to better control their own gambling behaviour (Livingstone & Rintoul, 2020). Although personal accountability is a crucial component in reducing harmful behaviours, there is a need to empirically investigate the facilitation of gambling-related harm for which the industry is accountable. By conceptualising consumers as well-informed and rational decision-makers, 'responsible gambling' narratives conflate consumers' decision to engage with specific gambling products with a personal acceptance of any harms experienced (Friedman et al., 2015). This conflation leads to the misconception that gambling-related harm is a result of a failing on behalf of the consumer, subsequently overlooking the role that the industry plays in the facilitation of this harm. Given that consumers have no explicit choice or input in relation to the way that gambling products are designed, this avenue of research is imperative in highlighting (and ultimately encouraging) ways in which the industry can construct more ethical and less harmful gambling products. This area relates to an interaction between the *consumer vulnerabilities* and *product features/structural characteristics* factors of the bespoke risk environment model. Although investigating this interaction via quantitative methods is warranted, exploring the perceptions of gamblers towards their preferred product features and their perceptions of gambling-related harm is also necessary.

Much like investigations of perceptions towards gambling advertising, gaining qualitative insight into the product preferences and perceptions of harm amongst gamblers provides valuable and useful data. Within the substance misuse literature, investigating the preferred aspects of particular drugs allows for more appropriate and directed intervention and harm-reductive programs. For example, Levy et al. (2005) utilised a qualitative method to explore the preferences, motivations, and experiences of college students in relation to MDMA use. The findings indicated that some of the primary preferences of MDMA (compared to other illicit drugs) amongst the participants involved its availability, ease of consumption, positive effect upon mood, and its tendency to create an environment that was perceived as fun and enjoyable. The authors concluded that MDMA intervention programs that incorporate educational elements should focus upon such preferences from a harm-reductive perspective in a realistic and balanced manner. This approach was suggested by some of the participants in the study who expressed that simply being 'bombarded' with negative information about the toxicity of MDMA would likely negatively impact engagement with interventions. Rather, it was suggested that harm-reductive educational messages should be interwoven and provided alongside the reported positive experiences of MDMA use.

This same approach can be utilised within a gambling context. By exploring what products consumers engage with and what aspects of these products draw them towards engagement, researchers can better understand the potential facilitation of harm alongside some of the barriers to harm-reduction. For example, the previous empirical literature has indicated that EGM gamblers most prefer particular EGM games based upon subjective (mis)perceptions of their pay-out rates that orientate notions of 'luck' alongside their immersive nature (Sally M Gainsbury et al., 2020; Rockloff et al., 2015). This insight is particularly useful and can be utilised to better understand which features should be addressed via harm-reduction strategies in relation to this particularly risky form of gambling. For instance, targeted harm-reduction strategies that focus upon statistical and luck-related cognitive distortions would likely be beneficial in this context (Armstrong et al., 2020). Therefore, Study 3 within this chapter will investigate qualitatively the product preferences and perceptions of harm amongst young adult gamblers. This study will address the second overarching aim of this thesis which involves 'providing original and novel insight in relation to how gambling product features are perceived by potentially vulnerable audiences'.

According to the bespoke-risk environment model, there are a vast number of pathways to gambling-related harm via the interaction between *consumer vulnerabilities* and *product features/structural*

*characteristics*. The number of potential pathways is high given the large number of consumer vulnerabilities and various product features that are offered within and across the diverse range of gambling modes. Therefore, it is not feasible to investigate all unexplored pathways to gambling-related harm via this model within the current thesis. However, one unexplored pathway that is particularly demonstrative of this bespoke risk interaction involves emotional and cognitive dysregulation in conjunction with the diverse and rapidly evolving online product features of in-play and traditional online sports betting (Sally Melissa Gainsbury et al., 2020; Killick & Griffiths, 2019; Mercier et al., 2018; P. Newall et al., 2020; Philip Newall et al., 2021; Russell, Hing, & Browne, 2019).

Gambling behaviours in general are emotionally charged and often elicit either strong positive or negative emotional responses depending on the outcome of the respective bet (Habib et al., 2012). However, sports betting is particularly emotional given that it is intrinsically connected to spectating sports and therefore, the sports fan identity (Na et al., 2019; Tussey, 2022). With many sports bettors not only wanting their respective team or player to succeed, but wanting successful betting outcomes, those who experience emotional and cognitive dysregulation may begin to make irrational, aggressive, and strategically weak betting decisions in response to unfavourable gambling outcomes or poor team performance (Browne, 1989; Moreau et al., 2015; Sharma et al., 2021). This state coupled with sports betting features such as near limitless in-play betting opportunities and the ability to instantly deposit cash into an online sports betting account has the potential to facilitate bespoke gambling-relating harm (Parke & Parke, 2019). To date (at the time of writing), no other empirical study has aimed to address this interaction in relation to sports betting. Therefore, Study 4 within the current chapter will investigate this topic utilising cluster analysis to compile profiles of sports bettors based on their emotional and cognitive dysregulation alongside investigating their sports betting product preferences. Consequently, this study will address the third overarching aim of this thesis which involves 'providing evidence of bespoke pathways to gambling-related harm that have not yet been researched'.

**3.2 Study 3 – '*The speed just keeps me captivated*'. The product preferences and perceptions of harm amongst young adult gamblers in the UK**

### 3.2.1 Introduction

In tandem with technological advancements and the growth in digital infrastructure, gambling products have diversified significantly over the previous two decades (Edson et al., 2022; Kuypers, 2000; Parke & Parke, 2019; St-Pierre et al., 2014). Although completely new modes of gambling have recently emerged (e.g., esports betting), existing gambling products have largely undergone transformation in relation to their specific features. The product features of gambling refer to the characteristics, mechanics, or properties of a particular mode of gambling or game-type. For example, such features may include the size of potential bets that can be placed, outcome frequency, withdraw/deposit mechanics, or aesthetic elements. There is a considerable amount of research indicating that the product features of gambling contribute significantly to harmful gambling behaviours (Leino et al., 2015; Ronzitti et al., 2016). This proposition is supported by prevalence data that suggests gambling-related harm is higher amongst individuals who have instantaneous access to gambling modes that are more rapid and continuous (Storer et al., 2009). The development and maintenance of maladaptive gambling is often complex and multifaceted. However, product features play a key role in the bespoke-risk environment of gambling via interactions between the personal vulnerabilities of the consumer and environmental cues such as gambling advertising (Lopez-Gonzalez, Guerrero-Solé, & Griffiths, 2018; Parke & Parke, 2019; Roderique-Davies et al., 2020; Torrance et al., 2022).

Emergent evidence indicates that there are observable differences between various gambling products in relation to their capacity to facilitate gambling-related harm (Leino et al., 2015). For example, a distinctive contrast in relation to gambling harm can be seen between the frequent users of fixed-odds betting terminals (FOBTs) and those who play Bingo (Ronzitti et al., 2016). The cause of the disparity between these gambling modes relates significantly to their associated characteristics. In comparison to Bingo games, FOBTs have a significantly higher outcome frequency, reinforcement schedules that facilitate excessive gambling, and aesthetic features that may be perceived as being more captivating or engrossing (Woodhouse, 2019). Consequently, the tighter regulation and modification of structural features has become a primary component of harm-reduction strategies from psychological and public-health perspectives (Delfabbro et al., 2021).

Due to this emergent focus upon gambling product features and the associated harms that are facilitated by them, exploring the product preferences of gamblers can provide useful insight. In light of the

paucity of qualitative research in this area, it is advantageous for researchers, policy makers, and service providers to understand whether the features that are associated with gambling-related harm are most favoured by gamblers. It is envisaged that gaining such understanding could illuminate potential difficulties in encouraging gamblers to self-regulate their gambling behaviour. For example, a strong preference for continuous and rapid gambling would likely impede the intended effects of generic UK responsible gambling slogans such as "*Pause. Take time to think*" used by the Betting and Gaming Council (BGC). Understanding product preferences has also proven beneficial in relation to gaining harm-reductive knowledge of other addictive products such as alcohol (Thibodeau & Pickering, 2019) and tobacco (Zare et al., 2018). In addition to qualitatively exploring product preferences, extending this approach into perceptions and experiences of gambling harm can offer an insightful view of why individuals engage with products that are known to be risky for their health (Nyemcsok et al., 2022b).

Despite mounting research that aims to gain insight into the motivations that underpin participation in gambling behaviours amongst young adults (Goldstein et al., 2016; Quinlan et al., 2014), there is a lack of empirical understanding in relation to the specific product preferences of this population. In addition, investigating perceptions and experiences of gambling-related harm amongst young adult gamblers within the UK can supplement this understanding. Such research is important to broaden public health responses alongside providing rich and meaningful data that can influence regulatory reform. Considering the lack of qualitative research in this area, the current study therefore aims to contribute to the international literature in relation to the meaning and experiences that young adults attribute to gambling products and gambling-related harm. The research was guided by three research questions:

1) What specific features do young adult gamblers prefer in relation to the respective gambling modes they engage with?
2) What are their perceptions towards and experiences of gambling-related harm in relation to themselves and observing it amongst others?
3) How much awareness do they have regarding procedures and organisations that aim to mitigate gambling-related harm within the UK?

### 3.2.2 Methods

The methods utilised within this study is identical to that of study 2. The question-set for the current study was utilised alongside that of study 2 with the dataset being split (according to the questions) after data collection. Consequently, the sample is also the same between these two studies. In a similar fashion to quantitative data, it is not uncommon for large qualitative datasets to undergo secondary analysis or to be divided into multiple studies (Altay & Kocak, 2021; Ruggiano & Perry, 2019). This is especially true if the original dataset contains multiple 'subsets' of data, is too large to be reported in one study, and if the divided findings are not discussed in either study (Beaufils & Karlsson, 2013). As outlined in chapter 2, study 2 focused upon perceptions of young adults towards gambling advertising, their understanding of the influence and impact of gambling advertising, and their opinions towards measures utilised within the UK to reduce advertising-induced harm. Conversely, the current study focuses upon the product preferences of young adults, their perceptions of general gambling-related harm (not associated with advertising) and their awareness of procedures and organisations in the UK that aim to mitigate general gambling-related harm (not associated with gambling advertising).

### 3.2.2.1 Survey Procedure:

The opening section of the survey required respondents to provide demographic and gambling data which included age, gender, ethnicity, residing region, and gambling behaviors/frequency. In a similar fashion to study 2, the qualitative questions were presented within the survey via an open-ended format with a 'no-limit' text box in which to answer. Participants were asked a range of qualitative questions that corresponded with the research questions of the current study. These questions orientated three main themes that included: 1) Product preferences. Examples include: '*Why are you interested in these types [of gambling products] specifically? What are the specific aspects that you find engaging compared to other forms of gambling*'? 2) Experiences of gambling-related harm, for example: '*Has anything ever concerned you about your own gambling – or gambling in general? If so, please elaborate*'. 3) Awareness of harm-reduction. '*Are you aware of anything put in place to reduce the risks associated with gambling in the UK? If so, please elaborate*'. See Appendix B for the full survey.

### 3.2.2.2 Data analysis:

In order to completely divide the studies, a separate analysis was conducted after the separation of the dataset. However, thematic analysis was also utilised within the current study. This thematic analysis was conducted in line with the analysis conducted in Chapter 2, Study 2 and involved the same coders

and research team (see Positionality and reflexive account). For the sake of brevity, this process will not be outlined again here. Similarly, the same quantifiers (a small number = 1% – 25%, several = 26% – 50%, many = 51% – 75%, and most = 76% – 100%) have been used within the narrative that surrounds the interpretation and presentation of the themes within the subsequent results section.

### 3.2.3 Results*:*

### 3.2.3.1 Research themes:

Three overarching themes emerged from the participants' responses. These included; 1) Product features; 2) Experiences and awareness of gambling-related harm; 3) Experiences and awareness of protective measures. These overarching themes consist of numerous sub-themes (Table 6) that are presented with corresponding participant quotes.

**Table 6.**

Summary of research themes that captured the perceptions and experiences of young adults towards gambling products, harm, and protective measures

| Overarching theme | Sub-theme |
|---|---|
| 1. Preferred product features | • Speed and higher outcome frequency<br>• Simplicity and straightforwardness<br>• Perceived analytical and skills-based elements<br>• Mechanics that are considered low risk |
| 2. Experiences and awareness of gambling-related harm | • Observing gambling-related harm amongst others<br>• Personal experiences of gambling-related harm |
| 3. Experiences and awareness of protective measures | • Lack of awareness<br>• 'Responsible Gambling' strategies<br>• Independent charities and support organisations<br>• Personal measures |

### 3.2.3.1.1 Theme one: Preferred product features

Participants disclosed their preferred product features that attracted them to specific game types. These features varied across the sample with regard to the wide range of gambling modes that respondents engaged with alongside their rate of gambling frequency.

### 3.2.3.1.1.1 Speed and higher outcome frequency

Amongst those who participated in online casino gambling at a high regularity (every day or a few times a week), the increased speed of play and high outcome frequency of these games were a strong

characteristic that these respondents found favourable over other forms of gambling. For these respondents, online casino games provided a swift, continuous, and ultimately engrossing cycle of wins or losses that deviated from other modes of gambling where bettors are required to wait longer periods of time for the outcome of their bets.

> 'I find quickfire slots incredibly enticing because you can win money so swiftly compared to other games. The speed just keeps me captivated'. (27-year-old male – gambles every day).

This preference for speed was also outlined by several participants in relation to online sports betting. In this context, sports betting products such as in-play betting were described as being '*quick and efficient*' alongside providing bettors with the opportunity to '*place a bunch of bets*' within one game or event. One participant expressed how much he enjoyed these particular features being intertwined with the sporting environment:

> 'For me, in-play [betting] is the one. It's probably because I'm obsessed with anything sports-related but I also hate table games. I'd much prefer to bet on sports because it's quick but also interesting. Looking at cards or slot machines I find so boring' (18-year-old male – gambles every day)

### 3.2.3.1.1.2 Simplicity and straightforwardness

Those who engaged with online casino games (especially slots and bingo), FOBT machines and the national lottery expressed that "*simplicity*" and the requirement of minimal effort were also attractive qualities of these modes. Such respondents often found other forms of gambling that demanded an in-depth understanding or specialised skill too complicated for their liking. As a result, engaging with games that involved "*no thought processes*" via an "*easy-to-use*" interface were preferred by this cohort. Many of the respondents within this group were female and specifically expressed how the world of sports-betting had become convoluted and overly complicated, pushing them towards simpler games that offered clear-cut and conventional mechanics.

> 'Honestly, I like simplicity. I don't understand football betting or horse racing. And I don't really understand all of the odds. So knowing I can spend £2 on a ticket with 6

numbers on it that need to match the 6 numbers Camelot choose, is much simpler for me'. (24-year-old female – gambles weekly)

### 3.2.3.1.1.3 Perceived analytical and skills-based elements

Just under one-third of the sample stated that the complicated, analytical, and strategic elements of sports betting (especially football and horse racing) and poker were the particular characteristics that they most preferred. Young males represented the vast majority of this group. These participants favoured the utilisation of developed skills and knowledge as a means of minimising aspects of perceived "*chance*" and increasing levels of perceived "*control*" in relation to their bets. From this perspective, applying this knowledge in combination with statistical predictions ensured that "*one feels as though they aren't simply throwing money at the whim of the dice*". The respondents described how such expertise was developed over time and was specific to their respective games or sports.

'I find sports betting fun because it involves some thinking – I don't like games that rely on chance much at all (like roulette). I much prefer sports betting and maybe some poker because they are more skills based'. (18-year-old male – gambles every day)

### 3.2.3.1.1.4 Mechanics that are considered 'low risk'

A small number of participants disclosed that they gravitate towards modes of gambling where the associated risks are perceived to be lower in general compared to other game types. The vast majority of this group consisted of females who engaged with both online Bingo, in-venue Bingo and the national lottery. Amongst this cohort, bingo and the lottery were considered "*harmless*" with a very low chance of developing any form of maladaptive gambling behaviour given the games were considered "*just a bit of fun*". Participation in bingo and the lottery were perceived to be much less harmful than other forms of gambling such as FOBT machines where the addictive qualities were more prominent. For example, in comparison to online-bingo, one female participant described FOBT machines as "*the pits*". It was explicitly mentioned across these participants that bingo and the lottery "*aren't addictive*" alongside a lowered risk in terms of monetary loss. Typically, these respondents disclosed placing smaller bets within these game types meaning the loss of a stake was relatively inconsequential in the long run.

### 3.2.3.1.2 Theme two: Experiences and awareness of harm

Respondents provided discussions surrounding an awareness or experience of maladaptive gambling behaviours or gambling-related harm. A wide range of harm-related behaviours were mentioned across the majority of demographics and all gambling frequencies within this sample of young adult gamblers. Essentially, participants were either able to retrospectively distinguish the trigger points at which their own behaviour may have crossed (or began to cross) over into what was considered harmful; or displayed an awareness of these trigger points by witnessing them amongst other individuals

### 3.2.3.1.2.1 Observing gambling-related harm amongst others

Several participants described the noticeable signs of gambling harm that could be seen amongst family members, close friends, and individuals the respondents interacted with. These experiences had a lasting impression upon participants and were symbolic of the embedded and widespread impact of gambling-related harm in the UK.

> 'As someone who used to work in a bookmakers, I've seen the very worst that gambling can do to people. With one man pawning his children's Christmas presents in order to afford his addiction. Therefore, I am concerned about the prevalence and devastating consequences of gambling addiction and gambling in general'. (27-year-old male – gambles every day).

In relation to family members or friends, several participants described how they noticed behavioural changes amongst these individuals that may have been indicative of gambling-related harm. Such behavioural changes included '*lying or fibbing about how much [money] they were losing*', '*getting defensive when questioned about their betting*', and '*never paying attention, always looking at their phone*'. One participant expressed how their uncle (a frequent gambler) would behave during times of financial stress caused by his gambling, and the impact this has upon his significant other:

> 'I can tell when he's been on a losing streak because he is super down after the weekend. When he's won quite a bit, he always seems jovial but after big losses, he is so down in the dumps. He's gambled for years and always says it's his only vice. But it's so obvious that it's often not just a bit of fun for him, it has such a massive grip on his life.

My auntie absolutely hates it, she gets just as stressed as him'. (23-year-old male –
gambles a few times a week).

From a broader perspective, other participants discussed the observable elements of gambling-related harm within their communities. This included seeing '*regulars who were always inside the bookies*' or describing '*those people who buy ten scratch cards at a time in the morning at the shop*'. However, a small number participants stated that in relation to online gambling, harmful gambling in the community may be much harder to notice:

'It's [*online gambling*] a bit different. It's easy to walk into a casino and see the harm it's doing to the local residents. But with online gambling, all that harm is taking place behind closed doors. It's sort of like a secret disease for some people. You can often tell when someone is a heavy drug user, but there's probably loads of people in my local area that are gambling addicts, and I'd never even know it'. (23-year-old female, gambles monthly)

**3.2.3.1.2.2 Personal experiences of gambling-related harm**

When asked if anything had concerned them regarding their personal gambling behaviour it was expressed amongst a few respondents that they had noticed an alarming influx in the frequency and size of their own bets. The vast majority of those who experienced this change in behaviour were young adult males who partook in sports betting. It was expressed that this typically happened over the course of time but could also easily happen during a single gambling session following a number of consecutive wins.

'When the risk is high and your winnings go up, you quickly find yourself betting amounts you never usually would if the stakes were not winnings – this is concerning'. (28-year-old male – gambles weekly)

Similarly, some respondents stated that they had become concerned with the financial toll that gambling had begun to take upon them. Worries of losing money were expressed in varying ways by participants depending on their gambling frequency and preferred mode of gambling. Those who engaged with online casino games such as slots, roulette and blackjack at a high frequency (every day or a few times a week) reported that it was very easy to become engrossed or "*lost*" within such games

resulting in an obscured awareness of how much money was being lost per session due to "*silly mistakes*" or "*lapses in judgement*". This cohort of respondents stated that it had become concerning that following such sessions, they had fallen into debt or struggled to pay for other necessities or activities. This was facilitated by repeated financial losses that were "*hard to keep track of*". Participants specified that this lack of awareness was due (in-part) to big wins that were likely to mask the full extent of financial losses. It was expressed however that this issue possessed the potential to repeat itself given that "*just walking away is harder than it sounds*".

'I have won over £2K in the past month, but I've spent well over £5K this year so far. A big win makes you forget the losses, but I'm never satisfied'. (23-year-old male – gambles every day)

Other respondents discussed a more immediate realisation regarding the concerning financial toll of gambling. This cohort was primarily represented by those who engaged with modes of gambling that typically operate at a lower event frequency than casino games such as the lottery. Amongst these participants, accumulated losses were deemed the initial alarming signs that their gambling behaviours were beginning to manifest into harmful habits that "*needed to be reined in*" before "*things got out of hand*". In attempts to avoid experiencing the financial toll of gambling, a minority of respondents described experiencing "*loss chasing*" where they had repeatedly deposited more funds in order to recuperate lost money or to reach the high financial stake they had previously attained. This was considered problematic by those who disclosed chasing losses given this method was described as likely to "*spiral*" out of control. Loss chasing was exclusively discussed by those who gambled either every day or a few times a week within online casino environments or sports betting. This maladaptive cycle was considered particularly harmful given how fast one could become desperate to salvage funds that may have taken considerable time and effort to attain.

'The issue is, one loss and you're forever chasing. When you lose its always "why was I so greedy I should have taken that". But that's the risk when you lose a £300 hand on blackjack you've been building from a £25 deposit over a few hours to then deposit another £300 of your own money to win what you've lost back. Then you lose again'. (23-year-old male – gambles every day).

From a broader perspective, some participants offered narratives that provided insight into the Psychophysiological elements that underpin and often precede the harmful behaviours mentioned

above. Such responses described experiencing "*urges*", "*impulsiveness*" and "*a lack of self-control*" that were particularly alarming and hard to manage or regulate. Such notions were expressed across all gambling frequencies with respondents displaying an awareness of how these issues were a possible indicator of maladaptive gambling. It was articulated that environmental cues mediated the urges or impulses via an interaction that was sometimes described by respondents as a sign of addiction. Such cues were typically grounded in content directly and overtly delivered to audiences such as promotional offers and advertisements. This effect was particularly noticeable for those who were aiming to curtail their own gambling behaviour as well as individuals who could not fulfil their gambling needs due to situational or contextual factors.

> 'When I was out of work and didn't have the finances to gamble, I constantly had the urges to do so when I was watching sporting events. This alerted me of how addicted I was to these [gambling] websites'. (23-year-old male – gambles every day).

When asked if anything had concerned them regarding their own gambling behaviour, a minority of respondents stated that they had previously experienced severe negative impacts upon their mental health and wellbeing. This cohort of respondents was entirely comprised of males who gambled at a high frequency, two of whom openly disclosed their disordered gambling. These young men displayed a well-defined level of insight regarding their experiences with harmful gambling behaviour alongside a pronounced openness to discuss how it impacted their self-esteem, emotional state, and levels of stress. The narratives that were provided contained statements that are consistent with individuals situated at the further end of the harm spectrum. For instance, one respondent expressed how he was concerned about turning to the gambling environment when experiencing a low mood or frustration; "*I gravitate towards gambling when I'm feeling low or pissed off about something that's happened earlier in the day for example*". Furthermore, issues of "*suicidal thoughts and a mass amount of other things*" were mentioned by these young men with a particular emphasis placed upon self-blame and guilt. Respondents from this small cohort described the frightening detrimental effect of gambling upon their lives with any notions of fun or entertainment outweighed by the crippling impact of considerable loss.

> 'The effect it had upon my mental state was extremely scary. The highs gambling could give you were always eclipsed by the lows it could bring. Feelings of self-hate all the time'. (28-year-old male – gambles a few times a week).

Overall, in regard to an awareness of gambling related harm, the responses suggest that the damaging effect of gambling addiction has become increasingly noticeable amongst those who respondents engage with in everyday life. In addition, the personal reports of respondents' concerning gambling behaviour varied with regard to severity but were reported across all gambling frequencies and modes.

### 3.2.3.1.3 Theme three: Experiences and awareness of protective measures

### 3.2.3.1.3.1 Lack of awareness

Despite the common experiences with concerning gambling behaviour, when respondents were asked if they were aware of any protective measures put in place to reduce gambling-related risk/harm, there was an overwhelmingly low awareness across the entire sample. A small number of participants expressed that they were completely unaware of any protective measures put in place to reduce gambling-related harm. The majority of these responses were simply "*no*" or expressions such as "*not that I can think of*". This cohort was not represented by any gambling frequency or demographic variable in particular. However, it should be acknowledged that all participants identifying as BAME stated they were unaware of protective measures within the UK.

### 3.2.3.1.3.2 'Responsible Gambling' strategies

At the structural level, brief descriptions of advertising stipulations relating to "responsible" gambling messages were offered by several respondents as well as an awareness of structural modifications to protect players such as "*changes in how much you can bet on fixed odd slot machines*". Both male and female respondents were aware of these protective measures however males were more likely to express criticism in regards to their effectiveness due (in-part) to the acknowledgment that "*there is always a way to gamble*".

> 'They've reduced the maximum stake on the machines but it won't do anything anyway. Those things are designed to fleece you no matter what the max amount is. I've lost a decent amount to these machines both before and after they made those changes.' (28-year-old male – gambles a few times a week).

### 3.2.3.1.3.3 Independent charities and organisations

At the organisational level, a small number of respondents briefly mentioned charities and treatment orientated organisations that aim to provide help for individuals struggling with gambling-related issues. Narratives regarding the specific services that these organisations offer were not provided by

the respondents; rather, responses only referenced the names or provided vague descriptions of these organisations. This cohort of participants was not represented by any demographic variable or gambling frequency in particular. Each respondent within this small group was only able to mention one specific charity or organisation within their responses which included statements displaying an awareness of "*Gambleaware*", "*Gamcare? That's about it*", "*free counselling for gamblers*" and "*support groups for people with gambling problems*".

### 3.2.3.1.3.4 Personal measures

Participants across the entire sample were more likely to provide insight into their awareness of personal strategies of harm-reduction at the individual level typically offered within the gambling-environment itself. This included '*self-exclusion schemes*', '*profit/loss tracking*' and '*betting limits*'. Males who gambled at a higher frequency (every day or a few times a week) across all ages (18-29) represented the vast majority of this cohort who recognised personal strategies. Amongst these responses however, participants often acknowledged that protective measures were personally set by the player and therefore could also be easily overridden or circumvented during times of desperation given their simplicity. It was also expressed that sometimes, these management features were hard to locate on betting platforms.

> 'I know that you can put a limit on your betting accounts in regard to weekly spending but I feel this is very easy to turn on and off. Sometimes, I've found it difficult to even find them'. (25-year-old male – gambles a few times a week).

### 3.2.4 Study 3 discussion and conclusions

The current study aimed to qualitatively investigate the product preferences, perceptions of gambling-related harm, and awareness of protective measures amongst young adult gamblers from the UK. The findings indicated that speed and high outcome frequency were favourable aspects amongst online casino game players who engaged with gambling at a high frequency. As discussed within the literature review of the current thesis (see *Speed of play and outcome frequency*), this product feature is the prototypical characteristic that is associated with the facilitation of harmful gambling within casino games and EGMs (Harris & Griffiths, 2018; Newall, 2022a; P. W. Newall, L. Weiss-Cohen, H. Singmann, W. P. Boyce, et al., 2022). However, high speeds of play were also a preference outlined by online sports bettors within the sample of young adult gamblers. This finding aligns with emergent research that suggests sports betting is evolving into a more rapid and continuous form of gambling

due to structural changes such as the advent of in-play betting, microbets, custom-sports bets, and the ability to instantly deposit cash into an online sports betting account (Killick & Griffiths, 2019, 2021; P. Newall et al., 2020; Parke & Parke, 2019). In relation to sports betting, participants also stated that they prefer this gambling mode due to the ability to utilise their skills and knowledge to reduce the associated 'risks' and increase the levels of 'control' over their bets. Mounting research has indicated that this notion is also reflected across modern sports betting advertisements via a dual persuasive strategy (Lopez-Gonzalez, Guerrero-Solé, & Griffiths, 2018; Torrance et al., 2021). The key implication associated with this product preference relates to the utilisation of skills and knowledge in a gambling context being correlated with the maintenance of cognitive distortions; namely, illusions of control (P. Newall et al., 2020).

The findings also suggest that a cohort consisting mostly of females prefer gambling mechanics that are considered 'low-risk'. This preference was expressed in relation to bingo and lottery where these gambling modes were considered unlikely to lead to gambling-related harm. This notion is generally accepted across the empirical literature although emergent studies have begun to identify some potential pathways to harm via participation in bingo. For example, Maltzahn et al (2022) conducted a qualitative investigation of bingo players' experiences in Australia. The authors identified numerous pathways to gambling-related harm that were outlined by the participants. These primarily involved the increasing prize sizes and jackpots within bingo that encourage continued participation, the ongoing digitisation of bingo that can be used alongside paper-based methods (increasing money spent), and most importantly the placement of bingo (physically and digitally) in close proximity to EGM machines. Therefore, although consumers may deem bingo to be an innocuous activity, there is the potential for some individuals to experience gambling-related harm via this gambling mode. However, bingo-related harm is only just being investigated and therefore more research is warranted in this area.

The results of the present study align with previously conducted research where the majority of gamblers display an ability to recognise harmful or risky behaviours (Holland et al., 2017; Walker et al., 2012). It should be acknowledged that gambling related harms were recognised via two avenues within the present study; 1) experiencing one's own gambling behaviour developing into what would be deemed "harmful", 2) experiences of other's behaviour indicative of harm or addiction. Within the international literature, the self-reported harmful behaviours outlined within the current study such as increased gambling intensity (Dowling et al., 2017b), loss chasing (Gainsbury, 2015), gambling-related urges (Williams et al., 2012), and a lack of self-control are stereotypically observed amongst

those classified as disordered gamblers, those reporting high PGSI scores or individuals who gamble at a considerably high frequency (Dowling et al., 2017b). Although varying in severity, such indicators of gambling-related harm were observed across all gambling frequencies within the present study. This finding suggests that the UK online gambling environment in general may pose bespoke-risks for those considered vulnerable irrespective of gambling frequency (Rockloff et al., 2017). Furthermore, this finding also aligns with the notion that gambling-related vulnerability is a fluctuating construct that may be observable across all levels of engagement and is mediated by situational context (Carran, 2018).

In relation to developing an awareness of gambling-related harm via experiencing severe maladaptive behaviours amongst individuals that the participants engaged with (family, friends, customers), the findings of the present study suggest the noticeable impact of gambling-related harm within the UK. The day-to-day experiences of familial and societal harm amongst the current sample align with the growing concern that gambling-related issues have developed into matters of public health within the UK (Atherton & Beynon, 2019; John et al., 2020; van Schalkwyk et al., 2019). That is to say, despite frequent regulatory intervention in previous years, prevalence rates of Gambling Disorder (GD) within the UK remain relatively unchanged alongside the additional concern of perceptible increases in "at-risk" individuals (Gambling Commission, 2018a, 2019, 2020a, 2021); evidenced via the respondents' narratives.

In regard to the awareness of protective factors amongst the current cohort of young adult gamblers in the UK, the present findings do not support the international literature (predominantly Australia, New Zealand and Finland) where gamblers display a relatively high awareness of factors put in place to reduce gambling-related harms (Castrén et al., 2018; Holland et al., 2017; Procter et al., 2019). It should be acknowledged that although regulatory intervention, organisational support and personal protective measures do indeed exist within the UK, nations such as Australia are generally considered more advanced in terms of combatting gambling related-harm. This may offer an explanation for the lack of awareness with regard to organisational support highlighting concerning barriers for harm-reduction amongst the cohort of the present study. Therefore, such findings suggest an increased understanding and awareness of charities and treatment services is warranted amongst young adults of the UK given the longitudinal evidence that highlights the pronounced gambling-related risks amongst this cohort (Gambling Commission, 2018a, 2020a, 2020b).

Focusing upon perceptions of governmental efforts to reduce gambling-related harm such as the lowering of the maximum stake on FOBTs, the findings here suggest that although these changes are warranted, they may be perceived as fruitless in relation to the overall harmful design of FOBTs and other related products. There is emergent research from the UK that aligns FOBTs with disordered gambling (Sharman, Murphy, et al., 2019) but there is a paucity of research investigating the associated facilitation of gambling-related harm following this governmental intervention (2017 onwards). Although such measures may be considered to be protective nudges that aim to reduce FOBT harm, they may also be considered 'soft approaches' that do little to reduce the overall impacts of gambling-related harm on a population level (Bond et al., 2010).

Personal harm-reduction strategies provided within the gambling environment garnered the most awareness within the present sample however participants (especially males) were likely to deem them to be easily circumventable. Current research has highlighted that those who possess minimal to zero levels of gambling-related risk have the potential to engage with personal harm-reduction strategies more positively than those observed further along the harm spectrum in a counterproductive manner (Hollingshead et al., 2019). With regard to the levels of vulnerability amongst the current sample, such findings produce concerning implications that warrant bespoke targeting notifications, tailored methods of harm-reduction and timely identification of risky behaviour in order to encourage higher compliance with mechanisms such as limit setting and self-exclusion. The present paper recognises that online environments operate as a potentially effective platform for the dissemination of safety information and hosting self-protective measures (especially amongst younger consumers). However, there exists a great need to increase the practical utility of such instruments in order to be realistically effective.

### 3.2.4.1 Limitations

Consideration should be given to some potential limitations when interpreting the findings of the current study. These limitations correspond with those outlined in the previous qualitative study given the similarities between the methodologies utilized. In addition, the sample utilized (in both studies) was skewed towards those who participate in online gambling. Therefore, the findings may not be generalizable to the wider population of young adult UK gamblers who also participate in offline or venue-based gambling. Generalizability is generally not a key factor that is associated with qualitative inquiry. However, this limitation is important in relation to understanding the context and framing of the current results. An additional consideration relates to the sample involving only 6 participants

(9.68%) who are from a Black, Asian, or mixed ethnic background (BAME). It is possible that the recruitment of more BAME participants would have revealed more ethnicity-related experiences in relation to gambling harm and awareness of gambling-related support. Therefore, further research in this area is proposed by the current author as a future research priority.

### 3.2.4.2 Conclusions

The UK gambling environment is versatile and offers considerable consumer-choice. Within the current study, the young adults reported that their personal product preferences were accommodated via a tailored gambling experience. Specific preferences may be associated with corresponding risks suggesting a less narrow approach to defining and investigating gambling related vulnerability is warranted. In addition, the findings suggest that an awareness of gambling related harm is generally high amongst young adults. In particular, the noticeable effects of gambling related harm were observable across and within the lives of the participants. In order to adequately address such harms, an increased awareness and understanding of organisational support is warranted amongst young adults. In addition, it is encouraged that "responsible gambling" messages utilise a more tailored approach in order to effectively reduce harms amongst vulnerable audiences. Similarly, further development should be directed towards personal harm reduction strategies such as limit setting, and self-exclusion given their currently circumventable nature. Future research from the UK is warranted and should aim to further contribute to the international literature base surrounding gambling-related vulnerability, industry accountability, and player protection. In particular, young adult gamblers who are often overlooked in terms of regulatory protection.

## 3.3 Study 4 – Conceptualising emotional and cognitive dysregulation amongst sports bettors; an exploratory study of 'tilting' in a new context

### 3.3.1 Introduction

Sports betting is a widely used mode of gambling that has seen a global increase in availability and complexity in recent years (Bunn et al., 2020; Labrador & Vallejo-Achón, 2020; P. W. S. Newall et al., 2020; Yüce et al., 2021). Due to the introduction of products such as in-play betting, and the instantaneous access provided by online bookmakers, there is evidence to suggest that sports betting is shifting into a more continuous and impulse-driven form of gambling (Philip Newall, Alex MT Russell, et al., 2021; Parke & Parke, 2019; Torrance et al., 2021). Correspondingly, sports bettors may be particularly vulnerable to gambling-related harm due to their distinct characteristics and specific cognitions compared to non-sports gamblers. These traits primarily include the tendency to emotionally invest in betting (due to team loyalty), acting impulsively, and misperceiving gambling-related risk (Cooper et al., 2021; Granero et al., 2020; Mercier et al., 2018; Russell, Hing, Li, et al., 2019). Although the identification of these characteristics within the literature is insightful, they are typically presented as separate constructs with little emphasis placed upon how they operate in combination.

An adaptable example of combining such constructs involves the poker-related phenomenon known as 'tilting'. This is defined as a state of frustration and irrationality when gambling due to experiencing repeated losses or being overwhelmed by strong negative emotions (Browne, 1989). This state is characterised by a reduction in strategic or calculated gambling and an increase in aggressive and reckless bets (Browne, 1989; Moreau, Chauchard, Sévigny, et al., 2020; Palomäki et al., 2014). The concept of tilting therefore encapsulates numerous cognitive-behavioural elements that are associated with gambling harm such as impulsivity, loss chasing, loss of control, emotional dysregulation, and irrational motives (Cantinotti et al., 2004; Moreau, Sévigny, et al., 2020; Russell, Hing, Li, et al., 2019).

The current paper theorises that the concept of tilting can be appropriately mapped onto sports betting as a potential pathway towards gambling harm. Within this conceptual pathway, bettors may initially adopt a more rational and calculated strategy by placing low-risk bets at a low frequency. Following consecutive losses, poor referee decisions or depleting funds, sports bettors may begin to tilt where

they place (riskier) higher odds bets and/or spontaneously increase their betting frequency (Gainsbury et al., 2019; Russell, Hing, & Browne, 2019). Such decisions may be grounded in emotionality, impulsivity, and irrationality; harmful factors that have been outlined within previous studies of sports betting (Hing, Li, et al., 2018). Maladaptive gambling behaviours and cognitions are often contextual given the vast structural differences across gambling modes and the demographic variations between the associated users (Brosowski et al., 2020; Castrén et al., 2018). For example, investigating perceived skill in relation to scratch-card gamblers may prove problematic as scratch-cards are primarily considered to be governed by 'luck' and 'randomness' (Delfabbro & Parke, 2021a; Stange, Brown, et al., 2017). Therefore, in attempting to adapt a poker-related concept into a sports betting context, it is imperative to first consider the fundamental similarities between these two gambling modes.

Sports betting and poker are both typically considered by bettors to involve a certain amount of skill that is grounded in contextual knowledge and gambling experience (Boulier & Stekler, 1999; Cantinotti et al., 2004; Khazaal et al., 2012). This may be due (in-part) to the incorporation of real-world information that engenders a sense of self-agency within these gambling modes. Poker players typically learn to 'read' the environment and the behaviours of their opponents whilst making economically underpinned decisions (Palomäki et al., 2020). Similarly, sports bettors often utilise team/player/match statistics whilst evaluating odds-related information when placing bets (Mercier et al., 2018). Corresponding research evidence indicates that skill, knowledge, and expertise within both poker and sports betting may increase the frequency of successful bets (Khazaal et al., 2012; Palomäki et al., 2020). However, whether or not this initial advantage leads to an increase in tangible winnings is less clear due to the cyclic nature of the game mechanics that may encourage the re-staking of winnings (Butler et al., 2021; Khazaal et al., 2012; Palomäki et al., 2020). Previous research has also highlighted the overlap between the traits and functional motives of sports bettors and players of 'skilled games' such as poker (Fang & Mowen, 2009). Primarily, both gambling modes are predominantly comprised of males who possess competitive traits (Fang & Mowen, 2009).

As previously observed within poker (Moreau, Chauchard, Sévigny, et al., 2020; Moreau et al., 2015), tilting within sports betting may operate as one of many possible transitional factors that reshapes low-risk gambling into more harmful gambling behaviours. However, gamblers can only tilt when the structural characteristics of the gambling mode provide the opportunity to do so. To this end, the product features of in-play sports betting may be particularly facilitative of the cognitive-behavioural elements of tilting. These in-play product features include the ability to place numerous concurrent bets, instantly deposit more funds or the opportunity to bet on 'micro-events' that may have high odds-

ratios (S. M Gainsbury et al., 2020; Parke & Parke, 2019). Consequently, an empirical understanding of which product features are most frequently used and deemed most important by in-play bettors is warranted by researchers when investigating tilting in this context. Such insight is important in relation to improving the regulation of particularly harmful gambling products; an issue that often transcends the personal control of the bettor.

Tilting can be measured indirectly by grouping together the primary indicators of tilting episodes via self-report scales. These typically involve issues associated with poor cognitive and emotional regulation within a gambling context (Moreau, Sévigny, et al., 2020). However, it is likely that the associated harms are best mitigated when bettors possess the ability to identify and perceive tilting episodes (Hing et al., 2019; Sharma et al., 2021). Therefore, it is useful to also measure the bettors' conscious perception of this phenomenon via direct questions. A similar approach was conducted in a previous study by Moreau, Sévigny, et al (2020). This study assessed tilting awareness amongst poker players by comparing scores from a self-report scale that indirectly assessed tilting episodes against direct questions that overtly measured the participant's awareness of this phenomenon. Three groups of participants were identified who all differed signifficantly in their awareness of tilting. These groups included poker players who overestimated their tilting, players who underestimated their tilting, and players who accuratlly reported little to no tilting (Moreau, Sévigny, et al., 2020). The current study will explore tilting and the perceptions of sports bettors towards this phenomenon in line with the methods utilized by Moreau, Sévigny, et al (2020). Adapting concepts from other forms of gambling into sports betting has been suggested to be particularly useful in highlighting transferable insight surrounding gambling-related harm (Philip Newall, Alex MT Russell, et al., 2021). Therefore, it is envisaged that adapting the poker-related concept of tilting within a sports betting context will provide an important contribution to the literature. Classifying sports bettors who are prone to tilting, investigating their conscious perception of this phenomenon, and comparing their characteristics will provide a preliminary understanding of the necessity of suitable harm-reduction strategies. To the best of our knowledge, the current study is the first to explore this topic within the sports betting sphere. Specifically, this study aimed to investigate:

1) How many classifications of sports bettors exist in relation to their reported tilting and awareness of this phenomenon?
2) How do these classifications of sports bettors differ in relation to gambling severity, gambling frequency, impulsivity, type of sport bettor (in-play/conventional), and perceived gambling skill?
3) What are the product preferences of the in-play bettors between the classifications?

### 3.3.2 Methods

### 3.3.2.1 Participants:

The eligibility criteria of the current study required participants to be 18 years of age or older, reside in the UK, and have engaged with sports betting at least once in the previous 6 months. The decision to implement these criteria was underpinned by the need to investigate the unique sports betting environment of the UK using this relatively short timeframe to minimise recall bias. The sample contained 225 sports bettors from England ($n = 154$), Wales ($n = 26$), Scotland ($n = 25$) and Northern Ireland ($n = 20$). Males constituted 79.11% ($n = 178$) of the sample with the largest proportion of participants (22.22%) representing the 18-24 age bracket ($n = 50$). In relation to educational level, the largest proportion of the sample (42.22%) had attained an undergraduate degree ($n = 95$). Ethnically, the largest proportion of the sample were represented by white individuals ($n = 184$, 81.78%). Asian ($n = 17$, 7.56%), Black ($n = 10$, 4.44%) and those of mixed ethnicity ($n = 14$, 6.22%) represented the remainder of the sample. Further demographic information is displayed in Table 7. The self-reported gambling behaviours of the sample indicate that 73.33% of participants engage with in-play betting ($n = 165$). In relation to gambling frequency, 44.44% gambled monthly ($n = 100$), 24% gambled weekly ($n = 54$), 22.67% gambled a few times a week ($n = 51$), and 8.89% gambled everyday ($n = 20$). The largest proportions of the sample participated in online sports betting ($n = 213$, 94.67%) and venue/bookmaker sports betting ($n = 91$, 40.44%). Additional information relating to the gambling behaviour of the sample is displayed in Table 8.

### 3.3.2.2 Measures:

The study was conducted via an online self-report survey that initially required respondents to disclose some brief demographic information including age, gender, ethnicity, educational level, and residing country. Respondents were also asked to confirm their gambling frequency and what forms of gambling they engage with in both the online environment and at physical venues/bookmakers. The next section within the survey included a description of tilting: '*tilting is a state of frustration and irrationality when gambling due to experiencing losses or being overwhelmed by strong emotions. This state is characterised by a reduction in strategic and calculated gambling and an increase in aggressive and impulsive bets*'. In addition to this definition, the following question was utilised as a subjective measure of perceived tilting frequency: "*According to you, how many times have you experienced 'tilting' whilst betting on sports in the last 6 months?*". This question was measured via a 7-point Likert scale ranging from "0 times" to "more than 10 times". Respondents were then asked whether their sports betting involved in-play betting as a binary measure to separate in-play and

conventional sports bettors. The subsequent sections of the survey incorporated the following measures:

**Table 7.** Demographic characteristics of the sample

| Demographic category | (n = 225) (%) |
|---|---|
| **Gender** | |
| Male | 178 (79.11) |
| Female | 47 (20.89) |
| **Age range** | |
| 18-24 | 50 (22.22) |
| 25-29 | 43 (19.11) |
| 30-34 | 46 (20.44) |
| 35-39 | 43 (19.11) |
| 40-44 | 13 (5.78) |
| 45-49 | 13 (5.78) |
| 50-54 | 7 (3.11) |
| 55-59 | 7 (3.11) |
| 60-64 | 2 (0.89) |
| 64-69 | 0 |
| 70+ | 1 (0.44) |
| **Residing UK region** | |
| England | 154 (68.44) |
| Wales | 26 (11.56) |
| Scotland | 25 (11.11) |
| Northern Ireland | 20 (8.89) |
| **Ethnicity** | |
| White | 184 (81.78) |
| Asian | 17 (7.56) |
| Black | 10 (4.44) |
| Mixed ethnicity | 14 (6.22) |
| **Educational level** | |
| Primary school | 1 (0.44) |
| Secondary school | 26 (11.56) |
| College | 59 (26.22) |
| Undergraduate degree | 95 (42.22) |
| Postgraduate degree | 39 (17.33) |
| Other | 5 (2.22) |

**Table 8.** Gambling behaviours of the sample

| Gambling characteristic | (n = 225) (%) |
|---|---|
| **Type of sports bettor** | |
| In-play | 165 (73.33) |
| Conventional | 60 (26.67) |
| **Gambling frequency** | |
| Everyday | 20 (8.89) |
| A few times a week | 51 (22.67) |
| Weekly | 54 (24.00) |
| Monthly | 100 (44.44) |
| **Participation in online gambling[a]** | |
| Sports betting | 213 (94.67) |
| Casino & table games (blackjack, poker etc.) | 70 (31.11) |
| Scratch cards | 39 (17.33) |
| Lottery | 79 (35.11) |
| Bingo | 16 (7.11) |
| Gaming/slot machines | 51 (22.67) |
| Other | 8 (3.56) |
| **Participation in venue/bookmaker gambling[a]** | |
| Sports betting | 91 (40.44) |
| Casino & table games (blackjack, poker etc.) | 25 (11.11) |
| Scratch cards | 23 (10.22) |
| Lottery | 29 (12.89) |
| Bingo | 11 (4.89) |
| Gaming/slot machines | 21 (9.33) |
| Other | 5 (2.22) |

[a] Respondents could choose more than one answer

### 3.3.2.2.1 In-play betting product feature scale –

Only respondents who confirmed that their sports betting involved in-play betting completed this scale within the survey. Conventional sports bettors were diverted to the next section. The in-play betting product feature scale was developed and underpinned by a brief scoping exercise that involved a literature search and observations of in-play betting pages provided by some of the most popular UK-based gambling operators (Paddy Power, William Hill, Bet365, Betfair, Betfred and Ladbrokes). This process was performed by JT, MOH, and involved consultations with the wider research team to reach a consensus concerning the pertinence of the features included within the scale. Consequently, the following product features were deemed to be the archetypal and distinctive elements that in-play bettors can engage with; 1) embedded live stream, 2) virtual live updates, 3) a statistics board, 4) the 'cash-out' feature, 5) instant depositing of funds, 6) the ability to place concurrent bets, 7) the ability to place high-odds bets. As indicated within Figure 6, each product feature was presented alongside a brief description, a picture, and two questions measured via 5-point Likert scales; "*How often do you use this feature?*" (never-always) and "*How important is this feature when you in-play bet?*" (not at all important-extremely important).



**Figure 6.** Screenshot examples of the in-play product preferences scale.

### 3.3.2.2.2 Short (SUPPS-P) Impulsivity Scale –

The current study utilised the shortened version of the UPPS-P Impulsivity Scale (Cyders et al., 2014; Lynam et al., 2006). This 20-item self-report questionnaire assesses impulsivity across five subscales that address negative urgency, positive urgency, lack of perseverance, lack of premeditation and sensation seeking. Items are measured in relation to agreement on a 4-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree). Scores across the subscales can be summed (after reverse scoring 12 items) and are indicative of higher levels of trait impulsivity. The shortened scale is considered a valid and reliable alternative to the longer (57-item) scale with comparable inter-correlations and overlapping variance between the two versions (Cyders et al., 2014). Within the current study, the Cronbach's alpha coefficient of internal consistency for the SUPPS-P was considered acceptable ($\alpha = .70$) to good ($\alpha = .80$) across the 4-item subscales.

### 3.3.2.2.3 Problem Gambling Severity Index (PGSI) –

The PGSI is a widely used instrument that adopts a 9-item self-report scale that measures problem gambling severity (Ferris & Wynne, 2001). Total scores can be produced that correspond to four clinical categories that include non-problem, low risk, moderate risk, and problem gambler. In relation to the psychometric properties of the PGSI, the scale possesses good internal consistency, test-retest reliability, and factor structure (Ferris & Wynne, 2001; Holtgraves, 2009). Although the literature concerning the validity of the PGSI is less clear, it is deemed a useful and applicable tool that is psychometrically stronger than other similar scales (Miller et al., 2013). Within the current study, the Cronbach's alpha coefficient of internal consistency for the PGSI was considered excellent ($\alpha = .93$).

### 3.3.2.2.4 Nine Item Online Poker Tilt Scale (OPTS-9) –

The 9-item Online Poker Tilting Scale (OPTS-9) is a shortened version of the original 17-item scale that was validated within a French population (Moreau, Chauchard, Hamel, et al., 2020; Moreau et al., 2017). The OPTS-9 was adapted within the current study to provide an additional measure of tilting occurrence without explicitly discussing this phenomenon. The items are measured on a five-point Likert scale (never, rarely, sometimes, often, almost every time) with higher summed scores indicative of higher tilting occurrence. The key aspects of tilting that are covered by the items within the OPTS-9 including risk-taking, alteration of focus, desire to win, dissociation, loss of control, frustration, negative mood, irritability/anger, and aggressive

actions. Within the scale, these items are grouped under two labels; either emotional or cognitive dysregulation. Due to this poker-related scale being adapted to sports betting in this context, each question was prefaced with '*while sports betting…*' rather than '*while playing poker…*'. Additionally, the examples described within the frustration item ("*I feel frustrated due to bad luck, other players' behaviour etc*") were changed to "*I feel frustrated due to bad luck, poor referee decisions / team performance etc)*". All other items within the scale remained unaltered as they were not poker specific in their wording. Within the current study, the Cronbach's alpha coefficient of internal consistency for the OPTS-9 was considered excellent ($\alpha = .90$).

### 3.3.2.2.5 GamCog Perceived Gambling Skill (PGS) Subscale –

Self-reported perceptions of gambling-related skill were measured using the Perceived Gambling Skill (PGS) subscale of the GamCog (Macey & Hamari, 2020). The GamCog is an instrument used in the assessment of cognitions within a gambling or video gaming context. The PGS subscale is comprised of 5 items that are scored on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The PGS was deemed most fitting in measuring perceived skill within the current study in comparison to other similar scales such as the Gambling-related Cognitions Scale (GRCS) (Raylu & Oei, 2004a). This decision was underpinned by the way in which the PGS specifically focuses upon perceived gambling-related skill in a manner that aligns appropriately with sports betting. In contrast, the GRCS focuses upon predictive control and illusions of control rather than perceived skill which may lead to overestimations of cognitive distortion in skills-based gambling modes such as poker or sports betting (Lévesque et al., 2017). Within the current study, the Cronbach's alpha coefficient of internal consistency for the PGS was considered good ($\alpha = .88$).

### 3.3.2.3 Procedure

Data collection occurred between May and July 2021 and was conducted via a survey that was hosted online. Invitations to participate were posted on Twitter, Reddit and via email. In relation to Reddit, the survey was most widely distributed via the "Soccer", "Casual UK", and "Problem Gambling" forums (subreddits). All of the respondents gave informed written consent to participate and gave permission for their anonymised data to be utilised within study reports, peer-reviewed publications and displayed via open science data sharing platforms. Participation was voluntary and respondents were not financially incentivised. Due to this lack of incentivisation alongside sports bettors often

displaying impulsive traits (Cooper et al., 2021; Mercier et al., 2018), short versions of the scales were incorporated to reduce attrition rates and time expenditure when completing the survey. The structure of the survey involved the following sections: 1) demographic information and gambling behaviour; 2) perceived tilting frequency (past 6 months); 3) separating in-play and conventional sports bettors 4) in-play betting product feature scale; 5) SUPPS-P Impulsivity Scale; 6) PGSI; 7) OPTS-9; 8) GamCog PGS. Ethical Approval for this study was given by the School of Psychology and Therapeutic Studies ethics panel at The University of South Wales (USW). All procedures were in accordance with the standards of USW and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

### 3.3.2.4 Data Analysis

The following analytical procedures were conducted using IBM SPSS Statistics version 27. To create distinct classifications of participants based on their reported tilting episodes and awareness of this phenomenon, a cluster analysis was performed. The process of clustering allows for the formulation of groups that are higher in homogeneity within themselves whilst being heterogenous between each other (Szekely & Rizzo, 2005). Firstly, z-scores ($M = 0$, $SD = 1$) were calculated in order to standardise the two tilting variables (total OPTS-9 scores and total perceived tilting) for the sake of comparability (Mohamad & Usman, 2013). Subsequently, these z-scores were subjected to hierarchical clustering to help define the number of suitable clusters within the sample before further analysis. Hierarchical clustering involves the creation of a nested sequence of partitions that includes an all-encompassing single cluster at the top of the hierarchy with clusters comprised of single cases at the bottom. Each level within the hierarchy is comprised of the two lower clusters beneath it and can be displayed graphically via a hierarchical tree known as a dendrogram. Ward's method of agglomerative clustering was utilised throughout this initial process using the squared Euclidean distance. Following this, the solution of the hierarchical clustering was determined and incorporated into a k-means cluster analysis. The k-means algorithm involved the previously calculated z-scores of the perceived tilting and OPTS-9 total score variables in order to allocate each participant into a cluster.

The stability and sufficiency of the k-means cluster model was validated via a series of ANOVAs and post hoc tests (Tukey and Games-Howell) that investigated differences between the clusters in terms of the two tilting variables (unstandardised OPTS-9 and perceived tilting scores). These ANOVAs and post hoc tests were also performed to investigate the differences between clusters with regards to characteristics such as gambling severity (PGSI), impulsivity (SUPPS-P total and subscales), and perceived skill (PGS). To investigate the association between cluster membership and the type of

sports betting the participants engage with (in-play or conventional), Chi-square analysis was conducted. Differences in gambling frequency and product preferences between the clusters were analysed using the non-parametric Kruskal-Wallis (one-way ANOVA on ranks) test with Dunn-Bonferroni post-hoc testing.

### 3.3.3 Results

#### 3.3.3.1 Tilting cluster formulation and characteristics

The hierarchical cluster analysis allowed for the identification of 3 distinct clusters amongst the sample. This classification was formulated using the agglomeration schedule alongside observations of the dendrogram. The standardised z-scores for each tilting variable (OPTS-9 and perceived tilting) across the 3 clusters are displayed in Figure 7 as a result of K-means clustering. The participants in Cluster 1, labelled 'Conscious tilters' ($n = 24$) had an OPTS-9 z-score of 1.47 and a total perceived tilting z-score of 2.36. Cluster 2 labelled 'Unconscious tilters' (n = 71), contained participants with an OPTS-9 z-score of .72 and a total perceived tilting z-score of .09. The participants in Cluster 3, labelled 'Non-tilters' ($n = 130$) had an OPTS-9 z-score of -.67 and a total perceived tilting z-score of -.49.
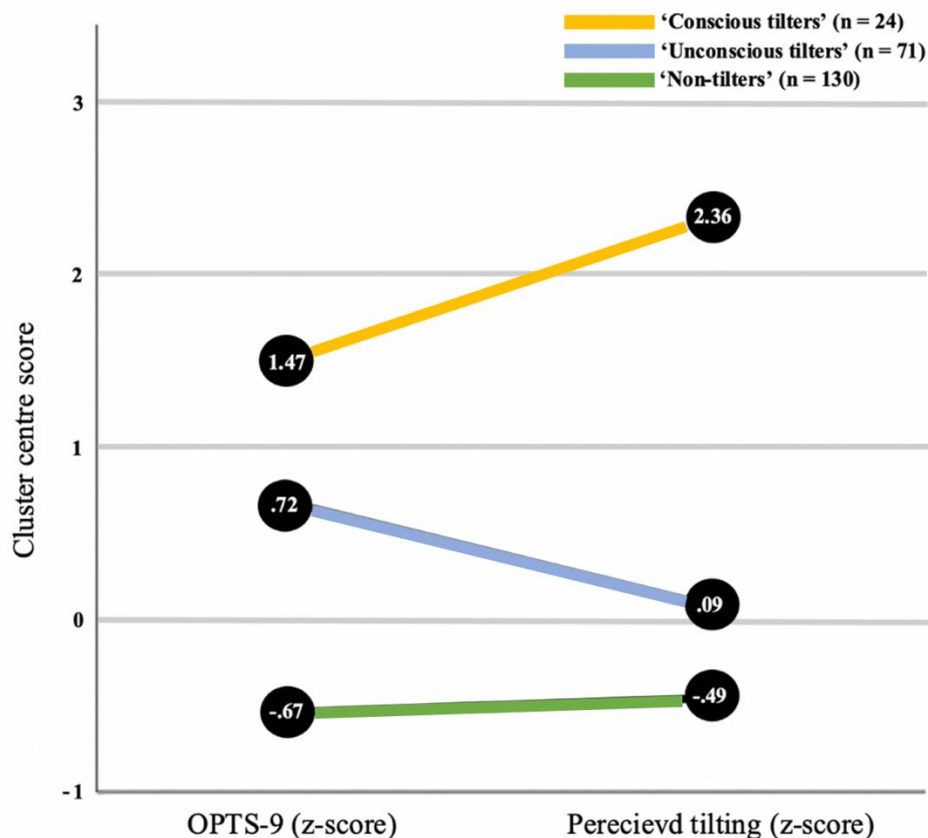


**Figure 7.** Cluster centre z-scores of OPTS-9 and perceived tilting

Between the clusters, the mean impulsivity (SUPPS-P total and subscales) and perceived skill (PGS) scores met the assumption of homogeneity of variance via Levene's $F$ testing and were subjected to one-way ANOVAs. Welch tests were performed to analyse the differences between the mean OPTS-9, perceived tilting and PGSI scores as these failed to meet the assumption of homogeneity of variance. Effect sizes were calculated using an estimation of omega squared. The results of these analyses are presented within Table 9 in addition to the unstandardised means and standard deviations of the measured variables. The Welch tests and ANOVAs revealed statistically significant main effects ($p<.001$) that indicated the 3 clusters differed in relation to mean OPTS-9 (*est.* $\omega^2 = .60$), perceived tilting (*est.* $\omega^2 = .54$), PGSI (*est.* $\omega^2 = .25$) and SUPPS-P total scores (*est.* $\omega^2 = .14$). In relation to the mean SUPPS-P subscales scores, the ANOVAs revealed statistically significant main effects ($p< .001$; $p< .005$) that indicated the 3 clusters differed in relation to 'negative urgency' (*est.* $\omega^2 = .14$), 'positive urgency' (*est.* $\omega^2 = .16$), and 'lack of premeditation' (*est.* $\omega^2 = .04$). The mean SUPPS-P 'lack of perseverance' subscale, SUPPS-P 'sensation seeking' subscale scores, and the mean PGS scores were not significantly different between the clusters.

**Table 9.** Comparisons of the characteristics between the three clusters

| | Cluster 1 'Conscious tilters' ($n = 24$) | Cluster 2 'Unconscious tilters' ($n = 71$) | Cluster 3 'Non-tilters' ($n = 130$) | *dif* 1 | *dif* 2 | *F* | *est.* $\omega^2$ |
|---|---|---|---|---|---|---|---|
| **Psychometric characteristic** | *M (SD)* | *M (SD)* | *M (SD)* | | | | |
| **OPTS-9** | 15.79 (7.04) [2,3] | 11.32 (3.85) [1,3] | 2.99 (2.19) [1,2] | 2 | 50.55 | 170.74** | .60 |
| **Perceived tilting** | 3.83 (1.13) [2,3] | 1 (.68) [1,3] | .28 (.50) [1,2] | 2 | 53.04 | 134.89** | .54 |
| **PGSI** | 9 (6.95) [2,3] | 4.76 (4.88) [1,3] | 1.02 (1.55) [1,2] | 2 | 47.95 | 34.19** | .25 |
| **SUPPS-P (total)** | 47.96 (7.50) [2,3] | 43.45 (6.51) [1,3] | 39.61 (6.56) [1,2] | 2 | 222 | 19.53** | .14 |
| *Negative urgency* | 11.33 (2.66) [2,3] | 9.52 (2.52) [1,3] | 7.95 (2.52) [1,2] | 2 | 222 | 22.10** | .14 |
| *Positive urgency* | 9.54 (2.90) [2,3] | 7.81 (2.27) [1,3] | 6.56 (2) [1,2] | 2 | 222 | 21.85** | .16 |
| *Lack of perseverance* | 8.16 (1.79) | 8 (2) | 8.3 (2.25) | 2 | 222 | .43 | |
| *Lack of premeditation* | 8.41 (1.72) [3] | 7.6 (2.17) | 7.03 (2.06) [1] | 2 | 222 | 5.24* | .04 |
| *Sensation seeking* | 10.5 (2.98) | 10.52 (2.22) | 9.76 (2.66) | 2 | 222 | 2.37 | |
| **PGS** | 20.04 (7.20) | 19.90 (6.00) | 17.76 (6.86) | 2 | 222 | 2.60 | |

** $p<.001$ * $p<.005$
[1,2,3] Representative of cluster that is significantly different ($p<.05$)

Post-hoc analysis involved Tukey tests for the variables that met the assumption of homogeneity of variance. Games-Howell testing was utilised for variables that violated this assumption. As denoted next to the mean scores displayed in Table 9, The 'conscious tilters' scored significantly higher across

7 of the 10 psychometric characteristics compared to the 'unconscious tilters'; OPTS-9 ($p = .017$); Perceived tilting ($p<.001$); PGSI ($p = .025$); SUPPS-P total ($p = .012$); SUPPS-P 'negative urgency' ($p = .008$); SUPPS-P 'positive urgency' ($p = .003$). The 'conscious tilters' also displayed significantly higher mean scores across the following psychometric characteristics compared to the 'non-tilters'; OPTS-9 ($p<.001$); Perceived tilting ($p<.001$); PGSI ($p<.001$); SUPPS-P total ($p<.001$); SUPPS-P 'negative urgency' ($p<.001$); SUPPS-P 'positive urgency' ($p<.001$); SUPPS-P 'lack of premeditation' ($p= .008$). Similarly, the 'unconscious tilters' also displayed significantly higher mean scores across the following variables compared to the 'non-tilters'; OPTS-9 ($p<.001$); Perceived tilting ($p<.001$); PGSI ($p<.001$) and SUPPS-P total ($p<.001$); SUPPS-P 'negative urgency' ($p<.001$); SUPPS-P 'positive urgency' ($p<.001$).

A chi-square test of independence was performed to examine the relation between cluster membership and the type of sports betting the participants engaged with. Participants were categorised as either in-play bettors (n = 165) or conventional sports bettors (n = 60). This analysis revealed that there was no significant association between cluster membership and sports betting type, $\chi^2(2) = 1.44$, $p = .49$. In order to analyse any differences in gambling frequency (monthly, weekly, a few times a week, everyday) between the clusters, a Kruskal-Wallis H-test was performed. The results of this test indicated that that there was a statistically significant difference in gambling frequency between at least one pair of clusters, $H = 13.23$, $p = .001$. The corresponding effect size was calculated via the eta squared measure using the Kruskal-Wallis H statistic, $\eta^2_H = .05$ (Tomczak & Tomczak, 2014). A mean rank gambling frequency of 154.56 was observed for the 'conscious tilters', 113.48 for the 'unconscious tilters' and 105.07 for the 'non-tilters'. Post-hoc analysis involved Dunn-Bonferroni testing that revealed the differences in gambling frequency were statistically significant between the 'conscious tilters' and the 'non-tilters' ($p = .001$), alongside the 'unconscious tilters' and the 'non-tilters' ($p = .014$). However, differences in gambling frequency were not statistically significant between the 'conscious tilters' and the 'unconscious tilters'.

Overall, these results indicate that there were significant differences observed between the clusters in relation to OPTS-9 scores, perceived tilting, PGSI scores, SUPPS-P scores, and gambling frequency. Contrastingly, there were no significant differences observed in relation to PGS (perceived skill) scores and gambling type.

### 3.3.3.2 In-play product preferences

To analyse the product preferences (frequency of use and perceived importance) of the in-play bettors ($n = 165$) between the clusters, Kruskal-Wallis $H$-tests were performed. The results of these tests indicated that there were statistically significant differences in product preferences between at least one pair of clusters across 5 of the 14 product preferences. These included: the frequency at which the embedded livestream feature was used ($H = 6.52$, $p = .038$); the perceived importance of the virtual updates feature ($H = 11.38$, $p = .003$); the frequency at which the statistics board was used ($H = 11.69$, $p = .003$); the frequency at which the instant deposit feature was used ($H = 18.39$, $p < .001$); the perceived importance of the instant deposit feature ($H = 9.63$, $p = .008$). The results and effect sizes for these analyses are displayed in Table 10. The effect sizes were calculated via the eta squared measure ($\eta^2_H$) using the Kruskal-Wallis $H$ statistic (Tomczak & Tomczak, 2014).

**Table 10.** Kruskal-Wallis $H$ tests of product preferences between clusters

| | Cluster 1 'Conscious tilters' ($n = 20$) | Cluster 2 'Unconscious tilters' ($n = 52$) | Cluster 3 'Non-tilters' ($n = 93$) | $n$ [a] | dif | $H$ | $\eta^2_H$ |
|---|---|---|---|---|---|---|---|
| **Frequency of use** | Mean ranking | Mean ranking | Mean ranking | | | | |
| Embedded livestream | 103.35[3] | 87.51 | 76.10[1] | 165 | 2 | 6.52* | .03 |
| Virtual live updates | 94.70 | 91.10 | 75.96 | 165 | 2 | 5.01 | |
| Statistics board | 103.90[3] | 93.87[3] | 72.43[1,2] | 165 | 2 | 11.69* | .06 |
| Cash-out feature | 92.50 | 83.76 | 80.53 | 165 | 2 | 1.16 | |
| Instant deposit | 104.80[3] | 98.65[3] | 69.56[1,2] | 165 | 2 | 18.39** | .10 |
| Concurrent bets | 91.38 | 87.00 | 78.96 | 165 | 2 | 1.75 | |
| High-odds / microevents | 99.48 | 89.09 | 76.05 | 165 | 2 | 5.60 | |
| **Importance** | Mean ranking | Mean ranking | Mean ranking | | | | |
| Embedded livestream | 73.47 | 74.48 | 63.44 | 136 | 2 | 2.70 | |
| Virtual live updates | 93.09[3] | 79.38 | 61.82[1] | 142 | 2 | 11.38* | .07 |
| Statistics board | 91.18 | 81.74 | 69.73 | 152 | 2 | 5.12 | |
| Cash-out feature | 74.42 | 75.19 | 78.66 | 153 | 2 | .29 | |
| Instant deposit | 94.75[3] | 86.37[3] | 67.67[1,2] | 154 | 2 | 9.63* | .05 |
| Concurrent bets | 76.88 | 64.96 | 65.14 | 132 | 2 | 1.41 | |
| High-odds / microevents | 66.75 | 69.22 | 63.75 | 131 | 2 | .60 | |

[a] Participants who reported 'never' using a feature did not rate its importance,
[1,2,3] Representative of cluster that is significantly different ($p < .05$),
* $p < .05$, ** $p < .001$,

Post-hoc analysis consisted of Dunn-Bonferroni testing. In relation to the embedded livestream feature, the 'conscious tilters' (*mean rank* = 103.35) reported a significantly higher frequency of use compared to the 'non-tilters' (*mean rank* = 76.10), $p = .048$. Concerning the statistics board feature, the 'conscious tilters' (*mean rank* = 103.90) reported a significantly higher frequency of use compared to the 'non-tilters' (*mean rank* = 72.43), $p = .018$. Similarly, the 'unconscious tilters' (*mean rank* = 93.87)

also reported using the statistics board at a significantly higher frequency compared to the 'non-tilters' (*mean rank* = 72.43), *p* = .023. With regards to the instant deposit feature, the 'conscious tilters' (*mean rank* = 104.80) reported a significantly higher frequency of use compared to the 'non-tilters' (*mean rank* = 69.56), *p* = .006. Similarly, the 'unconscious tilters' (*mean rank* = 98.65) also reported using the instant deposit feature at a significantly higher frequency compared to the 'non-tilters' (*mean rank* = 69.56), *p* = .001.  The perceived importance of the instant deposit feature reported by the 'conscious tilters' (*mean rank* = 94.75) was significantly higher than the 'non-tilters' (*mean rank* = 67.67), *p* = .036. The perceived importance of the instant deposit feature was also significantly higher amongst the 'unconscious tilters' (*mean rank* = 86.37) compared to the 'non-tilters' (*mean rank* = 67.67), *p* = .044. Lastly, in relation to the virtual live updates feature, the 'conscious tilters' (*mean rank* = 93.09) reported this feature to be significantly higher in importance compared to the 'non-tilters' (*mean rank* = 61.82), *p* = .010. Overall, the product preferences differed significantly between some but not all of the in-play product features between clusters.

### 3.3.4 Study 4 discussion and conclusions

The current study aimed to contribute to the literature by adapting and investigating the concept of 'tilting' amongst sports bettors within the gambling environment of the UK. The evidence here indicates that tilting is indeed observable in this context with distinct groups of sports bettors who differ according to their reported tilting occurrence and awareness of this phenomenon. Specifically, cluster analyses distinguished three groups who reported significantly different OPTS-9 scores and perceived tilting frequencies in congruence with Moreau, Sévigny, et al (2020). These groups also differed significantly in relation to gambling severity, gambling frequency, and impulsivity (positive/ negative urgency and lack of premeditation). Significant differences were not observed in relation to perceived skill or type of sports bettor (in-play or conventional). Lastly, the in-play bettors across these groups differed significantly in relation to some but not all of their reported product preferences.

The first group were labelled 'Conscious tilters' and consisted of 24 bettors who reported significantly higher OPTS-9 scores and perceived tilting frequencies compared to the two other groups. These 'Conscious tilters' were labelled as such due to high z-scores in relation to the two tilting variables. Specifically, with a cluster centre z-score of 2.36 for perceived tilting frequency and 1.47 for OPTS-9 scores, it is evident that individuals within this group are highly cognizant of their own tilting episodes. This group also reported significantly higher mean PGSI scores compared to the other two groups. With a mean PGSI score of 9,  this 'Conscious tilting' group are representative of the 'problem

gambler' categorisation (Ferris & Wynne, 2001). Consequently, this finding supports the notion that tilting may operate as a facilitator of harmful or maladaptive sports betting (Browne, 1989; Moreau, Sévigny, et al., 2020). Similarly, with significantly higher gambling frequencies (mean rank = 154.56) compared to the two other groups, these individuals may be more prone to tilting as more frequent engagements with the gambling environment may provide more opportunities to tilt.

This particular group are likely situated at the higher end of the harm-spectrum and their tilting may be facilitated (in-part) by their significantly higher mean total impulsivity (47.96), negative urgency (11.33), positive urgency (9.54), and lack of premeditation (8.41) scores compared to the two other groups. Tilting is suggested to be grounded in uncalculated and reckless betting decisions that are often the product of irrational motives and acting in a spontaneous or overly emotional manner (Browne, 1989). Therefore, it is unsurprising that those who are most prone to tilting also report significantly higher levels of general trait impulsivity, impulsive urgency and a lack of premeditation (Schreiber et al., 2012). This finding was not previously observed amongst poker players (Moreau, Sévigny, et al., 2020) suggesting that the nature of maladaptive sports betting may be more impulse-driven and/or that sports bettors may possess more impulsive traits in comparison (Hing, Li, et al., 2018). Overall, these 'Conscious tilters' represent a cohort of sports bettors who, despite being highly aware, appear to experience the highest tilting occurrence alongside higher levels of associated gambling-harm.

The second group were labelled 'Unconscious tilters' and consisted of 71 bettors who reported significantly higher OPTS-9 scores and perceived tilting frequencies compared to the third group. This particular group were labelled in accordance with the discrepancy between the two reported tilting variables. Specifically, these 'Unconscious tilters' reported a lower cluster centre z-score for perceived tilting frequency (.09) in comparison to a higher OPTS-9 z-score (.72). This discrepancy is indicative of a low conscious awareness or underestimation of tilting occurrence. In addition, these 'Unconscious tilters' reported a significantly higher mean PGSI score (4.76) compared to the third group and would therefore be categorised as 'moderate-risk gamblers' (Ferris & Wynne, 2001). The same trend was also observable in relation to the mean total impulsivity (43.45), negative urgency (9.52), and positive urgency (7.81) scores in comparison to the third group. In combination, these factors are particularly important when considered via the lens of harm-reduction. Given that tilting may operate as a gateway to maladaptive or disordered gambling (Browne & Rockloff, 2018), it is necessary to recognise that this group are represented by a sizeable portion of the sample (31.56%) compared to the 'Conscious tilting' group (10.67%). In summary, the current study provides preliminary evidence for a cohort of sports bettors who are 'unconscious' or unaware of their own tilting episodes. At face value, this cohort

appears to be distinct and detached from the other groups. However, it could be proposed that this group may operate as a steppingstone into the 'Conscious tilting' group for some bettors. This transition may take place if tilting episodes and the associated harms become too frequent and intense to misperceive. Further investigation into this potential transition as a future research priority is therefore recommended.

The third group were labelled 'Non-tilters' and consisted of 130 participants. This group were labelled according to their significantly lower OPTS-9 scores and perceived tilting frequencies compared to the two other groups. The cluster centre z-scores for the OPTS-9 (-.67) and perceived tilting frequency (-.49) within this particular group are indicative of a relatively accurate perception of little to no tilting episodes. Correspondingly, this group reported a significantly lower mean PGSI score (1.02) in comparison to the two other groups which is representative of the 'low-risk gambler' categorisation (Ferris & Wynne, 2001). The mean total impulsivity (39.61), negative urgency (7.95) and positive urgency (6.56) scores of this group was also significantly lower than the two other groups. Overall, these 'Non-tilters' represent a cohort of sports bettors who report the lowest tilting occurrence, are less impulsive, gamble at the lowest frequency and experience the lowest amount of gambling-related harm.

In light of the behavioural and psychological characteristics that are encompassed by the concept of tilting, the current findings suggest that maladaptive sports betting can be investigated via the emergent paradigm of emotional and cognitive dysregulation. Although this approach has been recently adopted in the prediction of maladaptive gambling in general (Buen & Flack, 2021; Ciccarelli et al., 2021), it appears particularly pertinent to sports betting. For example, sports betting may be more emotionally charged than other forms of gambling due to the sports fan identity and the emotional investment that bettors place upon their respective team to succeed (Jones & Noël, 2020). In addition, the analytical nature of sports betting combined with a high number of betting opportunities may facilitate erroneous cognitions, impulsivity, and loss-chasing (Nweze et al., 2020; Russell, Hing, Li, et al., 2019). However, tilting is currently a more established and recognised concept amongst poker players compared to sports bettors. Within the poker sphere, the frequency of tilting is typically associated with perceived skill as players who wish to increase their expertise are expected to display adequate emotional regulation when gambling (Laakasuo et al., 2016; Palomäki et al., 2020). In contrast, the three groups of sports bettors within the current study did not differ significantly in relation to their perceived gambling skill when clustered according to their tilting scores and perceived tilting frequency. Although placing a new emphasis upon identifying tilting episodes and the importance of

emotional regulation would likely benefit sports bettors to an extent, the structural characteristics and product features associated with this gambling mode are also very relevant in this context.

The evolution of the sports betting environment is rapid, and the associated products are increasing in complexity and availability (Philip Newall, Alex MT Russell, et al., 2021; Parke & Parke, 2019). Therefore, the current study also investigated the product preferences of the in-play bettors across the three groups. The ability to instantly deposit funds was the only in-play product feature that differed significantly between the groups in terms of both frequency of use and perceived importance. The 'Conscious tilters' and 'Unconscious tilters' within the current study both reported using this in-play feature at a significantly higher frequency compared to the 'Non-tilters'. The instant depositing of funds has been previously highlighted as a catalyst in prolonging sports betting sessions alongside possessing the potential to facilitate impulsive gambling behaviours (Parke & Parke, 2019). Theoretically, the instant deposit feature may enable tilting bettors to immediately replenish their lost funds in order to place more reckless and impulse-driven bets during episodes of irrationality.

The 'Conscious tilters' and 'Unconscious tilters' also reported using the statistics board feature at a significantly higher frequency compared to the 'Non-tilters'. Similarly, the 'Conscious tilters' reported using the embedded livestream feature at a significantly higher frequency and deemed the virtual live updates feature to be significantly more important compared to the 'Non-tilters'. The statistics board, embedded livestream, and live update features can all be categorised as information-based. These features provide bettors with either visual or statistical information related to the respective game, match, or event. It appears rational to assume that in-play bettors utilise these features to inform their sports betting decisions although whether they are used before, during, or after tilting episodes remains unclear. Previous research has suggested that information-based product features may facilitate illusions of control amongst sports bettors by providing them with a perceived advantage (Lopez-Gonzalez, Estévez, & Griffiths, 2018). Supporting evidence for this notion is provided here given these features were most frequently used and deemed most important by those with higher problem gambling severity and tilting occurrence within the current study. However, no significant association was observed in relation to the type of sports betting (in-play or conventional) that bettors engaged with between the three groups. Therefore, the product preferences of the in-play bettors should be interpreted conservatively in relation to the facilitation of tilting in this context. In light of these preliminary findings, future research should aim to investigate the influence of sports betting product features in facilitating tilting episodes within more naturalistic settings.

This exploratory study has also raised numerous questions relating to the potential context in which tilting episodes take place. For example, sports betting and alcohol products are often marketed in tandem (Deans et al., 2016; Lopez-Gonzalez, Estévez, Jiménez-Murcia, et al., 2018) and it is common for sports bettors to consume alcohol whilst gambling (Jenkinson et al., 2018). Given the evidence indicating the detrimental effect of alcohol upon rational decision making and emotional regulation (Dvorak et al., 2014; George et al., 2005; Li et al., 2020), future research should seek to investigate such contextual factors and their relationship with tilting episodes amongst sports bettors. It is likely that tilting is a multifaceted phenomenon that is facilitated by game design, cognition, and environmental factors (Sharma et al., 2021). Therefore, research that aims to investigate tilting via multiple avenues from a harm-reduction perspective is warranted.

### 3.3.4.1 Limitations:

There are some potential limitations that should be considered in light of the current findings. Firstly, this study incorporated questions that required participants to retrospectively identify the frequency of their own tilting episodes. Given that these questions typically rely upon the accurate recollection of the participants, there is potential for recall bias. However, the questions were framed to assess tilting over the relatively short time-frame of the previous 6-months in an attempt to minimise this bias. Furthermore, the concept of tilting was investigated via an additional measure (OPTS-9) that did not include a time-frame in order to provide a more holistic assessment of this phenomenon. A second limitation relates to the development of the in-play product feature scale. It is possible that certain in-play product or structural features were not included within this scale as they are not entirely consistent across operator websites and apps. To increase the rigor and applicability of this scale, the archetypical in-play product features were incorporated after a consensus had been reached by the research team concerning their inclusion.

### 3.3.4.2 Conclusions:

In contribution to the international gambling literature, the current findings provide preliminary evidence for the existence of tilting amongst sports bettors. The results indicate that there are at least three profiles of sports bettors who differ in relation to their tilting scores alongside their perception and awareness of this phenomenon. There are characteristic differences between these groups that include variations in gambling severity, gambling frequency, impulsivity, and product preferences. Specifically, there is evidence here to suggest that tilting may operate as a facilitator of maladaptive sports betting or increased gambling severity, although further research is warranted in relation to this

interaction. The findings of this exploratory study also open up new lines of enquiry regarding the role of emotional and cognitive dysregulation within maladaptive sports betting; two elements that are encompassed by the concept of tilting. Consequently, there is a need to further investigate the influence of specific product features upon the onset and maintenance of tilting episodes. The preliminary findings here suggest that the ability to instantly deposit funds and utilise sports/odds-related information may facilitate tilting. It is important for this research area to develop in step with the rapid expansion and increasing complexity of the sports betting sphere. Gaining insight into tilting as a contextual factor that reshapes low risk into maladaptive sports betting is beneficial to gamblers, researchers, and service providers.

## 3.4 Chapter discussion

The objective of the current chapter involved addressing two of the overall thesis research aims; 1) to provide original and novel insight in relation to how product features are perceived by potentially vulnerable audiences; 2) to provide evidence of bespoke pathways to gambling-related harm that have not yet been researched. Two studies were conducted in order to accomplish these aims respectively. Firstly, via a qualitative investigation of young adults' perceptions towards gambling product features and harm within the UK (Study 3). Secondly, a quantitative cluster analysis that investigated groups of sports bettors based upon their reported levels and awareness of emotional and cognitive dysregulation when gambling (tilting; Study 4).

Each of these empirical studies was also underpinned by more specific research questions. For example, Study 3 was underpinned by three research questions that included; 1) What specific features do young adult gamblers prefer in relation to the respective gambling modes they engage with? 2) What are their perceptions towards and experiences of gambling-related harm in relation to themselves and observing it amongst others? 3) How much awareness do they have regarding procedures and organisations that aim to mitigate gambling-related harm within the UK? Study 4 was also underpinned by three specific research questions; 1) How many classifications of sports bettors exist in relation to their reported tilting and awareness of this phenomenon? 2) How do these classifications of sports bettors differ in relation to gambling severity, gambling frequency, impulsivity, type of sport bettor (in-play/conventional), and perceived gambling skill? 3) What are the product preferences of the in-play bettors between the classifications? In a similar fashion to the previous chapter, the current chapter discussion will briefly summarize the findings of the included studies and will broadly discuss their implications in relation to the bespoke risk environment and the associated literature. Specifically,

the findings of Study 3 and 4 are underpinned by an interaction between the *consumer vulnerabilities* and *product features/structural characteristics factors* of the bespoke risk environment model and will be discussed from this perspective.

In relation to study 3, participants within this young adult sample expressed that they preferred a range of product features that are provided in relation to the gambling modes they engaged with. Firstly, this included fast speeds and play and high outcome frequency primarily expressed by frequent gamblers who engage with casino games and sports betting. There are bespoke risks associated with this preference as high speeds of play have been outlined as a quintessential facilitator of gambling-relating harm within the literature (Harris & Griffiths, 2018; Newall, 2022a). Despite the potential for associated harm, this feature was favoured by numerous participants which highlights barriers in relation to their potential engagement with the safer (and slower) redesign of gambling products. In order to mitigate the harm associated with faster speeds of play amongst gamblers who inherently prefer swift and continuous engagement, targeted interventions have been suggested across the literature. For example, Harris and Griffiths (2018) suggest that simply slowing games down may impede the enjoyment individuals get from high-speed gambling. They therefore recommend the incorporation of non-gambling mini games into betting platforms in order to ensure that the time between gambling sessions is still entertaining. Conversely, Newall (2022a) suggests that simple reductions in speeds of play across gambling modes is a viable and effective method of reducing gambling-related harm without impacting the freedoms of gamblers who are not experiencing such harm. In any case, attempting to reduce the harm associated with faster speeds of play may prove difficult in relation to gamblers who actively seek out and prefer this feature. However, as stated throughout the current thesis, gambling products are not immutable and should regularly undergo cosmetic and structural adjustments in order to reduce gambling-related harms.

The second product preference outlined within Study 3 relates to simplicity and straightforwardness predominantly expressed by female gamblers who engaged with FOBTs, spin/slot games, and the national lottery. Despite the widespread increase in gambling product complexity and diversification over the past two decades (see *Transformation of gambling products*), participants in this cohort favoured games and gambling modes that required little skill via an easy-to-use interface. Although simplicity is not a gambling product feature that has been directly associated with the facilitation of bespoke gambling-related harm across the literature, many participants in this cohort expressed that they actively enjoyed games where '*no thought processes*' were involved. This notion is intrinsically connected to spin games and FOBTs via the concept of 'being in the zone' (Oakes et al., 2020). This

primarily involves an altered state of awareness or trance-like episodes where gambling-related decision-making may be impaired (Kuley & Jacobs, 1988). However, the connection between simplicity and this state should be interpreted conservatively in this context as the participants in this cohort did not elaborate upon this topic further. Therefore, further research should seek to explicitly investigate the concept of dissociative immersion in relation to simplistic gambling products available in the UK such as bingo and the repeated use of digital scratch cards.

The third product preference outlined in Study 3 involves the ability to utilise related skills and knowledge primarily outlined by young males who engage with poker and sports betting. It was generally expressed that utilising such skill operated as a perceived method of increasing control and reducing the risks of bets compared to games that were perceived to be more chance-based. However, this perception is contradictory to some previously conducted literature where it is suggested that sports-related skills and knowledge do not lead to increased winnings compared to completely random bets (Cantinotti et al., 2004). According to this literature, it is more likely that the perceived advantages of sports-related skills and knowledge during sports betting sessions may actually be cognitive distortions (Cantinotti et al., 2004; Myrseth et al., 2010; Phua et al., 2022). Therefore, consideration should be given to the bespoke risks associated with gamblers who gravitate towards skills-based games due to the (mis)perceived advantage that they believe they possess. Indeed, there is some preliminary research evidence that indicates that skill, knowledge, and expertise within both poker and sports betting may increase the frequency of successful bets (Khazaal et al., 2012; Palomäki et al., 2020). However, it is unclear whether these successful bets lead to tangible winnings in the long-run as the cyclic nature of sports betting products may encourage the re-staking of winnings (Butler et al., 2021; Khazaal et al., 2012; Palomäki et al., 2020; Parke & Parke, 2019).

The final product preference provided by the sample in Study 3 related to gaming mechanics that were perceived to be low-risk or non-addictive. This sentiment was primarily expressed by female gamblers who engaged with bingo and the lottery. Such perceptions may be associated with bespoke-risks given the emergent literature that indicates the increasing potential for harm in relation to bingo (Kathleen Maltzahn, John Cox, et al., 2022; Kathleen Maltzahn, Mary Whiteside, et al., 2022; Stead et al., 2016). The primary risk for bespoke harm relates to bingo products often being hosted in close proximity to EGMs or FOBTs in venues as well as online (Kathleen Maltzahn, John Cox, et al., 2022; Kathleen Maltzahn, Mary Whiteside, et al., 2022). Therefore, there is the potential for these 'low-risk' perceptions of bingo to extend into other areas of bingo websites (or venues) that host other gambling modes where the harms are more pronounced.

Overall, the sample within Study 3 provided a range of product preferences that are each associated with a varying degree of bespoke-risk. Despite this, the awareness within the sample in relation to any measures utilised within the UK that are aimed at reducing gambling-related harm was low. This included a lack of recognition regarding governmental, organisational, and personal strategies. Although awareness of harm-reduction was generally low, the most commonly recognised harm-reductive strategies amongst the sample of Study 3 related to personal measures such as limit setting and self-exclusion. However, these measures were deemed to be easily circumventable and often difficult to locate. Recently, the Behavioural Insights Team (BIT) produced a report on their audit of popular UK gambling websites (BIT, 2022). The report highlighted numerous dark patterns, nudges, and 'sludge' (Newall, 2022b) within the practices of these websites. 'Sludge' is defined by practices or content such as convoluted T&Cs that cause friction and delay in relation to the decision-making of consumers. Among other harmful (but legal) practices, The BIT report indicated that safer gambling management tools (such as limit setting) were far harder to locate and set up compared to placing bets on UK gambling websites. Furthermore, deposit limits could only be set via predefined denominations rather than allowing consumers to set their own specific limit via a free text box (BIT, 2022). These findings mirror the qualitative experiences of the young adult sample and highlight the need for effective, prominent, and publicised harm-reduction (or management) tools within the UK gambling environment (McMahon et al., 2019; Tanner et al., 2017).

In relation to Study 4, three distinct groups of sports bettors were identified as a result of the cluster analysis based upon their reported tilting occurrence and awareness of this phenomenon. The first group, labelled 'conscious tilters', reported the highest tilting occurrence and were highly cognisant of their tilting episodes. Correspondingly, these conscious tilters reported the highest mean PGSI scores that were indicative of the 'problem gambler' categorisation (Ferris & Wynne, 2001). This group also reported the highest mean gambling frequency, impulsive urgency (positive and negative), and lack of premeditation (via SUPPS-P). The second group labelled 'unconscious tilters', reported significantly higher tilting occurrence than the third group whilst underestimating these episodes. These findings are concerning given that this sizeable group of gamblers had a mean PGSI score that was indicative of the 'moderate-risk' gambler categorisation and reported significantly higher impulsivity scores (positive and negative urgency) compared to the third group. The third group labelled 'non-tilters', reported a significantly lower tilting occurrence compared to the two other groups and displayed a relatively accurate awareness of this phenomenon. They also reported a mean PGSI score that was indicative of the 'low-risk' gambler categorisation. The 'Conscious tilters' and 'Unconscious tilters'

within the current study both reported using this instant cash deposit feature at a significantly higher frequency compared to the 'Non-tilters'. Theoretically, the instant deposit feature may enable tilting bettors to immediately replenish their lost funds in order to place more reckless and impulse-driven bets during episodes of irrationality (Parke & Parke, 2019). Overall, these findings suggest that within a sports betting context, tilting is an observable concept and is a likely facilitator of gambling-related harm that large groups of sports bettors may not even be aware of, despite experiencing it.

In conclusion, the combined study findings within the current chapter indicate that modern gambling products are diverse and cater to the wide-ranging preferences of consumers in the UK. These preferences are associated with a range of potential harms and risks that are bespoke to each product feature in conjunction with specific consumer vulnerabilities (such as age, gender, perceptions of risk, gambling frequency). This pattern of results corresponds with the emergent empirical literature whereby potential gambling-related harms are not universal and also fall on a continuum rather than being dichotomously categorised (John et al., 2020) In other words, classifying product features as harmful/not harmful may be a restricted approach given the high number of potential interactions that could take place between the vast array of diverse product features and consumer vulnerabilities. Essentially, it appears rational to accept that some product features are generally more harmful than others (e.g. high speed of play vs simplicity) whilst recognising that there is inevitable variance in relation to how this harm is experienced (and perceived) by varying groups of consumers. Using the example of the online sports betting environment, the current findings suggest that emotional and cognitive dysregulation (tilting) is a facilitator of gambling-related harm that some consumers may underestimate. This harm may be expediated via facets of trait impulsivity and specific product features of the sports betting environment such as the ability to instantly deposit cash when betting recklessly. Therefore, this example is indicative of one of the many harmful interactions between the *consumer vulnerability* (cognitive/emotional dysregulation) and *product feature* (instantly depositing cash) factors of the bespoke-risk environment.

# 4. Chapter 4 – The development of a psychological inoculation against gambling advertising persuasion
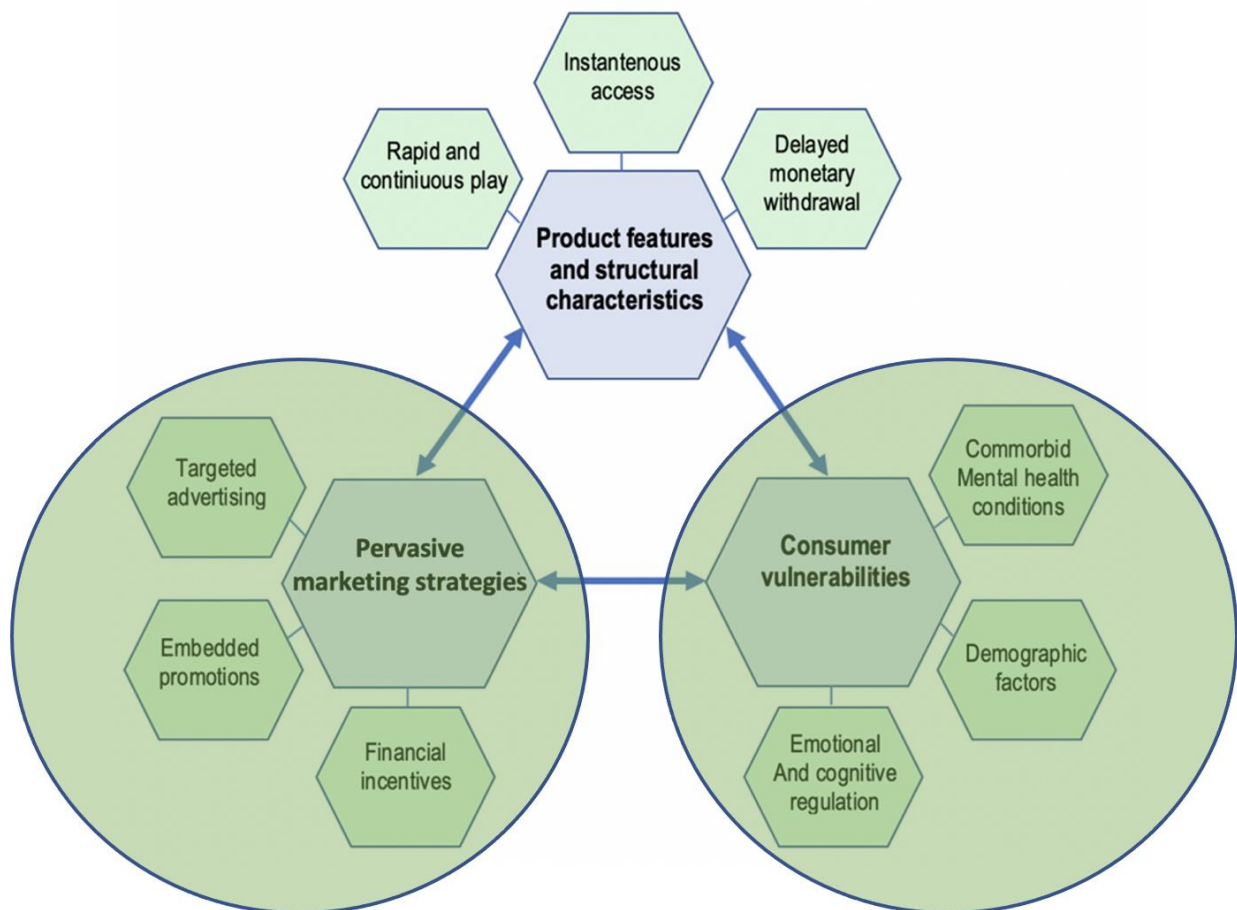
## 4.1 Background

### 4.1.1 Inadequacy of 'harm reduction' messages in UK gambling advertising

As outlined within the current thesis (see *Chapter 2, Study 2*), consumer perceptions towards UK 'harm-reduction' messages within gambling advertising are generally negative and critical. These messages have been deemed tokenistic, contrived, and ineffective due to the vague and ambiguous slogans utilised within them that offset the responsibility onto the consumer to better control their own gambling behaviour (Torrance et al., 2020). Correspondingly, academics, regulators, and service providers have also expressed similar sentiments and have communicated their belief that such messages are unlikely to positively change the behaviour of gamblers (P. W. Newall, M. Rockloff, et al., 2022). Although personal responsibility is a key element of harm-reduction, mounting empirical research supports the qualitative perceptions mentioned above, highlighting the overall inefficacy of UK 'harm-reduction' messages in gambling advertising. For example, P. W. Newall, L. Weiss-Cohen, H. Singmann, L. Walasek, et al. (2022) utilised an online experimental design whereby three groups of participants were provided with a monetary endowment in order to place real bets on either sports betting or roulette. Any money won from successful bets could either be withdrawn or re-staked on additional bets by participants. One group were exposed to various versions of the popular UK 'harm-reduction' (or 'safer-gambling') message; '*When the fun stops, stop!*'. The results indicated no credible evidence of a protective effect in relation to this message, highlighting its inadequacy and the need for alternative and effective interventions. A similar lack of credible evidence for a protective effect was also found in relation to another popular and recently implemented UK 'harm-reduction' slogan utilised throughout advertisements; "*Take time to think*" (P. Newall et al., 2022).

In addition to ineffective messaging content, it has also been highlighted within the current thesis (see *Chapter 2, Study 1*) that the positioning and presentation of 'harm-reductive' messages within gambling advertising are often inconspicuous and characterised by poor visibility (Torrance et al., 2021). Furthermore, it has been indicated that the majority of 'harm-reduction' messages within UK gambling advertisements fail to even explicitly mention gambling-related harm (Critchlow et al., 2020). Such findings are typically obtained via the content or sentiment analyses of gambling advertisements (Critchlow et al., 2020; Newall, Moodie, et al., 2019; Purves et al., 2020). However, there is supporting empirical literature that utilises a quantitative approach that emphasises the inadequate nature and obscure presentation of such messages. For example, an eye-tracking study of bettors and non-bettors conducted by Lole et al. (2019) demonstrated that very few visual fixations are

placed on these 'harm-reduction' messages in comparison to other wagering information displayed within sports betting advertisements. Overall, it is clear that gambling-related harm-reduction messages currently utilised within UK advertisements are not fit for purpose and should not be the cornerstone of a public-health approach to gambling-related harm. Currently, such messages are constructed and implemented (in-part) by the UK gambling industry itself, and the reasons as to why such inadequate messages have been selected to supposedly 'protect' consumers has been questioned (van Schalkwyk, Maani, et al., 2021). Therefore, alternative interventions are warranted that incorporate a logical and realistic approach to harm-reduction that are created by independent researchers and developed with the assistance of those who have experienced gambling-related harm.

Although inadequate, current UK harm-reduction messages are typically aimed at generalised harms associated with gambling. However, mounting research has also highlighted the bespoke-harms that are specifically associated with gambling advertising exposure (Bouguettaya et al., 2020; García-Castro et al., 2022). Alongside increased engagement with gambling, this advertising-related harm is also associated with 1) the facilitation of gambling-related cognitive distortions as a result of the persuasive narratives utilised within gambling advertisements (Lopez-Gonzalez, Guerrero-Solé, & Griffiths, 2018), 2) financial incentives in advertisements often failing the requirements of informed-choice (Hing, Sproston, et al., 2017), and 3) the placement of gambling advertising in areas that are exposed to young or vulnerable audiences (Sharman et al., 2022). Therefore, alongside the need for more effective harm-reduction messages that are aimed at gambling in general, the current author posits that consumers would also benefit from brief interventions that facilitate resilience to the persuasive strategies utilised within gambling advertising specifically.

### 4.1.2 Advertising literacy/scepticism

Advertising literacy is defined by consumers' ability to understand advertising, the associated techniques/promotional strategies used within them, and to recognise various types of commercial phenomena placed within media (Malmelin, 2010). This concept can be appropriately understood via four 'literacy dimensions' that include; informational literacy, aesthetic literacy, rhetorical literacy, and promotional literacy (Malmelin, 2010). Informational literacy relates to consumers' ability to comprehend and evaluate the information/data/statistics utilised within advertisements. Aesthetic literacy is defined by the ability of consumers to recognise the artistic or creative elements within advertising and the reasons why they have been implemented. Rhetorical literacy relates to consumers' ability to identify and understand the persuasive elements within advertisements. Lastly, promotional

literacy is defined by the general ability of the consumer to recognise the promotional intent of varying media sources in order to decipher whether it is a form of advertising or not. In combination, these literacy dimensions encompass the overall concept of advertising literacy. However, it has been suggested across the empirical literature that advertising literacy alone does not equate to advertising resistance (Rozendaal et al., 2011). This is due (in-part) to many modern advertisements incorporating emotionally-charged content where the advertisement is more likely to be processed under conditions of low-elaboration (Cacioppo et al., 1986; Shahab et al., 2021). Therefore, in the steps towards increasing resilience to advertising persuasion (resistance), consumers must develop their advertising literacy in order to subsequently foster an adaptable and well-informed sense of advertising scepticism (Mikołajczak-Degrauwe & Brengman, 2014). Advertising scepticism is a critical attitude or disbelief towards advertising strategies and content. It may also refer to the mistrust that consumers hold towards the veracity, accuracy, or reliability of advertising claims and messages (Moriarty et al., 2014). Scepticism is an important facet of resilience to advertising persuasion as it allows consumers to critically evaluate potentially deceptive or misleading messages (Solomon et al., 2017). Considering the empirical literature that highlights these negative qualities in relation to gambling advertising messages/strategies (Torrance et al., 2021; Torrance et al., 2020), an intervention that fosters increased advertising literacy and scepticism amongst consumers would likely facilitate more informed and autonomous choices when they are exposed to such advertisements alongside reducing the potential for gambling-related harm.

### 4.1.3 Inoculation theory

Within the current thesis, a prospective brief intervention aimed at increasing resilience to gambling advertising persuasion (via increased advertising literacy and scepticism) would require a logical and recognised theoretical underpinning. In this context, Inoculation Theory (McGuire, 1964) is an appropriate and applicable foundation that can be incorporated into such an intervention as it is intrinsically connected to persuasion and the subsequent development of cognitive resilience (Compton, 2013). Inoculation theory is best explained via a medical analogy that relates to viral immunisation. Specifically, the practice of intentionally exposing individuals to a weakened form of a virus in order to build their immunity to better safeguard them in preparation for actual viral exposure. Similarly, McGuire (1964) proposed that individuals could be inoculated against persuasive 'attacks' by exposing them to weakened forms of these attacks via the use of hypothetical counterarguments that can be logically refuted. This process allows individuals to build resilience against attempted

attitudinal persuasion from sources such as peers, media outlets, advertising, and political campaigns (Banas & Rains, 2010).

The core mechanisms associated with Inoculation Theory involve; perceived threat (forewarning), counterarguments, logical refutation, and message quality. In relation to perceived threat, the inoculation process must first begin with a forewarning that highlights how a particular message or persuasive attack is harmful, deceptive, or a threat to the individual's current attitudes or beliefs. For example, '*Gambling advertisements often portray risky higher-odds bets compared to simple (less risky) bets. This may encourage more reckless betting. Riskier bets are also associated with higher profit margins for the industry compared to simple bets*'. Counterarguments to the original threat should then be presented as examples of opinions that align with the persuasive attack. For example, '*In all fairness, consumers are aware of the risks associated with higher-odds bets*'. Individuals should then be exposed to logical refutations of these counterarguments in order to encourage critical thinking and to allow them to pre-empt future counterarguments they may experience in response to resisting or critiquing the persuasive message/content. For example, '*These higher odds bets are almost exclusively shown to be successful within gambling advertising which is not an accurate or realistic portrayal of their likelihood*'. The quality of the message is an important factor in relation to both the original persuasive attack and the logical refutation. For example, if persuasive attacks are well reasoned and supported by evidence that is deemed credible, they are typically more successful (Barbati et al., 2021). Therefore, logical refutations to persuasive attacks must also be particularly clear, compelling, and supported by credible evidence. Overall, studies that utilise Inoculation Theory incorporate this forewarning-counterargument-refutation format with variation imposed upon the content of these elements.

To date, a substantial amount of research has been conducted on Inoculation Theory that demonstrates its practical utility and effectiveness (Banas & Rains, 2010; Barbati et al., 2021; Compton & Pfau, 2004; Compton et al., 2021). Due to the associated ability of helping individuals build resilience against (potentially harmful) persuasive attacks, the theory has particular application in relation to public health and Health Psychology (Ivanov, 2017). For example, inoculative interventions have proved efficacious in positively encouraging resilience towards deceptive credit card advertisements (Compton & Pfau, 2004), tobacco-related persuasion (Pfau et al., 1992), and fast-food marketing (Bryan et al., 2019). Despite the effectiveness of Inoculation Theory in these contexts, to the best of the current author's knowledge (at the time of writing), no intervention has been realised in relation to building cognitive resilience against the complex and persuasive messages disseminated within

gambling advertisements. In order to address this gap, it appears rational to deliver such an intervention via the practical and viable format of video.

### 4.1.4 Video-based health interventions

Video-based formats for health interventions are a popular and cost-effective method of delivery (Tuong et al., 2014). For example, video-based interventions have proven efficacious in relation to encouraging smoking cessation (Graham et al., 2016), reducing dual cannabis and alcohol use amongst vulnerable populations (Walsh et al., 2017), obesity prevention (Cheung et al., 2017), and sexual-risk reduction (Carey et al., 2015). This format has also been previously utilised in relation to a wide range of effective inoculative interventions such as those aimed at reducing alcohol-related peer pressure amongst adolescents (Godbold & Pfau, 2000), increasing resilience to political/scientific misinformation (Compton et al., 2021; Roozenbeek et al., 2022), and preventing gang-participation amongst youths (Breen & Matusitz, 2008).

Video-based interventions have also proven efficacious in a gambling context. For example, Brown and Russell (2020) explored the effectiveness of video-based interventions aimed at reducing public stigma associated with Gambling Disorder (GD). Participants ($n = 164$) were randomly allocated to either an intervention video that focused upon GD education and harm-reductive advocacy, or a neutral control video. Participants within the intervention group reported significantly reduced anger and discrimination towards those with GD (measured via pre/post testing) compared to the control group. Such findings highlight the promise of video-based interventions in a gambling context. Another example involves the study conducted by Steenbergh et al. (2004) that sought to investigate the efficacy of a video-based intervention aimed at increasing knowledge of gambling risk and reducing irrational gambling beliefs. Participants were comprised of 101 college students who were randomly assigned to either an intervention or a control condition. Following exposure, participants in the intervention condition reported significantly higher scores on gambling knowledge and lower scores of irrational beliefs compared to the control group. Similarly, this study provides insight into the usefulness of video-based interventions in a gambling context. Lastly, in a review of gambling-harm minimisation strategies conducted by Harris and Griffiths (2017), educational video interventions were identified as an effective tool across numerous studies. In combination, video-based interventions appear to be a efficacious method of intervention delivery. However, it is also worth considering the advantages of such interventions to further support this conceptual chapter.

Overall, video-based interventions have numerous advantages. Firstly, video-based interventions are convenient for participants as they do not require physical attendance and predominantly only rely upon an internet connection to facilitate successful delivery. Secondly, this format of intervention delivery is efficient and economical as it can be disseminated to significantly large samples of participants who all engage with the content individually. By comparison, in-person interventions can only appropriately be delivered to a finite number of participants at any given time. Lastly, video-based interventions provide the participant with flexibility where they can pause and replay specific segments of the content at their own convenience. Considering the content and application of a prospective inoculative intervention aimed at reducing gambling advertising persuasion, using a video format would likely produce the same results as similar in-person interventions in line with the existing literature (Ivanov, 2017).

### 4.1.5 Chapter purpose and aims:

The primary *purpose* of this conceptual chapter involves the design of a prospective intervention that will be extended and implemented by the current author following the completion of this thesis. This will likely be facilitated by organisational funding/grants if the current author is successful in attaining this financial support. Based upon the ineffective and poorly presented nature of existing 'harm-reduction' messages within UK gambling advertising alongside the potential negative impacts associated with this form of advertising overall, this conceptual chapter therefore *aims* to:

- Develop a framework in which to deliver an inoculative intervention that focuses upon increasing gambling advertising scepticism and increasing resilience to gambling advertising persuasion.
- Conceptualise the intervention content based upon the empirical literature and the findings of the current thesis.
- Design a methodology that would allow for the empirical testing and qualitative evaluation of this inoculative intervention.

## 4.2 Intervention development

### 4.2.1 Intervention structure and content

Overall, the prospective intervention will be comprised of two main components; 1) an introductory segment that aims to increase gambling advertising scepticism; 2) a more substantial segment that aims to increase resilience to gambling advertising persuasion using inoculative methods. Interventions that

utilise inoculation theory involve strategies that promote resistance to attitude change, rather than changing attitudes (Pfau & Bockern, 1994). Consequently, the inoculation process is best conceptualised as a preventative measure because it requires a prior attitude that is somewhat in favour of the inoculative position (McGuire, 1964). Therefore, the current author deems the implementation of the introductory 'scepticism' segment of the prospective intervention to be imperative. Priming participants in this manner before they undergo the more substantial inoculative segment of the intervention will increase the likelihood of its efficacy. For example, if participants hold generally positive attitudes towards gambling advertising messages, it is unlikely that they will perceive such messages as a 'threat' to their current attitudes; a vital first step in the inoculative process mentioned in the previous subsection (forewarning). For this reason, it is important to destabilise positive attitudes towards gambling advertising messages and encourage critical thought during this introductory segment. Overall, the intervention will last approximately 30 minutes with 10 minutes dedicated to the introductory segment and the remainder of the duration dedicated to the inoculative segment. The reasoning that underpins this decision relates to recommendations within the empirical literature that suggest pre-recorded video-based interventions should be as brief and as succinct as possible in order to avoid lapses in attention or drop-out (Cavanagh, 2010).

In relation to the content of the introductory segment that aims to increase gambling advertising scepticism, participants will be presented with common strategies, narratives, and messages utilised within gambling advertising alongside visual examples. These examples will be supported by clear and understandable critical points that highlight the deceptive and potentially unethical nature of such practices. The aim of this segment is to empower participants whilst emphasising the strategies utilised by gambling operators that may undermine the autonomous and informed decisions of consumers. It appears rational to take a sensitive approach whilst highlighting some of the practices utilised in gambling advertising within this segment. For example, explicitly stating that gambling operators are intentionally aiming to expose promotional messages to vulnerable audiences would be an irresponsible approach. Information relating to the actual intentions and objectives of gambling operators in regard to the marketing of gambling products is not easily accessible. Therefore, the examples utilised within this section will be presented in terms of the *potential* risks and harms that *may* be associated with such practices rather than stating that harmful advertising practices have been implemented purposefully by the industry. This segment will address topics such as (but not limited to) positively portraying gambling, targeting certain demographics, inadequate harm reduction messaging, and esoteric/strict conditions in financial incentives (Torrance et al., 2021; Torrance et al.,

2020). Please see Figure 8 below for a prototype screenshot that would be included in the introductory segment of the prospective intervention.
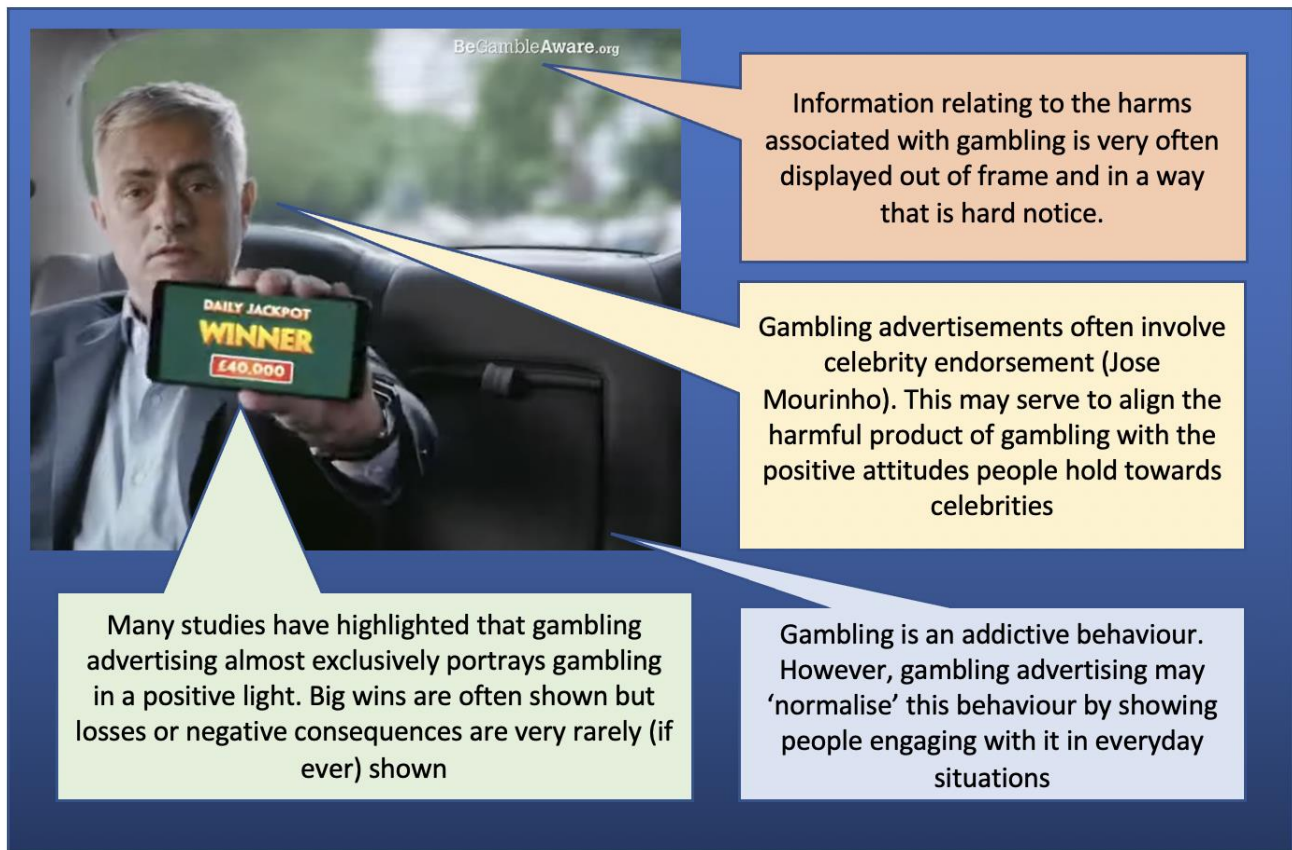


**Figure 8.** Prototype screenshot from the introductory segment of the prospective intervention

In relation to the content within the inoculative segment of the intervention, the forewarning-counterargument-refutation format will be utilised in relation to common 'persuasive attacks' that may be associated with gambling advertising (see Figure 9 for an example screenshot). In line with this approach, the persuasive attacks covered (and inoculated against) within this segment will include:

- The notion that big wins are common and risky bets should be encouraged (Torrance et al., 2021)
- Specific product features being portrayed as advantageous to betting success (Lopez-Gonzalez et al., 2017).
- Safety measures being portrayed as easy to use (BIT, 2022)
- The notion that gambling is a 'normalised' activity in which the bettor is solely responsible for minimising gambling harm (Livingstone & Rintoul, 2020).

- Financial incentives being linked to easily gained and tangible winnings (Torrance et al., 2021)
- The idea that betting on sports is grounded in enjoying sports (Torrance et al., 2021)



**Figure 9.** Prototype screenshot from the inoculative segment of the prospective intervention

### 4.2.2 Intervention pilot testing

The current subsection outlines how the prospective intervention will be empirically pilot tested in order to investigate its initial efficacy. A randomised pre/post-test control group design will be utilised via an online digital crowdsourcing platform. In order to be eligible to participate in the study, participants will need to be 18 years of age or older, residing within the UK, and self-reported gamblers. A preliminary power analysis has revealed a recommended sample size of $n = 320$ based upon a medium effect size. When initiating the study, participants will be required to complete pre-test measures of gambling advertising scepticism and persuasion knowledge. Participants will be randomly allocated to either condition 1 (intervention video) or condition 2 (control video). Participants will not be disadvantaged in being allocated to the control video as it will take the form of a 30-minute healthy lifestyle video. It is envisaged that the content of the control video will not confound post-test scores of gambling advertising scepticism or persuasion knowledge. Following this

step, post-test measures of gambling advertising scepticism and persuasion knowledge will be required alongside demographic information, self-reported gambling frequency and the PGSI.

### 4.2.3 Intervention feasibility and Acceptability

When developing and implementing preliminary health-related interventions, it is recommended that the associated feasibility and acceptability are investigated (in-part) via qualitative inquiry (O'Cathain et al., 2015). As discussed throughout the current thesis, rigorous qualitative methodologies produce rich and meaningful data in their own right whilst also providing supplementary insight in conjunction with quantitative data (Silverman, 2020; Vishnevsky & Beanlands, 2004). In relation to feasibility testing, this process involves evaluating whether an intervention is constructed in a way that is appropriate for further testing (or expansion) alongside gaging its sustainability and relevance (Bowen et al., 2009). This practice is typically necessary when there is a paucity of previously conducted empirical literature surrounding the intervention as well as the population being studied requiring unique consideration. Acceptability is a slightly different concept in that it is defined by the extent to which a program, intervention, or technique is perceived to be suitable, attractive, and beneficial to both intervention deliverers alongside the prospective recipients (Bowen et al., 2009; Sekhon et al., 2017). In combination, these two concepts highlight areas in need of improvement and ultimately encourage the reconceptualization, refinement, and/or development of interventions via a person-centred approach.

In relation to the inoculative intervention outlined within the current section, it appears rational to incorporate methods of investigating the associated feasibility and acceptability during the early stages of its conception and implementation before it is expanded into a more substantial intervention. A key population to utilise within this process involves gambling 'Experts by Experience" (EbyE). In brief, gambling EbyEs are '*gamblers and their social network members who have been impacted by gambling related harm, who speak with an independent voice, and who provide insight, expertise, and recommendations to ensure that decisions for gambling research, education, treatment and policy are grounded in lived experiences' (Nyemcsok et al., 2022a, p. 2)*.

EbyEs in general have very often been involved in the development of positive health-related initiatives alongside assisting in the design of health-related interventions (Barker & Maguire, 2017; Happell et al., 2022; Horgan et al., 2018). Therefore, this population can provide their insight and expertise within the development of the inoculative intervention given their experiences of gambling-

related harm and their commonly expressed critique of gambling advertising practices (Nyemcsok et al., 2022a). This would primarily involve online qualitative focus group studies involving EbyEs where the preliminary intervention is presented in order to facilitate insightful and critical discussion around its appropriateness, validity, practical utility, and perceived effectiveness. It is not uncommon for participants to be compensated for their time within online psychological studies; this is typically calculated at minimum wage in equivalence (at the very least) with few studies going beyond this level of imbursement (Largent & Lynch, 2017). However, it appears more ethical to compensate EbyEs in line with the payments expected for consultancy work rather than simply time spent. Therefore, this method of ethical compensation would be implemented during the feasibility and acceptability testing of the inoculative intervention given the integral role of the EbyEs in its development.

Based upon the synthesised qualitative findings of the focus groups mentioned above, the inoculative intervention would be adjusted and improved before its expansion and wider-scale role out. Some example barriers or critical issues that may be highlighted during this process include:

- The opening segment of the intervention failing to produce sceptical attitudes towards gambling advertising before the inoculative segment is presented.
- The content of the intervention being UK-centric which may negatively impact its implementation in other jurisdictions
- The rapidly evolving nature of gambling advertising content and strategies potentially rendering the intervention irrelevant and in need of updating after a certain amount of time has passed.

### 4.2.4 Intervention expansion

During the expansion stage, one of the key areas to address would involve increasing the breadth of topics covered within the inoculative segment of the intervention. For example, these may include the 'pseudo community' often portrayed in bingo advertising (Kathleen Maltzahn, Mary Whiteside, et al., 2022; Stead et al., 2016) or the commonly advertised notion that related skills and knowledge facilitate long term winnings (Torrance et al., 2021). Alongside its content, the intended recipients of the intervention could also be expanded to include older gamblers or those who are classified as non or novice gamblers. However, these expansion methods would be contingent upon each successful stage of the intervention piloting, feasibility, and acceptability testing in order to ensure that the intervention is supported by a rigorously investigated and logical foundation.

## 4.3 Conclusions

Gambling advertising has been associated with the facilitation of gambling-related harm due to practices that have been perceived as unethical alongside its pervasive and enticing nature (Bouguettaya et al., 2020; Torrance et al., 2021; Torrance et al., 2020). Similarly, the harm-reduction messages that are typically incorporated into such advertising have been highlighted as ineffective and tokenistic within the empirical literature due to their poor visibility and vague content (P. W. Newall, L. Weiss-Cohen, H. Singmann, L. Walasek, et al., 2022; Torrance et al., 2020; van Schalkwyk, Maani, et al., 2021). Consequently, it is been indicated that such messages will do little to protect consumers from the harms associated with gambling as well as the harms related to the narratives and content of the advertisements themselves (Critchlow et al., 2020; P. Newall et al., 2022; P. W. Newall, M. Rockloff, et al., 2022). As a result, there is a clear need to develop methods by which consumers can make more autonomous and well-informed decisions in relation to their gambling behaviours in light of the persuasive strategies often utilised within gambling advertisements. The current chapter therefore proposes the development of a video-based intervention that aims to increase gambling advertising scepticism and persuasion resistance. The primary mechanism that will underpin this intervention involves the use of inoculation theory (McGuire, 1964); the process of exposing recipients to critical points, counterarguments, and logical refutations in order to protect them against future 'persuasive attacks'. This intervention will be pilot tested in order to test its efficacy. It is envisaged that participants who are exposed to the inoculative intervention will show significant increases in advertising scepticism and persuasion knowledge compared to those who have been exposed to the control video. Following pilot testing, the intervention will undergo qualitative feasibility and acceptability testing via samples of gambling EbyEs before it is refined, developed, and expanded into a more substantial intervention.

# 5. Chapter 5 – Integrated discussion and conclusions

## 5.1 Summary of thesis aims

Gambling has diversified and evolved significantly over the previous two decades, especially within the UK. This transformation has occurred in relation to both gambling products and gambling advertisements as a result of regulatory liberalisation, technological advancement, and market demand (Banks & Waters, 2021). In relation to gambling products, there has been a vast growth in the complexity and variety across the features associated with the vast majority of gambling modes available to UK consumers (Banks & Waters, 2021; Reith, 2005). However, this growth has been particularly evident within sports betting, casino games, and EGMs (or FOBTs). For example, sports betting is a predominantly online product that provides expansive betting opportunities before or during sporting events and is populated with a broad spectrum of structural features (Killick & Griffiths, 2019; Torrance et al., 2022). These advancements have led to the suggestion that sports betting has evolved from a relatively static gambling mode into one that is characterised by rapid, continuous (and therefore more harmful) betting (Brevers et al., 2022; Parke & Parke, 2019). Similarly, online casino games have also developed significantly within the UK resulting in hundreds of sites that are now constantly accessible and host a variety of games that include; bingo, poker, slot games, blackjack, and roulette (Edson et al., 2022).

Current UK gambling advertisements, promotions and marketing strategies have also transformed over the previous two decades and now are diverse alongside extending far beyond the traditional sources that have previously been utilised (Newall, Moodie, et al., 2019; Torrance et al., 2021). This includes pervasive social media advertising either directly by gambling operators or via paid affiliates (Houghton et al., 2019), sports sponsorship and embedded gambling promotion within sports (Bunn et al., 2019; Djohari et al., 2019; Roderique-Davies et al., 2020), unsolicited 'pop-up' advertisements online (McMullan & Kervin, 2012), and frequent television advertisements aimed at bingo players, sports bettors, and casino game players (Newall, Moodie, et al., 2019; Torrance et al., 2021). This expansion has resulted in a significantly larger portion of the population being exposed to such advertisements in comparison to audiences prior to the implementation of the 2005 Gambling Act. Furthermore, this increased exposure amongst a larger audience now includes potentially vulnerable individuals such as children (Djohari et al., 2019). The expansion of gambling advertising has been so

significant, that published literature associated with its contents and effects has been highlighted for not being able to keep pace (Torrance et al., 2021).

Due to the transformation of the gambling sphere mentioned above, there is considerable need for continued research that focuses upon nuanced instances of gambling-related harm. Specifically, there is a need for research that focuses upon the varying components of the bespoke-risk environment of gambling within the UK. Therefore, the overarching aims of this thesis can be categorised into four key domains:

**1)** providing evidence of the rapid expansion and increased complexity of modern gambling advertisements and product features from a psychological perspective.

**2)** providing original and novel insight in relation to how these advertisements and product features are perceived by potentially vulnerable audiences.

**3)** to provide evidence of bespoke pathways to gambling-related harm that have not yet been researched.

**4)** to provide a conceptual framework that underpins the development of a brief-intervention aimed at reducing gambling advertising persuasion.

## 5.2 Methodology

In order to address the thesis aims mentioned above, 4 empirical studies were conducted (across 2 chapters) alongside the production of a conceptual chapter that involved the hypothetical design and methods associated with a prospective brief intervention. Overall, this thesis adopts a mixed-methods approach via studies/experiments that were all internet-based (see *COVID-19 statement*). In relation to study 1, a rapid review methodology was utilised. This involved a systematic literature search that was conducted in order to obtain relevant peer-reviewed studies (2015-2020) concerning the content, delivery, and structural characteristics of gambling advertising. Following this literature search, all eligible studies ($n = 25$) were collated, and the respective characteristics and data were extracted for presentation in tabulated format (see Table 1). Narrative synthesis was subsequently conducted upon the included studies in order to produce a thematically organized set of findings according to the associated research questions.

Study 2 extended the findings of the rapid review by utilising a qualitative method centred around distinguishing the perceptions of young adults ($n = 62$) within the UK towards gambling advertising. Specifically, this involved the dissemination of an online survey that addressed perceptions towards

and opinions of gambling advertising strategies/practices, the associated impacts, and advertising-related 'harm-reduction'/regulation. Thematic analysis was conducted upon the qualitative response of the sample in order to produce salient and distinct themes in relation to the topics mentioned above (Table 5). This same method was utilised for study 3 which also shared the same sample of young adults from the UK. However, this study aimed to better understand the product preferences, experiences of harm, and awareness of wider harm-reduction measures amongst the sample (Table 6). Study 4 aimed to adapt and investigate the concept of tilting amongst sport bettors in order to provide preliminary insight regarding previously unexplored instances of maladaptive sports betting. The sample consisted of 225 sports bettors who completed an online questionnaire that investigated their reported tilting episodes, awareness of tilting, impulsivity, perceived skill, gambling severity, gambling frequency, and product preferences. Cluster analyses (hierarchical and k-means) were utilised to distinguish profiles of sports bettors based upon these factors.

### 5.2.1 Positionality and reflexive account

Exploring and outlining one's positionality via a reflexive account is an integral part of framing and contextualising qualitative research (Holmes, 2020). Specifically, this approach provides an account of the researcher's position and the associated impacts this has upon how the research was conducted and how the results were interpreted (Marsh & Furlong, 2002). Positionality describes the context around an individual's world view, experiences, and culturally ascribed traits (Foote & Gau Bartell, 2011). Reflexivity informs positionality and refers to the process of acknowledging one's place within research via self-assessment and sensitive reflection (May & Perry, 2017). Within this section, I will therefore outline my positionality via a reflexive account from three perspectives: 1) as an early career researcher, 2) as a researcher who was part of a wider addictions research team, and 3) as an 'outsider' to the culture of gambling.

As an early career researcher, I began conducting the studies that are incorporated within the current thesis in 2019 after completing an MSc in Clinical and Abnormal Psychology. Although my previous qualifications allowed me to develop some of the core skills needed to conduct empirical research, my practical experience and knowledge in relation to qualitative methods and gambling were limited compared to other more prominent (and experienced) researchers in the field. Considering I started the project with study 2 and 3 (qualitative), my limited experience may have impacted my ability to identify and understand the nuances within the field of gambling research. Consequently, this may have impacted the sensitivity and amount of the questions within the surveys utilised in study 2 and 3

(which were explicitly stated and extensive in quantity). This issue was approached with caution before the studies commenced and self-reflection after they had concluded. I was guided and supported by more experienced researchers (Professor Gareth Roderique-Davies and Professor Bev John) as well as further immersing myself in the associated literature. As the overall project progressed, I was able to participate in professional development opportunities (such as conferences and focus groups) that provided the chance to personally engage with those who have experienced gambling-related harm. Such opportunities allowed me to develop a reflexive identity that reduced the distance between myself and those directly affected by gambling (Enright & Facer, 2017) Subsequently, my understanding of the nuances in this area increased as the project progressed.

During my time as an undergraduate psychology student, I had studied the impacts of MDMA upon long-term depression and was later (during the current project) a member of the USW Addictions Research Group. Therefore, my personal experience with psychology has largely been influenced by the study of addiction. As outlined throughout the current thesis, gambling is an addictive product that has an intrinsic relationship with psychology. My previous experiences therefore gave me an epistemological perspective of gambling that was rational, scientific, and critical. However, such a perspective primarily shaped my understanding of gambling as a pathological issue (Frisone, 2021); perhaps at the cost of considering the sociological factors surrounding gambling or the positive elements that it brings to some peoples' lives. Upon reflection, this is compounded by the fact that all co-authors associated with the studies within this project are too primarily addictions-based researchers. Moreover, gambling is a multi-faceted phenomenon that can be addressed via multiple interdisciplinary lenses such as law, politics, and economics (all which have not been addressed in detail within the current project). Therefore, it should be acknowledged that my positionality as a primarily addictions-based researcher has provided an epistemologically rational framework that surrounds the qualitative findings within the current thesis.

Lastly, I have never engaged with gambling. I therefore consider myself an 'outsider' to the culture of gambling which is worth consideration in this context. There has been a longstanding debate surrounding the epistemological assumption that being an 'insider' within research is more likely to produce 'true' knowledge (Herod, 1999). I personally disagree with this assumption primarily due to the fact that others' perception of me may differ to the perception that I have of myself (as an 'outsider'). For example, as a gambling 'outsider' I have sometimes felt that there is a distance between my own experiences and those who experience gambling-related harm (addressed above). However, throughout my interactions with individuals who have experienced such harm, my role as a researcher

who aims to reduce-harm has generally been perceived positively and my 'outsiderness' appears to exist largely in my perception of myself. Being an 'outsider' to the culture of gambling has provided me with a neutral perspective of this phenomena that is not influenced (either positively or negatively) by personal experience. This is not necessarily considered an advantage across many disciplines; especially those that place an emphasis upon ethnographic research (Gusterson, 2008). However, although objectivity can still be managed within the ethnographic approach, I have found it is easier to maintain as an 'outsider' within the psychological study of gambling throughout this project (Delfabbro & King, 2021).

## 5.3 Summary of key findings and original contributions to knowledge

### 5.3.1 Study 1 – rapid review of emergent gambling advertising

The first empirical study (Chapter 2) aimed to investigate; 1) the content and narratives incorporated within gambling advertising; 2) the methods of gambling advertising delivery and placement; 3) the mechanics and structural features of gambling advertising e.g. design, usability and complexity. A total of 25 peer-reviewed studies (2015-2020) were identified that aligned with the aims of the review mentioned above. The included studies indicated that the content within emergent gambling advertisements almost exclusively portrays gambling in a positive light. Previous reviews have indicated this finding in a general and more broad sense, as is to be expected for any advertised product (Newall, Moodie, et al., 2019). However, the results of the review within the current thesis indicated that this positive framing is now complex and multifaceted. A key example involves the content of sports betting advertising predominantly aimed at males that aligns this mode of gambling with notions of peer-bonding and team loyalty (Deans et al., 2016; Lopez-Gonzalez, Guerrero-Solé, Estévez, et al., 2018). Similarly, there was evidence within the included studies that highlighted the positive framing of gambling within associated advertisements aimed at parents, young adults, and women (Abarbanel et al., 2017; Bestman et al., 2016; Stead et al., 2016).

The review also highlighted the skewed representation of complex, exotic, and risky bets compared to more simplistic bets within gambling advertisements (Newall, 2017; Newall, Thobhani, et al., 2019; Newall, Walasek, et al., 2019). Similarly, the pattern of results highlighted the increasingly varied, complicated, and pervasively promoted financial incentives incorporated within gambling advertising content that were often subject to strict conditions (Hing, Sproston, et al., 2017; Killick & Griffiths, 2020; Lopez-Gonzalez, Estévez, & Griffiths, 2018). Despite these findings, the review highlighted the lack of provision dedicated to harm-reductive content within gambling advertisements. Specifically,

the included studies demonstrated that this content is inconsistently displayed across advertisements, characterised by poor visibility, and in some cases completely absent (Critchlow et al., 2020; Gainsbury et al., 2016).

In relation to the delivery and placement of gambling advertising, the review revealed the ubiquity of such advertisements within the sporting sphere. Specifically, sports betting promotion now extending far beyond conventional methods of TV-break advertising and into the area of play (Bunn et al., 2019; Purves et al., 2020). This ubiquity was also evident across the included studies that focused upon the emergent method of advertising gambling via social media platforms for the sake of increasing brand awareness and encouraging consumer engagement via affiliate marketing (Bradley & James, 2019; Houghton et al., 2019). From a broader perspective, other emergent gambling advertising strategies were highlighted within the review that deviate from the linear approach of TV commercials or standalone social media posts. For example, the included studies indicated that emergent gambling advertisements have begun to utilise digitally interactive features (via social media) that provide the opportunity for a more collaborative interchange between the operator and the public. This primarily involved gambling operators using interactive polls and asking consumers to like and share their content; therefore becoming disseminators of marketing content in their own right (Bradley & James, 2019; Houghton et al., 2019).

### 5.3.1.1 Original contributions to knowledge

Overall, this rapid review was the first to provide a synthesised snapshot of the literature surrounding emergent gambling advertising with a focus on presenting a taxonomy of its content, delivery, and structural features. Prior to the completion of this review, there was a paucity of synthesised literature in this area during a time when gambling advertising was/is pervasive and in need of regulatory reform (especially in the UK). There were numerous findings that extended and supplemented those of previous reviews in this general area such as highlighting the increased diversification of positive framing, the inadequacy of RG or 'harm-reductive content', and the emergent utilisation of digital interactivity within gambling advertisements. The findings are therefore of direct relevance to regulators and policymakers in the UK, Australia and other jurisdictions set to liberalise gambling such as North America. For this reason, it was submitted (alongside other studies) to the DCMS Review of the 2005 Gambling Act Call for Evidence. Based upon its novelty and original contributions to knowledge, the review was also published in an open-access peer-reviewed scientific journal

(Torrance et al., 2021) alongside being central in two news articles by the current author (see *Project outputs*).

### 5.3.2 Study 2 – qualitative investigation into young adult perceptions of UK gambling advertising

The second empirical study (Chapter 2) was guided by three specific research questions; 1) what are the attitudes and opinions of young adults towards gambling advertising in the UK? 2) What are their perceptions about the influence of gambling advertising upon gambling behaviors? 3) What are young adults' perceptions about current measures in the UK to minimize the potential risks and harms associated with gambling advertising? The sample consisted of 62 young adult gamblers from the UK who completed an online qualitative survey from which their responses were thematically analysed. Three overarching themes emerged a result of this analysis that align with the research questions mentioned above. Firstly, the findings of this qualitative study indicated the young adult sample were highlight cognizant of gambling advertising strategies and commonly described their experiences to be '*saturated'* with such content. It was expressed that because not all individuals could '*mentally resist'* gambling advertising, then the inevitable exposure of such content amongst those considered vulnerable was unethical and '*manipulative'*. Similarly, participants stated that they perceived gambling advertising (often sports betting promotions) to intentionally exploit the relationship between gambling and the young male identity. This perceived advertising practice was deemed '*cruel'* and '*toxic'* by a cohort of the sample with a number of young male participants expressing opposing standpoints where they were generally accepting of such advertisements. Many participants also declared that they deemed gambling advertising as a means by which the loopholes of language are exploited to disseminate '*grossly misleading'* and '*disingenuous'* content. This primarily related to perceptions towards financial incentivization within current gambling advertisements within the UK.

The qualitative findings of this study also indicated that participants perceived three main impacts associated with gambling advertising. The first of these impacts was perceived to be increased participation in gambling or at the very least increased intentions to gamble. This was supported by some personal accounts expressed by participants where they had engaged with gambling following advertising exposure. The second impact involved gambling advertising facilitating the widespread normalization of gambling within the UK. It was expressed that advertisements positively framed gambling and made it look like a normal activity or '*something cool to do'*. Thirdly, many participants

in the sample stated that due to the misleading content and positive portrayal mentioned above, a resulting impact of gambling advertising involved '*misinterpretation*' amongst consumers about the true risks of gambling. Although many respondents were able to discuss these impacts, many often did so in relation to others rather than themselves. It was expressed that advertising impact was '*hard to measure*' and primarily operated on the unconscious level. Several participants also stated that the currently utilized 'responsible gambling' messages within UK gambling advertisements were contrived, superficial, and tokenistic. Specifically, these messages were described as '*half-hearted*' to the point of appearing to be '*taking the mick*' due to their ineffective and meaningless nature. Tighter regulation or advertising prohibition were also encouraged by several participants. Furthermore, frustration was expressed around gambling promotion not being as strictly regulated as tobacco and alcohol marketing.

### 5.3.2.1 Original contributions to knowledge

This empirical study directly addressed the gap within the literature caused by the significant paucity of qualitative research into perceptions towards UK gambling advertising. Specifically, this was the first UK-based study to address this issue amongst a sample of young adults. This population warranted academic attention in relation to this topic given that they share many cognitive traits with those under 18 whilst being of legal age to actually gamble. Furthermore, this group are the second most likely cohort to experience GD (Gambling Commission, 2019). In a similar fashion to study 1, this study produced novel, original, and insightful findings associated with the perceptions towards the ethics of gambling advertising practices, advertising effect, and inadequate regulation at a time when gambling advertising was/is particularly pervasive in the UK and in need of regulatory reform. Furthermore, these novel findings offer much needed experiential evidence in contribution to the international debate surrounding the recognition of gambling (and associated advertising) as an issue of public health. For these reasons, this study was also submitted to the DCMS Review of the 2005 Gambling Act Call for Evidence. In addition, it was also published in a peer-reviewed scientific journal (Torrance et al., 2020) and was presented at the SSA Annual Conference of 2020.

### 5.3.3 Study 3 – qualitative investigation into young adult product preferences, experiences of harm, and awareness of harm reduction measures

The third empirical study (Chapter 3) was guided by three research questions; 1) What specific features do young adult gamblers prefer in relation to the respective gambling modes they engage with? 2)

What are their perceptions towards and experiences of gambling-related harm in relation to themselves and observing it amongst others? 3) How much awareness do they have regarding procedures and organisations that aim to mitigate gambling-related harm within the UK? The same young adult sample as study 2 was utilized ($n = 62$) using additional qualitative survey questions where the respective responses were thematically analysed separately. As a result of this analysis, three overarching themes were identified within the data that corresponded to the research questions mentioned above. Firstly, participants disclosed numerous product features that underpinned their preference for certain gambling modes. For example, speed and higher outcome frequency were predominantly favoured by casino game players and sports bettors who gambled with a high regularity. In addition, poker players and sports bettors also favoured the perceived analytical and skills-based elements of these gambling modes as they often deemed them to be a means of increasing the '*control*' and reducing the '*risk*' associated with their bets. Simplicity and straightforwardness were also described as desirable features where bingo players, slots players, and those who played the national lottery outlined a preference for an '*easy-to-use*' interface that required '*no thought processes*'. Lastly, many of these bingo and lottery players also outlined a preference for these modes based upon the incorporated mechanics that were considered '*low-risk*', '*harmless*', and *'just a bit of fun'*.

Participants within this qualitative study also discussed their experiences and awareness of gambling-related harm. This was outlined in the context of observing harm amongst others within the lives of the participants such as family members and friends. Specifically, several participants expressed that they had experienced these individuals lying about or concealing the true amount of their gambling losses or constantly interacting with their phone. From a broader perspective, other participants outlined the noticeable impact of gambling-related harm within their community, but it was also stated that this harm is sometimes hard to notice in some instances due to the privatised nature of online gambling for instance. In relation to personal experiences of gambling-related harm, a few sports betting respondents described how easily and quickly the frequency and size of their bets could increase during sport betting sessions. Similarly, casino game players outlined how they could become '*lost*' within gambling sessions where '*lapses in judgement*' led to losses that were '*hard to keep track of*' due to the immersive and engrossing nature of such games. Some participants were able to explain the psychological elements that they believed to underpin these negative aspects of gambling such as experiencing '*urges*' and '*impulsiveness*' that were hard to control. Two respondents who disclosed their own disordered gambling expressed having experienced '*suicidal thoughts*' and '*feelings of self-hate*' as a result of their harmful gambling behaviours.

Amongst the sample, there was a general and noticeable lack of awareness in relation to gambling-related protective measures available to consumers. However, several respondents were aware of structural changes that were underpinned by a 'responsible gambling' ethos such as the reduction of the maximum stake in relation to FOBTs within the UK. However, these respondents expressed criticism about such measures by expressing that there will always be a way to gamble harmfully irrespective of methods such as imposing stake limits. At the organisational level, a small number of participants very briefly listed the names of charities such as '*GambleAware*' and '*Gamcare*' but could not describe what these organisations offered consumers in terms of protection or guidance. Personal measures were the most discussed protective measure by the sample and included methods such as '*self-exclusion schemes* 'or '*setting limits*'. However, many of the participants discussing such measures deemed them to be hard to locate on betting platforms and easily circumventable when they could in fact find/use them.

### 5.3.3.1 Original contributions to knowledge

In light of the lack of qualitative research in this area, the findings of this study offer insightful contributions to the international literature surrounding the experiences and awareness of gambling products and protective measures amongst young adults in the UK. Specifically, the qualitative findings of this study supplement the existing research in this area that highlights the potentially harmful nature of gambling products and how they may be intertwined with the product preferences of consumers (Killick & Griffiths, 2019; Luquiens et al., 2022; Kathleen Maltzahn, Mary Whiteside, et al., 2022; Parke & Parke, 2019). This interconnection between harms and preferences emphasises the difficult nature of more ethically redesigning and regulating gambling products in a way that does not negatively impacts consumers' enjoyment of gambling. In addition, the findings highlight the clear need for more effective and publicised harm-reduction strategies within the UK that are underpinned by a public health approach. Following the completion of the current thesis, the author will aim to submit this study for publication within a peer-reviewed scientific journal.

### 5.3.4 Study 4 – Conceptualising 'tilting' amongst sports bettors

The fourth empirical study (Chapter 3) aimed to investigate; 1) How many classifications of sports bettors exist in relation to their reported tilting and awareness of this phenomenon? 2) How do these classifications of sports bettors differ in relation to gambling severity, gambling frequency, impulsivity, type of sport bettor (in-play/conventional), and perceived gambling skill? 3) What are the product preferences of the in-play bettors between the classifications? Three distinct profiles of sports

bettors were identified as a result of the cluster analysis based upon their reported tilting occurrence and awareness of this phenomenon. The first group labelled 'conscious tilters', reported the highest tilting occurrence and were highly cognisant of their tilting episodes. Correspondingly, these conscious tilters reported the highest mean PGSI scores that were indicative of the 'problem gambler' categorisation (Ferris & Wynne, 2001). This group also reported the highest mean gambling frequency, impulsive urgency (positive and negative), and lack of premeditation (via SUPPS-P). The second group labelled 'unconscious tilters', reported significantly higher tilting occurrence than the third group whilst underestimating these episodes. The third group labelled 'non-tilters', reported a significantly lower tilting occurrence compared to the two other groups and displayed an accurate awareness of this phenomenon. They also reported a mean PGSI score that was indicative of the 'low-risk' gambler categorisation. The 'Conscious tilters' and 'Unconscious tilters' within the current study both reported using this instant cash deposit feature at a significantly higher frequency compared to the 'Non-tilters'.

### 5.3.4.1 Original contributions to knowledge

Although previous research has been conducted in relation to 'tilting' within a poker context, the current study was the first to explore this topic amongst sports bettors. Therefore, considering the study highlighted that tilting is indeed observable within this context, the findings provide original and novel insight regarding the contextual factors that may reshape low risk into maladaptive sports betting (emotional dysregulation and facets of impulsivity). Furthermore, the findings emphasise that sizeable cohorts of sports bettors may not consciously perceive their tilting episodes and therefore open up new lines of inquiry regarding the need for targeted harm-reduction and harm-awareness amongst this population. Similarly, this study highlights the potential role of sports betting product features in relation to the maintenance of and consequences associated with tilting during a time when the sport betting environment is rapidly evolving and diversifying. For these reasons, this study was published in a peer-reviewed scientific journal (Torrance et al., 2020), was presented orally at Current Advances in Gambling Research (CAGR) conference of 2022, and was central in an article showcasing the related findings within The Conversation.

## 5.4 Theoretical implications

As discussed throughout, the theoretical underpinning of the current thesis involves the bespoke risk environment model. In brief, this is a modernised (or updated) framework adapted from the public

health model of gambling (Korn & Shaffer, 1999) that is comprised of three components; 1) *pervasive marketing strategies*; 2) *product features and structural characteristics*; 3) *consumer vulnerabilities*. This model is conceptualised around the potential interactions between these components that are facilitative of bespoke or contextualised harm for consumers. Furthermore, the model operates with appropriate recognition given to the corporate determinants of harm rather than focusing primarily upon consumers better controlling their own gambling behaviours in light of their own personal risk-factors (Livingstone & Rintoul, 2020). The model also accounts for the facilitation of bespoke gambling harms that are experienced across the entire harm spectrum rather than exclusively focusing upon those considered 'disordered gamblers', those with GD, or anyone primarily situated at the higher end of the harm-spectrum (Browne & Rockloff, 2018). Although there are examples throughout the previous literature that demonstrate interactions between the components of the bespoke risk environment (see The bespoke risk environment of gambling), there is a need to develop further evidence that provides a comprehensive breakdown of this model in order to encourage effective regulatory change and intervention. It is acknowledged that no one theoretical model will provide exhaustive and all-encompassing insight regarding the facilitation of gambling-related harm. This is primarily due to the multifaceted nature of gambling-related harm alongside inconsistencies across the literature in defining the concept (see Gambling-related harm). It would therefore appear rational to utilise various components of existing models in order to gain a holistic understanding of gambling-related harm depending on the context and scope of investigation (see Theories of maladaptive or harmful gambling). However, the current section will solely address the theoretical implications of the bespoke risk environment model utilised throughout the thesis.

### 5.4.1 Pervasive marketing strategies

The first two studies within this thesis (see Chapter 2 study 1 and study 2) highlighted the pervasive marketing strategies utilised by the industry to promote gambling. Overall, it was distinguished that marketing strategies are diverse and although traditional modes of advertisement are increasing in complexity and specificity, new marketing strategies are also emerging. These strategies involve portraying gambling in a misleading manner, incorporating financial incentives into advertisements that are subject to strict conditions, and disseminating subtle online advertisements that do not overtly appear promotional in their intent. As discussed throughout this thesis, the sporting sphere and online environment are also densely populated by gambling advertising that may be exposed to young and vulnerable audiences. Given that gambling products have addictive potential, the pervasive advertisement of these products raises numerous ethical concerns.

### 5.4.2 Product features and structural characteristics

Evidence of harmful product features were highlighted across numerous studies within the current thesis. For example, speed and higher outcome frequency were outlined as preferred product features by casino game players and sports bettors who gambled with a high regularity (see Chapter 3 study 3). This feature has been outlined as particularly harmful across the literature but there is a paucity studies that investigate its emergence within gambling modes outside of FOBTs/EGMs such as sports betting (Parke & Parke, 2019). Similarly, poker players and sports bettors also favoured the perceived analytical and skills-based elements of these gambling modes and perceived them to increase the control of their bets whilst decreasing the relative risk. The ability to instantly deposit funds was also deemed most important by those more likely to experiences sports-betting related harm (see Chapter 3 study 4). This product feature possesses the potential to facilitate tilting episodes whereby sports bettors rapidly replenish lost funds during times of frustration, aggression, and desperation.

### 5.4.3 Consumer vulnerabilities

Within the current thesis, numerous findings provide evidence of consumer vulnerabilities that possess the potential for harmful interactions between the other components of the bespoke-risk environment model. For example, demographic vulnerabilities were highlighted across the included studies in relation to targeted advertising that contained masculinised content, feminised content, and humour/memes that are generally more relevant amongst younger populations (see Chapter 2 study 1). Younger audiences also make up a sizeable portion of sports spectatorship where gambling advertising is ubiquitous (see Chapter 2 study 1). Furthermore, young adults expressed feeling bombarded by gambling advertising where their experiences were saturated with such content (see Chapter 2 study 2). Psychological vulnerabilities were also highlighted such as the increased likelihood of experiencing gambling-related harm within the online sports betting environment due to the influence of emotional/cognitive dysregulation and trait impulsivity (see Chapter 3 study 4).

## 5.5 Practical implications

The findings from the studies within this thesis highlight numerous practical implications relating to both gambling advertising, gambling product features, and their interactions with consumers in the UK. In relation to gambling advertising, both study 1 (rapid review) and study 2 (qualitative advertising perceptions) provide empirical support for the long-standing recommendation that gambling advertising (alongside gambling in general) should be reframed as an issue of public health

(Hörnle & Carran, 2018; McGee, 2020). Of great importance within this reframing, is recognising the corporate determinants of gambling-related harm via the well-funded, complex, and persuasive promotional strategies utilised by the gambling industry (Torrance et al., 2021; Torrance et al., 2020). Not only have these strategies been highlighted for their potentially deceptive and misleading nature, but also their role in facilitating intentions to gamble amongst consumers (Bouguettaya et al., 2020; Roderique-Davies et al., 2020; Torrance et al., 2021). In addition, although it is vehemently denied by the gambling industry that children and young people are a target demographic within the promotion of gambling, it is ubiquitous within areas associated with this population such as the sporting sphere and social media (Torrance et al., 2021).

The recognition of corporate determinants of harm has previously occurred in relation to the advertisement of tobacco and alcohol products and is supported by an abundance of literature (Biener & Siegel, 2000; Soneji et al., 2018; Weiss et al., 2006). As a result, many lessons have previously been learnt regarding the pitfalls of settling for industry-led interventions or 'soft approaches' that do little to reduce overall rates of harm caused by alcohol or tobacco marketing (Bond et al., 2010; Noel et al., 2017; Savell et al., 2014). Therefore, alongside distinguishing gambling advertising as intrinsically connected to public health, the findings of study 1 and study 2 within this thesis highlight the need for significantly expanding and improving regulatory frameworks in order to better control gambling advertising in the UK. If we are to regard the lessons learnt from the alcohol and tobacco sphere mentioned above, the prospective overhaul of gambling advertising regulation should be developed and employed independently of companies or entities that have a commercial interest in its promotion (Hörnle & Carran, 2018). This is especially pertinent to the regulation of gambling advertising content/placement as well as appropriately regulating the dissemination of gambling advertising in the online environment (Hörnle & Carran, 2018; Hörnle et al., 2019). Such an overhaul is warranted given that the vast majority of the current regulatory framework was established without appropriate foresight given to the proliferation of complex gambling advertising messages or even the prospect of online advertising methods (Hörnle et al., 2019; Rossi & Nairn, 2022). For example, Study 1 in particular highlighted the emergent rise of pervasive social media gambling advertisements that may not overtly appear to be promotional in their intent alongside promotional methods that require user interaction from consumers (Torrance et al., 2021).

As discussed throughout this thesis, at the time of writing, the UK awaits a review of the 2005 Gambling Act that has been subject to many delays and setbacks (van Schalkwyk et al., 2022). As the wheels of politics can often move sluggishly alongside the concern that the resulting review will not

adequately address the regulatory reform of gambling advertising, alternative methods of advertising-related harm reduction are warranted. Correspondingly, the findings of study 1 and study 2 within the current thesis highlight the need for interventions that combat the persuasive effects of gambling advertising messages as (to the best of the current authors knowledge) no such intervention has been realised and empirically tested. Primarily, the findings of study 1 and study 2 provide empirically synthesised and experiential evidence of the persuasive and diverse nature of emergent gambling advertising messages alongside the inadequacy of currently employed harm-reduction messages within such advertising (Torrance et al., 2021; Torrance et al., 2020). This practical implication has been addressed to a certain degree within Chapter 4 via the hypothetical design and methodological testing of a video-based inoculative intervention. Although it should be recognised that this intervention is yet to be developed and piloted. It is envisaged that such an intervention (or similarly designed interventions) can help consumers make more autonomous and well-informed decisions as a result of being able to better distinguish and critically evaluate the promotional messages disseminated by the gambling industry. Acknowledgement should be given to the fact that such interventions will unlikely reduce *all* of the harms associated with gambling advertising. Although they can operate as a beneficial component in the wider landscape of harm-reduction, the long-awaited regulatory reform is also very much necessary.

In a similar fashion to the studies mentioned above, the findings of study 3 and 4 of the current thesis also provide supporting evidence for the recognition of gambling (and the associated product features) as an issue of public health (Abbott, 2020; Atherton & Beynon, 2019; John et al., 2020; van Schalkwyk, Petticrew, et al., 2021). This was evidenced by the experiential findings of the qualitative study that highlighted the impacts of gambling-related harm at both an individual and societal level. Moreover, study 3 and study 4 also emphasised the difficulties that may be faced when attempting to more ethically regulate gambling product features that are actively favoured or preferred by gamblers. For example, as is discussed throughout this thesis, certain cohorts of consumers prefer fast/rapid speeds of play (study 3) or the ability to deposit funds quickly and repeatedly in response to consecutive losses (study 4). Therefore, imposing slower speeds of play or effective deposit limits in certain gambling modes may create the potential for driving consumers towards other (potentially more harmful) areas or modes of gambling where they can experience these features. Therefore, considerable thought should be paid to effectively redesigning gambling products in a realistic and stepwise fashion in line with recent suggestions made by researchers in this area (K Maltzahn et al., 2022; Newall, 2022a). Another practical implication highlighted by study 3 and 4 relates to consumers' awareness of gambling-related harm that they may be experiencing. For example, the findings of study

4 provided evidence of a sizeable cohort of sports bettors who experience 'tilting' but display a relatively inaccurate conscious awareness of this phenomenon (Torrance et al., 2022). Such findings highlight the need for effective interventions that assist consumers in identifying their own harmful gambling behaviours alongside the need for strategies targeted towards laypeople that help them critically evaluate the potential harms associated with certain gambling products. One such example involves the development of pictograms that can be disseminated to consumers to highlight the primary addictive properties of gambling products (Luquiens et al., 2022). Such a strategy was deemed successful via pilot-testing as it doubled the ability of laypeople to accurately assess the harmful features of gambling products compared to those exposed to a generic harm-reduction message or a no-treatment control condition (Luquiens et al., 2022). However, there is a relative paucity within the harm-reductive literature that focuses specifically upon gambling product features. Therefore, the findings of study 3 and study 4 offer support to those who wish to address this gap moving forward.

Lastly, in relation to study 4, the findings highlighted the practical implications associated with the existence of varying profiles of sports bettors who differ in terms of self-reported emotional dysregulation, gambling severity, impulsivity, and product preferences. Such findings coincide with the recently conducted literature that proposes a need to distinguish the contextual motivations and characteristics of subgroups of sports bettors as they are often (erroneously) categorised as a homogenous population (Granero et al., 2020; Hesketh et al., 2021; Russell, Hing, Li, et al., 2019). This misconception may hinder the bespoke development and delivery of targeted interventions amongst sports bettors and the current author argues that this would likely be the same for other modes of gambling as well (Barrault & Varescon, 2022; Dufour et al., 2015; Jeannot et al., 2023). Overall, the combined findings of the studies within this thesis highlight the emergent complexity and specificity of gambling advertising and gambling product features by developing evidence for the bespoke-risk environment of modern gambling. In developing this evidence, this thesis has highlighted a clear need for improved regulation, effective and targeted interventions, and the associated difficulties in implementing these strategies given the multifaceted nature of gambling advertising, products, and their interactions with consumer vulnerabilities.

## 5.6 Limitations

Although the findings from each of the studies within the current thesis provide original and novel insight in relation to our understanding of bespoke risk within the UK gambling environment, there are numerous limitations that should be considered when interpreting these findings. As the limitations

for each respective study within this thesis are covered in each associated chapter (see *Limitations* in sections 2.2.4.1, 2.3.4.1, 3.2.4.1, and 3.3.4.1), the current section will address the overall limitations of this thesis in its totality.

All but one (study 1) of the incorporated studies within this thesis utilised methodologies that relied upon retrospective and cross-sectional data. Although retrospective studies are widely adopted within the sphere of Psychology and health promotion due to their practical utility, the primary limitation owing to their design involves the high potential for recall bias within participant responses (Talari & Goyal, 2020). This potential issue may be further compounded by requiring participants to retrospectively assess their experiences in relation to complex and nuanced topics (such as advertising effect and gambling-harm related phenomena). Similarly, there are numerous limitations associated with cross-sectional data such as a heightened potential for selection bias and difficulties in establishing causal inference (Wang & Cheng, 2020). Moving forward, these issues could be addressed when extending the findings of this thesis by utilising longitudinal designs that do not solely rely upon the recall of participants. For example, in relation to investigations of perceptions towards and effects of gambling advertising, previous studies have used ecological momentary assessment in an attempt to minimise recall bias. This involves requiring participants to log their real-time experiences of gambling advertising in naturalistic environments at varying time points throughout the study timeline (Browne et al., 2019; Russell et al., 2018).

Given that large portions of the current thesis utilise qualitative methods, there are potential issues relating to a lack of generalisability overall. Although this issue is typical of qualitative research, it should be acknowledged that complete generalisability was not a primary objective of the current thesis. The main purpose was to provide evidence and examples of the contextualised (or bespoke) instances of gambling-related harm that may occur as a result of the complex and diversified gambling environment of the UK. Therefore, due to the bespoke-nature of gambling-related harm covered within the current thesis, it is unlikely that the associated findings will be generalisable to all gamblers/consumers within the UK.

Another limitation to this thesis as a whole relates to the incorporated studies being considered UK-centric. This may be perceived as a pitfall considering the existence (and resulting liberalisation) of gambling across a wide range of other jurisdictions such as Africa, China, and Turkey (Bitanihirwe & Ssewanyana, 2021; Güney et al., 2022; Wu et al., 2022). Therefore, much of the insight provided as a result of the studies within this thesis are likely not applicable to other jurisdictions where there are

significant variances in gambling regulation, advertising, and (legally) available gambling products compared to the UK. However, the scope of the current thesis needed to be logical and realistic meaning in-depth investigations of gambling-related phenomena outside of the UK was practically unfeasible. Furthermore, although a primary focus upon the UK gambling environment within this thesis may be considered a limitation, this jurisdiction was chosen for two primary reasons. Firstly, this thesis aimed to specifically investigate the UK gambling environment due to it being particularly unique and liberalised in nature compared to most other jurisdictions. Secondly, one of the aims of this thesis was to provide data that is relevant to the bespoke-risks of the UK gambling environment at a time when a regulatory review is underway. These reasons underline the submission of some of the included studies to the DCMS Review of the 2005 Gambling Act Call for Evidence.

## 5.7 Future research

There are numerous paths for future research that have been highlighted by the findings and associated limitations of the current thesis. In relation to gambling advertising strategies, the rapid review (study 1) emphasised the clear need for future research to investigate the placement of gambling advertising within sports across jurisdictions other than the UK that are liberalising or are set to liberalise sports betting. Correspondingly, empirical research should also be conducted in order to quantify the frequency of similar forms of advertisements within the sporting sphere (especially football) such as cryptocurrency and investment promotions. Currently, there is an absence of such literature in this area despite cryptocurrency enterprises emerging as a popular sponsor amongst sports clubs (Kerr, 2018). In regard to other spheres where gambling advertising is ubiquitous such as social media, the rapid review also highlighted the need for an empirical focus upon more subtle promotional methods disseminated by the industry that rely upon user-interaction such as polls or the utilisation of affiliate marketing (Houghton et al., 2019; Houghton et al., 2020). The promotional intent of such marketing strategies is often not made clear to consumers and the current author theorises that this practice is likely to intensify in light of stricter regulations placed upon more overt forms of gambling advertising in the near future.

In relation to perceptions towards gambling advertising, the sample utilised within study 2 contained only a small number of BAME individuals. Mounting gambling-related studies from other jurisdictions such as Australia have been conducted with an explicit focus upon the views and perceptions of these populations (Gupta et al., 2021; Hing, Breen, et al., 2014; Nagel et al., 2011). Therefore, the current author proposes that UK-based studies should follow suit by investigating the

perceptions of the BAME community in relation to the UK gambling environment in light of emergent evidence suggesting a harm-paradox of gambling amongst such populations (Wardle et al., 2019). In brief, the harm-paradox in this context is characterised by individuals who are less likely to engage with gambling, but are more likely to experience harm when they do (Beard et al., 2016). Considering the complexity and diversity of gambling advertising and products highlighted within the current thesis, this avenue of research is imperative.

Lastly, the findings of study 4 have also opened up important lines of inquiry in relation to the phenomenon of tilting within sports betting. Given that this study was explorative, future research should aim to investigate the influence of sports betting product features in facilitating tilting episodes within more naturalistic settings rather than utilising retrospective data. Furthermore, the findings of study 4 suggest that tilting is a multifaceted state that is influenced by a range of factors. With this study focusing specifically upon emotional dysregulation, impulsivity, and gambling cognitions, the role of other potential influencers that are known to impact decision-making (such as alcohol) should be empirically investigated in the context of maladaptive sports betting and the facilitation of tilting episodes.

## 5.8 Conclusions

Developing insightful evidence for the bespoke risk environment of gambling is imperative due to the vast expansion and increasing complexity of gambling advertising and gambling products within the UK. These advanced components of the gambling environment have the potential to interact with the vulnerabilities of consumers resulting in bespoke-risks or contextualised harms that can be experienced across the entire harm-spectrum (rather than those with GD exclusively). Developing evidence for this bespoke risk is also important in highlighting the corporate determinants of harm rather than adhering to the (mis)conception that consumers are solely accountable for their 'responsible gambling'. In other words, although personal accountability is a fundamental element of harm-reduction, gambling advertising strategies and gambling products are facilitative of gambling-related harm and their cosmetic/structural design falls within the responsibility of the industry. The current thesis employed a mixed-methods approach in order to provide a) a taxonomy of emergent gambling advertising strategies; b) insight regarding the perceptions of potentially vulnerable consumers towards gambling advertising, product features, and currently utilised harm-reductive measures; c) empirical evidence that offers an example of bespoke harm within the gambling environment; d) the design of a novel intervention aimed at reducing gambling-related harm caused by gambling advertisements.

The thesis findings indicated that there is a vast array of complex marketing strategies utilised by the industry that raise numerous ethical concerns. Namely (but not limited to), the positive framing of gambling, a skewed representation of higher odds and risker bets, the widespread dissemination of financial incentives that are subject to strict and esoteric conditions, a lack of harm-reductive content within gambling advertisements, the ubiquity of such advertising in areas associated with young/vulnerable audiences such as the sporting sphere and social media, and the emergent use of subtle online marketing strategies where the promotional intent is concealed. The thesis findings indicated that these practices were predominantly viewed negatively by cohorts of consumers who deemed them to be misleading and predatory alongside perceiving them to being responsible for gambling-related misconceptions and the wider normalisation of gambling across the UK. In relation to gambling products, the current thesis highlighted that the UK gambling environment caters to the wide range of consumers' product preferences that were each related to bespoke-risks. This was evidenced via the example of the sports betting environment where specific product features may facilitate instances of harmful gambling (e.g. tilting). Despite this, sizeable cohorts of sports bettors may not consciously be aware of this phenomenon which is exacerbated by the findings here that also suggest a wider lack of awareness and confidence towards publicly available harm-reduction strategies overall. In combination, the findings of the current thesis emphasise the need for a regulatory overhaul of gambling advertising alongside the more ethical (re)design of specific gambling products. In addition to these measures, there is a clear need for effective and publicised interventions that can help consumers build resilience against the persuasive commercial narratives disseminated by the gambling industry as well as increasing their ability to distinguish harmful gambling products. Consequently, the findings of this thesis can contribute to the development of these prospective measures in line with a public-health approach in reducing gambling-related harm.

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# Appendices:

## Appendix A – Ethical approval for Study 2/3 (combined)

| Overview of Proposed Study | |
|---|---|
| Name of Chief Investigator: | Jamie Torrance |
| Staff or student project: | Student (MPhil/PhD) |
| Faculty: | FLSE Psychology |
| Programme of Study: (if applicable) | PhD Psychology |
| Name of Study Lead / Supervisor: (if applicable) | Professor Bev John & Dr. Gareth Roderique-Davies |
| Proposed Project Title: | "Scoping the Bespoke-Risk Environments of Gambling amongst young people in the UK; a qualitative study" |
| Start date: | **May 2019** |
| Proposed end date: | **Dec 2019** |
| Co-investigators: | |
| Code(s) of conduct to be followed or the guidelines appropriate to your area of study or discipline: | BPS code of ethics |

| Brief outline of your Research Study (500-750 words) to include: |
|---|
| 1. Rationale, research aims and/or questions<br>2. Research setting (e.g. is a lone worker policy needed?)<br>3. Your professional role (if appropriate)<br>4. Your relationship to participants (if any)<br>5. Details of sample and sampling strategy<br>6. Methods of data collection[1]<br>7. Data analysis |

The proposed research aims to investigate the contextual risks associated with modern gambling behaviours. An emphasis is therefore placed upon these "bespoke risk-environments" of gambling that involve interactions between situational factors that deviate from the generic risk-factors of Gambling Disorder. Therefore, this study underpinned by the notion that existing conceptualisations of gambling-related harm and vulnerability are too narrow. Respectively, regulatory interventions are considered equally as narrow having little impact on the overall existence of fluctuating or context-specific gambling issues (Anzer & Simon, 2014). This may

be due to the overrepresentation of personal responsibility in regulatory discourse and thus a marginalisation of industry accountability (Carran, 2018).

In light of these points, a scoping investigation is proposed that aims to identify the contextual trigger points that cause young gamblers to cross the line between safe and unsafe gambling. The study is concerned with the intersections between consumer vulnerability, current advertising strategies and product features that may lead to bespoke risk. These factors are brought together and conceptualised as the "bespoke-risk environment" with potential theoretical framework. In brief, the proposed research involves a qualitative survey-based study addressing the broad questions of (1) Are young people being targeted within the bespoke risk-environment? (2) by which methods and structural features? (3) What are the prevalence and trends of these methods; (4) how far upstream do resulting risks begin?

There is no research setting as such, participants will complete the survey online via computer, laptop or mobile devices. The survey will be uploaded and accessible via Online-Surveys (formerly Bristol-Online-Surveys) in accordance with General Data Protection Regulations. As the lead investigator, my professional role involves developing an appropriate level of theoretical underpinning to the study as well as constructing the questions to be presented in an exploratory but non-intrusive manner. There is no relationship between the researcher(s) and the participants. The sample will consist of 50-60 young adults aged between 18 and 25. If data saturation is reached before this amount of participants respond, the survey will be closed. Respondents are eligible if they have participated in any form of gambling over the past month (including scratch-cards and the national lottery); although the main focus of this research relates to the use of online gambling-environments. Such respondents will be reached via online methods, these include the social networking sites; Facebook, Twitter and Reddit. The survey link will be posted onto relative gambling-related pages on the social networking sites with a brief invitation attached.

The survey will initially require some brief demographic information such as age, gender, geographical info, educational / employment status etc. Following this, respondents are required to answer the open ended questions in a qualitative format; offering as much or as little as they please. In order to facilitate this, this latter section of the survey will include open text-boxes. In brief, the questions will revolve around 3 main topics, these include; consumer vulnerability, gambling advertising and the harmful product features of gambling (e.g. instant access, speed of play etc.). These responses will be collated and analysed via methods of qualitative data analysis – namely context analysis or thematic analysis. In essence, reoccurring themes and narratives within the responses will be distinguished and explored for the purpose of better understanding current perceptions and attitudes towards gambling amongst young people.

## Responsibilities to Participants

### 1. Voluntary Informed Consent

How will you gain access to the participants?

Access to the participants will be gained by posting the survey onto the relative gambling-related pages on the social media sites mentioned above. The link will be accompanied by a brief invitation to participate, including the eligibility criteria. Please find attached a copy of this invitation.

How will you provide participants with the information they need about the study? **Please attach a copy of the information that will be provided to the participants where appropriate**

Upon meeting the eligibility criteria and accepting the invitation to participate via the provided link, participants will be presented with the first page of the survey. This page will provide respondents with all of the information they need about the study before they participate. This page will inform participants of the purpose of the study; why they have been chosen; what will happen when they take part; what is required of them; what are the advantages and disadvantages of participation; data confidentiality & usage; researcher contact details and the USW complaints procedure.

| | |
|---|---|
| **How will you ensure that you have informed consent from the participants? Please attach a copy of the consent form(s) that will be provided to the participants where appropriate** | |
| Participants will be instructed via the information page that using the link to commence the survey will be considered an indication of informed consent. Please find attached the paragraph that notifies participants of this procedure. | |
| **How will you inform participants of their right to withdraw from the study?** | |
| Within this initial information page, participants will be informed that they can withdraw from the study at any time by simply closing the tab /window. It will be made clear to participants that once they have submitted a full completed survey, a withdrawal of data will not be permissible. | |
| **How will you inform participants of the complaints procedure?** | |
| The complaints procedure will be clearly outlined on the information page alongside the relative internet links and contact details associated with the University Secretary's Office. | |

| **Checklist for managing Voluntary Informed Consent - Tick all that apply** | |
|---|---|
| Please confirm that all respondents will be given an appropriate level of information about and be given adequate time to think about the information before being asked to agree to participate | ✔ |
| Please confirm that all participants taking part in an interview, focus group, observation (or other activity which is not questionnaire based) will be informed that anything they say which either: <ul><li>Suggests harm to a person might be caused</li><li>Indicates potential or actual professional misconduct</li><li>Outlines criminal activity</li></ul> Then, the information will need to be report to the appropriate authorities. | |
| Please confirm that all participants completing a questionnaire will be informed on the Information Sheet that returning the completed questionnaire implies consent to participate. On-line: this message will be presented at the start (with a reminder at the end) of the questionnaire as part of an implied consent statement. | ✔ |
| Please confirm that all participants being asked to provide personal data (sensitive and standard) will be told which **legal basis** is being cited for collecting and processing their personal information – this should be conveyed on the consent form and information sheet. In accordance with the new General Data Protection Regulations (GDPR). | ✔ |
| Please confirm that all respondents will be told that they can: <ul><li>withdraw at any time,</li><li>ask for their data to be removed from the project until it is no longer practical to do so (e.g. following anonymization or, when a report has</li></ul> | ✔ |

| | |
|---|---|
| been written and submitted). | |
| Please confirm that personal data will only be retained for the purpose of this research and will be disposed of as soon as possible (e.g., immediately following anonymization). | ✓ |

**Duty of Care to the Participants**

How will you ensure the participants' well-being during the research?

Although the study is very simple in design, requiring no actual research setting as such; there is little to no chance participants will encounter any physical harm during the completion of the survey. However, it is acknowledged that the subject of gambling (and related-harms) can be a particularly sensitive topic at times. Therefore, participants will be provided with the contact details of the appropriate gambling information and help services if they need such support.

What information will you provide to the participants at the end of their involvement in the study (if appropriate)?
Is it necessary to hold personal contact information for this purpose?

Once a respondent has completed a submission, participants will be presented with the final page of the survey. Among thanking participants for their involvement, there will be a concise paragraph that offers respondents a debriefing of the current study. Please find attached this debriefing section.

Does the Chief Investigator or any other investigator/collaborator have any direct personal involvement (e.g. financial, share-holding, personal relationship etc.) in the organisations funding the research that may give rise to a possible conflict of interest? If so, please describe these below and any arrangements in place to mitigate the conflicts.

No

**Researcher Safety**

Are there any issues around researcher safety and if so how will you address those?
Are there any risks? What are the arrangements in place to mitigate risk?

There are no issues regarding researcher safety. All responses are collected online with no contact between the researcher(s) and participants. If any responses cause unease or distress, the researchers have numerous well-trained and knowledgeable supervisors and colleagues to share concerns with and make the appropriate action.

## 2. Managing Data

How will you ensure the confidentiality and anonymity of the research participants?

| | |
|---|---|
| Participants are not required to offer any personal or identifying data. Therefore responses will be anonymised as soon as they are submitted. Within the text-responses, all names of people, places or organisations, which *could* lead to the identification of individuals or organisations, will be changed or redacted. All data will kept securely at USW according to the Data Protection Act 1998 and 2018 (DPA), as well as the new General Data Protection Regulations (GDPR) in accordance with USW guidelines. | |
| **Checklist for managing issues of confidentiality and anonymity** <br> **Tick all that apply** | |
| Questionnaires will be returned anonymously and indirectly | ✓ |
| Questionnaires and/or interview transcripts will only be identifiable by a unique identifier (e.g. code/pseudonym). | ✓ |
| Lists of identity numbers or pseudonyms linked to names and/or addresses will be stored securely and separately from the research data. | ✓ |
| All names of people, places or organisations, which could lead to the identification of individuals or organisations, will be changed. | ✓ |
| I confirm that my research records will be held securely at USW according to the Data Protection Act 1998 and 2018 (DPA), as well as the new General Data Protection Regulations (GDPR) in accordance with USW guidelines | ✓ |
| I confirm that I will not use the research data for any other purpose WITHOUT contacting the Faculty Ethics Champion or USW Research Governance Officer in advance. This includes the sharing of research data with people outside of the research team. | ✓ |
| Data will be stored on a personal computer and, as well as the computer being password protected/encrypted, so will any document files. | ✓ |
| | |
| How will research findings be fed back to the research participants? | |

| | |
|---|---|
| Findings will not be directly fed back to participants as after analysis, it will be not be possible to gain access and contact respondents given the lack of personal and identifying data. | |
| How will the research be disseminated to the wider community? | |
| The findings will be presented in the style of a qualitative report with the eventual aim of an open-access publication. | |

## Attachments

| Tick all that are included | |
|---|---|
| Data collection tools | ✓ |
| Adverts and standard letters | ✓ |
| Information Sheet(s) | ✓ |
| Consent Form(s) | ✓ |
| Researcher Safety Protocol (e.g. the lone worker policy) | |
| Other approvals, for example approval of external organisations allowing you access to their participants; or internal approvals and USW risk assessment. | |

| Applicant's Declaration | |
|---|---|
| **If your project is approved you must follow the process and documents you have submitted. If your application is not approved you will need to refer to this version of your application when preparing your re-submission.** Please note if you intend on deviating from the approved protocol or documentation you will need to request approval for any changes.<br>Please indicate the following: | |
| I have read and agree to abide by the USW documents: Research Governance Framework (2016) and Guidelines for Research and Consultancy (2016) | ✓ |
| I have read and agree to abide by the Code(s) of Conduct identified at the start of this form | ✓ |
| I understand that failure to follow my approved protocol constitutes research misconduct and the policy for such offences will be followed in such an instance | ✓ |
| I confirm that the USW is responsible for this study | ✓ |
| I confirm that all procedures that will occur within the research will adhere to USW Policy on Health and Safety and that where applicable, a thorough risk assessment will be completed *prior to* the research taking place | ✓ |

| | |
|---|---|
| Print name:  Jamie Torrance | Please sign: |
| Date: 03/05/2019 | |

| **Supervisor's Declaration (for students). If missing, application should be rejected.** | |
|---|---|
| **If the student's project is approved they must follow the process and documents they have submitted. If their application is not approved they will need to refer to this version of their application when preparing their re-submission.** Please note if you intend on deviating from the approved protocol or documentation you will need to request approval for any changes. | |
| I have read and agree to abide by the Code(s) of Conduct identified at the start of this form | ✓ |
| I have read the guidelines accompanying this application form and understand that failure to follow these and the approved protocol constitutes research misconduct and the policy for such offences will be followed in such an instance | ✓ |
| Print name:   Dr Gareth Roderique-Davies | Please sign |
| Date: 03/05/2019 | |

| **Decision** | |
|---|---|
| Approval | X |
| Further Information needed and Resubmission required | |
| Rejected | |
| Notes<br>**This application is approved.** | |

**Appendix B – Survey structure for Study 2/3 (combined)**

# Gambling Amongst Young People

## Page 1: Information & Consent

**Survey Title -** The Experiences and Perceptions of the Current Gambling Landscape Amongst Young Adults

### INVITATION

You are being asked to take part in a research study that aims to investigate current perceptions and experiences of young people in regards to gambling. Specifically, your personal attitudes towards gambling-related advertising and the specific components of the betting/games offered to the public. **To be eligible to participate, you need to be over the age of 18 and have participated in any form of online gambling (sports-betting, casino-games, online bingo etc.) in the past month.**

### WHAT WILL HAPPEN

Once you have indicated that you've read and fully understood this information and consent page, you will be initially asked to provide some brief demographic information. Following this, you will be required to answer the open-ended questions provided. There are no restrictions on how much you write, although it is encouraged that you offer as much insight as possible. After submission, you will be presented with the final page that incl debriefing of the study and some useful gambling-related information.

### TIME COMMITMENT

Although you can take as long as you wish to complete the survey, you should typically expect it to take a minimum of approximately 20 minutes depending on your typing speed.

### PARTICIPANTS' RIGHTS

If you decide to exit the research study whilst completing the survey, you have the right to withdraw without question at any time. This can be done by simply going to another URL, closing the browser window or deleting the tab. Doing so will prohibit the submission of your response. Once you have completed and submitted your response however, you will be unable to withdraw it from the study. You will not be paid for your contribution, but it should be noted that your responses are greatly appreciated as they contribute to a better understanding of gambling-related risk(s). You have the right to have your questions about the study answered. If you have any questions as a result of reading this information page, you should email the researcher before you begin the survey (details provided below).

**CONFIDENTIALITY/ANONYMITY**

The data collected does not contain any personally identifying information. Within your responses, all names of people, places or organisations, which *could* lead to the identification of individuals or organisations, will be changed or redacted. When your role with this project is complete, your data will be anonymised. From that time, there will be no record that links the data collected, to yourself. Up until the point at which your data has been anonymised, you can decide not to consent to having your data included in further analyses by exiting the survey via your web-browser.

**FOR FURTHER INFORMATION**

If at any time during or after your participation in the study you have concerns or any complaints, then you may contact the lead researcher: Jamie Torrance (jamie.torrance@southwales.ac.uk) or the project supervisors Dr Gareth Roderique-Davies (gareth.rdavies@southwales.ac.uk) and Professor Bev John (bev.john@southwles.ac.uk). If you remain unhappy and wish to complain formally you can do this through the University of South Wales' Research Governance Office Mr Jonathan Sinfield who can be contacted on 01443 484518 or emailing jonathan.sinfield@southwales.ac.uk.

*CONSENT VIA LINK*

By continuing via the "Next " link below, you are agreeing that:

**(1)** You confirm that you have read and understood the information sheet for the above study. You have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. **(2)** You understand that your participation is voluntary and that you are free to withdraw only before data is submitted without any consequence. **(3)** You consent to the processing of any collected information for the purposes of this research study. You understand that such information will be treated as confidential and handled in accordance with GDPR. **(4)** You accept that once all the data has been submitted, you cannot request the data to be deleted. **(5)** You agree to take part in the above study. **(6)** You confirm you are 18 years old or above

# Page 2: Demographic Information

*1.* Please confirm your age (in years)

[_____]

*2.* Please confirm your gender:

○ Male          ○ Female

*3.* Please indicate your ethnicity using the text box below

[_____]

*4.* In what region of the UK do you reside?

[_____]

*5.* Please indicate how often you gamble

○ Every day
○ A few times a week
○ Weekly
○ Monthly

# Page 3

## Gambling Advertising

This section relates to your experiences with gambling advertising. Although there are no restrictions on how much / little you write, we appreciate you offering as much information as you can.

6. Please name as many gambling brands/operators or companies as you can

7. Where do you typically see these brands? How often?

8. Please let us know in your own words, how you feel / what your stance is regarding gambling advertising that young people like yourself encounter
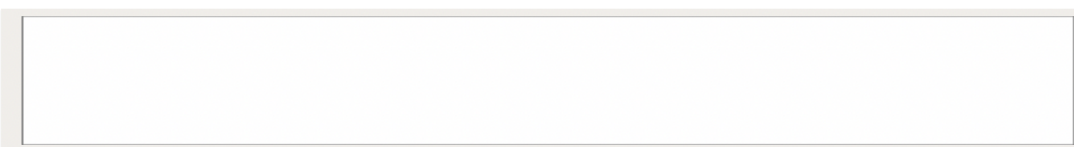
9. In what ways (if any) do these advertisements influence you?

10. What promotional offers have been offered to you?

11. How do you feel about these offers? Do you think they influence when/how much you gamble? in what ways?

# Page 4

## Product Features

This section relates to gambling product features. In other words, the specific features or components that are integrated into the gambling activity itself.

*12.* Why do you gamble? If you have multiple reasons, please list them all

*13.* Can you please explain what types of gambling you engage with?

**14.** Why are you interested in these types specifically? What are the specific aspects that you find engaging compared to other forms of gambling?

**15.** When and where are you likely to engage with gambling?

# Page 5
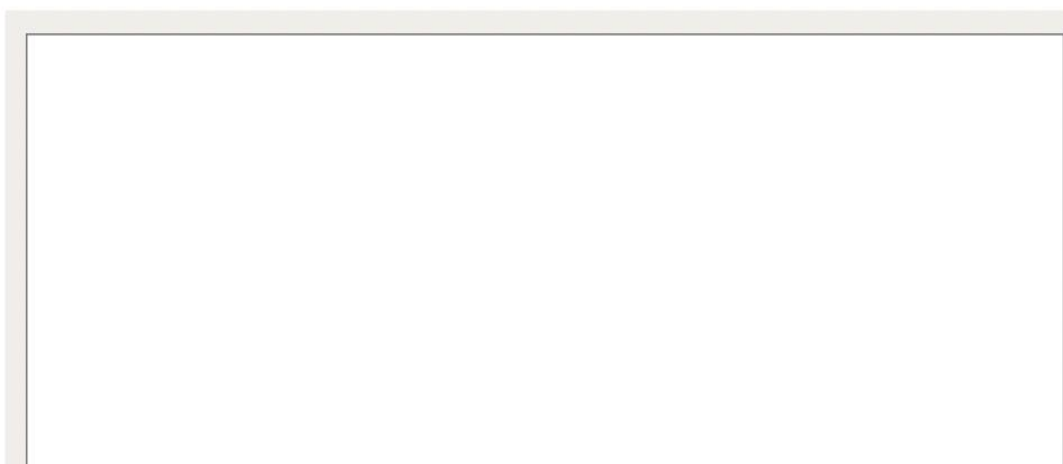
## Possible Risk(s)

This section relates to any possible risk(s) associated with gambling amongst young people. Again, there are no requirements for how much / little you write - but it would be greatly appreciated if you could be as descriptive as possible.

16. Has anything ever concerned you about your own gambling - or gambling in general? If so, please elaborate

17. Are you aware of anything put in place to reduce the risks associated with gambling?

## Page 6: Final page

Thank you for taking part in this study. Your participation is greatly appreciated by all of the researchers involved in this project.

This survey is part of a research project that aims to investigate and explore the current experiences of young people in regards to gambling advertising, product features and possible risk(s). Open-ended questions were implemented as it is very important to consider both what attracts young consumers, and what concerns them about gambling.

---

If you have any concerns or complaints about this research and wish to discuss them further please contact the lead researcher (jamie.torrance@southwales.ac.uk). Alternatively, you can contact the project supervisors Dr Gareth Roderique-Davies (gareth.rdavies@southwales.ac.uk) and Professor Bev John (bev.john@southwles.ac.uk). If you remain unhappy and wish to complain formally you can do this through the University of South Wales' Research Governance Office Mr. Jonathan Sinfield who can be contacted on01443 484518 or emailing jonathan.sinfield@southwales.ac.uk.

---

If you are concerned about your own or anyone else's gambling, there are relative links and contact details below for further information and assistance

- Gamcare UK:
  http://www.gamcare.org.uk/
- Getting help to control your gambling:
  http://www.gamblingcommission.gov.uk/for-the-public/Safer-gambling/Getting-help-to-control-your-gambling.aspx
- Gamblers Anonymous UK
  https://www.gamblersanonymous.org.uk/
- National Gambling Helpline:
  Freephone 0808 8020 133 8am-midnight 7 days a week
- GambleAware
  https://www.begambleaware.org/

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# Appendix C - Ethical approval for Study 4

| Overview of Proposed Study | |
|---|---|
| Name of Chief Investigator: | Jamie Torrance |
| Staff or student project: | Student (PhD) |
| Faculty: | FLSE Psychology |
| Programme of Study: (if applicable) | |
| Name of Study Lead / Supervisor: (if applicable) | Professor Bev John & Dr. Gareth Roderique-Davies |
| Proposed Project Title: | "Adapting the concept of poker 'tilting' among in-play and conventional sports bettors in the UK" |
| Start date: | **April 2021** |
| Proposed end date: | **June 2021** |
| Co-investigators: | |
| Code(s) of conduct to be followed or the guidelines appropriate to your area of study or discipline: | BPS code of ethics |

Brief outline of your Research Study (500-750 words) to include:
8.  Rationale, research aims and/or questions
9.  Research setting (e.g. is a lone worker policy needed?)
10. Your professional role (if appropriate)
11. Your relationship to participants (if any)
12. Details of sample and sampling strategy
13. Methods of data collection[2]
14. Data analysis

Although emergent studies have highlighted the similarities between the structural characteristics of electric gaming machines (EGMs) and in-play sports betting (Newall, Russel & Hing, 2021), there are also some prominent differences between these gambling modes. Primarily, EGM machines rely upon algorithmic pay-out rates that are typically interpreted by bettors to orbit notions of perceived 'randomness' and 'luck' (Livingstone, 2017). In contrast, both in-play and conventional sports betting may be considered by bettors to involve a certain amount of skill that is grounded in sports-related knowledge. Theoretically, this incorporated element of perceived skill within in-play sports betting is more akin to poker rather than algorithm-based gaming

machines. Numerous studies have highlighted that within (but not limited to) the novice-intermediate 'learning phase' of poker, individuals commonly experience a phenomenon known as 'tilting' (Palomäki, Laakasuo & Salmela, 2013). Tilting is defined as a state of frustration and irrationality when gambling due to experiencing losses or being overwhelmed by strong emotions. This state is characterised by a reduction in strategic or calculated gambling and an increase in aggressive, impulsive and sporadic bets (Browne, 1989). The current paper theorises that the concept of 'tilting' can be appropriately mapped onto in-play sports betting as a potential pathway to maladaptive gambling behaviour given the element of perceived skill involved. To date, no study has aimed to investigate this phenomenon within a context outside of poker.

Research Questions:

1. Do sports bettors experiences episodes of 'tilting' and are they associated with higher PGSI scores?
2. What are the psychometric profiles of sports betting 'tilters' in this context?
3. What structural features are deemed most important to in-play bettors?

There is no research setting as such, participants will complete the study online via computer, laptop or mobile devices. The study will be developed and made available via Online Surveys (previously Bristol Online) in accordance with General Data Protection Regulations. As the lead investigator, my professional role involves developing an appropriate level of theoretical underpinning to the study as well as ensuring the study procedure is logical and methodologically sound. There is no relationship between the researcher(s) and the participants. The sample will consist of approximately 250 sports bettors. Respondents are eligible if they have participated in sports betting at least once within the past 6 months. Additionally, participants must be over the age of 18 and must currently reside in the UK. Such respondents will be reached via online methods, these include the social networking sites; Facebook, Twitter and Reddit. The study link will be posted onto relative gambling-related pages on the social networking sites.

The study will initially require some brief demographic information such as age, gender, geographical info, educational / employment status etc. Following this, participants will be asked whether they take part in in-play betting or not. If so, they will be required to gage structural characteristics of in-play sports betting (e.g. stats board, cash-out feature) in terms of how often they use them and how important they deem them to be to their gambling. These participants (alongside those who stated they do not partake in-play betting) progress onto the final stage of the survey in which they complete 4 brief psychometric scales. These include an adapted online tilting scale, perceived gambling skill scale, impulsivity scale and a gambling harm scale. Data will be analysed using SPSS via K means clustering and numerous forms of analysis of variance.

Browne, B. R. (1989). Going on tilt: Frequent poker players and control. *Journal of gambling behavior*, *5*(1), 3-21.

Livingstone, C. (2017). *How electronic gambling machines work*. AGRC Discussion Paper 8). Melbourne: Australian Gambling Research Centre, Australian Institute of Family Studies.

Newall, P., Russell, A., & Hing, N (2021). Structural characteristics of fixed-odds sports betting products.

Palomäki, J., Laakasuo, M., & Salmela, M. (2013). 'This is just so unfair!': A qualitative analysis of loss-induced emotions and tilting in on-line poker. *International Gambling Studies*, *13*(2), 255-270.

## Responsibilities to Participants

### 3. Voluntary Informed Consent

How will you gain access to the participants?

Access to the participants will be gained by posting the study link onto the relative gambling-related pages on the social media sites mentioned above. The link will be accompanied by a brief invitation to participate, including the eligibility criteria. This invitation will be presented as such:

"Please take part in this online survey that aims to explore the psychology of sports betting and related products. To participate, you must be over the age of 18, reside in the UK and must have engaged with sports

betting in the past 6 months. All appropriate information will be provided before and after the survey. – [*URL LINK TO SURVEY*]"

| | |
|---|---|
| **How will you provide participants with the information they need about the study? Please attach a copy of the information that will be provided to the participants where appropriate** | |
| Upon meeting the eligibility criteria and accepting the invitation to participate via the provided link, participants will be presented with the first page of the study. This page will provide respondents with all of the information they need about the study before they participate. This page will inform participants of the purpose of the study; why they have been chosen; what will happen when they take part; what is required of them; what are the advantages and disadvantages of participation; data confidentiality & usage; researcher contact details and the USW complaints procedure. | |
| **How will you ensure that you have informed consent from the participants? Please attach a copy of the consent form(s) that will be provided to the participants where appropriate** | |
| Participants will be instructed via the information page that using the link to commence the study will be considered an indication of informed consent. Please find attached the paragraph that notifies participants of this procedure. | |
| **How will you inform participants of their right to withdraw from the study?** | |
| Within this initial information page, participants will be informed that they can withdraw from the study at any time by simply closing the tab /window. It will be made clear to participants that once they have submitted a full completed response, a withdrawal of data will not be permissible. | |
| **How will you inform participants of the complaints procedure?** | |
| The complaints procedure will be clearly outlined on the information page alongside the relative internet links and contact details associated with the University Secretary's Office. | |

| **Checklist for managing Voluntary Informed Consent - Tick all that apply** | |
|---|:---:|
| Please confirm that all respondents will be given an appropriate level of information about and be given adequate time to think about the information before being asked to agree to participate | ✓ |
| Please confirm that all participants taking part in an interview, focus group, observation (or other activity which is not questionnaire based) will be informed that anything they say which either:<br>• Suggests harm to a person might be caused<br>• Indicates potential or actual professional misconduct<br>• Outlines criminal activity<br><br>Then, the information will need to be report to the appropriate authorities. | |
| Please confirm that all participants completing a questionnaire will be informed on the Information Sheet that returning the completed questionnaire implies consent to participate.<br>On-line: this message will be presented at the start (with a reminder at the end) of the questionnaire as part of an implied consent statement. | ✓ |

| | |
|---|---|
| Please confirm that all participants being asked to provide personal data (sensitive and standard) will be told which **legal basis** is being cited for collecting and processing their personal information – this should be conveyed on the consent form and information sheet. In accordance with the new General Data Protection Regulations (GDPR). | ✓ |
| Please confirm that all respondents will be told that they can: <br> • withdraw at any time, <br> • ask for their data to be removed from the project until it is no longer practical to do so (e.g. following anonymization or, when a report has been written and submitted). | ✓ |
| Please confirm that personal data will only be retained for the purpose of this research and will be disposed of as soon as possible (e.g., immediately following anonymization). | ✓ |

**Duty of Care to the Participants**

How will you ensure the participants' well-being during the research?

Although the study is very simple in design, requiring no actual research setting as such; there is little to no chance participants will encounter any physical harm during the completion of the study. However, it is acknowledged that the subject of gambling (and related-harms) can be a particularly sensitive topic. Therefore, participants will be provided with the contact details of the appropriate gambling information and help services during the debrief if they need such support.

What information will you provide to the participants at the end of their involvement in the study (if appropriate)?
Is it necessary to hold personal contact information for this purpose?

Once a respondent has completed a submission, participants will be presented with the final page of the study. Alongside thanking participants for their involvement, there will be a concise paragraph that offers respondents a debriefing of the current study. Please find attached this debriefing section.

Does the Chief Investigator or any other investigator/collaborator have any direct personal involvement (e.g. financial, share-holding, personal relationship etc.) in the organisations funding the research that may give rise to a possible conflict of interest? If so, please describe these below and any arrangements in place to mitigate the conflicts.

No

**Researcher Safety**

Are there any issues around researcher safety and if so how will you address those?
Are there any risks? What are the arrangements in place to mitigate risk?

There are no issues regarding researcher safety. All responses are collected online with no contact between the researcher(s) and participants. If any responses cause unease or distress, the researchers have numerous well-

trained and knowledgeable supervisors and colleagues to share concerns with and make the appropriate action.

<br>

## 1. Managing Data

How will you ensure the confidentiality and anonymity of the research participants?

Participants are not required to offer any personal or identifying data. Therefore, responses will be anonymised as soon as they are submitted. All data will keep securely at USW according to the Data Protection Act 1998 and 2018 (DPA), as well as the new General Data Protection Regulations (GDPR) in accordance with USW guidelines.

| Checklist for managing issues of confidentiality and anonymity Tick all that apply | |
|---|---|
| Questionnaires will be returned anonymously and indirectly | ✓ |
| Questionnaires and/or interview transcripts will only be identifiable by a unique identifier (e.g. code/pseudonym). | ✓ |
| Lists of identity numbers or pseudonyms linked to names and/or addresses will be stored securely and separately from the research data. | ✓ |
| All names of people, places or organisations, which could lead to the identification of individuals or organisations, will be changed. | ✓ |
| I confirm that my research records will be held securely at USW according to the Data Protection Act 1998 and 2018 (DPA), as well as the new General Data Protection Regulations (GDPR) in accordance with USW guidelines | ✓ |
| I confirm that I will not use the research data for any other purpose WITHOUT contacting the Faculty Ethics Champion or USW Research Governance Officer in advance. This includes the sharing of research data with people outside of the research team. | ✓ |
| Data will be stored on a personal computer and, as well as the computer being password protected/encrypted, so will any document files. | ✓ |

| How will research findings be fed back to the research participants? | |
|---|---|
| Findings will not be directly fed back to participants. After analysis, it will be not be possible to gain access and contact respondents given the lack of personal and identifying data. | |
| How will the research be disseminated to the wider community? | |
| The findings will be presented in the style of a quantitative report with the eventual aim of an open-access publication. | |

## Attachments

### Tick all that are included

| | |
|---|---|
| Data collection tools | ✓ |
| Adverts and standard letters | ✓ |
| Information Sheet(s) | ✓ |
| Consent Form(s) | ✓ |
| Researcher Safety Protocol (e.g. the lone worker policy) | |
| Other approvals, for example approval of external organisations allowing you access to their participants; or internal approvals and USW risk assessment. | |

### Applicant's Declaration

**If your project is approved you must follow the process and documents you have submitted. If your application is not approved you will need to refer to this version of your application when preparing your re-submission.** Please note if you intend on deviating from the approved protocol or documentation you will need to request approval for any changes.
Please indicate the following:

| | |
|---|---|
| I have read and agree to abide by the USW documents: Research Governance Framework (2016) and Guidelines for Research and Consultancy (2016) | ✓ |
| I have read and agree to abide by the Code(s) of Conduct identified at the start of this form | ✓ |
| I understand that failure to follow my approved protocol constitutes research misconduct and the policy for such offences will be followed in such an instance | ✓ |
| I confirm that the USW is responsible for this study | ✓ |

| | |
|---|---|
| I confirm that all procedures that will occur within the research will adhere to USW Policy on Health and Safety and that where applicable, a thorough risk assessment will be completed *prior to* the research taking place | ✓ |

| Print name: Jamie Torrance | Please sign: |
|---|---|

Date: 22/03/2021

**Supervisor's Declaration (for students). If missing, application should be rejected.**

**If the student's project is approved they must follow the process and documents they have submitted. If their application is not approved they will need to refer to this version of their application when preparing their re-submission.** Please note if you intend on deviating from the approved protocol or documentation you will need to request approval for any changes.

| | |
|---|---|
| I have read and agree to abide by the Code(s) of Conduct identified at the start of this form | ✓ |
| I have read the guidelines accompanying this application form and understand that failure to follow these and the approved protocol constitutes research misconduct and the policy for such offences will be followed in such an instance | ✓ |

| Print name: Dr Gareth Roderique-Davies | Please sign |
|---|---|

Date: 22/03/2021

| **Decision** | |
|---|---|
| Approval | **X** |
| Further Information needed and Resubmission required | |
| Rejected | |
| Notes | |

# Appendix D – Survey structure for study 4

## INVITATION:

You are being asked to take part in a research study that aims to investigate the psychology of sports betting. **To be eligible to participate, you need to be over the age of 18, live in the UK and have participated in sports betting in the past six months.**

## WHAT WILL HAPPEN:

Once you have indicated that you've read and fully understood this information and consent page, you will be initially asked to provide some brief demographic information. Following this, you will be required to answer the questions provided. Please think about your answers carefully. After submission, you will be presented with some gambling screening measures and some useful gambling-related information.

## TIME COMMITMENT:

Although you can take as long as you wish to complete the survey, you should typically expect it to take a minimum of approximately 5 minutes depending on your typing speed.

### PARTICIPANTS' RIGHTS:

If you decide to exit the research study whilst completing the survey, you have the right to withdraw without question at any time. This can be done by simply going to another URL,closing the browser window or deleting the tab. Doing so will prohibit the submission of your response. Once you have completed and submitted your response however, you will be unable to withdraw it from the study. You will not be paid for your contribution, but it should be noted that your responses are greatly appreciated as they contribute to a better understanding of gambling-related risk(s). You have the right to have your questions about the study answered. If you have any questions as a result of reading this information page,you should email the researcher before you begin the survey (details provided below).

### RISKS & BENEFITS:

There are no known physical risks for you in this study. Although, participation does involve the self-reporting of experiences with gambling. Therefore, important information and contact details are provided within the final debrief page if you experience any concern or distress regarding yours or anyone else's gambling behaviour.It cannot be promised that the study will help you but the information collected from the study will help to improve the understanding of the current landscape of gambling. Ultimately, this information will contribute to eventual harm-reduction strategies.

### COST, REIMBURSEMENT AND COMPENSATION:

Your participation in this study is voluntary. Therefore, there are no physical costs and subsequently no reimbursement or compensation as mentioned above.

### CONFIDENTIALITY/ANONYMITY:

The data collected will not contain any personally identifying information. .

**FOR FURTHER INFORMATION:**

If at any time during or after your participation in the study you have concerns or any complaints, then you may contact the lead researcher: Jamie Torrance(jamie.torrance@southwales.ac.uk) or the project supervisors Dr Gareth Roderique-Davies(gareth.rdavies@southwales.ac.uk) and Professor Bev John (bev.john@southwles.ac.uk). Ifyou remain unhappy and wish to complain formally you can do this through the University ofSouth Wales' Research Governance Office Mr Jonathan Sinfield who can be contacted on01443 484518 or emailing jonathan.sinfield@southwales.ac.uk.

# CONSENT VIA LINK:

By continuing via the "Next " link below, you are agreeing that:(1) You confirm that you have read and understood the information for this above study. You have had the opportunity to consider the

information, ask questions and have had these answered satisfactorily. (2) You understand that your participation is voluntary and that you are free to withdraw only before data is submitted without any consequence. (3) You consent to the processing of any collected information for the purposes of this research study. You understand that such information will be treated as confidential and handled in accordance with GDPR. (4) You accept that once all the data has been submitted, you cannot request the data to be deleted. (5) You agree to take part in the above study.(6) You confirm you are 18 years old or above

## Demographic information & gambling behaviour

Please provide your demographic information and gambling behaviours below. All of this information is anonymous and unidentifiable.

1. Please confirm your age:

[                                        ]

2. Please confirm your gender

- ○ Male
- ○ Female

3. Please confirm your ethnicity:

4. Please confirm your highest level of education

If you selected Other, please specify:

5. What country within the UK do you reside?

6. How often do you gamble?

7. What forms of gambling do you engage with **online?** (you can select multiple answers)

☐ Sports betting
☐ Casino & table games
☐ Scratch cards
☐ Lottery
☐ Bingo
☐ Gaming/slot machines
☐ Other

If you selected Other, please specify:

[                                        ]

8. What forms of gambling do you engage with at **venues/bookmakers?** (you can select multiple answers)

☐ Sports betting

☐ Casino & table games

☐ Scratch cards

☐ Lottery

☐ Bingo

☐ Gaming/slot machines

☐ Other

If you selected Other, please specify:

[                                        ]

In the last 6 months, have you engaged with sports betting?

○ Yes                    ○ No

# In-play betting
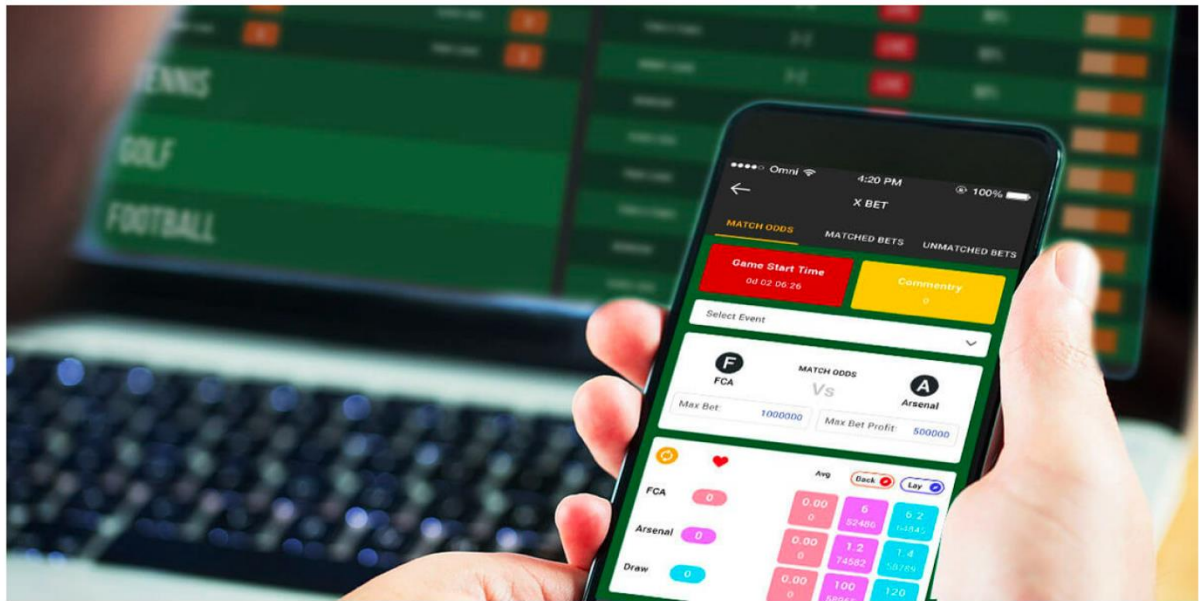


Has your sports betting involved in-play betting?

| ○ Yes | ○ No |
|-------|------|

**In-play betting (or in-running or live betting as it is also known) is betting while the event is actually taking place, for example, placing a bet on a horse race while the race is being run, or on a football match whilst it is being played**

## Instructions:

**Over the next few pages, you'll be shown images of features associated with in-play sports betting.**

**Use the scales provided to answer the questions. You will be asked the following:**

**1) How often you use each particular feature**

**2) How important the feature is to you during in-play betting**

# Embedded live stream

Most gambling operators offer a live stream of the sporting event for bettors to watch as they place bets. This live stream is typically embedded within the in-play betting page.
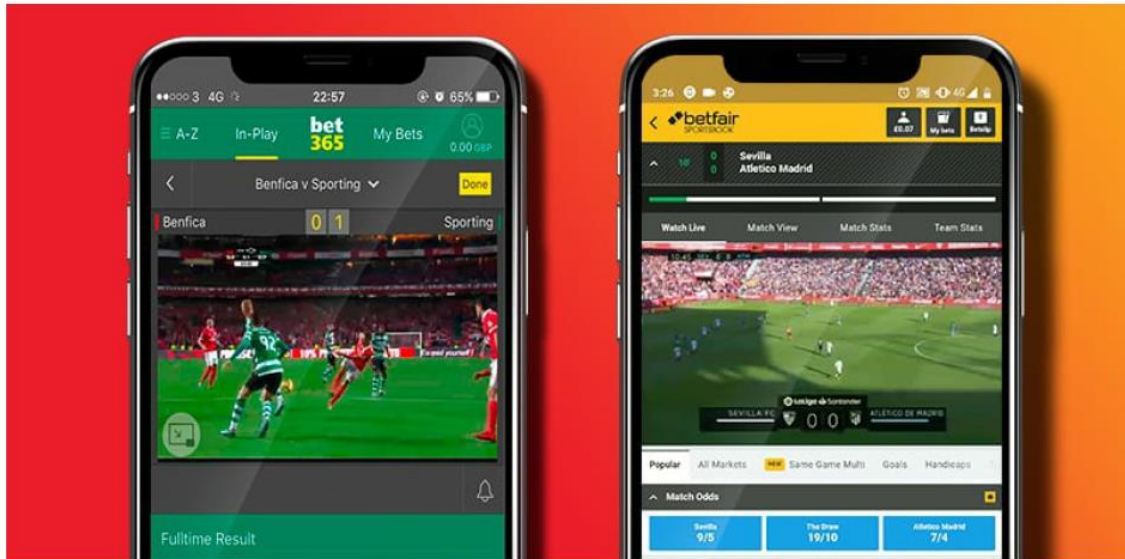


**1. How often do you use this feature?**

- Never
- Rarely
- Sometimes
- Often
- Always

**2) How important is this feature when you in-play bet?**

- Not at all important
- Somewhat important
- Moderately important
- Very important
- Extremely important

# Virtual live updates

Alongside (or instead of) a live stream of the sporting event, operators will often display live updates via a virtual reconstruction. These virtual updates notify the bettor of the events that unfold during a sporting event. For example, a free kick in football or a point won in tennis.
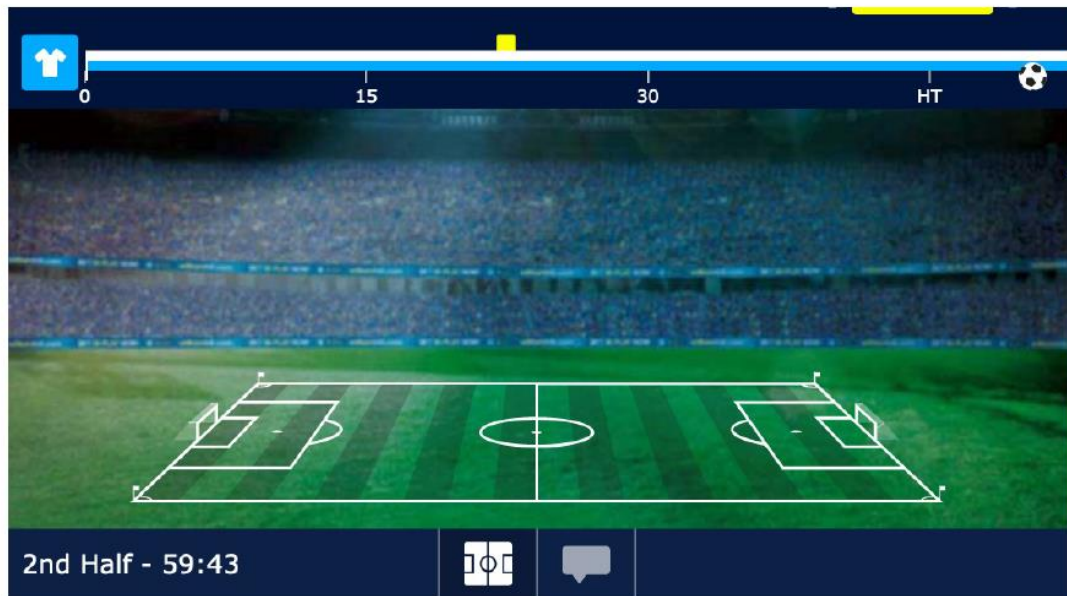


## 1. How often do you use this feature?

○ Never
○ Rarely
○ Sometimes
○ Often
○ Always

## 2) How important is this feature when you in-play bet?

○ Not at all important
○ Somewhat important
○ Moderately important
○ Very important

# Statistics board

During a live sporting event, operators will display related information via a statistics board on the in-play betting page.
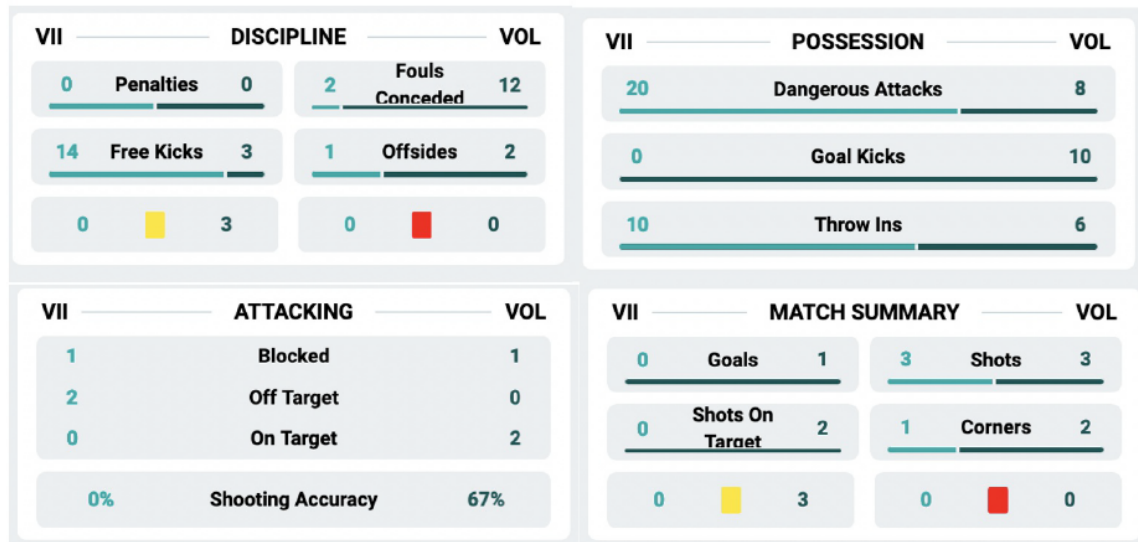


## 1. How often do you use this feature?

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Always

## 2) How important is this feature when you in-play bet?

- ○ Not at all important
- ○ Somewhat important
- ○ Moderately important
- ○ Very important
- ○ Extremely important

## 'Cash-out' feature

Cash out allows you to get money back on your bet before the event you are betting on is over. The amount of money you get back is determined at the time of cashing out and will depend upon the current likelihood of the bet winning – so it could be greater or less than the initial stake.
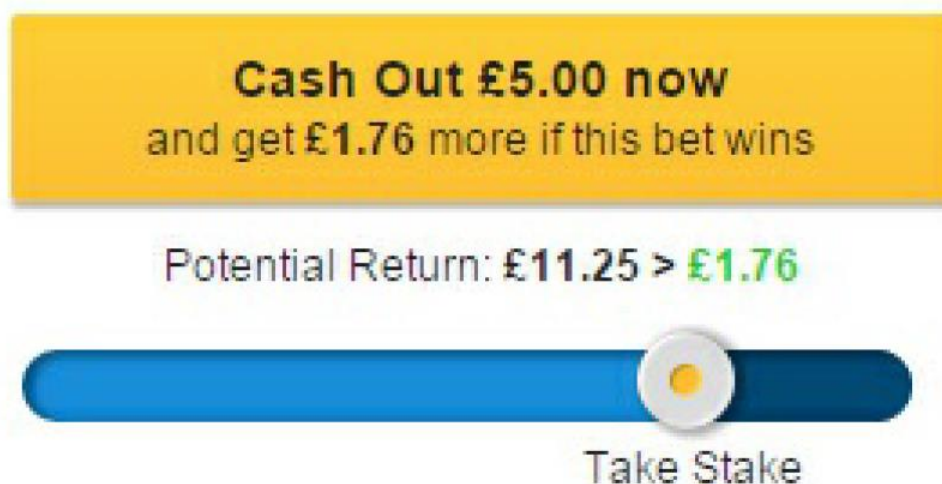


**1. How often do you use this feature?**

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Always

**2) How important is this feature when you in-play bet?**

- ○ Not at all important
- ○ Somewhat important
- ○ Moderately important
- ○ Very important
- ○ Extremely important

# Instant deposit of funds

Whilst engaging with online sports betting, bettors can deposit funds into their digital account. The deposited funds can be used straight away. In addition, bettors can often set up a 'quick/fast' deposit option that makes this process even quicker.



## 1. How often do you use this feature?

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Always

## 2) How important is this feature when you in-play bet?

- ○ Not at all important

- ○ Somewhat important
- ○ Moderately important
- ○ Very important
- ○ Extremely important

# Placing concurrent bets

In-play betting typically offers the user a high number of betting opportunities that can be placed concurrently (all at the same time).

| Match Betting Live | | |
|---|---|---|
| Stoke U23 | Draw | Fulham U23 |
| 1/7 | 9/2 | 28/1 |

| Both Teams To Score Live | |
|---|---|
| Yes | No |
| 3/1 | 2/9 |

| Match Over/Under 1.5 Goals Live | |
|---|---|
| Under 1.5 | Over 1.5 |
| 8/15 | 11/8 |

| Match Over/Under 2.5 Goals Live | |
|---|---|
| Under 2.5 | Over 2.5 |
| 1/16 | 7/1 |

| 2nd Goal Live | | |
|---|---|---|
| Stoke U23 | Fulham U23 | No Goal |
| 3/1 | 9/2 | 4/9 |

## 1. How often do you use this feature?

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Always

## 2) How important is this feature when you in-play bet?

- ○ Not at all important
- ○ Somewhat important
- ○ Moderately important
- ○ Very important
- ○ Extremely important

# The opportunity to place high-odds bets

In-play betting offers the availibility of very high-odds bets that may produce large returns if successful. Such high-odds bets may include scenarios such as match outcome and also micro-events such as the first free-kick or yellow card.

23 May 16:00   English Premier League - 2020/21 - Outright

| Man City | Man Utd | Chelsea |
|----------|---------|---------|
| 1/250 | 80/1 | 200/1 |

| Leicester | Tottenham | West Ham |
|-----------|-----------|----------|
| 200/1 | 500/1 | 500/1 |

Show more ∨

View All Today's Matches

## 1. How often do you use this feature?

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Always

## 2) How important is this feature when you in-play bet?

- ○ Not at all important
- ○ Somewhat important
- ○ Moderately important
- ○ Very important
- ○ Extremely important

# Brief survey page 1

The last step of the experiment involves you completing some short gambling measures. This should only take a few minutes - please think carefully before you answer

**What is 'tilting'? - this term relates to a state of frustration and irrationality when gambling due to experiencing losses or being overwhelmed by strong emotions. This phase is characterised by a reduction in strategic or calculated gambling and an increase in aggressive, impulsive and sporadic bets.**

Please answer the question below - think carefully about your response and try to remember how you feel when your in-play betting isn't going as planned.

Please don't select more than 1 answer(s) per row.

Please select at least 1 answer(s).

|  | 0 times | 1–2 times | 3–4 times | 5–6 times | 7–8 times | 9–10 times | more than 10 times |
|---|---|---|---|---|---|---|---|
| According to you, how many times have you experienced 'tilting' in the last 6 months? | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

Below are a number of statements that describe ways in which people act and think. For each statement, please indicate how much you agree or disagree.

Please don't select more than 1 answer(s) per row.

Please select at least 20 answer(s).

|  | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| I generally like to see things through to the end | ☐ | ☐ | ☐ | ☐ |
| My thinking is usually careful and purposeful | ☐ | ☐ | ☐ | ☐ |
| When I am in great mood, I tend to get into situations that could cause me problems | ☐ | ☐ | ☐ | ☐ |
| Unfinished tasks really bother me | ☐ | ☐ | ☐ | ☐ |
| I like to stop and think things over before I do them | ☐ | ☐ | ☐ | ☐ |
| When I feel bad, I will often do things I later regret in order to make myself feel better now | ☐ | ☐ | ☐ | ☐ |
| Once I get going on something I hate to stop | ☐ | ☐ | ☐ | ☐ |
| Sometimes when I feel bad, I can't seem to stop what I am doing even though it is making me feel worse | ☐ | ☐ | ☐ | ☐ |
| I quite enjoy taking risks | ☐ | ☐ | ☐ | ☐ |
| I tend to lose control when I am in a great mood | ☐ | ☐ | ☐ | ☐ |
| I finish what I start | ☐ | ☐ | ☐ | ☐ |
| I tend to value and follow a rational, "sensible" approach to things | ☐ | ☐ | ☐ | ☐ |
| When I am upset I often act without thinking | ☐ | ☐ | ☐ | ☐ |
| I welcome new and exciting experiences and sensations, even if they are a little frightening and unconventional | ☐ | ☐ | ☐ | ☐ |
| When I feel rejected, I will often say things that I later regret | ☐ | ☐ | ☐ | ☐ |
| I would like to learn to fly an airplane | ☐ | ☐ | ☐ | ☐ |
| Others are shocked or worried about the things I do when I am feeling very excited | ☐ | ☐ | ☐ | ☐ |

| | | | | |
|---|---|---|---|---|
| I would enjoy the sensation of skiing very fast down a high mountain slope | ☐ | ☐ | ☐ | ☐ |
| I usually think carefully before doing anything | ☐ | ☐ | ☐ | ☐ |
| ! tend to act without thinking when I am really excited | ☐ | ☐ | ☐ | ☐ |

# Brief survey page 2

**Please provide answers for the statements below. Thinking over the past 12 months......**

| | Never | Sometimes | Most of the time | Almost always |
|---|---|---|---|---|
| Have you bet more than you could really afford to lose? | ☐ | ☐ | ☐ | ☐ |
| Have you needed to gamble with larger amounts of money to get the same feeling of excitement? | ☐ | ☐ | ☐ | ☐ |
| When you gambled, did you go back another day to try to win back the money you lost? | ☐ | ☐ | ☐ | ☐ |
| Have you borrowed money or sold anything to get money to gamble? | ☐ | ☐ | ☐ | ☐ |
| Have you felt that you might have a problem with gambling? | ☐ | ☐ | ☐ | ☐ |
| Has gambling caused you any health problems, including stress or anxiety? | ☐ | ☐ | ☐ | ☐ |
| Have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true? | ☐ | ☐ | ☐ | ☐ |
| Has your gambling caused any financial problems for you or your household? | ☐ | ☐ | ☐ | ☐ |
| Have you felt guilty about the way you gamble or what happens when you gamble? | ☐ | ☐ | ☐ | ☐ |

## Please indicate how often you encounter the following situations

**When I bet on sports, there are times when........**

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| | rarely | sometimes | often | almost always | always |
|---|---|---|---|---|---|
| I am less focused | ☐ | ☐ | ☐ | ☐ | ☐ |
| I get angry | ☐ | ☐ | ☐ | ☐ | ☐ |
| My desire to win is stronger than my reason | ☐ | ☐ | ☐ | ☐ | ☐ |
| I feel as if I am losing control | ☐ | ☐ | ☐ | ☐ | ☐ |
| I throw objects around or hit my phone/keyboard | ☐ | ☐ | ☐ | ☐ | ☐ |
| I feel frustrated (bad luck, poor referee decision etc.). | ☐ | ☐ | ☐ | ☐ | ☐ |
| I have negative thoughts | ☐ | ☐ | ☐ | ☐ | ☐ |
| I click faster and hit the keyboard harder | ☐ | ☐ | ☐ | ☐ | ☐ |
| I shout or insult other people | ☐ | ☐ | ☐ | ☐ | ☐ |
| I play without thinking about the consequences | ☐ | ☐ | ☐ | ☐ | ☐ |
| I take more risks | ☐ | ☐ | ☐ | ☐ | ☐ |
| I act without thinking | ☐ | ☐ | ☐ | ☐ | ☐ |
| My decisions are no longer rational | ☐ | ☐ | ☐ | ☐ | ☐ |
| I don't feel like myself | ☐ | ☐ | ☐ | ☐ | ☐ |
| It feels like I've got no control over the game anymore | ☐ | ☐ | ☐ | ☐ | ☐ |
| I think I should stop playing but I don't manage to do so | ☐ | ☐ | ☐ | ☐ | ☐ |

| | | | | | |
|---|---|---|---|---|---|
| I unsuccessfully try to calm down | ☐ | ☐ | ☐ | ☐ | ☐ |

# GamCog

**Please provide your level of agreement with the statements below:**

| | Strongly Disagree | Disagree | Somewhat Disagree | Neither Agree Nor Disagree | Somewhat Agree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|---|
| A series of losses will provide me with a learning experience that will help me win later. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| My knowledge and skill in gambling contribute to the likelihood that I will make money | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| There are certain circumstances or situations that increase my chances of winning | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| My gambling wins prove that I have skills and knowledge related to gambling | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| When I win it is mainly due to my skill and knowledge in the area | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

# Harm Scale

Please complete the survey below:

## Section 1: Screening items

|  | Never | Less than monthly | Monthly | Weekly | Daily or almost daily |
|---|---|---|---|---|---|
| How often have you gambled in the last year? | ☐ | ☐ | ☐ | ☐ | ☐ |

.

|  | 0-1 times | 2-3 times | 4-6 times | 7 or more times |
|---|---|---|---|---|
| On a typical day of gambling how many times do you gamble or place a bet? | ☐ | ☐ | ☐ | ☐ |

## Section 2. Motivations to gamble - Please indicate to what extent you agree with the following statements.....

|  | Strongly disagree | Disagree | Agree | Strongly Agree |
|---|---|---|---|---|
| My main motivation to gamble is to win money | ☐ | ☐ | ☐ | ☐ |
| I only gamble to spend time with my friends and family | ☐ | ☐ | ☐ | ☐ |
| I gamble to help relieve stress and cheer myself up when I'm feeling down | ☐ | ☐ | ☐ | ☐ |
| I gamble because it gives me a rush and I find it exciting | ☐ | ☐ | ☐ | ☐ |

## Section 3. Gambling risks and harms

| | Never | Sometimes | Often | All the time |
|---|---|---|---|---|
| How often in the last year were you not able to stop gambling once you had started? | □ | □ | □ | □ |
| How often over the last year have you felt guilty after gambling? | □ | □ | □ | □ |
| How often over the last year have you gambled alone to relieve stress or cheer yourself up? | □ | □ | □ | □ |
| How often over the last year have you lied to your friends and/or family members about your gambling behaviour? | □ | □ | □ | □ |
| How often over the last year have you bet more money than you could afford to lose? | □ | □ | □ | □ |
| How often over the last year have people in your life told you that you should cut down on your gambling? | □ | □ | □ | □ |
| Over last year how often have you gambled while drinking alcohol? | □ | □ | □ | □ |
| How often over the last year have you not been able to pay for something because of your gambling? | □ | □ | □ | □ |

# Thanks for your time

Unfortunately, as stated in the invitation we are only aiming to study those who have engaged with sports betting in the past 6 months.

# Final page

**Thank you for taking part in this study!**

Your participation is greatly appreciated by all of the researchers involved in this project. This survey is part of a research project that aims to investigate and explore tthe psychological profile of sports bettors.

If you have any concerns or complaints about this research and wish to discuss them further please contact the lead researcher (jamie.torrance@southwales.ac.uk). Alternatively, you can contact the project supervisors Professor Gareth Roderique-Davies (gareth.rdavies@southwales.ac.uk) and Professor Bev John (bev.john@southwles.ac.uk).

If you remain unhappy and wish to complain formally you can do this through the University of South Wales' Research Governance Office Mr Jonathan Sinfield who can be contacted on 01443 484518 or emailing jonathan.sinfield@southwales.ac.uk. If you are concerned about your own or anyone else's gambling, there are relative links and contact details below for further information and assistance

- Gamcare UK:http://www.gamcare.org.uk/
- Getting help to control your gambling: http://www.gamblingcommission.gov.uk/for-the-public/Safer-gambling/Getting-help-to-control-your-gambling.aspx
- Gamblers Anonymous UK https://www.gamblersanonymous.org.uk/National
- Gambling Helpline: Freephone 0808 8020 133 8am-midnight 7 days a week
- GambleAware https://www.begambleaware.org