

EGM environments that contribute to excess consumption and harm

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Our vision: A Victoria free from gambling-related harm

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Executive Summary

Project Overview

The Victorian Responsible Gambling Foundation engaged CQU's Experimental Gambling Research Laboratory to investigate how different environmental contexts of Electronic Gaming Machines (EGMs) influence gambling consumption and harm. The aim of the project was to systematically investigate the environmental context of online, mobile and venue-based EGM gambling to determine what combinations of environmental and contextual features are most associated with problem gambling, and also to determine what environments are attractive to players who gamble recreationally and without apparent problems. This information will help policy makers and operators to devise and encourage gambling environments that are safer and more enjoyable for players.

This project was undertaken to examine how the environment, broadly conceived, influences EGM gambling preferences. Gambling is an entertainment product, and like other forms of entertainment, an EGM is enjoyed within a larger environment that forms an important part of the overall experience. In the conceptualisation of the project, we made a fundamental assumption. In deciding to gamble on an EGM, players must consider: 1) The Platform (whether to gamble online, on a smart device or at a physical venue), 2) The Provider (e.g., whether to gamble in a place where the food is cheap, the air-conditioning is nice, etc.), and 3) The Machine (e.g., whether the chosen game has attractive sounds, quality animations, etc.). Each of these broad levels of the choice equation helped to guide our search for specific elements of the *servicescape* (Bitner, 1992); or the environment that surrounds EGM gambling. Logically, a player must make each of these decisions sequentially, either explicitly or implicitly, before arriving at a specific environmental context in which they can enjoy a gambling product.

Our premise was that EGM gambling could be considered as an entertainment product that is consumed within a specific environmental context with various measurable features. Our goal was to understand the basic preferences people have for various environmental features in the servicescape. Specifically, a discrete choice experiment was devised as a final study in the project to determine the relative importance of each feature of choice, as well as to discover distinct Market Segments that align with different environmental preferences. As this research revealed, different sets of gamblers prefer different types of environments.

Methodology

This project was organised and guided by a three level model of environmental choice (i.e., platform, provider and machine). A literature review was conducted and qualitative data was gathered to determine the specific aspects of the environment that players nominate as the most important to their gambling choice. For accuracy in determining what elements to consider in our analyses, it was important to gather a large set of potential features that gamblers deemed to be important. Once gathered, we selected the most frequently mentioned features of the environment to create a large hypothetical set of gambling choices. In a large-scale survey, gamblers chose amongst these sets of environments, and our statistical analyses allowed us to discover the elements that implicitly ranked most highly in their choices, as well as the existence of four distinct market segments that characterised the choices of different types of gamblers.

The aim of the project was to deliver new knowledge about three interrelated aspects of gambling environments. First, we aimed to understand the environmental elements that EGM gamblers consider

as important in choosing their gambling game. Second, we aimed to understand the relative importance that people attach to each of the most frequently mentioned elements of environmental choices. Third and last, we aimed to understand if there were different market segments that characterise sets of preferred environments.

Literature Review

The literature review was conducted to survey past work on EGM environmental features that influence gambling decisions, and was organised around our three logical levels of contextual focus: platform, provider and machine.

We found that there is minimal research on the relative attractions of platforms: including internet, mobile and land-based. However, the proliferation of online and mobile gambling opportunities from offshore providers has generated concern (Gainsbury & Wood, 2011). The accessibility and anonymity of online and mobile EGM gambling are features that likely appeal to people with gambling problems (e.g. Thomas, Mora, & Rive, 2010).

With regards to selecting a venue provider, we found that important elements include venue lighting and background sounds (e.g. Stark, Saunders, & Wookey, 1982; White et al., 2006), and non-gambling attractions (Hare, 2009; Hing & Haw, 2010; White et al., 2006), the opportunities to socialise (Thomas et al., 2010; White et al., 2006), and the provision of a safe-place to gather (Australian Productivity Commission, 1999; Thomas et al., 2009).

Lastly, there is a great deal of work on attractive features of the games. Attractive features include quality music (Delfabbro, 2006), graphics and themes (Livingstone, Woolley, Zazryn, Bakacs, & Shami, 2008), as well as the availability of multiline play (Delfabbro, 2008), jackpots (Delfabbro, 2008; Hing & Haw, 2010), bonus features (Livingstone et al., 2008), bill acceptors (Australian Productivity Commission, 1999) and small minimum bet sizes (Livingstone et al., 2008).

The literature review suggested that we need a better understanding for how environmental features may be differentially attractive to players with problems, and therefore highlighted the need for this present study. Moreover, the literature review was helpful in providing some initial materials to optimise the coverage in the next stage of qualitative interviews.

Study 1

The qualitative interviews were produced from an interview schedule that was informed by our literature review. Our schedule included open-ended questions probing for features of the platform that EGM players find attractive. For example, players at a club were asked: "Have you ever gambled at casino? Why don't you go there regularly instead?" Our purpose was to gather as many spontaneous mentions of environmental features as possible, without unduly influencing the participants in the answers they provided. In this way, the qualitative interviews provided us with detailed features that players nominate as important, as well as the frequencies of each feature that was mentioned.

These results provided us with many detailed features of the environment that addressed the **first aim** of the study. They also generated some insights into the features that are most commonly mentioned by players with problems, which included: 1) choosing a place to play based on perceptions of winning more at one venue compared to another, 2) having a wide variety of games to play, and 3) choosing an environment that would limit losses (e.g., via simulated gambling online, or a venue with limited access to cash via ATMs).

Study 2

To understand what features are most important to EGM players, we focused on those features that were most frequently mentioned in the qualitative interviews and/or appeared prominently in our literature review. Using a relatively circumscribed number of environmental elements was a necessity, but we considered it reasonable to assume that the most frequently mentioned elements were also likely to be the most important.

The environmental choice domains that were preserved for the discrete choice experiment, as well as their associated features, included: 1) gambling on/at (*mobile phone, tablet device, casino, hotel or pub*), 2) at or near (*home, work, the shops, or somewhere new*), 3) other people (*there is nobody else around, gambling with a group of friends, or amongst new people*), 4) general sounds (*the place is relatively quiet and still or sounds and noises come from a variety of sources*), 5) the place has pleasant (*music, air conditioning, or lighting*), 6) refreshments are (*free or cheap or high quality and delicious*), 7) the room (*is large and spacious or small and cosy*), 8) the game has (*quality sound, bright colours, pastel colours, or quality animations*), 9) The game is (*a new and unfamiliar design or a classic well-known design*), 10) the game has (*small minimum bet sizes or large maximum bet sizes*), 11) there are options to play (*a wide variety of games or just a few games*), 12) the environment feels (*safe and secure, like you're well looked after, or private for gambling in peace*). Domain 1 tested elements of platform choice, domains 2-7 tested elements of provider choice, and domains 8-12 tested for the utilities associated with choice of a specific game.

These 12 choice domains and their associated features were material for constructing vignettes that described different gambling environments. Survey participants were asked to choose repeatedly from 15 sets of three quasi-random vignettes that were constructed from these feature sets. The results of their discrete choices amongst these vignettes allowed us to statistically infer those features that weighted most heavily in their choices; thereby revealing the relative importance of each domain to each participant. Moreover, we were able to observe which features from these 12 domains each player preferred (e.g., who preferred gambling at a club compared to a casino).

Results

Importance, Utilities & Segments

The **second aim** of the study was to estimate the importance that EGM gamblers attach to each domain in the choice equation. When considered as a homogenous group, our analysis of players' discrete choices revealed that:

- Gamblers attach the greatest importance to the platform on which they gamble; either on the internet, a smart device, or at casinos, clubs, hotels or pubs.
- Gamblers attach relatively strong importance to whom they gamble with; such as friends, new people, or whether they gamble alone.
- Gamblers attach relatively strong importance to whether the games they play have small minimum bet sizes.

Our results also revealed more specific aspects, or features, of the domains that players generally preferred. The main effect of our utility calculations suggests that the ideal environment for the average gambler includes: gambling at a club near home, with a group of friends, in a relatively quiet place with pleasant air-conditioning, with cheap food available and a large space to play in, on a

classic game with quality animations and small bet sizes, where you feel safe and secure and there is a wide variety of other games to play when you are done.

There were many detailed differences in the preferences expressed by players with existing gambling problems. Some of the largest differences included that:

- Problem Gamblers are much less likely to give weight to the company they share; such as being alone, with a group of friends or with new people.
- Problem Gamblers place less weight on the food and drink offerings, although (like others) they prefer offerings which are cheap rather than quality.
- Problem Gamblers show a clear preference for larger venues in comparison to others, and particularly in comparison to recreational/non-problem gamblers.
- Problem Gamblers show a preference for quality sounds and bright colours in games in comparison with others.
- Problem Gamblers are less concerned about available (small) bet sizes on machines in comparison to other gamblers.

The **third aim** of our project was to address the potential for Market Segments of environments that appeal to different types of gamblers. Market segments describe a mapping of subsets of the gambling population with preferences for particular combinations of environmental elements. **Four Market Segments were found: Social, Internet, High Roller and Value.** The chosen names reflect some of the largest differences that characterise each segment. We found that Problem Gamblers were over-represented in both the High Roller (46.7% of PGs vs 25.3% of all) and Internet segments (21.6% of PGs vs 16.7% of all). In contrast, Problem Gamblers were less common in the Social and Value segments.

Predictors of Segment Membership

We were interested to understand who was attracted to what types of environments. The Social segment was picked as the base level of comparison, since it had the largest membership (34.2% of all) and the second smallest proportion of PGs (17.7% of PGs). Our findings revealed that:

- Male gamblers, compared to females, were twice as likely to be in the Internet segment (odds = 2.04), much more likely to be in the High Roller segment (odds = 1.77) and moderately more likely to be in the Value segment (odds = 1.24) compared to the Social segment.
- Younger gamblers were much more likely to be in the Internet segment (odds = 1.03), the High Roller segment (odds = 1.04) and the Value segment (odds = 1.01) when compared to the Social segment. As an example, a gambler who was 10 years younger than another was 40% more likely to be in the High Roller segment compared to the Social segment.
- People with many gambling problems were moderately more likely to be in the Internet segment (odds = 1.11) compared to the Social segment. Each change in PGSI category was associated with an 11% greater likelihood of being in the Internet segment compared to the Social segment.
- People with many gambling problems were much more likely to be in the High Roller segment (odds = 1.28) compared to the Social segment. Therefore, each change in PGSI category was associated with a 28% greater likelihood of being in the High Roller segment compared to the Social segment.

Lastly, we explored several psychological variables that are known to be associated with gambling problems and the risk for developing gambling problems. Among the measures we explored, we found that:

- PHQ4 (which measures depression and anxiety) was a significant predictor of membership in the High Roller segment (odds = 1.24). The top 5% of PHQ4 scores had a 47% greater chance of membership in the High Roller segment compared to the Social segment.
- BIS15 (which measures impulsivity) was a marginally significant predictor of membership in the High Roller segment (odds = 1.19). Those who scored in the top 5% on the BIS15 had a 36% greater chance of membership in the High Roller segment compared to the Social segment.
- The “Escape” factor of the Four Es predicted membership in the High Roller segment compared to the Social segment (odd = 1.34). People who scored in the top 5% on the Escape factor had a 67% greater chance of being in the High Roller segment compared to the Social segment.

Our findings suggest that there are many detailed considerations, but also a few common elements that people nominate as important in choosing EGM gambling environments. Players attached the greatest importance to what platform they use to gamble (internet, mobile, club, hotel/pub), but also viewed many other aspects of choice, such as who they gamble with, as important considerations. Problem gamblers showed some preference in environments, for instance, in preferring larger venues. We found that there are four Market Segments that can describe player preferences: the Social, Internet, High Roller and Value segments. People with more gambling problems tended to prefer the Internet and High Roller environments, and moreover, common demographics associated with problem gambling, such as being male and young were also associated with these market segments. Lastly, common psychological scales associated with problem gambling, such as depression and anxiety, impulsivity and a need for “escape”, were uniquely associated with membership in the High Roller segment.

This project made a contribution through addressing three aims envisioned for the project. First, we found many detailed features of the environment that EGM players consider to be important in making choices about their gambling. Second, we found that some of these considerations, such as what platform to gamble on, are particularly important. Last, we discovered four segments of EGM environments we called Social, Internet, High Roller and Value. There was a host of convergent evidence that the High Roller segment was particularly associated with problems, and some lesser evidence that the Internet segment was associated with gambling problems. On a more positive note, the Social and Value segments of the market are contrarily associated with fewer problems. Encouraging the growth of these environments at the expense of the others may make for safer and more enjoyable gambling for players.

Background & Literature Review

Scope

Gambling problems are often located within the individual. The 'problem gambler' or 'disordered gambler' is the source of the problem due to individual psychological and cognitive factors that must be fixed or cured. However, gambling problems are also a product of the environmental context in which gambling occurs. For example, gambling problems are largely unheard of in cultures, such as Saudi Arabia, that do not allow legal gambling and have cultural mores against it (U.S. Department Of State, 2004). Many studies have clearly shown that the environment in which gambling occurs does matter (e.g., Rockloff & Dyer, 2007a; Rockloff, Greer, & Fay, 2011). It is important to understand what specific aspects of the environment encourage or discourage the development of gambling problems. As a first step, this literature review develops a framework for a well organised approach to researching the environment surrounding EGM gambling.

As everything outside of the mind of the gambler might be considered the 'environment', it is important to carefully delineate the aspects or landscape of features that might contribute to poor or better gambling decisions and product selections. One logical arrangement is to consider the hierarchy of decisions that must be navigated in order to choose to play a particular game within a defined time and space. This logic leads us to consider that first someone has to choose how to gamble, next where to gamble and lastly, the game itself. By proposing a decision hierarchy framework, understanding why gamblers choose to gamble in certain environments can be systematically explored.

Elimination-by-Aspects

According to Tversky's (1972) Elimination-by-Aspects model (EBA), people attempt to make an optimal decision from a number of options (such as gambling choices) by considering their various aspects, features or attributes in a sequential process of elimination. Each alternative option is viewed as a collection of aspects that describe the potential choices. People decide which aspects are most important to them or meet their needs, and options that do not contain these aspects are progressively eliminated until the individual arrives at a final choice. The EBA model has been heavily utilised in marketing literature and is often used to model brand choice behaviour (Manrai, 1995). This decision-making model is appropriate for describing the process that gamblers apply when selecting their optimal EGM environment.

The gambling literature shows that individuals value many different aspects or features of an EGM environment (e.g., Hing & Haw, 2010). However, the literature is not informative with respect to understanding which features are the most important, since it has presented no organisational structure or overarching themes. The sequential nature of decision-making by aspects proposed by Tversky (1972), however, suggests the sequential nature of decisions regarding gambling environment choices is appropriate, as it has proven useful in describing many other consumer choices.

In order for an individual to decide on the exact environment in which they wish to gamble, the individual must employ a logical hierarchy-based decision tree (either consciously or implicitly), firstly focussing on the platform on which to gamble; secondly the provider of the gambling opportunities; and finally, the game on which to gamble. The aspects or features from which one must choose via a process of elimination are contained within each of the three hierarchical levels: how to gamble (platform); where to gamble (provider); what machine/game to gamble on (game). This framework will

be referred to hereafter as the Hierarchy of Gambling Choices (HGC). It is worth noting that our definitions for “platform”, “provider” and “game” are given a specific meaning in this report, as the platform extends to physical venues and not just devices; and provider refers to locales associated with a brand. Nevertheless, these simple descriptors are useful as an organising principle.

The logical hierarchy of platform, provider and game encapsulated in the HGC is fed by information availability, including how much information one currently possesses about the environment and the investment it would take in order to investigate further alternatives. For example, figuring out the distance to a venue requires very little investment on the part of the decision-maker, therefore, the elimination of venue options that do not fit the distance criteria are easily done. However, as one proceeds further down the levels of the environmental hierarchy, more investment is needed to evaluate and eliminate options as certain characteristics are unable to be observed without going to a venue or logging onto a website. This includes features such as whether the venue is crowded or whether a game with a particular theme (e.g., Egyptian) is located in the venue. The economics term for this type of product that requires consumption in order to determine its utility is an ‘experience good’ (Nelson, 1970). Some aspect of the gambling environment cannot be evaluated or appreciated without at least once experiencing it.

Only through experience and practice can a gambler decide if the environment is ‘right’ - or at least satisficing - for them. If it is not good enough, they must choose again. They might choose to change games, or go to a higher level and change providers, or a higher level still and change platforms. Wherever they choose to ‘start over’ for an entirely new environment, they’ll need to (logically) progress back up the hierarchy before changing games. An important implication for this logic is that it is easier to change games than changing providers, and likewise changing a provider is easier than choosing a new platform, because each higher level choice naturally implies that the player must once again make new lower level choices.

To summarise, dividing environmental characteristics into these three hierarchical levels of choice allows a more logical and focussed context in which to view the numerous features that may attract and maintain EGM gambling behaviour. The following review seeks to provide an understanding of the appeal of certain environmental features, organised logically into three choice-driven levels. In doing so, we can make better predictions about what particular combinations of environmental features may be attractive to gamblers as a whole. In addition, we are also able to examine the kinds of EGM environments that are likely to contribute to excessive consumption and gambling-related problems. Due to the relative lack of EGM-specific literature this review will draw on literature related to EGM environments, but will also draw from wider research on other types of gambling where prudent.

Gambling Platform Features

The HGC model states that the first choice a prospective EGM gambler is to make is how to gamble. This is the highest level decision and the choice made by the gambler will dictate the following levels that one moves through in the hierarchy. Whilst EGM games used to be a solely in-venue gambling option, they are now available online, which includes mobile devices and smart internet-connected devices such as televisions. This forces a dichotomous choice of online or land-based EGM play. As the EGM games offered to players may be technically identical across betting platforms (by virtue of modern cross-platform programming tools), Lucas (2003) argues it is the pull of the surrounding environment that influences this choice of platform.

To explore online gaming preferences, we draw from Young et al.’s (2000) and Cooper’s (1998) work in online sexual activities. Young et al. (2000) and Cooper (1998) propose that the stigma felt by consumers of sexual content pushes them online due to the anonymity, affordability, convenience, and feelings of escape the online platform offers. Similarly, there is a marked stigma felt by some

gamblers (Donaldson, Langham, Best, & Browne, in press) and the above features sway some gamblers' choices to play online rather than in-venue (American Gaming Association, 2006; Griffiths, 2003; Wood & Griffiths, 2008; Wood & Williams, 2009). A desire for anonymity has been linked with problem gamblers in land-based venue research, who show a preference for venues that have gaming room entries that are obscured from passers-by and other venue patrons (Thomas et al., 2010). Online gambling may therefore capitalise on the opportunity to gamble without fear of social judgment.

Convenience and accessibility are the most commonly cited reason for choosing to gamble online over in-venue (Wood & Williams, 2009). Marshall (2005) argues the more accessible gambling opportunities are in the community, the more people will choose to gamble, with a strong association between EGM density and gambling participation. This is consistent with other public health research that shows accessibility of alcohol and cigarette outlets; as well as illicit drug availability; increases public use of these substances (Griffiths, 1999). Online gambling frequently transcends geographic boundaries, with gamblers able to access gambling opportunities from lightly regulated jurisdictions. In addition, online gambling also provides generally unrestricted access to all segments of the population.

Australian prevalence studies have shown that approximately 5% of adolescents gamble online, and there are currently few controls that make gambling websites inaccessible to underage gamblers (Delfabbro, Lahn, & Grabosky, 2005; Dowling, Jackson, Thomas, & Frydenberg, 2010; Jackson, Dowling, Thomas, Bond, & Patton, 2008). Other people who may choose online gambling by default are drug or alcohol abusers that are not tolerated in other venues; gamblers that have been barred or self-excluded from land-based venues; or those that have intellectual disabilities that make it difficult for them to access gambling.

Affordability is another aspect of online gambling that is related to access. Payout rates for online versus offline gambling can be substantially different, given that in-venue payouts rates are tightly controlled and online EGM gambling is prohibited. A variety of websites offer low stakes gambling, opening the market to those that may not be able to afford to gamble in-venue. In fact, some websites offer free gambling or free monetary credits to beginner gamblers in order to make online gambling appear even more affordable and this 'simulation gambling' may increase the likelihood of later participation in real cash-based gambling (Griffiths, 2003).

Gambling Provider Features

Following a consumer's initial attraction to a particular gambling platform, the HGC logically states that the provider must then be selected. As we proceed down the hierarchy, the number of aspects (or features) becomes greater due to the nature of the product, i.e., there are more gambling providers than there are platforms, and there are more EGM games - again - than there are gambling providers that are accessible to a gambler. However, as the level and choice becomes more refined despite the proliferation of options, there is a greater ease in the ability to substitute one option for another. In this section, we will discuss substitution in terms of online gambling: 'why does one choose a particular website?', and in terms of land-based gambling: 'why does one frequent a particular pub, club, hotel or casino?'.

An online provider that offers an experience as close to that found in a high quality land-based venue is the most highly valued consideration when selecting a particular website or app (Abarbanel, 2013; Lombard & Ditton, 1997; Wood & Williams, 2009). This may include images of glamorous interiors, avatars of staff and fellow gamblers and the sound of coins falling out of the machine slots (Abarbanel, 2013). Other important features include the reputation of the provider and their financial reliability (Wood & Williams, 2009).

Whilst a manufactured atmosphere is important for the choices of online gamblers, land-based gambling venues' physical architecture has likewise been shown to influence gamblers' ratings of venues. Mayer and Johnson (2003) found that the features that had the greatest effect on ratings of casino atmospheres were the layout and theme. Websites and apps are now able to mirror these features. When examining the variables that make up the atmosphere of a gambling venue, there are two architectural designs in particular that have been applied to gambling research: Kranes' (1995) 'playground' style and Friedman's (2000) 'traditional' style. The Kranes (1995) model emphasises large spaces with high ceilings, natural light, organic features such as plants and water, and more of a focus on showcasing a theme rather than the gaming machines. In contrast, the Friedman (2000) model is known for low ceilings, dim lighting and an emphasis on the machines as the main attraction packed tightly into twisting and turning rows.

Finlay, Marmurek, Kanetkar, and Londerville (2007) used video simulations to explore how venue design affects gambling behaviour. In a traditional Friedman-style gaming room, the likelihood of participants gambling more than they had planned (i.e., at-risk gambling) increased when ambient casino sounds predominated but not when rock music was played; with monotone colours schemes; and when EGMs were grouped in themes rather than randomised. There was no effect for these environmental elements noted in Kranes (1995) style rooms. However, venue features that increased at-risk gambling - regardless of room design - were flashing lights over stationary lights, and crowded venues over uncrowded venues. This highlights the policy implications of venue choice, showing that regardless of whether the chosen platform is online or in-venue, certain provider-specific features of the gambling environment may encourage risky gambling.

A strong theme that emerged in relation to specific provider choice, like platform choice, was the convenience and accessibility of venues. The Victorian Gambling Study of 15,000 people showed that of those that had played EGMs in the last year, over half travelled less than 5km to access their preferred venue. Problem gamblers were more likely than any other group to rate "easy to get to" and "close to home" as one of their top three preferred features (Hare, 2009). Similarly, a preference for extended opening hours was also found to be significantly and positively correlated to a respondent's PGSI score in the 2009 Victorian Gambling Study. In fact, 8.6% of problem gamblers rated opening hours as one of their top three preferred features compared to only 0.28% of all other EGM gambler.

In discussing accessibility, the Australian Productivity Commission (1999) refers to the feeling that a venue is a safe place as falling under the umbrella of social accessibility: "...the sense in which a venue provides a non-threatening and attractive environment to groups who might otherwise feel excluded" (p.C8.6). A small qualitative study using purposive sampling methodology found that this feature of safety was especially the case for single women, with woman from a regional area of Australia saying about her local club, "A woman by herself can go nowadays...it is very safe they have security there, they have door men, and if you (are) there late at night they escort you right up to the car" (Thomas, Allen, Phillips, & Karantzas, 2011, p.7). The improvements in service provision that offer a perceptively safe environments for patrons may also be a contributing factor to the levelling out of gender participation in gambling over the past decade (Brown & Coventry, 1997; Surgey & Seibert, 2000). Online gambling may completely circumvent this issue of physical personal safety, although research has failed to investigate this as a motivation for preferring online providers.

Another prominent theme in the literature is choosing a venue as a place for a social outing, with the preference towards the nature of this social engagement differing by problem gambling status. Gambling with others can be protective of gambling problems (Clarke et al., 2007) and, in general, EGM players are less likely to gamble alone than those that gamble on other modes, such as horse racing (Bernhard, Dickens, & Shapiro, 2012). Those that prefer to gamble alone are more likely to be problem gamblers (Fisher, 1993; Griffiths, 1991) and report that their gambling started as a social activity, but over time it became a solitary endeavour (Thomas et al., 2010). Nevertheless, problem

gamblers in treatment speak of the importance of the social aspect of gambling (White et al., 2006). In a qualitative study, one participant mentioned her hatred of going home to an empty house and that gambling at her local venue was a way to postpone this eventuality (White et al., 2006). This illustrates that it may not be the opportunities for socialising with fellow venue patrons or staff that gives this feeling of gambling as a 'social' activity that people prefer, but simply being surrounded by others.

To illustrate how a preference for 'social' EGM providers may influence gambling behaviour, Rockloff and Dyer (2007a) experimentally manipulated the presence of others whilst gambling. When participants could see and hear sounds associated with winning EGMs, they increased the number of games played and their expenditure. This finding has been built upon, with studies showing that when a (simulated) venue is crowded gambling intensity rises (Rockloff et al., 2011).

Studies that include problem gamblers often report that easy access to an ATM in the gambling venue is a preferred feature. Non-gamblers that frequent clubs, casinos and other venues that have gambling facilities have significantly lower rates of ATM use than regular and recreational gambler (McMillen, Marshall, & Murphy, 2004). The removal of ATMs from venues altogether was seen by problem gamblers in treatment to be one of the best modifications to venues for harm minimization (White et al., 2006). This is echoed in research into online gambling provider preferences, with deterrents including a perceived risk of rapid overspending (i.e., through the use of direct bank transfer or credit card as opposed to dealing with a cashier or finding an off-site ATM; see Wood & Williams, 2009).

Gaming Machine Characteristics

In exploring consumer preferences of gambling environments, the next and last level in the HCG model is that of the machine or game. This level has the greatest number of options but is also the most easily substitutable. An EGM gambler is more likely to see changing machines as the easier option than changing venues or platforms. The following discussion will focus on EGM design features and the effect these features have on different subsets of gamblers and gambling preferences.

The effect of sound in a retail setting has been studied, with results showing that music attracts customers and increases feelings of pleasure (Garlin & Owen, 2006). Cross disciplinary work has shown that when sounds are paired with visual stimuli, both work to enhance one another's effectiveness as well as increasing measures of physiological arousal (Hébert, Béland, Dionne-Fournelle, Crête, & Lupien, 2005; Iwamiya, 1994; Jørgensen, 2008; Lipscomb & Zehnder, 2004; Nacke, Grimshaw, & Lindley, 2010). It has been demonstrated experimentally that playing EGMs with the sound effect on, as opposed to on mute, lead to larger skin conductance responses and higher ratings of enjoyment (Dixon et al., 2013). In turn, problem gamblers show much higher levels of arousal than non-problem gamblers when in a gambling venue (Anderson & Brown, 1984) leading to speculation that EGM sounds and graphics may have a more pronounced effect on that population. In addition, the frequent sound effects associated with winning spins (and lack of losing sound effects) has been shown to increase the self-esteem of the gambler by drawing attention to the win (Griffiths & Parke, 2005; Rockloff & Dyer, 2007a) and potentially associating this feeling with the winning sounds.

In terms of the preferred graphics, Parke and Griffiths (2007) argue that familiarity is what attracts EGM gamblers to machines. There is little research into what recreational gamblers prefer but focus groups and interviews with problem gamblers show that most prefer older-style games that they have been playing since they first began gambling. One recovering problem gambler related her preference to being "comfortable with what I'm playing", with another saying it was about "knowing where you are" (Livingstone et al., 2008, pp. 100-101). Many talked about still preferring the machines on which they had "learned the ropes" (Livingstone et al., 2008, p. 101), supporting assertions that many problem gamblers are 'escape' gamblers that attach to particular, often classically themed, machines (Australian Productivity Commission, 2010). However, a small number of problem gamblers prefer

newer machines, saying that they get bored playing the same machine and like to try something different (Livingstone et al., 2008). This finding illustrates the diversity of EGM gamblers.

Jackpots have also been seen to contribute to gamblers' machines preferences. Data from the Victorian Gambling Study shows problem gambling status was correlated with a preference for linked jackpots as a venue feature (Hare, 2009). Delfabbro (2008) showed that 30% of problem gamblers go to particular venues to play linked jackpot machines compared to 3% of non-problem gamblers. However, the reasons as to why jackpots are more attractive to problem gamblers have been less well explored. One hypothesis is that, similarly to national lottery jackpots, where huge numbers of tickets are sold, jackpots offer the possibility of a life-altering win, which may be a more ardent desire for those struggling with gambling problems (Australian Productivity Commission, 2010; Griffiths & Wood, 2001). Rockloff and colleagues demonstrated - both experimentally and through in-venue observation - that jackpots, as well as being more attractive to at-risk gamblers, also intensify gambling behaviour across all risk groups (Rockloff et al., 2014).

Free spins – a type of bonus feature that results in a certain number of games played being free of charge – also appear to be highly valued by EGM gamblers. Livingstone et al. (2008) found that the majority of the recovering problem gamblers in their sample rated free spins as the most attractive feature of their favourite EGM. Walker's (2004) earlier work showed gambling "double or nothing" (a feature) was also popular with high risk players. Research also showed that there are many EGM gamblers whose main motivation for playing is less about winning money but more about getting value for money in terms of time on device. Free spins allow these gamblers to increase their time on device without having to insert more money into the machine (Livingstone et al., 2008; Schüll, 2012).

Conclusion

New technology and the constantly evolving features of gambling platforms, providers and games present a challenge for understanding how the wider EGM gambling environment influences the consumption of EGM-type products. Breaking down the features of the gambling environment into three levels of choice based on Tversky's (1972) EBA model, and recognising the reality of EGM gambling as an experience-good (Nelson, 1970), presents a coherent way to organise the innumerable features that may attract consumers to particular EGM environments and subsequently influence their gambling behaviour.

Despite the possibility that for certain consumers some higher level decisions may be implicit and driven by lower level preferences; e.g., a desire to play a favourite machine that is only available at one particular land-based casino; the higher level choice remains temporally superior, and lower level preferences will not drive unrealistic and impractical choices. Therefore, whether these three levels of choice are applied implicitly or explicitly to a consumer's gambling decision, higher level choices precede lower level choices and follow the order: platform, provider and machine.

By understanding the appeal of each environmental feature, organized logically into the three choice-driven levels of the HGC model, we can make better predictions about what particular combinations of environmental features may be attractive to gamblers as a whole. For example, if a particular EGM was removed from a venue, and it happened to be a gambler's favourite and most utilised machine, the HGC would predict that the gambler is more likely to simply choose another game as this is the easiest and most substitutable level of the gambling hierarchy. The alternative would be to change providers (to another gambling venue that may have that particular machine), which takes more effort, or to go to yet another level higher and expend more effort to change platforms.

In addition to assisting to the understanding of gambling choices, the HGC model also provides a framework to examine the kinds of EGM environments that are likely to contribute to excessive consumption and gambling-related problems. The HGC model presents a coherent and cohesive framework for understanding the EGM gambling environment and may ultimately inform gambling policy and regulation.

Project Rationale and Aim

The literature review (above) revealed an emerging understanding of how environmental features and contexts influence EGM gambling, but past research tended to focus on isolated elements of the environment or specific machine characteristics. There is a need to understand EGM gambling environments using a more holistic approach, where environments are conceived as the collective influence of a sequence of elements. People cannot gamble on EGMs by choosing all of the features that they prefer to create an ideal environment. Instead, people choose from pre-configured options for their gambling choice. For example, if they gamble at home on the internet, this choice may preclude gambling amongst friends who might be at the club or casino. Therefore, there is a need to use new methods that better reflect peoples' natural expressions of all the environmental features that are important to them, and to also understand their choices in the context of whole environments.

The field of marketing research has well-developed paradigms for investigating the consumer experience. Our task is similar to marketing research, aimed at understanding the desirable features of a product. When shopping for a car or shampoo, people need to decide from amongst a number of options that have various desirable attributes. People cannot choose an ideal car or shampoo by selecting all the features they desire and mixing them to create a perfect product. A Discrete Choice Experiment (DCE) is a tool for understanding how people value the various elements of a product when people can only make gestalt judgements by choosing amongst various products with pre-configured options or features. The desirability of each feature is revealed implicitly and statistically through their product choices.

Our purpose was to investigate how EGM environments, broadly conceived, influence peoples' gambling product choices. The project makes a contribution by addressing three main aims:

- 1) To discover the detailed features of the environment that players consider as important.
- 2) To discover the relative importance of environmental features in determining gambling choices.
- 3) To test for market segments that describe player preferences for EGM environments, and to describe the personal and psychological characteristics of people who prefer each segment.

The first study, as described in detail in the next chapter, addressed the first aim. Using an embedded mixed-methods approach of semi-structured interviews combined with some survey data, regular EGM players were asked about the features of the environment that they considered as important and desirable in gambling.

The second study was a focused exploration on frequently mentioned environmental features found in Study 1. Study 2 was conducted as a Discrete Choice Experiment, which presented several different hypothetical gambling environments, each composed of a number of features, and asked survey respondents to make choices about their preferred environments. Using this technique, it was possible to address the second aim by inferring (statistically) the relative importance of each feature in determining player choices. Lastly, Study 2 also addressed the third aim by analysing the resulting utilities attached to each feature to determine market segments for EGM environments. Each player had estimated preferences for preferred features, and clustering was used to extract groups of participants who had unique preference profiles. Lastly, regression was used to predict segment membership from personal characteristics of gamblers, including problem-gambling risk status (PGSI

scores) and other demographic and psychological factors associated with gambling problems (e.g., male-gender, impulsivity, etc.).

In addressing the three aims, we explored at each step how player preferences for environmental features differed according to respondents' problem gambling status. Some environments are more attractive to recreational gamblers, whereas other environments are more attractive to players with gambling problems. This project contributes to our understanding of safer gambling environments that appeal most to players not experiencing problems, and who are likewise less at risk for developing problems.

Study 1: Qualitative Interviews

Approach

Methodology

Study 1 explored the gambling preferences of EGM gamblers using an embedded mixed methods approach. Firstly, we undertook semi-structured interviews with 59 EGM participants to investigate which EGM environmental features they preferred and the reasons for these choices. Figure 1 provides a visual representation of the interview prompts. Following the interview, participants were asked to complete the Problem Gambling Severity Index (PGSI; Ferris & Wynne, 2001) to determine their level of gambling risk (Holtgraves, 2009) along with a brief demographics questionnaire. Together, these methods enabled us to identify the environmental and contextual features that EGM players prefer and whether or not these choices associated with their gambling risk status. Within our sample, just under half of the participants (42%) were classified as low-risk (0-2 on PGSI scale) and just over half of the sample (58%) were classified as higher-risk gamblers (3+ on the PGSI scale). These data were analysed to investigate the following research questions:

- 1) What are the commonly identified characteristics of preferred Electronic Gaming Machine (EGM) environments?
- 2) What differences exist between low-risk and high-risk gamblers in preferences for EGM environments?
- 3) How do low-risk and high-risk gamblers justify or explain their EGM environment preferences?

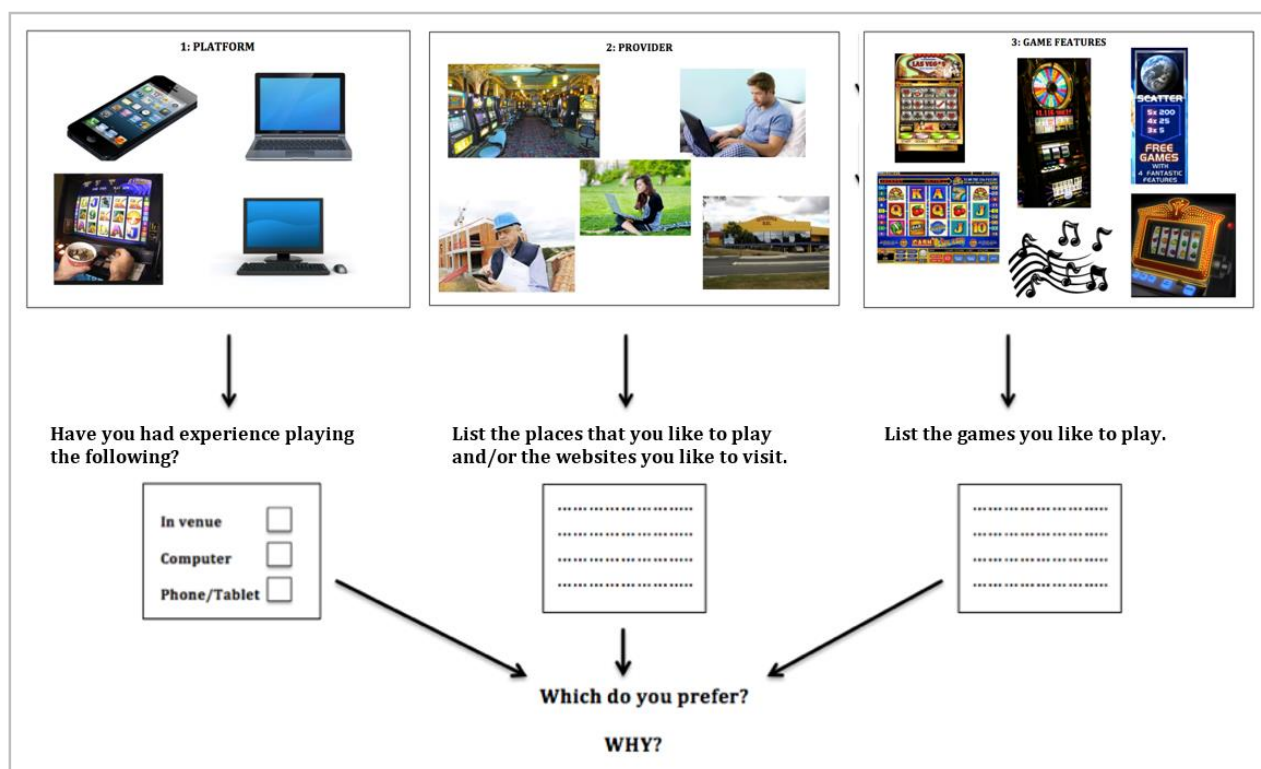


Figure 1. Visual representation of interview structure

Participants

The participants in this study (N = 59) included 31 males and 28 females aged between 20 and 81 years old ($M = 55.2$, $SD = 17.0$). Participants were from diverse backgrounds (58% born in Australia, 7% born in Vietnam, 5% born in Lebanon, and 30% from a mix of other ethnicities). Within the sample 27% had played EGMs online or on another portable electronic device. Table 1 provides a summary of the sample characteristics.

Table 1. Study 1 sample characteristics

PG Status	Born	Gender	Age	Count
Low	Australia	Male	Below 55	3
Low	Australia	Male	55 or Above	1
Low	Australia	Female	Below 55	1
Low	Australia	Female	n/a	1
Low	Australia	Female	55 or Above	3
Low	Vietnam	Female	55 or Above	1
Low	Other	Male	55 or Above	1
Low	Other	Female	Below 55	1
Low	Other	Female	n/a	1
Low	Other	Female	55 or Above	2
High	Australia	Male	Below 55	10
High	Australia	Male	55 or Above	5
High	Australia	Female	Below 55	5
High	Australia	Female	55 or Above	5
High	Vietnam	Male	55 or Above	2
High	Vietnam	Female	55 or Above	1
High	Lebanon	Male	Below 55	2
High	Lebanon	Male	55 or Above	1
High	Other	Male	Below 55	1
High	Other	Male	55 or Above	4
High	Other	Female	Below 55	1
High	Other	Female	n/a	1
High	Other	Female	55 or Above	5
High	n/a	Male	Below 55	1

Note: n/a represents data that was not collected.

Data Collection

Participants were recruited from five EGM venues in Sydney and South East Queensland, Australia. The recruitment process consisted of setting up signage at the venues advertising the study and waiting for customers to approach the uniformed researcher if they were interested. Participants were compensated for their time with a \$50 supermarket voucher for participation in the study. The university's internal review board issued ethical approval for the study and each participant gave signed informed consent prior to the commencement of the interview.

Script

An interview script was created to ensure each interview followed a similar structure and key questions were addressed. At the beginning of the interview, participants were shown pictures (see Figure 1, panel A) of the different 'levels' of interest and it was explained that they would first be asked about their preferred platform (i.e., in-venue, on computer, or smartphone/tablet application). Secondly, they would be asked about their preferred location of play and their reasons for this preference. Lastly, participants were asked about their preferred games and reasons for their choice.

Interviews

Semi-structured interviews were conducted using a question guide. While extracting key information, participants were also encouraged to express views and reflections related to gambling that fell outside of the scripted topics. Interviews took place in the venue within sight of the gaming room so that participants could point out features of the gaming or venue environment to the interviewer without being overheard by other patrons and staff. Interviews were audio recorded and transcribed verbatim into text documents. Interviews ranged from 10 to 60 minutes in length (M = 22 mins).

Analysis

Interview transcripts were coded using NVivo 10 qualitative data management software and analysed using an interpretive methodological approach (Mason, 2002). The *a priori* codes were created on the basis of the interview questions. To ensure inter-rater reliability, two of our researchers reviewed and refined the finalised coding framework (see Appendix 2 for code structure).

Results

The results reported are a combination of findings from the qualitative interviews, and the associated demographic information and PGSI status of participants from the post-interview survey. Our explicit use of mixed methods was judged to be most appropriate for answering our research questions, which included identification of preferred environments (Q1), their justification and meaning to participants (Q3), but also how these answers potentially differed between people with and without gambling problems (Q2). To identify gambling environment preferences between gambling risk status, the percentage of participants mentioning each preference was recorded and tabled for comparisons between the total sample and across gambling risk status. Table 2 shows the most common¹ reasons provided by participants for preferring specific playing platforms, locations, and games.

¹Preferences reported by 10 or more participants, or 3 or more of the device using participants for preferences regarding device use.

Table 2. EGM environment references and reasons for total sample and split by problem gambling status and gender

Preference	Reason	% Total	% Low PGSI (n = 25)	% High PGSI (n = 34)	% Male (n=31)	% Female (n=28)
In-venue EGMs	More social	36	32	38	35	36
	More interesting	24	32	18	26	21
	Real Money	20	12	26	19	21
	Not possessing the technology	22	28	18	13	32*
	Avoid the risk of over spending	19	8	26*	23	14
Device	Preferring the hardware/functions	53	67	50	60	43
	Convenience	24	33	21	20	29
	Prevention of addiction and money loss	18	33	14^	20	29
Home	Able to do other activities	18	0	21^	10	29
	Comfort	18	0	21^	20	14
Venue	Close to home	80	76	82	81	79
	Service	80	76	82	81	79
	Clientele	54	56	53	52	57
	Social	54	52	56	58	50
	Availability of other activities	68	80	59	68	68
	Availability of good/cheap food and drink	49	52	47	48	50
	General atmosphere	51	44	56	39	64**
	Other opportunities to win money	20	16	24	6	36**
	Amount of EGMs	36	12	53**	42	29
	Familiarity	32	28	35	35	29
	Size	32	28	35	35	29
	Perception of winning more	27	8	41**	39**	14
	Physical layout of the venue	58	64	53	58	57
	Busy	27	24	29	32	21
	Safety features	25	32	21	26	25
	Member benefits	29	24	32	29	29
	Prices at venue	31	28	32	35	25
Online Provider	More accessible	29	33	29^	20	43
	Familiar	29	0	36^	40	14
	Good/wide selection of games	24	33	21^	20	29
	Value	24	0	29^	20	29
	Recommended	29	67	21^	20	29
Particular Game	Features (e.g., free spins, extra games)	64	56	71	58	71
	Jackpots	56	44	65	65	46
	Perceived chance of winning	78	80	76	65	46
	Value (cost of each spin)	49	56	44	39	61*
	Familiarity	46	48	44	48	43
	Graphics	69	72	68	65	75
	Modernity	36	28	41	32	39
	Combinations required to win	27	32	24	19	36
	Sounds	20	16	24	42	86*
	Sophistication of hardware	32	24	38	19	21

Note: ** significantly more likely to mention this item according to Pearsons Chi-Square test, $p < .05$, * $p < .1$ (marginal result). Figures reported for items applicable to only online/device gambling are based on a sample including only participants who reported this behaviour ($n=17$). ^ = cannot compute chi square due to low cell count.

Choice of EGM platform

The social aspects of gaming in a venue (rather than on a device) was the most popular response regarding platform selection, and was mentioned by 36% of the sample. For example, when asked why they preferred their favourite venue over others, some participants described the club as a meeting place for them and their friends:

I know a lot of people here. I've got a lot of friends within the club ... So [it's a] meeting place, I guess for some people ... it's a meeting place to meet up, see people we know. Maybe if we're good friends, if we know each other's pay day, maybe we swap money. (F, 73yrs)

Once a week he comes down here on a Friday, and I come down, and I usually meet my sister. We go and have lunch. Then a little bit later on – this other friend that I've met when I've come here – she's a school teacher – she comes down on a Friday, and it's her and I that usually sit together and play. (F, 64yrs).

Another participant enjoyed the social aspect of discussing his EGM gambling with acquaintances:

... there's a couple of blokes that come in here that I know – and one of them likes the machine next to the one I play – so we sit there conferring notes. (M, 70yrs)

Other popular reasons for playing in-venue were that people found it more interesting (24%) and associated playing in a venue with winning real money (20%). Some participants mentioned that online EGM play was a less exciting option:

I know it sounds weird, but I don't find any of them entertaining to the extent of being in a club. Because, you know, you've got nothing falling out of the slot ... If you don't put nothing in, there's nothing coming out. I might sometimes I have \$15,000 worth of credit, but its simulated money. (M, 74yrs)

Some participants also reported that playing in-venue safeguarded them against extreme money losses associated with gambling online (19%), and expressed concern at how others gamble on their phones and other devices:

Because you can win, win, win but there's always a time to lose – and if you play at home you can play while you're asleep too ... I play games on my phone before I sleep. (M, 53yrs).

Other participants talked about how they were able to set limits for themselves when they gambled in-venue and how that same protection may not be possible when gambling online:

You might just get a bit too taken away with it, so if I come to the pub with a limited amount of money – I spend that and I go home – and I don't worry about it. (F, 63yrs)

Those who preferred playing on digital devices rather than at a venue most commonly mentioned the hardware or functionality (53%) and the convenience (24%) as a reason for preferring a device. One participant talked about the ease at which he can access multiple EGM gambling sites online from his computer:

On the game you've got – like there's more ways like you can play on the computer. But on the tablet you've got less pokies that you can play because you've got to download them ... on a computer it's all on the internet – so it's easier to get onto the actual pokie machine. (M, 20yrs)

Amongst the most commonly mentioned reasons for preferring to play on a device at home rather than at a venue were the opportunity to do other activities (18%) and comfort (18%). One participant discussed the comfort of playing EGM games on his phone whilst in bed:

Home is like ... you can lay down and relax. When you get bored ... when you feel sleepy – you can sleep straight away. Because if you go outside – you can't sleep straight away. (M, 20yrs)

Venue Provider

Participants provided a wide range of reasons for preferring one venue or type of venue over another. The two most mentioned reasons were the service (i.e. staff and management) and the proximity of venue in relation to home, work or other facilities (80%). An elderly participant talked about how she felt so welcome when she came to play EGMs in her preferred club and that it cheered her up:

Well, I know a lot of them [staff] – even on the door ... Yeah, and there's different ones. I get a kiss from one when I go to the concert – he's usually there. I like – it's sort of a family and they're nice. There's one – see his name escapes me for a minute – he'll always say hello, he'll always smile and that's what's nice about it. You have to have a smile on your face even if you don't feel well. (F, 80yrs)

Another elderly man talked about his preferred venue as being so easy to get to as it was so close to home:

Just because I live round the corner. (M, 81yrs)

Other popular reasons for venue selection were aspects of the physical set up of the venue (58%) and general atmosphere (51%), the availability of other activities (68%), and social aspects, such as friendly or polite clientele (54%). One participant talked about the difference between the clientele of his local pubs compared to his preferred club, saying:

I don't want to judge people, but I guess they're more family oriented here. Where when you go into pubs – they're like single guys on their own. Might get the odd female and that; and it's just not a very comfortable place. So I myself chooses (sic) these places because I tend to like the sense of family. (F, 43yrs)

Online Provider

Players who used digital devices provided a range of reasons for purchasing or downloading games from specific suppliers. Popular responses included: accessibility (24%), familiarity of a particular website or online store (24%), a wide selection of games (24%), but also the perceived good-value and whether the site had been recommended to them by another player. One middle-aged woman talked about her strong preference for mobile EGM apps, citing the variety and accessibility on offer:

Well there's so many to choose from. So easy to get into, so easy to download – I love everything about it. (F, 43yrs)

Games

The most common reason given for selecting a particular game or machine was the perceived chance of winning; specifically, 78% of interviewees chose to play a particular machine because they believed it was lucky due to past wins, paid out more often, or was due to pay out based on previous play. Furthermore, 64% of the sample chose a game based on the amounts of features in the game

including; free spins, bonus rounds and extra chances to multiply winnings. The presence of a jackpot (56%) was also deemed very important. One participant was certain that the presence of bonus features, especially free spins, was the biggest factor in attracting EGM gamblers to a venue:

Yeah, that's what you come here for [free spins]. They're not designed to do that really, they're designed to take your money, I'm fully aware of that ... (F, 52yrs)

Another middle-aged participant expressed his disappointment in EGM gambling sessions that do not yield an adequate amount of bonus features:

Yes, well just that satisfaction of getting a free game. There's nothing worse than spending \$20 or \$50 and not getting a free game. (M, 41yrs)

In reference to jackpots, one middle-aged male confided that the allure of EGM jackpots was so strong for him that he 'chased' jackpots by going from venue to venue:

Yeah, yeah, yeah, I'll put 20 bucks in and I'll play it. Then I'll – because the jackpot is not high enough – I'll go to the next venue. Then if that one is not high enough, I'll go to the next venue and then to the next venue and that. Then by the time I go all the way around, up past service and back, it's six kilometres. Then I'm home, at the [club]. [It] is the last one. (M, 50yrs).

The minimum cost of each spin was also mentioned frequently (49%), along with familiarity of the machine (46%), attractiveness of graphics (69%) and sounds (20%), and the sophistication of the hardware itself (32%). Interestingly, players reported very different preferences in terms of what they found attractive about these attributes. For example, many people preferred modern games with bright graphics, unpredictable sounds and complex player options. One participant described the theme of her favourite game in detail and how exciting the unexpected graphics are:

... It's entertaining. When the feature comes – because it comes up randomly – and just comes out and it just [unclear] ... and you're not paying really – you're paying more attention to hitting the buttons or talking or [unclear] and it just gives you a bit of a shock and then you find out how many bats you can get to how much money you can win and then there's another bat spin. It's just something that's entertaining, especially when – playing with my mother, it's entertaining for her because [unclear] another bat spin. She just thinks it's funny. (F, 63yrs)

Some players reported that they preferred more traditional and familiar games that were simple and predictable to play, regardless of their age. One 38 year old man described his preference for the games that he had always played in the past:

I just like the older machines. The ones that I know. I don't like any new ones... All these new ones I don't know the free games and that. (M, 38yrs)

A 63 year old woman talked about how new machines aren't as enjoyable for the older clientele as they can be confusing:

They're a bit harder to understand, yeah, for the elderly, yeah. The young ones, well they can pick up anything quickly. They can pick up that you don't go [makes noise] and they know exactly what they're doing. (F, 63yrs)

Differences according Gambling Status and Gender

Responses were also compared for gambling risk status and gender, revealing some substantive differences in EGM player preferences between the levels of each group (see Table 2). Participants

categorized as high risk of problem gambling (PGSI 3+) tended to mention the amount of machines available and a perceived chance of winning more often than low risk gamblers (PGSI 0-2) as important factors when selecting a venue to attend.

One participant described how his preferred EGM venue was the casino due to the amount of machines available:

It's just that there's so many to choose – like you've got many options. If you don't like that machine, there's like 1000 more to choose from; but it is quite confusing sometimes because you don't know which one to play. (M, 43yrs, high-risk gambler)

High-risk gamblers also mentioned preventing risk of over-spending or addiction when discussing their platform of choice, and mentioned this aspect more often than low-risk gamblers. One participant preferred gambling on EGMs on his mobile phone and tablet as opposed to gambling in-venue as he could play with simulated money:

Probably it fills up the time or keeps you away from losing money, I guess. (M, 39yrs, high-risk gambler)

Conversely, another participant felt that gambling on EGMs in-venue was a safer option than online:

It's just the experience would be a bit different. Because I think coming in – if you bring in a certain amount: you use that much – whereas if you do it through a phone or a laptop, you can't really control how much you use ... I guess it's just the fact that you decide how much you're willing to use on that day. So, for example, I might bring in \$50 for that day. So before I go in – I might leave my debit card at home. (M, 20yrs, high-risk gambler)

Gender differences were also apparent. Female gamblers were more likely to base their venue preferences on atmosphere and other opportunities to win prizes, when compared to men. One woman described the myriad of entertainment options available at her preferred club, saying:

... we go there for the raffles, and we go there to play Bingo ... sometimes they just have musical nights – and we're there for that, and we play lawn bowls there [too]. It's not just about playing the pokies there – it's a bit of everything. (F, 64yrs)

Men tended to mention more than women that 'perceived chance of winning' was a reason for selecting a particular venue. One man believed that the EGMs at his preferred venue paid out at a higher rate than a venue nearby, saying:

It's just that the ones at [the other venue] don't pay that very good ... I find the ones at [the other venue] sort of rip you off a bit more. (M, 43yrs)

No differences were apparent regarding features of the games themselves. However, female gamblers tended to be more likely to mention the value of a machine, and their sounds, as a reason for selection a particular game. One older female gambler talked about how she enjoyed the sounds and music of her favourite 'island girl' themed machine:

I like the little music. It's very attractive ... It's very tropical. Something different and, you know, if you're in the mood, why not? (F, 61yrs)

Discussion

This chapter reported on gambling environment preferences of EGM gamblers in terms of platform, provider and game characteristics. Both high- and low-risk gamblers preferred the social aspect of using EGMs within a land-based venue. Women were more likely to prefer venues that had a good atmosphere and provided other avenues to win money, such as playing bingo. These findings are consistent with previous research which found that EGM gambling fulfils social needs for many players (Thomas et al., 2010; White et al., 2006). For EGM gamblers that chose to play in land-based venues, their preferred venue typically featured quality customer service and personable staff who gave the impression that they cared about their customers. Positive interactions with venue staff added to the valued social interactions that in-venue gambling provided.

The majority of gamblers tended to find in-venue gambling more interesting than online or mobile gambling. They enjoyed the 'real money' aspect of being able to win cash at a venue, rather than credits online (even if those credits were redeemable for payment). The excitement and risk associated with 'real cash' gambling is likely to be due to the tangible nature of cash in hand. In contrast, one is removed from the reality of spending money when instead of inserting cash, gamblers use electronic forms of payment. In terms of the use of purely simulated money (or points rather than credits), this lack of perceived risk and tangible reward provides an explanation to why the majority of gamblers did not find this form of 'gambling' as exciting.

Furthermore, many participants reported that certain features of land-based venues protected them against over-spending against their limits. For example, some participants mentioned that online gambling was too convenient and accessible, and moreover an easy way to lose control. Due to harm minimisation policies in Australia, large amounts of cash are often difficult to access at land-based venues. The removal of ATMs from gambling venues (excluding casinos), and restrictions on how much cash can be taken out at one time from the in-venue cashier, helps to limit player investment, which is a protective feature not available by default when using a credit card online. Reports of spending control at land-based gaming venues may be a promising indication that some gamblers set limits by only taking a certain amount of cash to the venue.

High-risk gamblers showed an awareness that gambling online was highly accessible and had the potential to cause overspending of both time and money. This introspection that is evident in high-risk gamblers indicates that in-venue EGM high-risk gamblers engage in strategies to prevent themselves from excessive gambling. However, the fact that respondents self-identified as high-risk gamblers (by the PGSI) shows that they are still experiencing a high rate of problems and harms - despite these attempts to control their gambling.

Despite the noted value of spending limits, having easy access to EGMs was an important criteria in land-based venue selection. This is consistent with research showing that; controlling for ages, sex and deprivation level; people living closest to gambling venues are most likely to gamble, and are therefore most at risk of becoming problem gamblers (Pearce, Mason, Hiscock, & Day, 2008). High-risk gamblers were more likely to select a certain venue because they perceived they had a better chance of winning, (i.e., the venue was luckier or fairer). This is consistent with findings that treatment seeking EGM problem gamblers are more likely to have high rates of superstitious beliefs about gambling than recreational gamblers (Joukhaider, Blaszczyński, & Maccallum, 2004). In addition, men were more likely than women to choose a particular venue or game because they perceived it to be associated with a greater likelihood of them winning.

There are limitations to this study that are worthy of noting. Participants were recruited solely from land-based gambling venues which it likely to have led to the low number of online gamblers in the sample. However, the study provides a starting point for research in EGM specific preferences. It is suggested that future researchers utilise survey measures based on our findings, allowing them to cost effectively recruit a larger sample, including more online gamblers.

Conclusion

Study 1 highlights the key environmental and contextual features of online, mobile and in-venue EGM gambling that drive consumer choices. It also illustrates that there are differences in EGM environment preferences between low- and high-risk gamblers. From a policy perspective, features of the gambling environment that disproportionately attract high-risk gamblers can be discouraged, whereas features that attract recreational gamblers with fewer problems may be safer for expansion. As many of the participants in this study commented, gambling can be an enjoyable and sociable pastime. This study provides evidence on what features of the environment are most important for players in making gambling choices, and further suggests what features are most consistent with safe levels of play.

Study 2: Survey & Conjoint Analysis

Approach

Study 2 explored the revealed preferences of regular EGM gamblers for different environmental features. This component of the project utilised the information gathered in both the literature review and Study 1 to compile a list of environmental features that gamblers judge as important in choosing how and where to gamble. This list of environmental features is substantially smaller than that explored in Study 1 in order to reduce the dimensionality of the resulting dataset, and thereby ensure that the conjoint and clustering analyses (described subsequently) remained tractable.

We opted to use those discovered environmental features that were mentioned with high frequency across many of our interviews, and organised features together into groupings that comprised natural alternatives. For example, many people mentioned the availability of 'small bet sizes' as an attractive feature, whereas a few mentioned 'large maximums' as attractive. These are natural alternatives that people might choose as contrasting options in making gambling choices, even though (in practice) it might be possible to have both available within one environment.

The development of a reduced set of codes proceeded from an examination of the raw codes from Study 1 as illustrated in Appendix 2. The highest frequency codes were chosen wherever those codes could be reasonably represented in a hypothetical gambling scenario. In addition, we supplemented these high frequency features with the highest level of description for gambling environments described in our literature review, the platform (e.g., internet, smart device, in-venue), since this was an *a priori* dimension of interest for the project.

Table 3 presents the environmental and game-context features, organised within each of the groupings comprising natural alternatives. The label describing the grouping of alternatives is provided in bold.

Table 3. Environmental and game-context features of choice, grouped by domain

You're gambling on/at ...
An internet website on a desktop/laptop computer
Mobile phone
Tablet device
A casino
A club
A hotel or pub
You are at or near ...
Home
Work
The shops
Somewhere new
Other people
There is nobody else around
You're with a group of friends
You're amongst new people you don't know
General sounds
The place is relatively quiet and still
There are sounds and noises coming from a variety of sources
The place has pleasant ...
Music
Furniture and décor
Air conditioning
Lighting
When you stop to take some refreshments, the food and drink are ...
Free or very cheap
High quality and delicious
The room you're playing in is ...
Large and spacious with high ceilings
Quite small and cosy
The game you're playing has ...
Quality sound
Bright colours
Muted pastel colours
Quality animations
The game you're playing has ...
A new design you're not familiar with yet
A classic design you know well
The game has...
A small minimum bet size
A large maximum bet size
When you're finished this game, you have the option to play ...
A wide variety of games
Just a few other games
Overall, the environment makes you feel ...
Safe and secure
Well looked after
That you have the privacy to play in peace

Study 2 used a marketing paradigm, a discrete choice experiment, to explore the revealed preferences of gamblers, rather than simply asking about the most and least desirable features of the environment. Discrete choice experiments (DCEs) are a quantitative technique for eliciting preferences that can be used as an alternative to explicit stated preference data. The method involves asking individuals to choose between hypothetical alternative scenarios, goods or services. In this case, each alternative comprises a particular environmental scenario in which one is gambling. The characteristics or features of each scenario involve one option from each alternative grouping shown in Table 3. Hereafter, each alternative grouping will be termed a *domain*.

This approach allowed us to infer which environmental characteristics have the most influence in determining preference for different gambling alternatives. The inferred preference for each feature is termed a *utility*. Study 1 revealed much of the most frequently mentioned features of the environment, and differences by PGSI scores of the respondents gave some indications of features that might be most attractive to people with and without gambling problems.

However, a gambling environment includes a collection of features (e.g., gambling at a club, with cheap food, and many EGMs) that need to be explored in each context. Furthermore, it is desirable to get a relative understanding of how each feature informs gambling choices; for example, whether the choice of gambling platform (club, casino, website, etc.) is more or less important than other features (e.g., the food, lighting, ambient noises, etc.).

DCEs are commonly applied in consumer research to determine what product characteristics are most salient to potential purchasers of products, and whether particular combinations of features tend to be more attractive to consumers. They are also useful when participants are either unaware or unwilling to explicitly divulge their actual preferences. For example, several highly influential studies have used a DCE task for participants to evaluate hypothetical individuals (e.g. in a simulated immigration assessment task), and demonstrated implicit prejudices towards racial minorities; a result that would not have been revealed in an explicit preference evaluation due to the influence of social desirability on responding (Hainmueller, Hopkins, & Yamamoto, 2014).

The first goal of the analysis was to ascertain overall (i.e., for the whole sample) differences in the perceived utility of different environmental features. However, it is important to recognise that gamblers are not a homogenous and undifferentiated population. Therefore, a crucial subsequent goal of the present study was to reduce the complex space of environments to a set of typical environmental configurations that potentially appeal to different sets of gamblers.

Using the language and techniques of marketing analysis, we made the assumption that there could be specific market segments for EGM players that include environmental features that attract different types of gamblers. This information could create the opportunity to note how well the current marketplace caters for each market segment's preferences. An efficient marketplace would contain environmental configurations that closely match the composition of gamblers who want (or express a preference) for such environments. Most important, however, is a recognition that some environments may be more or less attractive to people with gambling problems, or further, may function to create or exacerbate gambling problems. Therefore, an integral goal of Study 2 was to understand how environmental features, and market segments that represent a conglomeration of these features, might be differentially attractive to problem gamblers. This knowledge might be useful in encouraging the development of environments that are associated with safe and recreational levels of play, whilst discouraging or restricting the creation of environments that are most associated with harms.

Market segmentation is based on a set of techniques that presume that there are different preferences among any set of consumers of a product, and that within the set of features that describe each product there is not a perfect or ideal set that meets everyone's preferences. Instead, there are

reliable “market segments” that describe ideal or near ideal combinations of elements of products for different types of consumers. Moreover, products need to be broadly defined in their environmental context. A Louis Vuitton handbag, for instance, has greater value when purchased from a signature store than if bought from a big-box retailer. Bitner (1992) described this context of consumption as the “servicescape” and maintained that it is a critical distinction in understanding the quality of the experience. Similarly, we define the EGM environment as critical to choice and recognise that this includes the *servicescape* - or the broader environment in which play occurs. In particular, this project focused on the hierarchy of environmental choice that encompasses the *servicescape*, and includes the choice of platform (mobile, internet or venue-based), selection of providers or venues, and the selection of game features within providers or venues.

Study 2 also included an exploration of the psychological underpinnings of environmental choice. There are many psychological constructs that have been associated with gambling problems, including impulsivity, anxiety and depression (Lorains, Cowlishaw, & Thomas, 2011). There are also gambling-unique scales, such as the Four Es factors of risk for problem gambling (Rockloff & Dyer, 2006), which have been shown to be related to gambling problems (Rockloff & Dyer, 2007b). These psychological factors, as well as predicting gambling problems, may also be useful in producing a better understanding of those gamblers who are attracted to specific gambling environments. Thus, a final goal of Study 2 was to understand the relationship between certain psychological characteristics and an individual's likelihood of belonging to a particular market segment of environmental preference. These psychological variables can provide additional evidence that some market segments are not just incidentally related to gambling-risk, but also reflect underlying psychological vulnerability to gambling-related harm.

In summary, Study 2 used a discrete choice experiment to explore current EGM gamblers' revealed preferences for gambling environments. Its purpose was to identify the importance attached to each feature of environmental choice, determine their relative attractiveness to people with gambling problems, simplify our understanding of environments by exploration of market segments, and improve our knowledge of the psychological motivations behind people who are attracted to particular environments.

Methodology

The Study 2 DCE was conducted as a combined in-venue and online panel survey that first asked some questions on gambling frequency, followed by 15 forced-choice sets of 3 different gambling environment-descriptions (see Figure 2 below for an example). Our advice from experts in this methodology is that a forced choice between three alternatives is more efficient than a binary choice task (Keith Chrzan, SVP, Sawtooth Software, personal communication). In the example shown, note that each gambling option represents a unique combination of alternative features from each of the choice domains. The participant provides data regarding the relative attractiveness of the three options. However, by repeated pairings of different combinations of features in alternatives both within and between subjects, statistical techniques allow the inference of the relative contribution of the constituent features in determining the participant's choice.

To keep from overwhelming participants with too many features for comparison, each discrete choice presented only five options from the 12 domains illustrated in Table 3. This is a common approach to reconciling the desire to evaluate a wide range of domains, with the need to limit cognitive load for participants, in order to ensure valid preference responses. Our software solution (Sawtooth Software) used an optimisation algorithm to construct a balanced set of comparisons across subjects, avoiding the over-representation of any one domain, or a bias of repeated pairings of the same domains across the whole study.

The survey finished with questions about gambling and gambling problems to avoid having these answers potentially influence their choices on preferred environments. As described in more detail below, a follow-up survey was conducted with a select 1,473 online respondents in order to test for psychological traits that were hypothesised to predict their choices. The follow-up survey was primarily needed to reduce the length of each survey to a manageable level.

It is important to note that all respondents were pre-qualified as having gambled on EGMs within the last 12 months, since the choices of these players were considered the most relevant. Respondents were choosing their preferred or ideal choices amongst sets of environmental features, and some of these combinations are not available in the contemporary marketplace. Therefore, these choices should not be interpreted as their best options for current gambling, but rather their preference for a set of features of the environment; which may or may not be accessible to them.

Instructions:
Please review the three options below. Try to visualize yourself in each of these situations.
If you had to choose just ONE of these options, which would you MOST prefer? (1 of 15)

	OPTION 1	OPTION 2	OPTION 3
Other people	there is nobody else around	you're with a group of friends	you're amongst new people you don't know
You are at or near...	home	the shops	the shops
When you stop to take some refreshments, the food and drink are...	free or very cheap	high quality and delicious	free or very cheap
The game you're playing has...	quality sound	muted pastel colours	quality animations
General sounds	there are sounds and noises coming from a variety of sources	there are sounds and noises coming from a variety of sources	the place is relatively quiet and still
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Figure 2. Screen-shot example of a discrete choice for a single respondent

Participants

The participants for the survey were recruited both in-venue (245 people from clubs in Melbourne and regional Victoria) and from an internet panel provider (7,516 people from MyOpinions.com.au). In-venue participants were paid with a \$25 gift voucher, while the internet panel participants received points from MyOpinions.com.au that could be redeemed for prizes and cash. The in-venue participants were sourced to improve the external validity of the study, since it is only legal to offer EGM gambling to Australians within licensed venues. The online panel provider, however, provided a large set of current gamblers, which included people who prefer to gamble online and thus may not attend venues. It is not illegal for Australians to gamble on internet-based EGMs, but rather providers cannot offer such services to Australians. A small proportion of Australians do gamble with off-shore internet-based EGMs, although this is dwarfed by in-venue gambling on EGMs (Gainsbury, Russell, Blaszczynski, & Hing, 2015).

In-venue Survey

One of our researchers recruited potential respondents at or near the entrance to six clubs in Melbourne and regional towns in Victoria. The selection of venues purposefully included large clubs (EGMs 100+) and small clubs (EGMs < 100). This spread of venues was intended to reflect a reasonable range and diversity of gambling environments in Victoria. Due to the rapid nature of recruitments, it was not possible to keep track of the success rates. The survey was conducted using

an iPad connected to the internet with 4G mobile account. The survey was hosted using Sawtooth Software and their dedicated package for Conjoint discrete-choice experiments, with this same survey used for all modes of data collection; including the in-venue and the online panel recruitment (detailed below).

A total of 245 venue-based participants (134 male and 111 female) completed the survey; aged 18-86 ($M = 51.6$). The cultural identities of respondents were 83.7% Australian, 4.9% English, 4.1% New Zealander and 7.3% other identities. Only 3 people (1.2%) identified as Aboriginal or Torres Strait Islander. The Problem Gambling Severity Index (PGSI) status of venue-based participants was: 77 (31.4%) non-problem, 81 (33.1%) low risk, 68 (27.8%) medium risk, and 19 (7.8%) problem gambler.

Online Survey

A national online panel of respondents sourced from MyOpinions.com.au was invited to participate in the survey, including 19,373 people who gambled on EGMs within the 12 months. A total of 7,516 people (39%) completed the survey, comprising of 3,464 male and 4,052 female respondents; aged 18-87 ($M = 51.2$). The cultural identities of respondents were 78.9% Australian, 5.5% English, 2.8% Chinese and 12.8% other identities. A further 148 people (2%) identified as Aboriginal or Torres Strait Islander. The Problem Gambling Severity Index (PGSI) status of online survey participants was: 3,754 (49.9%) non-problem, 1,578 (21.0%) low risk, 1,271 (16.9%) medium risk, and 913 (12.1%) problem gambler.

Follow-up Survey

A follow-up survey was conducted approximately two months after the initial online survey. The principal purpose of the follow-up survey was to gather additional data on the psychological traits of respondents that might be predictive of their choice of environmental features. These questions could not be included on the original survey due to length. Respondents for the follow-up survey were chosen as those who conformed most closely to the market segment choices in our analyses (see Market Segments section below). A total of 3,000 of the original respondents were invited to participate in the follow-up, and 1,473 (49.1%) completed the trait measures; comprising of 755 male and 718 female respondents.

Design

The $6 \times 4^3 \times 3^2 \times 2^6$ discrete choice experiment featured 300 blocks of 15 choice sets each². Each choice set contained three alternatives, each described in terms of a subset of five of the 12 domains. Whilst cognitive load in a full profile design would make a comparison on 12 dimensions impractical, the partial profile design using 5 dimensions is more typical of discrete choice experiments. The experimental design controlled both which domains appeared in each choice set as well as which features appeared in each alternative. Our design was mainly orthogonal, which provides greater power to detect main effects (i.e. environmental feature salience), which was the primary objective of the study. The design deviated from orthogonality to some extent to allow overlap in features between the choice alternatives provided to participants. This approach assisted in ensuring that participants adopted compensatory choosing, i.e. weighing all the features in making their choice, rather than adopting a less cognitively demanding decision method.

² The experiment included one domain with 6 options, three domains with 4 options, two domains with 3 options and six domains with 2 options. These are illustrated in Table 1. There were 300 environmental combinations generated, and each subject made 15 judgments.

Analysis

Desiring utility information for each environmental feature at the respondent-level for subsequent segmentation analysis, we settled on Hierarchical Bayesian multinomial logit (HB-MNL) as the statistical model for respondents' choices. HB-MNL combines an "upper level" model of the distribution of preferences across the sample and a "lower level" model of individual preferences to come up with part-worth utility estimates for each individual respondent (Allenby & Ginter, 1995). The individual level part-worths may be understood as analogous to latent random-effect scores for individuals, in frequentist random-effects models. In both cases, the individual-level effects are themselves unobserved, but estimates may be inferred by the modelling procedure. In HB-MNL, as in other forms of Bayesian analysis, all parameters are estimated using Markov chain Monte Carlo optimization methods. The final result of such an analysis is an individual by feature matrix of part-worths: the entries of which (in this study) reflect the contribution of each environmental feature to the probability of each individual's likelihood of selecting a particular gambling environmental alternative. These part-worths may be aggregated to reveal the general preferences of the entire sample, or may be subjected to further analyses, such as clustering, to reveal potential population heterogeneity (i.e. market segmentation).

Segmentation

Basis variables

The 36 part-worth utilities from the discrete choice experiment provide the basis variables for market segmentation. Market segmentation amounts to a particular application of multivariate clustering; a procedure that aims to discover clusters of similar individuals within a sample, based on their feature vectors. In this case, the feature vectors comprised the individual-level utilities of the environmental features considered in this study. Thus, the segmentation amounted to a grouping of individual respondents based on the particular combination of environmental characteristics that could be inferred as salient in determining their gambling preferences. Some applications of this technique in the literature normalise the utilities with respect to individuals, so that each individual's *relative*, rather than absolute, preferences are clustered. We chose to use the *raw* respondent-level HB-MNL utilities for the choice model. This decision was based on our desire to maximise the interpretation of the clusters in terms of actual preferences for different environments, rather than preferences that were transformed in any way.

Metric

The segmentation analysis featured simple Euclidean distances as the metric defining the distance between respondents. Other distance metrics have been proposed in the literature and can be used for specific applications for which a rationale can be provided (Zwerina, 1997). However, in the absence of a rationale for an alternative in this study, the base metric in which the utilities are calculated is preferable. This is because, like standardised beta weights in multiple logistic regression, the raw utilities are comparable on a metric scale in terms on their relative contribution to the log odds of a participant preferring one environmental alternative over another.

Segment Generation

The K-means algorithm was used for the clustering analysis. For each number of segments, two through 10, the convergent algorithm ran 30 separate K-means solutions, each with a different starting point strategy. A reproducibility statistic captures the commonality of solutions for a given number of segments by counting the proportion of solutions in which respondents end up classified in the same segments. This approach acknowledges the fact that a global minima for clustering does not exist, and each clustering solution depends, to some extent, on the random starting position of the clusters. The reproducibility statistic captures the reliability of clustering solutions, with different random initialisation

conditions, to generate the same clustering solutions. All else being equal reproducibility should fall as the number of segments rises, so solutions which precede a large decrease indicate potentially robust underlying structure. Reproducibility of the two through 10 K-means segment solutions appear on Figure 3 below. While reproducibility was particularly high for all of the numbers of clusters, on the basis of this analysis the four and seven segment solutions most appeared to suggest a robust underlying structure and were selected as the subjects of further investigation. Subsequent profiling of segments revealed that the four segment solution related powerfully to variables not included in the cluster analysis. This external validation led to the selection of the four segment solution as the basis for further analysis.

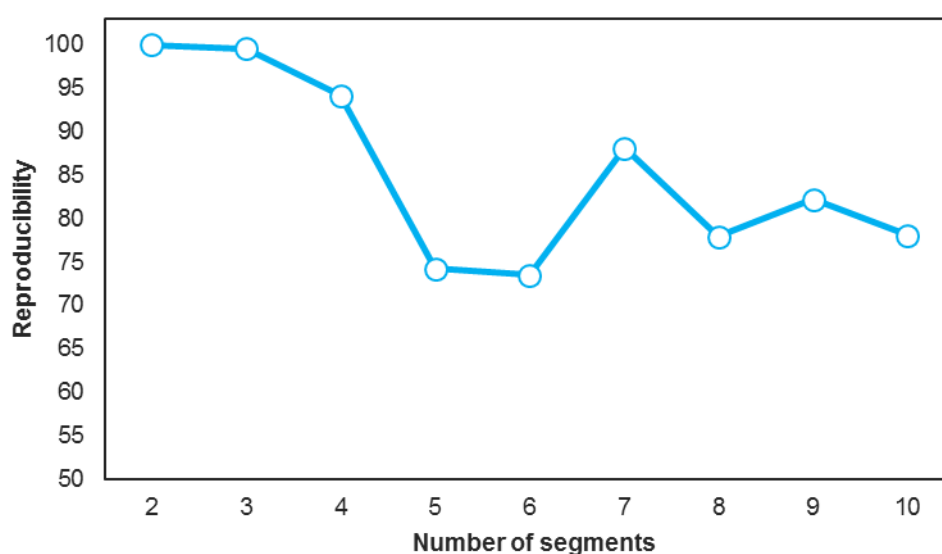


Figure 3. Reproducibility statistic (out of 100) for each number of segments, two through 10

Results

Importance

Each discrete choice amongst three options (as per Figure 2 above) revealed something about the preferences of the respondents for the individual elements of the environment. By having each participant make multiple decisions (x15), it was possible to infer the importance they attach to each domain. For example, if a person consistently chose environments with low ambient noises, it can be inferred statistically that they prefer this feature. The balanced composition of environments presented to respondents, using the algorithmic assignment made by our Sawtooth Software, allowed for estimations of the utilities and relative importances for each participant, as well the calculation of average importances across all participants. The aggregate importance data is shown in Figure 4 below.

As shown in Figure 4, participants attached the greatest importance to their gambling Platform (e.g., internet, smart device, club, pub/hotel, or casino). In accordance with the HCG model, we suggested that people might naturally make this decision first before deciding on other elements of the environment in choosing where and how to gamble. For instance, people wouldn't search for the game design they like best by going to casinos, clubs and surfing the internet all on one occasion. Instead, they choose whether they want to go to a physical venue or gamble online; and they make this choice

before choosing a game. In this context, it is not surprising that the choice of “platform” is seen as the single most important domain of choice from the ones we presented.

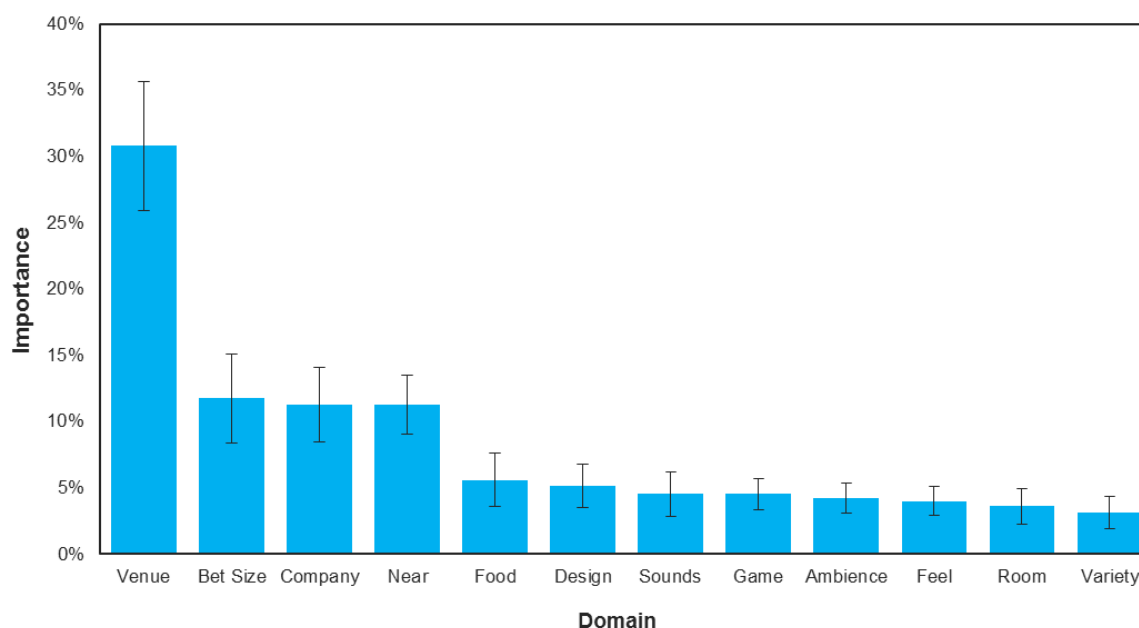


Figure 4. Derived importance of each choice domain. Note: Error bars indicate standard deviation

Gamblers attached relatively strong importance to whether they are gambling at or near important places in their life; such as home, work, shopping or somewhere new. Furthermore, they also showed through their choices that they place importance on the people they gamble with; such as friends, new people, or whether they gamble alone. A final item of relatively strong importance was a consideration of the bet size on offer with the game, with results showing that small minimum bet sizes were generally considered preferable over large maximums. Other considerations were of lesser importance, but need to be seen in context of their overall judgements, since these choices in aggregate still had a very large influence on players' choice of environments. In fact, these other considerations, although of lesser importance, collectively comprise greater summed importance than any other one factor alone (34.8%).

Figure 5 illustrates the importances for each choice domain broken out by PGSI gambling status of respondents. In general, there are few differences in the overall importance that gamblers with many problems attached to the various choice domains, as opposed to people with few or no identifiable problems. This should not be confused, however, with the utilities that people assigned to each feature within the choice domain, which as demonstrated below, show significant differences by PGSI status.

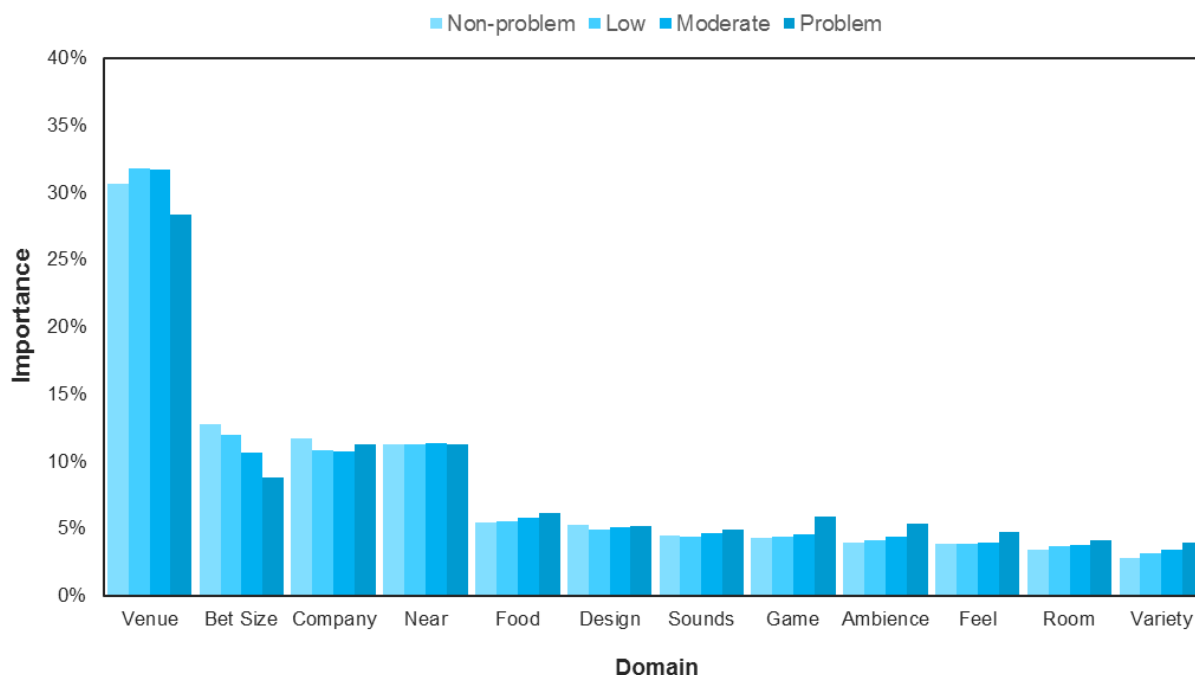


Figure 5. Derived importance of each choice domain, by PGSI category

Nevertheless, there are some minor differences in overall importance in Figure 5 that are worthy of note. Problem gamblers attached slightly lesser importance than others to the platform on which they gamble; including choices of internet, mobile devices, casinos, clubs and hotels/pubs. They also attached somewhat lesser importance to bet sizes on machines; whether there are small minimum bet sizes or large maximums. For most other choice domains, there were only very minor differences in the importance attached between problem gamblers and gamblers with few or no identifiable problems.

Utilities

Table 4 illustrates the calculated (average) utilities within each choice domain. The magnitudes of the utilities illustrate their relative importance to overall judgements. Importantly, within each domain the utilities sum to zero, therefore each domain can be viewed independently. Positive utilities show that people placed a positive weight on the attribute relative to the mean of all levels, and negative utilities illustrate negative weight for that level. The standard deviations show that there is often large individual variability in estimated utilities even when population estimates are stable. Since utilities are relative, these figures can only be used to understand the relative desirability of these features/levels within a domain, and not their absolute attractiveness. Due to the size of our sample ($N = 7761$), most of the comparisons are significantly different. As a result, our discussion focuses on differences with the largest absolute differences, and thus practical significance as opposed to statistical significance.

Table 4. Relative (average) utilities of features

Features (grouped by choice domain)	Utilities	Standard Deviation
You're gambling on/at ...		
An internet website on a desktop/laptop computer	-45.97	111.03
Mobile phone	-148.19	108.15
Tablet device	-82.83	94.66
A casino	+48.36	113.32
A club	+121.32	115.67
A hotel or pub	+107.30	112.57
You are at or near ...		
Home	+51.49	50.60
Work	-57.10	37.01
The shops	-3.45	31.19
Somewhere new	+9.06	36.55
Other people		
There is nobody else around	-13.27	56.72
You're with a group of friends	+38.22	70.11
You're amongst new people you don't know	-24.95	48.94
General sounds		
The place is relatively quiet and still	+13.96	30.95
There are sounds and noises coming from a variety of sources	-13.96	30.95
The place has pleasant ...		
Music	-1.92	20.48
Furniture and décor	-1.65	20.33
Air conditioning	+11.35	24.38
Lighting	-7.79	18.98
When you stop to take some refreshments, the food and drink are ...		
Free or very cheap	+11.05	39.97
High quality and delicious	-11.05	39.97
The room you're playing in is ...		
Large and spacious with high ceilings	+1.42	27.05
Quite small and cosy	-1.42	27.05
The game you're playing has ...		
Quality sound	+5.98	20.28
Bright colours	-0.97	21.09
Muted pastel colours	-11.06	25.42
Quality animations	+6.06	23.49
The game you're playing has ...		
A new design you're not familiar with yet	-26.56	25.45
A classic design you know well	+26.56	25.45
The game has...		
A small minimum bet size	+61.10	53.26
A large maximum bet size	-61.10	53.26
When you're finished this game, you have the option to play ...		
A wide variety of games	+9.00	21.84
Just a few other games	-9.00	21.84
Overall, the environment makes you feel ...		
Safe and secure	+11.66	20.61
Well looked after	-8.40	21.13
That you have the privacy to play in peace	-3.26	23.30

Table 4 shows the average results for entire set of respondents in the survey, including both the small set of in-venue participants (n = 245) and the much larger set of internet-panel participants (n = 7516). The greater stability of the combined results allowed us to focus on significant findings.

The results in Table 4 focused on the preference of the “average gambler”, but a note of caution is warranted in terms of our interpretation. The process of averaging can dilute substantial differences amongst people who like very different features. In short, not all people are alike, and therefore averages can be misleading. The fact that there are different clusters, or market segments, of gamblers will be addressed in a latter section. Nevertheless, it is helpful to understand typical gambler preferences in order to bring the details of latter findings into sharper relief.

Gamblers in our combined sample favoured physical venues over online or smart device platforms; and favoured clubs, pubs and hotels above casinos. They preferred to gamble near home rather than locations near their work. On average, gamblers preferred to gamble with a group of friends, rather than alone or with someone new. They liked places with relatively low ambient noises. Perhaps surprisingly, they placed greater value on good air-conditioning relative to other features such as pleasant music, furniture or lighting.

Further, the participants preferred food that is free or very cheap compared to high-quality and delicious. They slightly preferred to gamble in large places, rather than small and cosy places. They tended to like classic games that they know well rather than trying new games. There was a strong preference for small minimum bet sizes rather than large maximums. Moreover, gamblers only slightly preferred to have a wide variety of games available to them; which perhaps accords with their preference for well-known games. Lastly, gamblers preferred to play in places where they feel safe and secure, over being well looked after and having privacy whilst they gamble.

The main effect of these utilities suggests that the ideal environment for the average gambler consists of: gambling at a club near home, with a group of friends, in a relatively quiet place with pleasant air-conditioning, with cheap food available and a large space to play in, on a classic game with quality animations and small bet sizes, where you feel safe and secure and there is a wide variety of other games to play when you are done.

Environment by Gambler Interactions

Although we considered the utilities of the “average gambler” above, it is also important to consider how these preferences may be different across people with many vs. few (or no) gambling problems. Table 5 illustrates utilities for each domain split across the four categories of PGSI gambling status; including non-problem; low risk; moderate risk; and problem gambling.

Table 5. Relative (average) utilities of features, by PGSI category

Features (grouped by choice domain)	Non-Problem (n = 3,831) Utilities	Low (n = 1,659) Utilities	Moderate (n = 1,339) Utilities	Problem (n = 932) Utilities
You're gambling on/at ...				
An internet website on a desktop/laptop computer	-49.41	-55.46	-45.72	-15.26
Mobile phone	-152.03	-160.56	-152.72	-103.88
Tablet device	-83.81	-91.61	-87.40	-56.58
A casino	+47.88	+57.87	+49.42	+31.89
A club	+124.82	+134.24	+124.71	+79.07
A hotel or pub	+112.56	+115.51	+111.71	+64.76
You are at or near ...				
Home	+53.69	+51.77	+51.82	+41.42
Work	-59.53	-59.45	-56.66	-43.53
The shops	-2.88	-3.44	-3.18	-6.20
Somewhere new	+8.71	+11.12	+8.01	+8.31
Other people				
There is nobody else around	-18.81	-14.09	-6.60	+1.34
You're with a group of friends	+51.51	+35.73	+23.01	+9.85
You're amongst new people you don't know	-32.7	-21.64	-16.42	-11.19
General sounds				
The place is relatively quiet and still	+15.14	+12.41	+13.79	+12.14
There are sounds and noises coming from a variety of sources	-15.14	-12.41	-13.79	-12.14
The place has pleasant ...				
Music	-1.15	-1.49	-2.91	-4.41
Furniture and décor	-1.13	-2.56	-2.14	-1.45
Air conditioning	+10.57	+12.6	+12.15	+11.23
Lighting	-8.28	-8.55	-7.11	-5.36
When you stop to take some refreshments, the food and drink are ...				
Free or very cheap	+10.52	+11.97	+13.41	+8.18
High quality and delicious	-10.52	-11.97	-13.41	-8.18
The room you're playing in is ...				
Large and spacious with high ceilings	-0.87	+2.53	+3.92	+5.29
Quite small and cosy	+0.87	-2.53	-3.92	-5.29
The game you're playing has ...				
Quality sound	+5.78	+5.60	+6.01	+7.41
Bright colours	-1.63	-0.68	-1.21	+1.56
Muted pastel colours	-10.11	-11.77	-11.44	-13.17
Quality animations	+5.97	+6.85	+6.64	+4.19
The game you're playing has ...				
A new design you're not familiar with yet	-28.84	-25.78	-24.98	-20.8
A classic design you know well	+28.84	+25.78	+24.98	+20.8
The game has ...				
A small minimum bet size	+71.41	+64.43	+51.80	+26.18
A large maximum bet size	-71.41	-64.43	-51.80	-26.18
When you're finished this game, you have the option to play ...				
A wide variety of games	+6.40	+11.27	+11.93	+11.45
Just a few other games	-6.40	-11.27	-11.93	-11.45
Overall, the environment makes you feel ...				
Safe and secure	+13.51	+11.51	+10.16	+6.44
Well looked after	-7.36	-8.39	-10.19	-10.11
That you have the privacy to play in peace	-6.15	-3.12	+0.03	+3.67

People with the most severe gambling problems (PGSI 8+) are a natural focus of interest, since these are gamblers who are individually experiencing the greatest harms. Therefore, our discussion focuses on these gamblers in comparison to the other groups.

As shown in Table 5, Problem Gamblers were somewhat less concerned about the choice of gambling platform/provider, although - like most other gamblers - on average they preferred clubs. They were somewhat less concerned about where they gamble; whether near home, work, the shops or somewhere new. Like others, however, they preferred to gamble near home. Problem Gamblers were much less likely to give weight to the company they share; such as being alone, with a group of friends or with new people. They placed slightly less weight on the music provided in the venue (excluding the sounds of the machines), but somewhat more weight on pleasant lighting compared with others. Perhaps unsurprisingly, Problem Gamblers placed less weight on the food and drink offerings, although (like others) they preferred cheap food and drink over quality offerings. Problem Gamblers showed a preference for larger venues in comparison to others, and particularly in comparison to recreational/non-problem gamblers. This is noteworthy for contrast to recreational gamblers, who showed very little regard for this feature other than to weakly prefer the small and cosy venues.

Problem Gamblers showed some distinctions in the games they prefer to play. They had a preference for quality sounds and bright colours in the games they play in comparison with others. However, Problem Gamblers were somewhat less concerned in comparison to others about whether a game is a classic favourite or something new. Nevertheless, like all gamblers, they preferred a well-known game. People with gambling problems were less concerned about available (small) bet sizes on machines in comparison to other gamblers, which is perhaps not surprising given prior literature suggesting they tend to bet larger than others (Australian Productivity Commission, 2010). Players with at least some gambling problems were relatively more concerned about the number of alternative games to play compared to recreational/non-problem gamblers.

Lastly, Problem Gamblers were relatively more concerned with their privacy whilst gambling, whereas recreational/non-problem gamblers were relatively more concerned about feeling safe and secure. Nevertheless, Problem Gamblers also placed weight on feeling safe and secure. In confirming many past observations from (mostly) qualitative research (e.g. Holdsworth, Nuske, & Breen, 2012), these utilities give good convergent evidence for how the preferences of players with many gambling problems differ from those with few or none.

Market Segments

The process of Segment Generation was described in our Methodology section. To recap, each participant made a forced-choice judgement of preference from 15 sets of environmental features. Through k-means clustering each respondent to our survey was assigned to one unique and most-probable cluster according to the utilities implied by their choices. Four market segments were found that corresponded to highly reproducible assignments reflecting clusters of preference for EGM environments. Figure 6 shows the relative sizes of each cluster segment, broken out across samples.

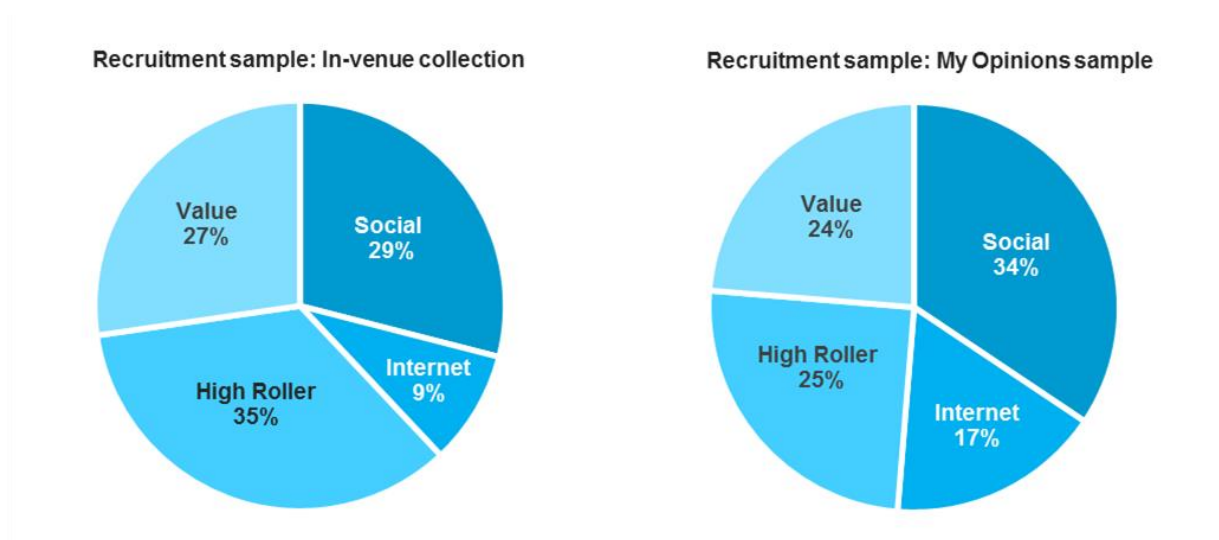


Figure 6. Market Segments by sample

We named each cluster according to some of the largest differences that were observable as characterising each. The four Market Segments are called: Social, Internet, High Roller and Value. Market segments represent a conglomeration of environmental elements, and therefore cannot be entirely reduced to the element implicit in these names. Nevertheless, an inspection of Table 6 reveals that these names capture some large variations in the utilities represented in each segment. Social gamblers have higher utilities for the sociable aspects of gambling, Internet gamblers prefer online games, High Rollers are less concerned about the cost of gambling, whereas Value gamblers want the best value-for-money.

Table 6. Relative (average) utilities of features, by Market Segment

Features (grouped by choice domain)	Social (n = 2,655) Utilities	Internet (n = 1,294) Utilities	High Roller (n = 1,962) Utilities	Value (n = 1,850) Utilities
You're gambling on/at ...				
An internet website on a desktop/laptop computer	-146.09	+125.86	-8.74	-61.95
Mobile phone	-242.35	+16.58	-97.25	-182.33
Tablet device	-168.81	+66.42	-44.66	-104.29
A casino	+136.07	-100.99	+39.84	+35.99
A club	+219.22	-48.99	+61.82	+163.05
A hotel or pub	+201.97	-58.88	+49.00	+149.52
You are at or near ...				
Home	+29.76	+86.52	+49.15	+60.64
Work	-61.52	-47.62	-51.41	-63.41
The shops	+7.17	-20.49	-9.13	-0.75
Somewhere new	+24.59	-18.41	+11.39	+3.52
Other people				
There is nobody else around	-34.25	+31.86	-13.84	-14.14
You're with a group of friends	+39.63	+19.29	+40.83	+46.66
You're amongst new people you don't know	-5.38	-51.16	-26.99	-32.52
General sounds				
The place is relatively quiet and still	+3.56	+30.30	+13.73	+17.71
There are sounds and noises coming from a variety of sources	-3.56	-30.30	-13.73	-17.71
The place has pleasant ...				
Music	-0.15	-3.66	-2.36	-2.77
Furniture and décor	-2.69	-0.56	-1.65	-0.92
Air conditioning	+12.65	+8.05	+11.01	+12.17
Lighting	-9.81	-3.82	-7.00	-8.48
When you stop to take some refreshments, the food and drink are ...				
Free or very cheap	+12.57	+12.03	+2.68	+17.05
High quality and delicious	-12.57	-12.03	-2.68	-17.05
The room you're playing in is ...				
Large and spacious with high ceilings	+10.66	-16.34	+4.55	-2.73
Quite small and cosy	-10.66	+16.34	-4.55	+2.73
The game you're playing has ...				
Quality sound	+2.34	+9.39	+8.27	+6.38
Bright colours	+2.33	-6.66	-0.95	-1.75
Muted pastel colours	-14.38	-3.59	-11.65	-10.90
Quality animations	+9.72	+0.86	+4.34	+6.27
The game you're playing has ...				
A new design you're not familiar with yet	-21.00	-31.23	-26.22	-31.62
A classic design you know well	+21.00	+31.23	+26.22	+31.62
The game has ...				
A small minimum bet size	+64.83	+52.81	+45.05	+78.59
A large maximum bet size	-64.83	-52.81	-45.05	-78.59
When you're finished this game, you have the option to play ...				
A wide variety of games	+15.74	-2.29	+10.47	+5.67
Just a few other games	-15.74	+2.29	-10.47	-5.67
Overall, the environment makes you feel ...				
Safe and secure	+12.42	+7.60	+10.99	+14.09
Well looked after	-3.77	-17.34	-8.43	-8.75
That you have the privacy to play in peace	-8.66	+9.74	-2.56	-5.34

In order to better understand the relative risks associated with each type of environment, Figure 7 shows the frequencies of gamblers across PGSI status with a preference for each segment.

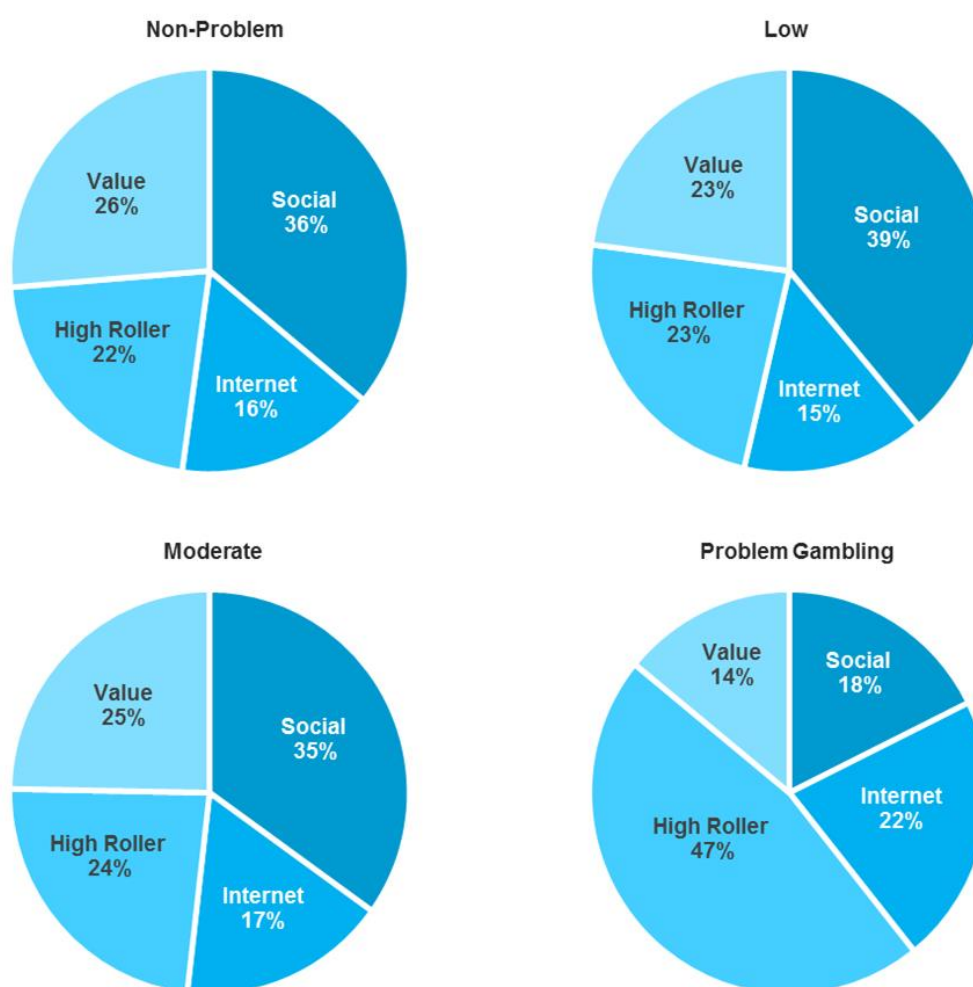


Figure 7. Proportion of gamblers in each Market Segment, by PGSI category

Problem gamblers were over-represented in the High Roller segment (46.7% of PGs vs 25.3% of all). They were also over-represented in the Internet segment (21.6% of PGs vs 16.7% of all). In contrast, people with many gambling problems were under-represented in the Value segment (14.1% of PGs vs 23.8% of all), as well as being under-represented in the Social segment (17.7% of PGs vs 34.2% of all).

The Social segment had the greatest number of total members (34.2%), while containing the second lowest proportion of problem gamblers (17.7%). As a result, in subsequent analyses we chose to use the Social segment as a basis for comparison in exploring what variables predict a gambler's segment membership.

Predictors of Segment Membership

In order to better understand what variables predict membership in market segments, multinomial logistic regression was employed. The outcome variable was segment membership (1 of 4) and the predictors were common demographics (gender and age) as well as PGSI gambling status (1-4). The large size of the sample made all comparisons statistically significant, however, the odds-ratio allowed

a more meaningful and practical interpretation of the results for each variable of interest. As noted above, the Social segment was picked as the base level of comparison, since it had the largest membership (34.2% of all) and the second smallest proportion of PGs (17.7% of PGs). The multinomial regression was needed, since it is well known that gambling problems are more common for males and younger people. As a result, it is important to know if the results from Figure 7 (above) showing greater gambling problems for people in the Internet and High Roller segments were solely due to their attraction for younger and/or male gamblers. Results of the multinomial regression are illustrated in Table 7.

Table 7. Predictors of Segment Membership

Segments*	Predictors	β	SE β	Wald's χ^2		e^β (odds)	CI	
Internet	Intercept	0.518	0.128	16.396	**	--		
	Gender (male)	0.715	0.071	102.311	**	2.044	1.779	2.347
	Age (younger)	0.033	0.002	199.721	**	1.034	1.029	1.039
	PGSI	0.107	0.033	10.367	**	1.113	1.043	1.187
High Roller	Intercept	1.070	0.114	87.532	**	--		
	Gender (male)	0.571	0.063	82.162	**	1.770	1.564	2.003
	Age (younger)	0.038	0.002	321.301	**	1.039	1.034	1.043
	PGSI	0.244	0.029	70.481	**	1.276	1.205	1.351
Value	Intercept	-0.089	0.120	0.549		--		
	Gender (male)	0.212	0.062	11.645	**	1.236	1.095	1.397
	Age (younger)	0.006	0.002	9.520	**	1.006	1.002	1.011
	PGSI	-0.024	0.031	0.619		.976	.919	1.037

*Note: * Reference category is the Social segment. df = 1 for all comparisons. ** $p < .01$*

Male Gamblers, compared to females, were twice as likely to be in the Internet segment (odds = 2.04), much more likely to be in the High Roller segment (odds = 1.77) and moderately more likely to be in the Value segment (odds = 1.24) compared to the Social segment. Younger gamblers were much more likely to be in the Internet segment (odds = 1.03), the High Roller segment (odds = 1.04) and the Value segment (odds = 1.01) when compared to the Social segment. As an example, a gambler who was 10 years younger than another was 40% more likely to be in the High Roller segment compared to the Social segment.

People with many gambling problems were moderately more likely to be in the Internet segment (odds = 1.11) compared to the Social segment. Each change in PGSI category was associated with an 11% greater likelihood of being in the Internet segment compared to the Social segment.

People with many gambling problems were also much more likely to be in the High Roller segment (odds = 1.28) compared to the Social segment. Therefore, each change in PGSI category was associated with a 28% greater likelihood of being in the High Roller segment compared to the Social segment.

In sum, the gambling problems associated with the Internet and High Roller segment were not exclusively due to attracting male gamblers and younger gamblers, although some of the risk may be a side effect of attracting these more vulnerable participants.

Personality Correlates

There are many personality and mental health constructs that have been associated with gambling problems (Lorains et al., 2011). Because they are correlated with PGSI gambling problems, however, we opted to consider them separately. Our interest was to explore common personality correlates guided by theory, since larger set of correlates was impractical. Moreover, our original survey did not have room to consider personality scales, and thus we opted to reinterview a subset of gamblers who took part in our panel-survey (n = 1473, see Methodology section).

Blaszczynski and Nower (2002) introduced a typology for people with gambling problems introduced in their Pathways Model. The Pathways model distinguishes between three developmental trajectories for gambling problems: 1) behaviourally conditioned, 2) emotional vulnerable and 3) antisocial/impulsive. Currently, the authors are validating a questionnaire to measure the psychological constructs related to these pathways, although it was not ready for use prior to the inception of data collection for this project. As a substitute, the reinterviews used the PHQ-4 (Kroenke, Spitzer, Williams, & Löwe, 2009) as a measure of depression and anxiety that should correspond with symptomology associate with Type 2 emotionally vulnerable gamblers. In addition, the SAPAS (Moran et al., 2003) is a measure of personality disorder that should correspond with at least some degree of anti-social tendencies in Type 3 gamblers. Lastly, we also included the BIS15 (Spinella, 2007), which is a measure of impulsivity that is also associated with Type 3 gamblers (anti-social/impulsive). Unfortunately, we could not find an existing scale that could reliably measure behavioural conditioning, in the abstract, since behavioural conditioning – from a strictly behaviourist perspective – is not a cognitive construct.

Rockloff and Dyer (2006) introduced a scale, the Four Es, purporting to measure psychological risk for development of a gambling disorder. The Four Es factors of Escape, Esteem, Excitement and Excess, described in more detail later, can be summed to find an overall measure that is highly predictive of concurrent gambling problems, but also predicts increases in gambling problems over time.

Multicollinearity

One problem in exploring how these psychological constructs predict gambling problems is that there is a high degree of covariance in the measures, particularly because some are measure of very similar constructs. Table 8 shows the correlations between each of the measures, and highlights the potential for multicollinearity issues when used in concurrent predictions of cluster membership.

Table 8. Correlations between personality constructs

	SAPAS	PHQ4	BIS15
SAPAS	--	--	--
PHQ4	0.456**	--	--
BIS15	0.363**	0.414**	--
Four Es	0.472**	0.691**	0.680**

*Note: ** indicates $p < 0.01$*

The Four Es had moderately strong correlations with BIS15. There is strong conceptual overlap between Impulsivity (BIS15) and the Excess trait of the Four Es. The Excess trait of the Four Es contains items such as “I usually get into trouble because I don’t stop to think”. Moreover, the Four Es had moderately strong correlations with PHQ4. There is strong conceptual overlap of PHQ4 (anxiety

and depression) and the Esteem trait of the Four Es. The Esteem trait contains items indicating a degree of self-loathing, such as “I’m a miserable person to be around.”

Due to the high degree of multicollinearity between the Four Es and the other measures, it is prudent to consider these traits in separate analyses. Therefore, in the subsequent sections, we predict cluster membership using Pathways-related personality measurements (SAPAS, BIS15, PHQ-4) separate from the Four Es related construct.

Pathways Model Variables by Segment

We have already explored how segment membership varies by PGSI status, and found that the Internet and High Roller segments preferentially appealed to people with gambling problems. However, we also sought evidence for what psychological dimensions might be associated with segment membership. We utilised the Pathways Model as inspiration for choosing personality variables amongst a large number of potential measures that are known to be associated with gambling problems. This is not, however, a test of the Pathways Model. Instead, it is a theory-based exploration of variables in the absence of other strong criteria for choosing amongst a large set of potential predictors. Table 9 shows the results of a multinomial logistic regression predicting segment membership based on age and gender (as covariates) and the constructs of BIS15 (impulsivity), PHQ-4 (anxiety and depression) and SAPAS (personality disorder).

Table 9. Pathways Model Predictors of Segment Membership

Segments*	Predictors	β	SE β	Wald's χ^2		e^{β} (odds ratio)	CI	
Internet	Intercept	1.738	0.304	32.787	**	--		
	Age (younger)	0.043	0.006	57.215	**	1.044	1.032	1.055
	Gender (male)	0.781	0.155	25.375	**	2.184	1.612	2.960
	BIS15	-0.036	0.087	0.169		0.965	.814	1.144
	PHQ4	0.175	0.093	3.517		1.191	.992	1.429
	SAPAS	-0.050	0.090	0.313		0.951	.798	1.134
High Roller	Intercept	2.712	0.305	78.933	**	--		
	Age (younger)	0.063	0.006	115.802	**	1.065	1.053	1.078
	Gender (male)	0.629	0.161	15.307	**	1.875	1.369	2.569
	BIS15	0.171	0.088	3.717		1.186	.997	1.411
	PHQ4	0.216	0.094	5.263	*	1.241	1.032	1.492
	SAPAS	-0.104	0.091	1.304		0.902	.755	1.077
Value	Intercept	-0.204	0.320	0.406		--		
	Age (younger)	-0.003	0.006	0.306		0.997	.986	1.008
	Gender (male)	0.101	0.147	0.473		1.106	.830	1.474
	BIS15	-0.022	0.083	0.069		0.978	.831	1.152
	PHQ4	0.151	0.091	2.778		1.163	.974	1.388
	SAPAS	-0.015	0.089	0.029		0.985	.828	1.172

Note: * Reference category is the Social segment. df = 1 for all comparisons. * $p < .05$, ** $p < .01$

As a reminder, Type 2 gamblers in the Pathways model are “emotionally vulnerable” and characterised by heightened depression and anxiety as measured by the PHQ4. PHQ4 (depression and anxiety) was a significant predictor of membership in the High Roller segment (odds = 1.24). The top 5% of PHQ4 scores had a 47% greater chance of membership in the High Roller segment compared to the Social segment.

Type 3 gamblers are “anti-social / impulsive” as represented by the BIS15 (impulsivity) and the SAPAS (personality disorder). Contrary to expectations, SAPAS was not a significant predictor of segment membership. Nevertheless, BIS15 (impulsivity) was a marginally significant predictor of membership in the High Roller segment (odds = 1.19). The top 5% of scores on the BIS15 had a 36% greater chance of membership in the High Roller segment compared to the Social segment. These latter findings, however, should be interpreted with some caution given that the results only just meet the test of significance (with rounding).

Four Es Model by Segment

The Four Es scale has an aggregate score that predicts concurrent gambling problems as well as increases in future gambling problems without any specific mention of gambling activities or products. In this way, the scale is useful in measuring the psychological predispositions that are theorised to put people at risk, and therefore also serves as a potentially useful scale for predicting cluster membership. The aim of the analyses of the Four Es scale was to provide additional (potential) evidence that these clusters are associated with psychological-risk and not just gambling problems. Table 10 shows a multinomial logistic regression predicting cluster membership from demographic variables (age and gender) as well as Four Es scores. As in previous analyses, the base level for comparison was the Social segment, which is the largest segment and also is associated with relatively fewer gambling problems compared to the Internet and High Roller segments.

Table 10. Four Es Model Predictors of Segment Membership

Segments*	Predictors	β	SE β	Wald's χ^2		e^{β} (odds ratio)	CI	
Internet	Intercept	1.727	0.302	32.717	**	--		
	Age (younger)	.042	0.006	56.194	**	1.043	1.032	1.055
	Gender (male)	.763	0.155	24.399	**	2.145	1.585	2.904
	Four Es	.111	0.080	1.929		1.117	.955	1.307
High Roller	Intercept	2.613	0.305	73.541	**	--		
	Age (younger)	.061	0.006	108.939	**	1.063	1.051	1.076
	Gender (male)	.621	0.160	14.986	**	1.861	1.359	2.548
	Four Es	.333	0.082	16.621	**	1.396	1.189	1.638
Value	Intercept	-.188	0.318	0.349		--		
	Age (younger)	-.003	0.006	0.281		.997	.986	1.008
	Gender (male)	.086	0.146	0.343		1.089	.818	1.451
	Four Es	.104	0.077	1.848		1.110	.955	1.290

*Note: * Reference category is Social segment. df = 1 for all comparisons. ** $p < .01$*

As shown in Table 10, the Four Es scale was a significant predictor of membership in the High Roller segment (odds=1.40) compared to the Social segment. The top 5% of scorers on the Four Es scale had a 78% greater chance of membership in the High Roller segment compared to the Social segment. However, the Four Es did not predict membership in the Internet segment; although the odds ratio is in the expected direction of likely membership.

Since the Four Es predicts membership in the High Roller segment, we decided to create a more focused comparison to determine which facet of the Four Es (i.e., Escape, Esteem, Excess or Excitement) was most predictive of membership in this market segment which contained the highest proportion of people with severe gambling problems.

Factor Predictor(s) of Four Es model for High Roller segment

The Four Es scale is composed of four subscales, including Escape, Esteem, Excess and Excitement. All four subscales are highly correlated, although also show factor structure indicating higher within factor item correlations than between item correlations (Rockloff & Dyer, 2006). Escape is measured by items that suggest a motivation to escape life problems or circumstances (e.g., “I wish I could take the next bus or flight out of this town.”). Esteem is measured by items of self-loathing (e.g., “I’m a miserable person to be around”). Excess is measured by items that show a lack of forethought (e.g., “I usually get into trouble because I don’t stop to think”) and Excitement is measured by items of boredom and restlessness (e.g., “I usually can’t think of things to keep my mind occupied”).

Our prior analysis showed that the Four Es trait (overall), controlling for age and gender, was predictive of membership in the High Roller segment; which in-turn is associated with the high proportions of people with severe gambling problems. Using the Social segment as the basis for comparison, Table 11 shows the results of a stepwise binomial logistic regression predicting membership in the High Roller segment from the Four Es factors of Escape, Esteem, Excess and Excitement. To validate these results, we used both forward and backward variable selection, but the results were the same. The “Escape” factor was the key predictive element of the Four Es that indicated membership in the High Roller segment compared to the Social segment (odd =1.34). The odds ratio indicates that people who scored in the top 5% on the Escape factor had a 67% greater chance of being in the High Roller segment compared to the Social segment.

Table 11. Four Es Model Prediction of Membership to High Roller segment

Variables in the Equation							
Variables	β	SE β	Wald's X^2		e^{β} (odds ratio)	CI	
Age (younger)	0.060	0.006	96.653	**	1.062	1.049	1.074
Gender (male)	0.613	0.169	13.129	**	1.845	1.325	2.570
Escape	0.296	0.086	11.710	**	1.344	1.135	1.592
Constant	2.546	0.313	66.263	**	12.760		

Variables not in the Equation		
Variables	Score*	p
Esteem	0.001	.975
Excess	0.872	.350
Excite	1.457	.227

*Note: * Score estimates change in model fit if the variable is added to the model. This is also known as the Lagrange multiplier test. df = 1 for all comparisons. ** p < .01*

Discussion

Our exploration of preferences for gambling environments was directed by the tools and techniques of marketing, which have a sophisticated paradigm for understanding how people differ with respect to the importance they attach to a consumer experience. We see this approach as highly relevant, since gambling is an entertainment product. Moreover, the environment in which gambling is consumed forms an important part of the experience. Past research that addressed the environment viewed it in isolation from the games themselves. Here we took a more comprehensive approach in considering the platform (internet, smart device, pub/hotel, club or casino), features of the immediate physical environment surrounding gambling (e.g., lighting, the food, etc.) as well as the games (animations, sounds, etc.). Importantly, our exploration was guided by these levels of analysis, but sought to find those features that were most frequently mentioned by gamblers as being important.

In Study 2, we examined the overall importance that gamblers attached to each choice domain that we presented to them. Perhaps unsurprisingly, the single most important feature of the environment for gamblers is the platform they play on (internet, smart device, club, pub/hotel or casino). Prior to the inception of our research, we speculated that people would likely need to make this decision first before considering other elements of the choice equation. As an example, it is unlikely that people would choose a game feature, such as attractive animations, and shop through all platforms to compare these features in any circumscribed period of time. Therefore, our findings are consistent with this *a priori* assumption. Other important features of the environment include where gamblers play (near home, the shops, work, etc.), who they play with (alone, with friends, with someone new) and the availability of attractive (minimum) bet sizes. Beyond these “most important” features of the environment, the collection of “other” environmental features is of greater importance than any one feature alone.

We noted that it could be misleading to look at average preferences, since this makes the assumption that a meaningful description can be given for the “average gambler”. Nevertheless, our subsequent analyses in Study 2 show that there are at least some consistencies in gamblers preferences irrespective of market segments. The main effect of utilities suggests that the ideal environment for the average gambler includes: gambling at a club near home, with a group of friends, in a relatively quiet place with pleasant air-conditioning, with cheap food available and a large space to play in, on a classic game with quality animations and small bet sizes, where you feel safe and secure and there is a wide variety of other games to play when you are done. Of course, our later analyses showed that some gamblers would prefer to play on the internet (i.e., the Internet segment) and some gamblers are more concerned with the cost vs. quality of gambling (e.g., Value vs. High Roller segments).

People with gambling problems show many common preferences for gambling environments as those without gambling problems, although there were also some distinct differences. For instance, Problem Gamblers are much less likely to give weight to the company they share; such as being alone, with a group of friends or with new people; and have a preference for larger venues. This preference for larger environments is notable, as it supports evidence that gambling in larger venues may promote more intensive gambling (Markham, Young, & Doran, 2014; Rockloff et al., 2011).

To better understand the differences in preference in the large group of gamblers who we surveyed, we used k-means cluster analysis to identify market segments amongst the gamblers. This segmentation had the purpose of identifying patterns of preference that reliably characterise different groups of gamblers, and allowed an exploration of those segments in terms of their attraction for people with gambling problems. Four Market Segments were found: Social, Internet, High Roller and Value. Market segments represent a conglomeration of environmental elements, although the chosen names highlight some of the largest differences that characterise each segment.

Problem Gamblers prefer environment features consistent with the High Roller and Internet segments, whereas non-problem players prefer features of the Value and Social segments. This is a critical finding, because it suggests that some environments are more attractive to recreational gamblers whereas others attract players with problems. An attractive gambling experience, in terms of the environment, could be part of the problem and solution. It may be possible to design or encourage the development of environments that are most conducive to the enjoyment of recreational gambling (e.g., the Value and Social environments), while minimising the availability or appeal of environments that attract players experiencing problems (i.e., the High Roller and Internet segments).

Given that the market that characterises EGM gambling can be divided into segments, we also explored what demographic properties of gamblers predicted their membership to these segments. We found that female gamblers were overrepresented in the ranks of the Social segment, whereas male gamblers were overrepresented in the other segments (Internet, High Roller and Value).

We also wanted to understand the psychological motivations and vulnerabilities that might predict segment membership. There are many psychological constructs that have been associated with gambling problems (Lorains et al., 2011), and therefore the field of potential measures that might predict segment membership was large. To narrow the field of our consideration, we focused on those variables that theoretical approaches to understanding gambling problems (such as the Pathways Model and the Four Es) suggest are important.

PHQ4 (depression and anxiety) and BIS15 (impulsivity) both separately predict membership in the High Roller segment, and moreover, the “Escape” factor of the Four Es also predicts membership in the High Roller segment. None of these measures have explicit reference to gambling activities or gambling-environments, and therefore are an important source of convergent validity suggesting that the High Roller environment may be attractive to people who are at risk for developing problems.

Perhaps the most salient implication of this project is that environments encouraging the “social” and “value” aspects of the environment may be safer by virtue of appealing to non-problematic gamblers. These environments may be less harmful, since people who prefer these environments have fewer problems, or otherwise may be less likely to influence people to progress to problem gambling. This gives practical advice in designing environments that appeal to a group of gamblers who are at less risk, and equally, may be better prepared to enjoy gambling as a recreational pursuit.

The Internet segment (16.7% of gamblers overall) suggests a large and unserved market for EGM products in a virtual environment. By and large, these gamblers are not going offshore to unregulated or under-regulated sites (Allen Consulting Group, 2009). Legalisation of these products in Australia could lead to a surge in demand, but also consequent expansion of a market that tends to attract players at a higher risk of developing gambling problems. There is an obvious point for debate about the safety and/or inevitability of EGM gambling on the internet given this potentially unmet desire for this type of EGM offering.

Limitations

We have tried to be comprehensive in our exploration of EGM environments, although there are necessary limitations imposed by our given approach. First, it is important to recognise that we chose aspects of the environment for consideration that were suggested to us during our interviews with EGM gamblers in Study 1. Gamblers may have only limited introspective access to understand what features of the environment truly change their consumption decisions. It is always possible that there were important considerations implicit in their choices of real gambling that they were not able to clearly articulate to us. In Study 2, we further restricted our consideration to only those dimensions of the environment that many people frequently mentioned as important. In short, our discrete choice experiment could not incorporate all aspects of environments that were brought to our attention in the

interviews, and therefore we needed to focus on only the most common elements. Of course, some other dimensions and features may have been important in hindsight - if presented the choice, so our findings are limited to those aspects that many gamblers spontaneously said were important.

In Study 2 we also needed to define our dimensions for comparison in a somewhat ad hoc fashion. We compared “large maximum bet sizes” against “small minimum bet sizes”, for instance, based on the logical similarity of these features. The particular sets of contrasting features chosen could have an influence on the overall importance that players attach to each dimension. Therefore, an alternative set of contrasts could potentially produce different results, particularly in terms of the magnitudes of relative importances.

Conclusion

This study used a powerful paradigm to reveal the attraction of gamblers to different elements of the environment in a way which encapsulated gestalt judgments that are natural expressions of peoples’ typical choices in gambling. In the real world, people cannot choose environmental elements of their gambling in isolation, but must instead choose amongst a set of features inherent in different experiences. People can choose to gamble on the internet, but that choice may limit the food they can eat, the music they enjoy or the games that they can play. Thus, our paradigm was a natural expression of how choices are made in the natural world, and therefore presumably better to reflect the relative trade-offs that must be made in such choices.

We found Social and Value oriented environments were most conducive to attracting players with few gambling problems, and High Roller and Internet focused environments appealed to more players with problems and vulnerabilities. This leaves some strong directions for the development of gambling environments that are most consistent with recreational play.

Project Summary

EGM gambling is an entertainment, and gambling games are played within environments that comprise an important part of their enjoyment. Bitner (1992) called the environmental context of consumption the *servicescape*. People must make choices about the servicescape in which they gamble, either implicitly or explicitly, in order to be able to play EGMs. Moreover, the platforms people choose to play on (mobile, internet, casinos, etc.), the providers they choose amongst (e.g., based on lighting, food service, etc.) and the machines they choose to play (e.g., based on animations, small minimum bets, etc.) are important components of both their choice and their play.

There was a large gap in both the breadth and depth of current knowledge about EGM environments. Prior to the current project, there has been no systematic effort at gathering the potential features of the environment that people see as important to their gambling choices. Moreover, there was little known about how different aspects of the environment are viewed by people with and without severe gambling problems. There was no information on the relative importance that people place on different aspects of the environment in making EGM gambling choices. Lastly, there was no understanding of the potential for different Market Segments that can reliably describe the preferences of different sets of gamblers.

The current project employed the well-developed tools of marketing research to explore the preferences of EGM gamblers for environmental features. In gathering what features of the environment players nominate as important, we relied on a mixed approach of gathering evidence from qualitative interviews and past literature. The environment feature set was reduced to the most common domains mentioned by many gamblers, and submitted to a discrete choice experiment. Survey respondents made several choices (x15) amongst alternative sets of three hypothetical EGM environments. Statistical analyses allowed us to infer which features were most important, how these choices differed based on peoples' past involvement with gambling problems, and how people could be divided into Market Segments that expressed unique environmental preferences.

Our first aim was to find, through qualitative interviews in Study 1, a collection of spontaneously produced environmental features that gamblers deemed to be important in making EGM gambling choices. We produced a detailed list of discoveries, but also verified some past findings that suggest social aspects of play (Thomas et al., 2010; White et al., 2006), playing close to home (Hare, 2009), and customer service (Hing & Haw, 2010) were important aspects for most players. We also discovered that gamblers with more severe problems more often noted the size of the venue and the number of EGMs available for play as notable aspects of their choice.

Our second aim was to determine the importance that players attach to each aspect of their choice. For practicality, we focused on the domains most frequently mentioned by players about the gambling environment to create a survey-based discrete choice experiment in Study 2. The study revealed that people place greatest importance on the platform through which they gamble (internet, smart device, casino, etc.), strong importance on who they play with (e.g., friends, new people, or alone), and the availability of small minimum bet sizes.

The third aim of the project was to explore the potential for dividing player preferences for EGM environments into distinct Market Segments. We found that players could be assigned to four sets of gambling preference: Social, Internet, High Roller, and Value. The Social segment was characterised by gamblers who placed high utility on the social aspects of their play, such as gambling with friends. Internet gamblers preferred to gamble on internet connected devices, High Rollers were less concerned about the costs of gambling, and Value players were relatively more concerned about spending less. Problem gamblers were much more likely to express preferences consistent with either

the Internet of High Roller segments, and much less likely to be Social and Value players. Demographic correlates commonly associated with risk for problem gambling, including being male and youthful, were also associated with the Internet and High Roller segments. Lastly, psychological constructs that are predictive of gambling problems, including depression and anxiety, impulsivity and a motivation to 'escape' life-problems, were predictive of membership in the High Roller segment.

Our study was limited to those aspects of the environment that gamblers could spontaneously recall in our qualitative interviews. We further restricted our discrete choice experiment to elements that many gamblers mentioned as important to their choices. As a result, there could be important environmental choices that are not captured in the current set of studies. Although our methods of revealed preference are based on well-documented techniques within marketing research literature, we recognise that other approaches might have yielded somewhat different results.

Future research should concentrate on how different subsets of gamblers, such as the Social, Internet, High Roller and Value players identified in this project, influence actual gambling decisions. The current project only examined preferences. It would be helpful to know how the expression of these preferences influences peoples' uptake of new (and potentially innovative) gambling opportunities. The evolution of the gambling marketplace with regard to online EGM offerings is particularly concerning. Our results reveal a potential legal marking gap, where a substantial number of gamblers are expressing a desire for internet EGM offerings, yet no legal products can be offered to Australians. Moreover, our results suggest that such new offerings might attract a high proportion of player who do, or will, have gambling related problems.

This research provides a great deal of new value towards our collective understanding of EGM gambling environments. It replicates some earlier findings, particularly with regard to validating features of the environment that players with problems seem to prefer (e.g., large gambling spaces). It also allows a detailed understanding of the complex environmental feature sets that players must decide upon, either implicitly or explicitly, when deciding where and how to gamble. We found four Market Segments for EGM environments, where two were associated with gambling problems (Internet and High Roller) and another two were associated with recreational gambling (Social and Value). This information provides important direction for encouraging gambling environments that are safer for consumers, and yet preserve the benefits for gambling industry, recreation and player enjoyment.

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Appendices

Appendix 1

Table 12. Study 1 participant demographics, platforms experienced and gambling status

ID	Gender	Age	Country of Birth	Platforms experienced			Risk of PG (PGSI)	Problem Gambler (CPSG)
				In Venue	Computer	Phone		
004	Male	57	Fiji	✓			No risk	Yes
005	Female	64	Denmark	✓	✓	✓	Mod	Yes
006	Male	68	Australia	✓			Mod	Yes
007	Male	20	Philippines	✓	✓	✓	Mod	Yes
008	Male	66	Lebanon	✓			No risk	Yes
009	Male	39	n/a	✓	✓	✓	Problem	Yes
010	Female	61	Mauritius	✓			Mod	No
011	Male	53	Lebanon	✓			No risk	Yes
012	Female	n/a	Greece	✓	✓	✓	Mod	Yes
013	Male	47	Lebanon	✓		✓	Mod	Yes
014	Male	33	Australia	✓			Problem	Yes
015	Female	43	Australia	✓	✓	✓	Low	Yes
016	Female	63	Australia	✓			Mod	Yes
017	Female	59	Vietnam	✓			Mod	No
018	Male	57	Vietnam	✓			Mod	Yes
019	Male	20	Australia	✓			Low	No
020	Male	20	Australia	✓			Mod	Yes
021	Male	62	Vietnam	✓			Mod	Yes
022	Female	80	Australia	✓			No risk	Yes
023	Male	59	Pakistan	✓	✓	✓	Mod	Yes
024	Female	50	Philippines	✓	✓	✓	Problem	Yes
025	Female	67	Australia	✓		✓	No risk	Yes
026	Male	67	Egypt	✓			Low	Yes
027	Female	58	Vietnam	✓			Low	Yes
028	Male	41	Australia	✓		✓	No risk	Yes
029	Male	65	Scotland	✓			Mod	No
030	Female	40	Australia	✓			Problem	Yes
031	Female	n/a	Australia	✓			No risk	No
032	Female	50	Australia	✓	✓		Mod	Yes
033	Female	64	Australia	✓			Low	No
034*	Male	42	Australia				Problem	Yes
035	Male	81	Australia	✓			Mod	Yes
036	Female	47	Australia	✓			No risk	No
037	Female	67	Australia	✓			No risk	No
038	Female	n/a	Spain	✓			Low	No
039	Male	38	Australia	✓			Mod	No
040	Male	50	Australia	✓	✓	✓	Mod	Yes
041	Male	50	Australia	✓			Problem	Yes
042	Male	41	Australia	✓	✓		Problem	Yes

043	Male	43	Australia	✓		✓	Problem	Yes
044	Male	70	Australia	✓			No risk	No
045	Male	61	Australia	✓			Problem	Yes
046	Male	48	Australia	✓			No risk	Yes
047	Female	78	Germany	✓			Mod	Yes
048	Female	60	England	✓			No risk	No
049	Male	26	Australia	✓			Mod	No
050	Female	77	England	✓			Low	Yes
051	Male	47	Australia	✓			No risk	Yes
052	Female	73	Australia	✓			Mod	No
053	Female	44	Australia	✓	✓	✓	Mod	Yes
054	Male	79	Australia	✓			Mod	Yes
055	Female	74	Australia	✓			No risk	Yes
056	Female	56	Germany	✓			No risk	Yes
057	Female	34	NZ	✓			Mod	No
058	Male	85	Australia	✓			No risk	Yes
059	Female	83	Australia	✓			No risk	Yes
060	Female	72	Hungary	✓			Problem	Yes
061	Male	74	NZ	✓	✓		Mod	Yes
062	Female	52	Australia	✓			No risk	Yes
063	Male	20	Australia	✓	✓	✓	Mod	Yes

Note: Participants 001–003 and 034 were removed from the sample due to incomplete interview. n/a represents data that was not collected.

Appendix 2

Table 13. Code structure devised for Study 1 analysis

Platform Preference
Platform\Preference\ Device
Preference\Device
Platform\Preference\Device\Computer
Platform\Preference\Device\Hand held device
Platform\Preference\Venue
Platform\Reason
Platform\Reason\Between Devices (<i>reasons for preferring one device over another</i>)
Platform\Reason\Between Devices\More authentic
Platform\Reason\Between Devices\ Comfortable
Platform\Reason\Between Devices\Convenience
Platform\Reason\Between Devices\Discreet
Platform\Reason\Between Devices\Hardware/Functions
Platform\Reason\Between Devices\Possessing the Technology
Platform\Reason\Between Devices\Cost
Platform\Reason\Between Devices\Risk of damage to device
Platform\Reason\Between Devices\Size
Platform\Reason\Between Devices\Technology know how required
Platform\Reason\Device (<i>reasons for preferring any device over in venue play</i>)
Platform\Reason\Device\Games available
Platform\Reason\Device\Can play at home
Platform\Reason\Device\Other activities accessible
Platform\Reason\Device\Cost
Platform\Reason\Device\Prevent addiction/money loss
Platform\Reason\Device\Social
Platform\Reason\ Venue (<i>reasons for preferring to play in a venue rather than on a device</i>)
Platform\Reason\Venue\Better atmosphere
Platform\Reason\Venue\More authentic
Platform\Reason\Venue\ Not aware of EGM on device
Platform\Reason\Venue\ Lack technological know-how
Platform\Reason\Venue\Chance of winning
Platform\Reason\Venue\Cost
Platform\Reason\Venue\Getting Out
Platform\Reason\Venue\Hardware/Functions
Platform\Reason\Venue\More Interesting
Platform\Reason\Venue\Jackpots
Platform\Reason\Venue\Availability of other activities
Platform\Reason\Venue\Possessing technology
Platform\Reason\Venue\Real Money
Platform\Reason\Venue\Risk
Platform\Reason\Venue\Risk\Risk Scam
Platform\Reason\Venue\Risk\Risk over -spending
Platform\Reason\Venue\Risk\Risk Addiction
Platform\Reason\Venue\Risk\Risk time wasting
Platform\Reason\Venue\Service
Platform\Reason\Venue\Service\Venue facilities
Platform\Reason\Venue\More social
Platform\Reason\Venue\Stigma
Platform\Reason\Venue\Variety
Provider Preferences
Provider\Preference

Provider\Preference\In-venue
Provider\Preference\In-venue\Casino
Provider\Preference\In-venue\Club
Provider\Preference\In-venue\Pub
Provider\Preference\Non-Venue
Provider\Preference\Non-Venue\Home
Provider\Preference\Non-Venue\Other
Provider\Preference\Supplier
Provider\Preference\Supplier\Advertisements
Provider\Preference\Supplier\Application Store
Provider\Preference\Supplier\CD
Provider\Preference\Supplier\Google Search
Provider\Preference\Supplier\Specific Website
Provider\Reason\Location\Home (<i>reasons for preferring to play at home</i>)
Provider\Reason\Location\Home\Atmosphere
Provider\Reason\Location\Home\Comfort
Provider\Reason\Location\Home\Convenience
Provider\Reason\Location\Home\Convenience\Other Activities
Provider\Reason\Location\Home\Convenience\Portable
Provider\Reason\Location\Home\Discreet
Provider\Reason\Location\Home\Family
Provider\Reason\Location\Home\Cost
Provider\Reason\Location\Home\Save time
Provider\Reason\Location\Other location (<i>reasons for preferring to play at a location aside from home or in venue</i>)
Provider\Reason\Location\Other location\Air quality
Provider\Reason\Location\Other location\Busy
Provider\Reason\Location\Other location\Discreet
Provider\Reason\Location\Other location\Other activities available
Provider\Reason\Location\Other location\Social
Provider\Reason\Location\Other location\Save time
Provider\Reason\Location\Venue (<i>reasons for preferring to play in a particular venue</i>)
Provider\Reason\Location\Venue\Anonymity
Provider\Reason\Location\Venue\Atmosphere
Provider\Reason\Location\Venue\Attraction
Provider\Reason\Location\Venue\Autonomy
Provider\Reason\Location\Venue\Busy
Provider\Reason\Location\Venue\Cleanliness
Provider\Reason\Location\Venue\Clientele
Provider\Reason\Location\Venue\Comfort
Provider\Reason\Location\Venue\Community
Provider\Reason\Location\Venue\Convenience
Provider\Reason\Location\Venue\Convenience\Close
Provider\Reason\Location\Venue\Convenience\Close\Other Facilities
Provider\Reason\Location\Venue\Convenience\Free Bus
Provider\Reason\Location\Venue\Convenience\Opening Hours
Provider\Reason\Location\Venue\Convenience\Parking
Provider\Reason\Location\Venue\Convenience\Public Transport available
Provider\Reason\Location\Venue\Facilities available
Provider\Reason\Location\Venue\Familiarity
Provider\Reason\Location\Venue\Food and drink quality/cost
Provider\Reason\Location\Venue\Gambling Risk
Provider\Reason\Location\Venue\Somewhere to bring guests
Provider\Reason\Location\Venue\Jackpots
Provider\Reason\Location\Venue\Machine

Provider\Reason\Location\Venue\Machine\Has favourite machine
Provider\Reason\Location\Venue\Machine\Amount of machines
Provider\Reason\Location\Venue\Machine\Quality of machines
Provider\Reason\Location\Venue\Machine\Familiarity with machines
Provider\Reason\Location\Venue\Machine\Variety of machines
Provider\Reason\Location\Venue\Machine\Winning machines
Provider\Reason\Location\Venue\Member
Provider\Reason\Location\Venue\Member Benefits
Provider\Reason\Location\Venue\Modernity
Provider\Reason\Location\Venue\Availability of other activities
Provider\Reason\Location\Venue\Other opportunities to win money/prizes
Provider\Reason\Location\Venue\Overall management
Provider\Reason\Location\Venue\Perceived chance of winning
Provider\Reason\Location\Venue\Phone Reception available
Provider\Reason\Location\Venue\Prices at venue
Provider\Reason\Location\Venue\Regulations
Provider\Reason\Location\Venue\Safety
Provider\Reason\Location\Venue\Service
Provider\Reason\Location\Venue\Physical layout of venue
Provider\Reason\Location\Venue\Social
Provider\Reason\Supplier (<i>reasons for preferring particular online provider</i>)
Provider\Reason\Supplier\Accessibility
Provider\Reason\Supplier\Availability
Provider\Reason\Supplier\Familiar
Provider\Reason\Supplier\Internet
Provider\Reason\Supplier\More wins
Provider\Reason\Supplier\Cost
Provider\Reason\Supplier\Recommended
Provider\Reason\Supplier\Variety
Game Preferences
Game\Reason (<i>reasons for preferring a particular game</i>)
Game\Reason\Advertising
Game\Reason\Availability
Game\Reason\Combinations required to win
Game\Reason\Complexity
Game\Reason\Familiarity
Game\Reason\Features
Game\Reason\Feeling
Game\Reason\Graphics
Game\Reason\Sophistication of hardware
Game\Reason\Jackpots
Game\Reason\Lights
Game\Reason\Modernity
Game\Reason\Perceived chance of winning
Game\Reason\Popularity
Game\Reason\Position in venue
Game\Reason\Opportunities to progress
Game\Reason\Sounds
Game\Reason\Speed
Game\Reason\Substitutes
Game\Reason\Value

