Problem gambling vulnerability: The interaction between access, individual cognitions and group beliefs/preferences

Final Report prepared for the
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This study tests the link between access, individual cognitions and group beliefs/preferences in order to determine problem gambling vulnerability. This involved an extensive literature review, conducting focus group interviews and in-depth interviews and questionnaires.

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Background to the Project

Team Members

The team integrated knowledge and expertise from their clinical, psychological and sociological perspectives, as well as their expertise in gambling, wider addictions, mood and compulsive-impulse control disorders, cultural policy and applied social policy to inform the study.

Dr Anna Thomas is part of the Swinburne Psychological, Clinical, Health and Evaluation (Swin-PsyCHE) Research Centre at Swinburne University. She has ten years experience in gambling research with a particular focus on problem gambling and electronic gaming machine gambling. She was Project Coordinator for this current project during the second phase, and then took the lead on data analysis and report writing.

Her PhD was a multi-methodological study developing and testing a model of electronic gaming machine problem gambling. She has four peer reviewed publications related to gambling research and has presented her research at numerous conferences. Dr Thomas also has an interest in the wider field of addictions, recently managing a multi-stage project investigating the experience of, and barriers to, treatment of people with mental health/substance use co-morbidity.

Professor Michael Kyrios holds the Chair in Psychology in the Faculty of Life and Social Sciences at Swinburne University where he is Director of the Brain Sciences Institute and the Swin-PsyCHE Research Centre. He chairs the Executive Committee of the National e-Therapy Centre for Anxiety Disorders funded by the Australian federal Department of Health and Ageing and holds an honorary position at the University of Melbourne where he worked for 15 years.

He is an academic clinical psychologist specialising in the study of depression, anxiety and obsessive-compulsive spectrum disorders (Obsessive-Compulsive Disorder [OCD],

compulsive buying and hoarding, problem gambling, Body Dysmorphic Disorder [BDD]), and chronic medical illnesses. Professor Kyrios has over 80 publications in peer reviewed journals and academic books. He has also been the recipient of grants totalling six and a half million dollars and has been involved as a chief investigator on grants studying obsessive-compulsive spectrum disorders, depression in primary care, problem gambling and mood disorders in medical conditions.

Professor Susan Moore is the inaugural research professor at Swinburne University, with thirty five years academic experience in psychology and education. Publications include over 100 refereed journal articles, four books and several book chapters. She has twelve publications on gambling. She has also been the recipient of close to two million dollars in research grants and been chief investigator in research projects involving co-operative links with various community agencies such as Epilepsy Foundation of Victoria, St Vincent's Hospital, Women's Health West, Boroondara City Council, and Parkinson's Victoria.

Professor Moore's research areas include risk-taking and gambling, psychology of adolescence, HIV/AIDS risk, identity theory, romance and sexual behaviour, women's health, health psychology and psychology of the Internet. She is a regular media contributor on psychological issues and reviews articles for a number of national and international peer reviewed journals including *International Gambling Studies*.

Professor Glen Bates is the academic head of Psychological Sciences and Statistics within the Faculty of Life and Social Sciences. He is an academic clinical psychologist with a particular interest in the assessment and treatment of anxiety disorders and depression; anger management; cross cultural factors in emotional disorders; autobiographical memory and emotional disorders; models of the self and emotional well-being; and generativity and life narrative themes at midlife.

He has 39 publications in peer reviewed journals and academic books and has been the recipient of grants totalling nearly $200,000 from the Department of Justice, University of Melbourne, Swinburne University of Technology and other sources.

Professor Denise Meredyth has an interdisciplinary research background, combining expertise in education, cultural sociology, cultural policy, applied social policy and political/social theory. Her recent work has been on citizenship, community capacity-building and the policy dilemmas associated with multi-ethnicity, social exclusion and information poverty. Her contribution to this project was an understanding of cultural policy, cultural practices and social issues, with a clear understanding of ethnic, gender, age and location as factors affecting social dynamics.

Professor Meredyth's research is usually team-based, drawing on substantial external funding. She has been a Chief Investigator on 10 Australian Research Council grants and has conducted a number of externally funded team-based consultancies. She has published industry reports and refereed journal articles and managed complex projects with large teams and multiple industry partners and stakeholders.

Dr Glenn Jessop completed his Ph.D. in 2007, with his thesis: *Motor Telephony: The practices and problems of regulating mobile telephony and driving*. Aside from publishing and presenting this work in journals and at conferences, he has taught sociology and worked as coordinator for the first year of the current research project looking at vulnerability and resilience to problem gambling. Currently a Research Associate at the Institute for Social Research, Glenn's research interests include the regulation of mobile phone use while driving, gambling policy and disability issues.

In December 2007, Dr Glenn Jessop left his role as Project Manager at Swinburne University of Technology to take up the role as Project Officer at the Office of Gaming and Racing. Dr Jessop conducted all work on this report during his time as Project Manager at Swinburne University of Technology and has not undertaken any work on this report since commencing with the Office of Gaming and Racing. The views expressed in this report are those of Dr Jessop in his previous capacity as Project Manager at Swinburne University of Technology.

Executive Summary

Introduction

Availability and accessibility are necessary precursors to any gambling activity but conceptualisation and measurement of accessibility has been generally restricted to geographical accessibility (e.g., Cox, Yu, Afifi, & Ladouceur, 2005; Rush, Veldhuizen, & Adlaf, 2007). Little is known about other dimensions of access such as opening hours, social accessibility, outlay costs, and ease of use (Productivity Commission, 1999). Given the accessibility of gambling it is important to understand how people control their gambling. The majority of research in this area has focussed on externally imposed harm minimisation strategies and formal and informal treatment provided to gamblers (e.g., Blaszczynski, Sharpe, & Walker, 2001; Echeburúa & Fernández-Montalvo, 2005; Ladouceur, Sylvian, & Gosselin, 2007). Most gamblers, however, even those experiencing problems prefer to manage their gambling by themselves (Hodgins & El-Guebaly, 2000; Hodgins, Wynne, & Makarchuk, 1999; Nathan, 2003). Self-regulation strategies employed by gamblers are still not well understood, nor has research considered how accessibility may relate to factors such as motivation and self regulation.

Research Aims and Methodological Design

This research aims to address some of these gaps in the research by using mixed methods to explore the multidimensionality of accessibility as well as the self-regulation strategies employed by people to manage their gambling given its accessibility. Phase one of the research uses a qualitative methodology to conduct an indepth exploration of accessibility and self-regulation for different groups of gamblers. The major research questions were (a) What attracts people to gambling venues/products, and (b) How do people manage or control their gambling?

Phase two used the Phase One findings and prior literature to develop items measuring multiple aspects of accessibility and self-regulation. Exploratory factor analysis was used to

create new subscales, which were analysed in terms of their relationship to demographics and other variables of interest. It was hypothesised that exploratory factor analyses conducted on both accessibility and self-regulation would result in multiple factors which were theoretically consistent with Phase One themes. Given the lack of prior research in this area, no specific hypotheses were made regarding the number or exact composition of factors. Research questions were posed in terms of the relationships accessibility and self-regulation had to other variables:

1. Are (a) accessibility, and (b) self-regulation, related to demographic characteristics (gender, age, and ethnicity)?
2. Are (a) accessibility, and (b) self-regulation, related to other variables known to relate to gambling behaviour (irrational cognitions about gambling, financial stress, gambling frequency, gambling urges, and gambling problems)?
3. Are aspects of accessibility related to self-regulation strategies?

Findings

These results extended prior research showing that accessibility is multidimensional, is related to self-regulating strategies, and that aspects of both accessibility and self-regulation differentiate those with problem gambling. The findings have implications for helping individuals with gambling problems in clinical and community settings.

Key Findings – Accessibility

The Phase One qualitative research revealed five accessibility-related themes: *geographical accessibility*, *temporal accessibility*, *social accessibility*, *within venue accessibility* and *Accessible Retreat*.

- People were attracted to gambling venues which were *geographically accessible* to home, work, community hubs and on regularly used routes. Geographical accessibility

could encourage impulsive gambling and make avoidance difficult for those with problems.

- The high *temporal accessibility* offered by some forms of gambling and some gambling venues also increased accessibility, with both early opening and late closing seen as an attraction by different sections of the community.

- *Social accessibility* was an important and complex theme. Accessibility was highest at venues which provided a safe, welcoming, and social atmosphere and which presented gambling as part of a wider entertainment experience. Social accessibility differed subtly according to age and some problem gamblers had established long term relationships with staff and other patrons.

- Accessibility was also facilitated *within venues.* Visits were made more accessible by the provision of courtesy buses, relaxed conditions of entry and incentives. Monetary access was enhanced by the provision of Electronic Funds Transfer at Point of Sale/Automated Teller Machine (EFTPOS/ATM) facilities and low outlay games, and play was made accessible with attractive and simple-to-play games.

- Analysis also revealed a previously undiscussed dimension *accessible retreat*. Gambling venues could provide a welcome retreat where, according to some participants, problems could be left "outside the door". This aspect of accessibility was important to problem gamblers and supports research suggesting that venues can provide a physical oasis from the outside world and its problems (Thomas, Sullivan, & Allen, 2009).

Exploratory factor analysis in Phase Two condensed the five themes into two major accessibility subscales: *Good Entertainment* and *Accessible Retreat* which reflected a broader conceptualisation but retained the multidimensionality of accessibility.

- The *Good Entertainment* factor related to social accessibility including whether venues were fun, social, affordable and safe. Gambling as a form of good entertainment was found to be equally important to men and women, people from different ethnic backgrounds, people of different ages and both problem and non-problem gamblers. There were only weak or non-significant relationships between this factor and gambling-related variables (irrational gambling cognitions, financial stress, gambling frequency and measures of gambling problems). This suggests that using gambling as social entertainment will appeal to a wide section of the community and, by itself, is unlikely to lead to problem gambling.

- The second factor *Accessible Retreat* related to geographic and temporal accessibility and venues as an anonymous retreat from life problems. People who had few alternative entertainment options were likely to score high on this factor. Unlike Good Entertainment, this factor had a significant and substantial positive relationship to a measure of gambling problems as well as to a variety of other variables known to be related to problematic gambling (irrational gambling cognitions, financial stress, gambling frequency and gambling urges). Gambling as a cognitive escape is central to many explanations of problem gambling (e.g., Blaszczynski & Nower, 2002; Dickerson & Baron, 2000; Ricketts & Macaskill, 2003). This research extends understanding, showing that venues can provide a physical as well as cognitive retreat from problems such as loneliness or stress.

These findings extend knowledge in the area of accessibility and gambling behaviour. Firstly, they show that accessibility is indeed multidimensional. Secondly, the finding that there were substantial relationships between geo-temporal accessibility and variables known to relate to gambling problems, but no such relationships between social accessibility and gambling-related variables, suggests that this dichotomy is important. Using gambling as an easy entertainment option may be a relatively safe, social activity. In contrast, continued reliance on gambling due to elements of associated accessibility and its role in providing a retreat from problems may lead to excessive and problematic gambling for some vulnerable individuals.

It must also be acknowledged, however, that the two facets of accessibility may combine to increase risks. The results of this and other research showed that gambling can provide a cognitive and physical retreat from problems. Venues which are geographically and temporally accessible and which also offer a warm, welcoming, social retreat from problems may have a particular appeal to those who are looking for a temporary respite from problems and negative emotions. Loneliness is related to gambling problems (Porter, Ungar, Frisch, & Chopra, 2004; Thomas & Moore, 2003; Trevorrow & Moore, 1998), for example, and people gamble as a way of being around others and forgetting about their problems (Thomas, et al., 2009). A lack of alternative social spaces may make the warm, social atmosphere of venues particularly attractive for this and similar groups (Morrison, 2004; Surgey, 2000; Thomas, et al.). These complex relationships between motivation and accessibility should be explored further and incorporated into explanatory models of problem gambling.

Key Findings – Self-Regulation Strategies

The Phase One qualitative research revealed five themes related to self-regulation: *setting limits*, *maintaining awareness*, *keeping it social*, *abstinence* and *help seeking*.

- *Setting limits* was an important strategy around limiting the amount of money and time spent gambling, and separating winning from original stakes. Problem gamblers had less success with this strategy, finding it difficult to regulate the amount of time and money spent gambling. They were also more likely to re-invest winnings rather than separating this money from the original stake.

- Many gamblers also reported *maintaining awareness* around the reality of gambling behaviour by expecting to lose rather than win; relating money spent to tangible objects from the "real world"; and maintaining awareness of the risks posed by gambling. To assist them in maintaining control, problem gamblers often thought about previous negative consequences of their uncontrolled gambling.

- Participants also felt it was important to *keep gambling social*, rather than allowing it to become a purely functional experience. Gambling alone could point to a gambling problem. This finding supported responsible gambling research (Turner, Wiebe, Falkowski-Ham, Kelly, & Skinner, 2005), and aligns with the attraction of gambling as a social experience. It suggests that people are aware that it is important to retain gambling as a form of social entertainment not as a means of making money.

While the above strategies were used by both problem and non-problem gamblers, they were more likely to constitute reliable and successful methods of self-regulation for non-problem gamblers. Those who had experienced problems with their gambling discussed the need to implement additional, more restrictive control strategies.

- Maintaining an *abstinence* from gambling venues was discussed as well as the need to replace gambling with other, more adaptive hobbies. It is important to find similarly rewarding hobbies to ensure that gamblers are not left with a "void" when gambling ceases (Griffiths, 2006; Petry, 2005a). While avoidance can be an effective method of control, geographical and temporal accessibility of venues made avoidance difficult, and it could place constraints on socialising if peers frequented gambling venues.

- Finally, *help-seeking*, including seeking assistance from friends or family, mutual help groups and seeking self-exclusion orders were discussed by some problem gamblers. Initiation of self-exclusion orders was seen as a strategy of last resort as it was a clear indication that the individual was no longer able to control gambling without assistance.

As was the case with accessibility, exploratory factor analyses in Phase Two condensed themes into four slightly broader subscales: *Self-Limiting, Avoidance, Help Seeking* and *Social Experience*.

- The *Self Limiting* subscale related to self imposed restrictions around the time and money spent gambling, maintaining awareness about the risks, and balancing gambling

with other activities and hobbies. This factor presented an interesting parallel to the discussion around social accessibility, suggesting that people are aware of the need to balance gambling with other entertainment factors.

- Scores on the use of Self-Limiting strategies were significantly higher for men, and people who scored high on this subscale also tended to score higher on measures of irrational gambling cognitions, financial stress, frequency of gambling, gambling urges and gambling problems than those who did not use Self-Limiting strategies. This was unexpected given that prior research (Turner, et al., 2005) and Phase One showed that non-problem gamblers preferred this type of self-regulation. This may reflect the fact that people who are experiencing gambling problems will generally implement a wider range and more of all regulation strategies, including those preferred by non-problem gamblers (Hodgins & El-Guelbaly, 2000).

- The *Avoidance* factor cohered well with the similarly named factor in the thematic analysis and related to avoiding venues as well as avoiding taking money or credit into venues.

- Subsequent analyses showed those who scored high on the subscale measuring use of Avoidance control strategies tended to also score higher on measures of irrational gambling cognitions, financial stress, frequency of gambling, gambling urges and gambling problems than those who did not use Avoidance control strategies. The relative strength of these relationships cohered with other research finding that avoidance is a favoured self-regulation strategy for problem gamblers (Hodgins & El-Guebaly, 2000; Hodgins, et al., 1999).

- The *Help-Seeking* factor was similar to the Phase One theme, but related more closely to direct and professional methods of Help Seeking rather than obtaining assistance from family or friends.

- Interestingly, there were only very weak relationships between scores on the measure of Help Seeking as a control strategy and measures of irrational cognitions, financial stress, gambling urges and frequency. There were slightly stronger relationships between scores on the use this strategy and both gambling problems and inability to stop gambling, variables measuring to loss of control. These relatively weak relationships may be because seeking professional help is considered to be a more extreme strategy and therefore only instigated by a relatively small proportion of gamblers (Hodgins & El-Guebaly, 2000; Hodgins et al., 1999; Nathan, 2003).

- Finally, regulating gambling by ensuring it remained a *Social Experience* rather than a gambling experience was discussed.

- There were no significant relationships between Social Experience and either demographic characteristics or gambling-related variables. This suggests that regulating gambling by ensuring it remained social is a strategy used by many different groups, including both social and problem gamblers. This is likely to manifest as an implicit attitude rather than a consciously employed strategy and relates to achieving balance in the way gambling is enjoyed. It cohered with the attraction of gambling as a cheap, fun, social and affordable form of entertainment.

Both phases of the research showed that self-regulation strategies gradually increased in strength from implicit attitudes towards keeping gambling social and the relatively unobtrusive strategies limiting time and money, through to more extreme strategies such as abstaining from gambling, self-excluding and seeking professional assistance. People appeared to implement the more extreme self-regulation strategies according to need, but frequent and problem gamblers were likely to implement strategies across the board in an attempt to control their gambling behaviour.

Subsequent analyses showed that there were interesting relationships between accessibility and self-regulation.

- People who scored high on the subscales measuring gambling as Good Entertainment tended to also score higher on measures relating to regulating gambling by ensuring it remained social and putting limits around the time and money spent gambling than those who scored low on Good Entertainment.

- In contrast, people who scored high on the subscales measuring gambling as an Accessible Retreat tended to score higher on measures relating to regulating gambling by Self-Limiting, Avoidance and Help Seeking than those who scored low on Accessible Retreat.

Future Directions

This study developed new measures of accessibility to gambling and self-regulation strategies. These measures can be used in future research to investigate in more detail how the different dimensions of accessibility interact with other morbid and co-morbid antecedent factors (e.g., mood disorders, situational stressors, coping styles) to influence gambling motivation and gambling behaviour.

Development of these multidimensional measures also means that future research can consider in detail how specific self-regulation strategies relate to different aspects of access. A full exploration of these relationships incorporating theoretical perspectives and the literature may help elucidate strategies that protect vulnerable individuals from increased access, thus informing prevention and treatment programs.

In addition, although initial reliability and validity tests were conducted on these measures, further psychometric testing needs to be conducted with new samples of gamblers. Scales might potentially be improved by the addition of items designed to measure other aspects of accessibility or self-regulation which were unable to be included in this study (e.g., handling increased financial access to gambling funds). Finally, there were emerging aspects of gambling that were not covered in this project for which the concept of “access” may have particular relevance. For instance, the emergence of internet-based gambling may require particular research attention.

Chapter One
Accessibility and Self-Regulation Strategies

1.1 Accessibility

The increased liberalisation of gambling legislation together with changes in gambling technology over the last two or three decades have led to substantial increases in the availability and accessibility gambling. Australia, along with many other western nations, now has ready access to a wide variety of gambling products including lotteries, scratch-it tickets, electronic gaming machines (EGMs, commonly referred to as poker machines, slot machines or fruit machines), and the newer internet, mobile phone and television based games (Breen & Zimmerman, 2002; Dickerson, 1996; Dickerson, Haw, & Shepherd, 2003; Ladouceur, 2004; Orford, 2005; Petry, 2003; Productivity Commission, 1999; Przezdziecki, 1999; Raylu & Tian, 2002; Shaffer, Hall, & Vander Bilt, 1999).

Numerous countries including the USA, Canada, Sweden, New Zealand and Australia estimate that between 68% and 82% of their respective populations gamble in a given year (e.g., Gill, Dal Grande, & Taylor, 2006; McDonald, McMullan, & Perrier, 2004; Petry, 2003; Productivity Commission, 1999; Wardle, et al., 2007) and increased accessibility has been related to gambling popularity as well as gambling problems (Australian Institute for Primary Care, 2004; Breen & Zimmerman, 2002; Clarke, et al., 2006; Griffiths, 1999; Griffiths & Delfabbro, 2001; Productivity Commission; Volberg, 2003; Walker, 1992). Increased availability and accessibility means that a greater number of people are exposed to gambling as an entertainment option. Exposing vulnerable individuals to gambling on a regular basis may increase their risk of eventually developing gambling problems (Productivity Commission).

It is now widely accepted that the transition from social to problem gambling is unlikely to result from a single cause, leading theorists to build complex biopsychosocial models that include social and environmental factors such as access to gambling in addition to the more traditional biological and psychological variables such as gender or personality type. Blaszczynski and Nower (2002), for example, developed a biopsychosocial pathways model which has become one of the most influential recent models of problem gambling. While they argue there are three major pathways into problem gambling, each with multiple influential factors, they also suggest that availability and accessibility to gambling are necessary "starting blocks" (p. 491) for the commencement of all gambling. Even in this complex model, however, accessibility remains peripheral, ill defined and poorly understood. In order to fully understand the relationship between accessibility and gambling problems it is important that research explores this phenomenon more deeply.

1.1.1 Geographical Accessibility

The majority of research exploring the relationship between accessibility and gambling behaviour has concentrated on geographical accessibility using number of machines per capita or distance/travel time from home to venues to operationalise this concept. A study conducted in a regional area of Victoria found people travelled an average of only two and a half kilometres to gamble (KPMG Consulting, 2000). Further, a Canadian study found a positive relationship between problem gambling and proximity to major gambling venues (Rush, et al., 2007). US studies have similarly found higher rates of problem gambling amongst people living near a casino compared to those living further away (Welte, Barness, Wieczorek, Tidwell, & Hoffman, 2007; Welte, Wieczorek, Barnes, Tidwell, & Hoffman, 2004).

Studies in both Australia and Canada also show that people living in regions with higher concentrations of EGMs, as measured by number of EGMs per capita, are more likely to gamble, to gamble more often, spend more money and have a higher prevalence of gambling problems than those in regions with lower concentrations (Cox, et al., 2005; Marshall, 2005). Finally, Ladouceur, Jacques, Ferland and Giroux (1999) compared

gambling activity in Quebec in 1996 to that in 1989 following increased access to a variety of gambling products. They found the 1996 sample were more likely to have gambled in the past year, there was a significant increase in the maximum amount of money lost in a day and a 75% increase in the rate of pathological gambling.

These studies have provided some important empirical evidence to link geographical accessibility and gambling behaviour, often using quite sophisticated methods of analysis. The conceptualisation of accessibility in these studies, however, is narrow. Geographical accessibility itself can be expanded to encompass more than simply the number of machines per capita or the relative distance of gambling venues from an individual's home. For instance, recent research has suggested that continued gambling is influenced by the accessibility of gambling to work, community and social locations in addition to its proximity to the home (Clarke, et al., 2006; Marshall, McMillen, Niemeyer, & Doran, 2004; McMillen & Doran, 2006). A study of club patronage within a region of NSW, for example, found that the spatial catchments were quite diverse with some attracting people from a wide catchment while others had extremely narrow catchment areas (i.e., 3km radius; Marshall, et al.).

1.1.2 Multidimensionality of Accessibility

Researchers have recently suggested that conceptualisation of accessibility needs to be extended to encompass aspects such as opening hours, social accessibility, outlay costs, ease of use, opportunities to gamble within a venue, and conditions of entry as well as number and spatial distribution of venues (Eltridge & Delfabbro, 2006; Marshall, et al., 2004; Productivity Commission, 1999). These aspects are discussed below.

Temporal Accessibility

Long opening hours or temporal accessibility has been shown to lead to impulsive gambling late at night as a response to boredom or loneliness (Thomas, et al., 2009). In comparison, a gambling product which is geographically close but which only offers gambling activities for a few hours every week, such as a weekly lotto draw, is still

relatively inaccessible as a form of gambling. Interactions between temporal and geographical constraints produce what are known as space-time accessibility (Marshall, 2005; Weber & Kwan, 2002). Newer in-house gambling products available on the internet, mobile phones and television can theoretically provide almost limitless space-time accessibility and raise the possibility that some of the legislative controls over who, and how gambling is accessed may be more easily circumnavigated (Griffiths & Wood, 2000).

Social Accessibility

Social accessibility involves the degree to which a gambling venue is perceived as attractive and non-threatening (Productivity Commission, 1999). Eltridge and Delfabbro (2006) found that social accessibility was important in explaining gambling choices with 19% of a sample of 400 regular EGM gamblers choosing venues which provided a good atmosphere and 23% choosing venues with pleasant staff. Interestingly, group comparisons showed that very regular patrons (gambling almost daily) and problem gamblers were more likely to choose a venue based on its geographic accessibility and incentives whereas less regular patrons were more likely to return to a venue with pleasant staff. This suggests that social accessibility may be more important to decision making for irregular, social gamblers while geographical accessibility is more important to regular and problem gamblers.

Monetary/economic Accessibility

Monetary or economic accessibility will impact upon initial and continued gambling. Gambling products which have a low initial outlay (e.g., some EGMs) may appear to be more accessible than those which have a relatively high initial entry fee (e.g., certain card games), even though both forms may ultimately result in the same cost (Productivity Commission, 1999; Robitaille & Herjean, 2008). Ready access to EFTPOS/ATMs within a venue may also influence the amount of time and money spent within a session (Blaszczynski, et al., 2001). Finally, level of discretionary or easily accessible money can influence initial decisions to gamble as well as the level of commitment during a session (Thomas, et al., 2009).

Accessibility related to Level of Difficulty

The real or perceived level of skill required to play a particular game can make it appear more or less accessible. Casino card games such as *Texas hold 'em poker* can appear to be quite complicated to the uninitiated gambler, whereas a raffle ticket or an EGM may seem relatively easy for a beginner to master. The number of gambling opportunities within a venue will also influence accessibility. A newsagent offering a weekly or bi-weekly lotto draw together with scratch-it cards has far fewer gambling opportunities per visit than a casino open 24 hours a day and offering several floors dedicated to a variety of different gambling products.

Conditions of Entry Accessibility

Finally, conditions of entry to venues including membership requirements and dress codes can influence the overall type of client who accesses a venue as well as unplanned decisions to gamble.

1.1.3 Other Factors relating to Accessibility

It is possible that the functionality of gambling interacts with the different dimensions of accessibility. Research has shown that problem gamblers are often motivated to gamble to escape problems (e.g., New Focus Research, 2003; Scannell, Quirk, Smith, Maddern, & Dickerson, 2000; Shepherd & Dickerson, 2001; Surgey, 2000; Thomas & Moore, 2003). EGM gambling venues in particular can provide a space which is geographically and temporally accessible, welcoming, social and which can be used as a physical and cognitive oasis from problems (Thomas, et al., 2009). People who are lonely and motivated to escape from these feelings may be drawn to the social accessibility offered by some venues, in particular the opportunity to be amongst other people and enjoy interactions with other patrons or staff. In contrast, bored individuals may be more attracted to the constant activity of gambling and the long opening hours.

The number and diversity of alternative entertainment options can also differ dramatically across different regions, affecting perceptions of relative accessibility. Inner-city regions

tend to have numerous restaurants, bars, cafes, cinemas, and theatres which can compete with gambling venues for patronage. Outer suburban, regional and lower socio-economic areas may have far fewer alternatives which are as geographically, temporally, socially and economically accessible as gambling venues. In rural areas in particular, the local pub or social club may be the main social gathering point as well as the local gambling venue.

Dimensions of accessibility may also be differentially important to specific sub-groups of the population. Women can feel unwelcome in traditional male gambling domains such as off course betting agencies and hotels (Thomas, 1995; Walker, 1992), but comfortable visiting EGM venues (Hing & Breen, 2001). People with disabilities have also reported that EGM venues were one of a limited number of places where they felt comfortable and welcomed (Surgey, 2000). Minority cultural groups may feel more welcome in large city-based casinos which are familiar catering for people with a different first language than in smaller suburban venues (GAMECS Project, 1999; Productivity Commission, 1999; Victorian Casino and Gaming Authority, 2000). Shift workers can find their leisure time fails to coincide with the rest of the community so they are left with a number of hours in the middle of the day when friends and family are unavailable, or finishing late at night when few entertainment outlets are available to them (KPMG Consulting, 2000; Thomas, et al., 2009). In this instance, gambling venues which provide somewhere to go with something to do may seem an attractive option. Accessibility of gambling, therefore, should be considered to be a complex, multidimensional concept. To date, however, few studies have explored these wider aspects of accessibility or how they relate to gambling motivations or demographic characteristics.

1.2 Self-Regulation of Gambling

Given the wide accessibility of gambling in the community, it is important to consider how people regulate or control their gambling behaviour. Extended and serious gambling problems such that the individual is spending more than intended, regularly losing control or experiencing negative consequences from gambling (see American Psychiatric Association, 2000), are experienced by a minority of the population. In Australia, it has

been estimated that around 1% of the population experience severe gambling problems in a year, with a further 1% experiencing moderate problems (Productivity Commission, 1999).

Much of the research investigating regulation or control strategies has concentrated on problem gamblers. The major body of research has investigated the use and usefulness of formal and informal treatments including individual counselling, self-help groups, support/assistance from friends or family, and assisted self-help such as self-exclusion programs[1], self-help manuals, audio-tapes and online guidance (see Echeburúa & Fernández-Montalvo, 2005; Ingle, Marotta, McMillan, & Wisdom, 2008; Ladouceur, et al., 2007; Petry, 2005a; Raylu, Oei, & Loo, 2008; Wood & Griffiths, 2007a).

Another body of research has investigated the usefulness of harm minimisation strategies implemented by governments and industry (e.g., Blaszczynski, et al., 2001; Breen, Buultjens, & Hing, 2006; Cloutier, Ladouceur, & Sevigny, 2006; Eltridge & Delfabbro, 2006; Hing & Mattinson, 2005; McMillen & Wright, 2008; Nisbet, 2005; Sharpe, Walker, Coughlan, Enersen, & Blaszczynski, 2005; Williams, West, & Simpson, 2007). Legislative amendments introduced into Victoria and N.S.W., for example, have resulted in amendments such as the re-introduction of natural light into venues, installation of time clocks, signage warnings, restrictions on advertising, smoking bans in venues, removal of 24 hour access, self exclusion options, caps on EGM numbers, regulation of loyalty card schemes, limits on cash withdrawals from ATM/EFTPOS facilities located within venues, and limits on cash payments and on cashing "winnings" cheques within venues (N.S.W. Government, 2000; Victorian Government, undated). The Victorian government has also recently pledged to remove ATMs from venues in future legislation. Further, voluntary codes of practice have been introduced to guide industry in responsible gambling initiatives (Breen, et al.; Hing & Mattinson). In addition to amendments to the physical environment, legislation has targeted the structural characteristics of EGMs including removal of $100

[1] Self-exclusion programs are offered by the gambling industry in various jurisdictions. In Victoria the self-exclusion program allows people experiencing problems with their gambling to nominate, in writing, venues from which they wish to be excluded. The venues are sent a photograph of the individual and are authorised to take any reasonable steps to ensure that the individual does not enter the venue or play gaming machines. This includes authorising management to remove the individual from the venue if he or she is detected breaching their self-exclusion (SA Centre for Economic Studies, 2003).

note acceptors, reductions in the maximum allowable bet to $10, removal of autoplay facilities, lowering of spin rates, and the display of available credits in terms of dollars and cents. In Victoria, the maximum allowable bet limit will be further reduced to $5 on all machines from 1 January 2010.

Interestingly, the majority of gamblers learn to successfully manage their play by themselves even though research has suggested that regular gamblers are very likely to experience symptoms of impaired control at some point requiring conscious efforts to regain control (Dickerson, et al., 2003). Even among those who do experience gambling problems, a large proportion choose to deal with their problems on their own rather than seek treatment (Hodgins & El-Guebaly, 2000; Hodgins, et al., 1999; Nathan, 2003). Where successful, this is known as natural recovery. There has been relatively little research investigating self-management strategies employed by the majority of gamblers who never seek professional assistance to control their gambling.

A study by Hodgins and El-Guebaly (2000) interviewed 43 resolved problem gamblers finding that the two most common actions used to assist in the resolution of gambling problems were self-management strategies around limiting access to venues and replacing gambling with new activities. These strategies were used by nearly 50% of the group. Twenty-six percent of the resolved gamblers also used self-directed cognitive strategies such as consciously reminding themselves about the negatives of gambling and the benefits of quitting. Seeking formal or informal treatment and social support from family or friends were reported by 28% and 23% of respondents respectively. Similarly, the most common strategies for maintaining recovery were enjoying new activities and remembering negative consequences. These were followed by social support and treatment.

A very small study of six recovered problem gamblers (Hodgins, et al., 1999) found that only two of the six had accessed treatment for their problems, with people generally preferring to deal with the problem on their own. Strategies included avoiding venues, stopping “cold turkey” and lifestyle changes including goal setting and re-direction strategies.

An interesting observational study of casino gamblers (Dzik, 2006) found that experienced casino gamblers were often aware of their control limitations, in particular the likelihood of escalating bets. Dzirk observed that this group would consciously implement strategies to manage their gambling including moving a proportion of gambling chips out of sight to reduce temptation and regularly walking away from the betting table.

Finally, a probability study of 2,500 adults in Ontario, Canada (Turner, et al., 2005) examined public awareness of responsible gambling practices. While they found that less than half the respondents were familiar with the term “responsible gambling” participants did have some understanding of the concept. The most common responses suggested that people understood responsible gambling to mean setting monetary and time limits around gambling, being in control, knowing when to walk away and treating gambling as entertainment. When asked about their own practices, most respondents reported gambling in a responsible manner by setting and keeping monetary and time limits around gambling, quitting when bored, not gambling until closing and refraining from borrowing money to gamble.

Thus, although most gamblers prefer to regulate their own gambling, the majority of research has focussed on strategies and treatments provided by others such as government and industry harm minimisation strategies and formal and informal treatments. The small amount of research that has been conducted into self-regulation strategies suggests limiting the time and money spent gambling are common strategies employed by all gamblers. The general population are also likely to use self-regulation strategies such as treating gambling as entertainment and knowing when to walk away. Problem gamblers in contrast may place stringent restrictions around gambling or replace it altogether with new activities. Problem gamblers may also use conscious reminders about the negatives of gambling and the benefits of quitting, and seek assistance and support from family, friends or professionals.

In summary there are some major gaps in both the accessibility and self-regulation research. Accessibility remains poorly defined and narrowly conceptualised, with little

theoretical or empirical exploration being undertaken into the different dimensions or how they may relate to gambling motivations and demographic characteristics. There are also substantial gaps in knowledge about self-regulation strategies with most research focussed on problem gamblers and strategies and treatments provided by others. Only a small number of studies have explored self-regulation strategies employed by social and problem gamblers to manage their own gambling behaviour. Finally, consideration needed to be given to how accessibility relates to self regulation. Such knowledge may help to elucidate strategies that protect vulnerable individuals from increased access, thus informing prevention and treatment programs.

The research presented in this report attempts to close some of these gaps in the research by using mixed methods to explore the multidimensionality of accessibility and how this relates to gambling behaviour as well as the self-regulation strategies employed by people to manage their gambling given its accessibility. Phase one of the research uses a qualitative methodology to facilitate an in-depth exploration of the multi-dimensional nature of accessibility and self-regulation in relation to gambling for different groups of gamblers. Phase Two uses the results of Phase One to inform construction of multidimensional scales measuring accessibility and self-regulation strategies. These scales are then examined in terms of relevant demographic characteristics and variables known to relate to gambling patterns as well as their relationship to each other.

Chapter Two

Phase One Study: A Qualitative Investigation of Access and Self-Regulation Strategies

2.1 Methodology

Given the lack of understanding of both accessibility and self-regulation, the Phase One study used a framework of phenomenology to uncover the psychological meaning of both accessibility and self-regulation from the point of view of the gambler. Phenomenological analysis facilitates an in-depth investigation and analysis of the experience of gambling within the context of the participants' lives (Giorgi & Giorgi, 2008). The study aimed to extend understanding by conducting an indepth exploration of the multidimensional nature of accessibility and self-regulation for different groups of gamblers. The major research questions used to provide an initial focus for the study were (a) What attracts people to gambling venues/products, and (b) How do people manage or control their gambling?

2.1.1 Participants

Within the constraints of a self-selected sample, purposive sampling techniques were used to provide diversity in sampling with contributions being sought (a) from individuals representing groups whose contribution was likely to be relevant in terms of the central research questions, and (b) where contributions were likely to provide a different perspective. On this basis participation was sought from people of different gender, age, gambler status (i.e., social gamblers, problem gamblers, ex-problem gamblers), ethnicity, and socio-economic group, with representation in these groups not mutually exclusive. The final sample included 38 participants ranging in age from 18 to 69 years of age (19 women

M = 39.79 years of age, *SD* = 14.21 years; 19 men *M* = 39.89 years of age, *SD* = 16.12 years). There were 13 people who identified as being from cultural minority groups, six regional participants, a venue worker, and four people who had been identified by researchers as being from a low socio-economic group. Five known ex-problem gamblers (Ex-PG) were also recruited. A measure of gambling problems described below confirmed that 21 participants were no-low risk gamblers (LRG), 10 were at moderate risk gamblers (MRG) and 11 scored over the threshold for gambling problems (PG).

To increase transparency individual quotes were coded to reflect gambler status (e.g., Ex-PG or LRG) as well gender (M or F) and age (in years). Where appropriate, specific group membership was identified (e.g., "Vietnamese participant" for people from a group who identified as being from a Vietnamese cultural background). In cases where the general group discussion precluded individual identification, participants were identified simply in terms of their gender (if this could be determined) and their group (e.g., regional participant).

Prior to recruitment, the researchers met with key stakeholders at community and dedicated counselling services to inform them about the study and gain their agreement to work with us in recruiting volunteers for the focus groups from pre-identified key demographic groups. Recruitment was then via electronic and paper based flyers advertising the study, as well as through dedicated gambling counselling services, and community services providing gambling-related support. Interested people contacted either the researchers or a designated worker within a service. To protect confidentiality, all participants were assigned a pseudonym to use during the groups and confidentiality issues were discussed at the beginning of each group. Pseudonyms were later replaced with identification numbers. All discussions were audio taped and relevant sections were transcribed with participants' permission.

2.1.2 Data Collection Method

Ethics approval for this study was obtained from the relevant University Committee. The primary method of data collection was focus group interviews. Each focus group was made up of similar participants (e.g., a group of ex-problem gamblers, a cultural minority group).

Focus groups were chosen with the dual purpose of increasing participant comfort and allowing the group facilitator to focus discussion according to the nature of the group (i.e., a more in depth discussion of Help Seeking with a group of problem gamblers). In some instances time and group constraints meant it was not possible to allocate an individual to a focus group so individual interviews (N=4) were conducted by a key researcher.

Interviews were semi-structured with a broad list of questions used by the interviewer to ensure the core research topics were covered. The semi-structured nature of the interview meant that follow up questions could be initiated to explore additional topics when these arose (Corbin & Strauss, 2008; Minichiello, Aroni, Timewell, & Alexander, 1995). Interviews lasted between 23 and 75 minutes and all were conducted face-to-face.

The *Problem Gambling Severity Index* (PGSI), a component of the Canadian Problem Gambling Index (Ferris & Wynne, 2001) was used to measure presence and severity of gambling problems. The measure assesses (a) problem gambling behaviour (e.g., "How often have you bet more than you could really afford to lose?") and (b) consequences of that behaviour for the individual and others (e.g., "How often have you felt guilty about the way you gamble or what happens when you gamble?"). Questions relate to the last 12 months and responses are scored on a 4-point Likert-type scale from 0 *(Never)* to 3 *(Almost always)*. Scale scores were obtained by summing across the nine items with scores ranging from 0-27. Scores are interpreted as follows: 0 = Non problem gambling, 1-2 = Low risk gambling, 3-7 = moderate risk gambling, 8+ = problem gambling. The scale has demonstrated excellent internal consistency (alpha ranging from .84 - .92) and stability (test-retest at 3-4 weeks .78). Validity has been demonstrated with high correlations being

demonstrated between the PGSI and other established measures of problem gambling (Centre for Gambling Research, 2004b; Ferris & Wynne).

2.1.3 Data Analysis

Thematic analysis was conducted on the data using a phenomenological framework (Braun & Clarke, 2006). This approach is focused on understanding the psychological meaning of a phenomenon, in this case gambling, through investigating and analysing the experience of gambling in the context of the participants' lives (Giorgi & Giorgi, 2008). Thematic analysis was used to identify and analyse the patterns within the dataset. Within the overall constraints of the two broad research questions, an inductive approach was taken such that the data drove the identification of individual themes rather than using prior theory or research to inform themes (Braun & Clarke).

Specific strategies were drawn from a number of sources including some from grounded theory and interpretative phenomenological analysis (Charmaz, 2006; Corbin & Strauss, 2008; Rennie, 2006; Smith & Osborn, 2008). Although the description of the analytic process given below is fairly linear the process itself is recursive rather than linear as the analysis moved back and forth between strategies and phases of the research until no new themes, patterns or insights were uncovered (Braun & Clarke, 2006; Cresswell, 2009). The transcript data was initially read and re-read to provide an indepth familiarisation with the data. At the same time initial coding of the data was undertaken with small sections of the text being analysed and coded according to its meaning (Braun & Clarke, 2006; Charmaz, 2006; Rennie, 2006; Smith & Osborn, 2008).

These coded sections of text were compared to each other for similarities and differences and similar codes were clustered into potential themes. Each theme was then examined to ensure it was coherent and meaningful. This analysis included returning to examine the raw text related to each theme to ensure the theme remained grounded in the data. The initial list of themes was also examined in total to understand the overall story the data was telling and to examine the relevance of the themes to the research questions. Once this initial list

of themes had been compiled, each theme was examined in more detail and themes were compared to each other to refine understanding and ensure the themes did not overlap in their meaning. Relationships among themes were also considered. This examination resulted in the splitting of some themes into sub-themes and gathering together of other related themes into higher order categories (Braun & Clarke, 2006; Charmaz, 2006).

2.2 Results for Accessibility

The data analysis revealed that accessibility could be viewed as a multidimensional construct with five separate dimensions that corresponded roughly with those described earlier: *Geographical Accessibility, Temporal Accessibility, Social Accessibility, An Accessible Retreat* and *Within Venue Accessibility.*

2.2.1 Geographical Accessibility

The proximity of venues made them an easy option. This could lead to impulsive gambling: "*Most of the time I wouldn't plan to gamble…it would be like a split-second decision of seeing a pokie venue or walking past one and deciding to go in"* (P18, M, 30 years old, LRG).

As has been suggested (Clarke, et al., 2006; Marshall, et al., 2004; McMillen & Doran, 2006; Thomas, et al., 2009) geographical accessibility related to more than the distance of venues from home. The relative accessibility of venues to work, regular routes and shopping centres affected behaviour.

"My father used to drive past pokies venues on the way home from work, and it became a routine to stop in and use the machines before going home. As the addiction got worse, if he was anywhere near a gaming venue/machine, he would 'disappear' for a while, could not resist the urge to gamble" (Unknown participant).

The spread of venues throughout suburbs as well as in the city centres meant that it was difficult for problem gamblers to avoid venues: *"They're on every street corner"* (P2, F, 50 years old, ex-PG). Some problem gamblers found that the proximity of venues meant that even limiting the amount of money taken to a venue did not prevent bingeing as it was only a short trip to access additional gambling funds: *"I've tried leaving cash at home, taking my limited amount … end up driving home and driving back"* (F, Regional participant, PG).

2.2.2 Temporal Accessibility

Long opening hours associated with some venues and some forms of gambling were seen as important. The 24 hour accessibility offered by newer online gambling products and the city-based casino could be an attraction. One young participant, for example, talked about visiting the city-based casino late in the evening (e.g., 11pm or 3am) because he and his friends knew it would be *"open at the time"* (P27, M, 18 years old, Vietnamese participant, PG). They would often stay until the next morning.

These younger gamblers said they were unlikely to go to the casino in the daytime but for others venues with early openings provided an incentive for gambling: *"I'll be at a venue at 10 o'clock (in the morning) if I've got the urge, yeah, I'm there knocking the door down"* (F, Regional participant, PG). Shift workers could be particularly vulnerable to the high temporal accessibility of gambling venues as they often finished shifts when others were still working. A tendency for shift workers to turn to gambling venues due to a lack of suitable entertainment options has been discussed previously (KPMG Consulting, 2000; Thomas, et al., 2009).

2.2.3 Social Accessibility

A social place

Some people said their favourite venues made them feel like they were part of a club. Some liked a very active social atmosphere that *"turns it into a big social event"* (P7, F, 41 years

old, MRG). Participants tended to enjoy venues which attracted similar people. For young people, it was important the venue was filled with other, similarly young individuals: *"a lot of people in your age group, and that's definitely a factor in attracting you there"* (P11, M, 21 years old, MRG). In contrast, older patrons were likely to avoid the large flashy venues popular with young people*: "sitting there with ten thousand people with ten thousand machines I mean, there's nothing….sophisticated about it"* (P9, M, 40-45 years old, MRG).

The long-term experience of problem gamblers meant some had developed personal relationships with staff and other patrons. A female participant, who had patronised some venues for up to 10 years, said that staff at her regular haunts all *"know me quite well"* (F, Regional Participant, PG). She had also *"become quite friendly"* with some other long term patrons but, interestingly, these friendships had very clear boundaries - they weren't *"friends anywhere else"*. This type of delineated, venue-specific friendship has been discussed in other gambling research (Rosecrance, 1986). It can lead some gamblers to become more and more dependent on the social interactions they find in the gambling environment. This "entrapment" in the gambling world can result in continued and increased gambling over time (Ocean & Smith, 1993; Raylu & Tian, 2002; Rosecrance).

Others preferred a more passive fellowship: *"you can be amongst people but not have to interact"* (F, Regional participant, PG). Other research has similarly found a tendency for EGM problem gamblers to favour this passive type of parallel play over any meaningful interaction with other patrons (New Focus Research, 2003; Surgey, 2000; Thomas, et al., 2009).

Part of a Wider Experience

Social accessibility was enhanced where the gambling was presented as part of a wider entertainment experience. Younger people in particular expected gambling to be provided within a range of activities: *"if there are other attractions around the place, like bars or a club or something like that … it's kind of like a combined factor with the gambling"* (P11, M, 21 years old, MRG).

Interestingly, reports from two female participants suggested that venue staff expected visitors to gamble even though the venue may purport to offer a range of entertainment options. Each woman said she had been asked to leave a venue because she had been socialising rather than gambling. An indigenous woman reported that she and her friends were asked to leave a near empty hotel where they were drinking and laughing, with a staff member informing them they were annoying other patrons. *"Who are we bothering? I mean there were the three staff, there were the three guys with me and my sister and one aboriginal person on the machine. So we weren't bothering anybody."* (F, Indigenous participant).

A safe option

For some individuals it was important that a gambling venue be seen as clean, trustworthy and reputable: *"A proper place that isn't going to rip you off"* (P12, M, 27 years old, LRG). Venues which were perceived to have a bad name or which were run down were less likely to be chosen compared to those which were newer, cleaner and well-run.

There was also a perception that some gambling venues were a safe and secure entertainment option for women who could feel comfortable visiting venues alone due to the security offered: *"It is very safe they have security there"* (F, Regional PG). This should not be seen as equally the case across all types of gambling venues. TAB betting shops, for example, have been traditionally seen as male domains (Walker, 1992), while EGM venues have been argued to provide an attractive, acceptable and safe space for women to congregate (Surgey, 2000).

2.2.4 An Accessible Retreat

In contrast to the social accessibility theme, this theme related to the attraction of the venue as a retreat from problems and people. *"All the trouble, all the people that are bugging me, everything that pisses me off is outside of that door and I'm in here. And it can't touch me. I'm in here and I'm free"* (F, Regional participant, PG).

The escape did not last of course, with problems returning: *"Course when you leave there you might have more (problems)"* (F, Regional participant, PG). This attraction was only discussed by problem gamblers and supported other research which has found that problem gamblers will use EGM venues in particular as a physical retreat from outside problems (Thomas, et al., 2009).

2.2.5 Within-Venue Accessibility

The location of EFTPOS/ATM machines inside venues and close to gambling areas increased access to money. This could lead to impulsive gambling or people gambling more than they intended: *"I kept going back again anyway – getting $200 out on the card again"* (M, Regional participant, PG). Some games were made to appear to be a more affordable by the small outlay required: *"we can go out and have a thrill for $2"* (Low socio-economic group participant).

Venues with few entry conditions, including the city casino, also increased accessibility and could lead to impulsive decisions to gamble: *"I can just go into the Casino; I don't have to be dressed up"* (P8, M, 49 years old, LRG). Courtesy buses could also increase access for people without private transportation and those with physical disabilities.

Specific features and games offered by venues attracted some people. The symbols on EGM machines could be a draw card for some: *"I'd have to say the symbols is what actually got me…symbols on the machines. That would be my main attraction, incentive for being there, to watch those symbols."* (P2, F, 50 years old, ex-PG). For others it was the promise of free spins which could be "won" during play on EGMs: *"you get on this machine and get all these free spins…it gives you such a sensational feeling."* (P5, M, 52 years old, PG).

Incentives or prizes offered by venues could be another way of attracting patrons. *"Free food, other free things and giveaway"* (unknown participant). Offering games which are perceived as easy to play can also increase accessibility. EGMs, for example, were seen as

"easy to use, just press a button" (P4, F, 35 years old, PG). Games such as poker may be seen as more complex, requiring the gambler to know 'the rules and make a number of different decisions.

2.3 Summary and Discussion of Accessibility Themes

These results extend prior research and show that people do in fact see accessibility as multidimensional, and differentiate between gambling opportunities based on their temporal, social, within venue and retreat qualities as well as their geographical accessibility (Eltridge & Delfabbro, 2006; Marshall, et al., 2004; Productivity Commission, 1999). *Geographical accessibility* encouraged impulsive gambling and this theme involved accessibility provided by the relative proximity of venues to shopping centres, work, social venues and on commonly used routes as well as to home. These findings supported the argument that geographical accessibility must encompass more than simply the number of opportunities per capita or the relative distance/time between venues and home (Clarke, et al., 2006; Marshall, et al.; McMillen & Doran, 2006; Thomas, et al., 2009). The spatial distribution of venues meant that some problem gamblers had difficulty avoiding venues and limiting the amount of money they spent.

The long opening hours of some venues provided high *temporal accessibility*. This theme presented an interesting diversification on age and group such that early openings increased access for some people while late closing was the attraction for others. The findings also supported other research (KPMG Consulting 2000; Thomas et al., 2009), and suggested that groups such as shift workers may be particularly attracted by temporal accessibility due to a lack of other entertainment options open during their leisure hours.

Social accessibility proved to be an important and complex theme with gambling seen as particularly accessible where it offered entertainment which was social, safe and presented as part of a wider entertainment experience. There were some interesting variations on the social theme with young people wanting a big, active, "flashy" social event, while older people may be more interested in a quiet, relaxing venue. In contrast to the findings of

Eltridge and Delfabbro (2006), this study found that problem gamblers were also likely to be drawn to the pleasant atmosphere and friendly staff, although some problem gamblers preferred a fairly passive social experience. Other research has found that problem gamblers are lonelier than non-problem gamblers (Grant & Kim, 2002; Porter, et al., 2004; Thomas & Moore, 2003; Trevorrow & Moore, 1998) and will gamble as a way of being among other people and forgetting about feelings of loneliness (Thomas et al., 2009). The findings also extended prior research which has suggested that women differentiate between entertainments based on perceptions of safety (e.g., Surgey, 2000; Walker, 1992), finding that men are also more likely to visit a venue perceived to be safe and trustworthy.

Gambling accessibility was also facilitated *within venues*. Patronage of venues was made more accessible by the provision of courtesy buses, relaxed conditions of entry, and incentives; monetary accessibility was enhanced by the provision of low outlay games and EFTPOS/ATM facilities and play was made accessible by the provision of attractive and easy to play games. This theme therefore combined several gambling elements thought to be related to accessibility (Productivity Commission, 1999). These within venue attributes may encourage more frequent gambling, longer sessions and higher spending patterns than were initially planned (Blaszczynski, et al., 2001; Productivity Commission).

Finally, a previous undefined aspect of accessibility was found, with venues which provided an *accessible retreat* from the problems of the outside world and the demands of others being attractive to a sub-group of problem gamblers. This finding supported other research which has found that problem gamblers can be motivated to gamble to escape from problems (e.g., New Focus Research, 2003; Scannell, et al., 2000; Surgey, 2000; Thomas & Moore, 2003), with games and venues being used in combination to provide both a physical and cognitive escape from problems (Thomas et al., 2009). The fact that this aspect of accessibility was only discussed by people who had experienced problems with their gambling suggests that using venues to temporarily retreat from problems may be particularly associated with excessive and problematic gambling.

2.4 Results for Self-Regulation Strategies

Thematic analysis revealed five self-regulation strategies: *Setting Limits, Maintaining Awareness, Keeping it Social, Abstinence and Help Seeking.* In addition, participants discussed some externally imposed gambling limitations.

2.4.1 Setting Limits

Limiting the Outlay

Low and moderate risk gamblers discussed setting predetermined limits on the amount of money they gambled in a session: *"(I) usually take out a specific amount from the ATM, and I'll force myself not to withdraw any more … that's the main form of self-regulation"* (P11, M, 21 years old, MRG). One man discussed planning his race-day gambling so that his predetermined budget would last the entire day: *"I would say 'OK, this is how much I'm going to spend in that day and once it's gone it's gone"* (P8, M, 49 years old, LRG). Some people discussed the importance of limiting spending to discretionary money: *"I know my limits ... you pay your bills and the money you got left over (can be used for gambling)"* (F, Indigenous group).

Limiting Visits

Participants also discussed putting limits around the number of visits to gambling venues and the length of time spent gambling: *"I have to have a limit if I want to have some recreational things"* (P15, M, 65 years old, MRG). Managing gambling by controlling the number and length of visits was more likely to be discussed by non-problem gambling individuals.

Studies with regular gamblers, problem gamblers and the general population have found that all of these groups will try to consciously limit the amount of time and money spent gambling (Dzik, 2006; Hodgins & El-Guebaly, 2000; Turner, et al., 2005), but the present findings showed that people experiencing problems attempted self limits but could struggle to maintain control using this management strategy, particularly restricting the amount of money spent in a session.

"You go to a venue and you think I'll just put this amount of money in, and it shows you the free spins and you get nothing on them. And you try to stop yourself … but there's another side saying but what if …" (M, regional participant, PG).

Separating Winnings from Stakes

Non-problem gamblers were also careful to separate winnings from the original stake. Some players discussed putting the original stake away if they won and then playing with their winnings. Others took a win as a sign that it was time to stop: *"If I can sit down, play $20 and double it, it's time to walk out as well, you know. Pay for dinner and everything, I'm in front"* (P13, M, 47 years old, NPG).

Problem gamblers, however, often continued playing with winnings until they had nothing left. *"When I'm on the pokies I can win some money I know I'll never take home"* (M, Regional participant, PG). A female problem gambler said she would rationalise her behaviour to herself to reduce self-directed anger: *"I say it was only their money anyway, it was winnings anyway it wasn't my money"* (F, Regional participant, PG).

2.4.2 Maintaining Awareness

An Expectation of Losing

Non-problem gamblers said that it was important to remember they were unlikely to win, and that a win should be seen as a bonus rather than an expectation. One man, for example said that he and his friends tended to limit their gambling to $20 for a session, an amount they were prepared to lose: *"if we win money back then that's a plus, but if we don't, nothing's happened, that's just normal"* (P11, M, 21 years old, MRG).

Keeping Spending Tangible

Another way of maintaining awareness was to relate past or present over-spending to other, tangible items:

"When I added it up over the year and looked back, I thought well that was my rego (car registration), that was my car insurance, that was a weekend away. That's when I sort of said just do it (gamble) once every two or three months and it won't hurt" (P7, F, 41 years old, MRG).

A regional male problem gambler advocated carrying reminder messages:

"You need something you can carry around in your pocket that you can look at that says 'If you leave now you can pay the gas bill, the electricity bill, the phone bill', because you (interrupted) 'cause the hopelessness at the end of the week when you know you're going to have to get on the phone and ask for an extension (to pay bills)".

Awareness of the Risks

Some gamblers discussed the need to remain alert to the potential risks associated with gambling. One participant, for example said she had heard *"stories about the depression, the desperation of people who become addicted"* (P7, F, 41 years old, MRG). Her fear of possible addiction led her to restrict her gambling to forms she felt were low risk: *"I don't tend to go near those or the slots or anything like that"* (P7, F, 41 years old, MRG).

For others, awareness of risks related to personal experience:

"There was a time where I probably spent two pay packets running, and then I thought 'Hmm, alright then, I've never spent that much before'. I'd paid my mortgage, but then I'd gambled $800 a fortnight for two weeks …. I thought 'Oh, it's taken me a long time to earn that'" (P6, F, 37 years old, LRG).

Studies with problem gamblers have emphasised the use of similar cognitive strategies to regain control (Hodgins & El-Guebaly, 2000).

2.4.3 Keeping it Social

In an interesting parallel to the attraction of gambling as a social occasion, maintaining gambling as part of a wider social event was used by some people as a way of ensuring gambling remained under control: *"If I was by myself then I'd have no particular desire to stay … the gambling is just a side part"* (P11, M, 21 years old, MRG). Moving onto gambling alone could be an indication that gambling was moving out of control: *"Never go alone … that's when you (are) really, really addicted"* (Vietnamese participant).

2.4.4 Abstinence

While the above strategies were used by both problem and non-problem gamblers, problem gamblers generally needed additional, more powerful, strategies to control gambling. Some discussed the need to totally abstain from visiting gambling venues, either temporarily or permanently. A group of regional problem gamblers discussed the need to replace gambling with other activities: *"replacing your own gambling behaviour with something else, healthier"* (Female Regional PG). It is important that problem gamblers find new, similarly rewarding hobbies to avoid a return to gambling and facilitate long term recovery (Clarke & Clarkson, 2008; Griffiths, 2006; Hodgins & El-Guebaly, 2000; Hodgins, et al., 1999; Petry, 2005a).

Avoiding gambling venues completely could be difficult when the venue was a major social entertainment hub within the community. Some of the young Vietnamese participants, for example, said that they may be left behind if they refused to go to the city casino: *"One in, all in"* (P27, M, 18 years old, Vietnamese participant, PG). Decisions to follow peers into gambling venues could result in setbacks to abstinence goals: *"No matter I said to myself I won't gamble but I do"* (P27, M, 18 years, Vietnamese participant, PG). One Vietnamese man said that he would try to change the subject to avoid going to the casino. He said this sometimes worked: *"(if you) say you don't want to go (to the casino) people usually listen to you"* (P28, M, 18 years, Vietnamese participant, MRG).

2.4.5 Help Seeking

Problem gamblers also discussed seeking help from others to manage their gambling. Help seeking could be informal such as asking trusted friends or family to handle money or seeking out a mutual support group.

> *"Oh well someone handling my money so I didn't handle it. 'Cause while I haven't got money I'm OK. I keep thinking about it but I'm not sort of going to get there. But as soon as I get hold of money ..."* (F, Regional participant, PG)

Others had sought more formal interventions, including self exclusion. Self exclusion as a method of control appeared to be a last resort, when all else had failed. It meant admitting that you could not control this by yourself: *"I've promised the counsellor here that these two venues where I live, that I won't go into those. If I go into them I'll self exclude myself. I'll sign up. Which I don't want to do"* (M, Regional participant, PG). Those who were ambivalent about giving up gambling were particularly reluctant to commit to this step because they were aware that this form of self-regulation meant that they could not easily change their minds about gambling.

Another reason problem gamblers were reluctant to initiate self-exclusion orders was that being caught breaching a self exclusion order could lead to embarrassment, shame and even humiliation, as recalled by one male regional problem gambler.

> *"I've been humiliated by people behind the bar saying 'Now wrack off', you know. Being caught (after self-exclusion) one bloke (a staff member at the venue) said 'Now be a good boy and get out of here' … and he knew darn well I couldn't even turn around and say 'Excuse me but you can be civil.' Now that annoys me. Won't go back there again."*

This last comment was interesting given that he had initiated the self exclusion order. Another member of the group asked him if he was fighting his self-exclusion order, to which he replied *"Yes I think so"*. These findings cohere with other research finding that

only a minority of gamblers ever seek formal treatment for gambling problems (Hodgins, et al., 1999).

2.4.6 Externally Imposed Limitations

In addition to self-initiated methods of gambling management, participants also alluded to externally imposed limitations. Dependent children or financial commitments, for example, could reduce available time for gambling.

Disapproval from family, partners and even friends was also a strong disincentive. A female participant, now a low risk gambler, had a brief period where she had gambled excessively. This had changed after her marriage: *"Once a year … that's a ration that my husband put me on*". She said *"It's not self-regulation, it's spouse regulation"* (P6, female, 37 years old, LRG).

Interventions from friends may only be appropriate if the friendship was very close and may be couched as indirect warnings: *"tried to bring it up lightly. It didn't get too serious, they were just saying 'You have got to watch out, that's how I heard it (gambling problem) starts'"* (P11, male, 21years old, MRG).

2.5 Summary and Discussion of Self-Regulation Themes

These findings again extend knowledge in this area showing that people use a variety of different self-regulation strategies to maintain control of their gambling. A very common strategy was s*etting limits*, which meant setting self-imposed limits around the amount of money and time spent gambling and physically or mentally separating original stakes from winnings. Setting monetary and time limits around gambling and knowing when to walk away were also a common strategy reported in an earlier study of responsible gambling (Turner, et al., 2005). An interesting finding of the present study was that both problem and non-problem gamblers employed these strategies, but problem gamblers were less successful in their implementation. Problem gamblers found it difficult to self-regulate the

amount of time and money spent gambling, regularly going over their self-imposed limits. This finding has implications for treatment regimes as it suggests that people experiencing problems may have difficulty reducing the amount of time and money spent gambling without clear guidelines and/or a period of abstinence.

Problem gamblers were also more likely to reinvest any winnings rather than separating this money from original stakes to regulate total spending. Some problem gamblers rationalised this behaviour by distancing themselves from their winnings, maintaining that this was never really their money, and therefore not their responsibility. This type of denial may assist problem gamblers to deal with the self-anger of losing all their own money. It again suggests that the decision making of this group is severely compromised, something which could be addressed by education or within treatment.

Maintaining awareness about gambling involved a series of mental strategies including being conscious that gambling was likely to result in a loss not a win; relating the money spent gambling to tangible objects so that the magnitude of the spending was based in the real world; and self-reminders about the consequences of excessive gambling. Both problem and non-problem gamblers used this strategy with problem gamblers relating the spending and risks to their personal experiences to guard against relapse. Hodgins and El-Guebaly (2000) also found resolved problem gamblers would commonly use cognitive reminders about the negatives of gambling and the benefits of quitting as self-directed strategies for maintaining abstinence.

Keeping it social, in other words maintaining gambling as part of a wider social experience was another strategy that was seen as important to maintaining control of gambling. Choosing to gamble alone may indicate a gambling problem. This philosophy, which aligns with the attraction of gambling as a social experience, was also mentioned in the study of responsible gambling (Turner, et al., 2005). This finding indicates that people understand it is important to retain gambling as a form of social entertainment rather than a means of making money.

The above strategies were all that was generally required for social gamblers to regulate their gambling behaviour. For at risk and problem gamblers, however, more powerful self-regulation strategies were often required. Some discussed the need to maintain an *abstinence* from gambling venues and replace this activity with other, healthier options. This supported other research finding that a popular self-regulation strategy for problem gamblers was to avoid gambling venues (Hodgins & El-Guebaly, 2000; Hodgins, et al., 1999), and that long term recovery was facilitated by incorporating lifestyle changes such as replacing gambling with more adaptive hobbies (Clarke & Clarkson, 2008; Griffiths, 2006; Hodgins & El-Guebaly; Hodgins, et al.; Petry, 2005a). While this type of behaviour can assist in controlling gambling, it can impose constraints on socialising if peer groups tend to congregate at gambling venues.

At the most extreme end of the control spectrum was formal or informal *help seeking.* This may involve mutual support groups, seeking practical assistance from family or friends or applying for self-exclusion from gambling venues. Seeking help or support from family and friends has previously been found to be an important resource to assist with abstinence and recovery (Clarke, 2007; Clarke, Abbott, DeSouza, & Bellringer, 2007; Hodgins & El-Guebaly, 2000; Oei & Gordon, 2008). Initiation of self-exclusion was seen as a strategy of last resort, signalling that the individual was no longer able to control their gambling without some assistance. Individuals who were still somewhat ambivalent about complete abstinence from gambling were reluctant to self-exclude.

Self initiated regulation strategies were therefore quite varied. In an interesting overlay, strategies were found to gradually increase in strength and data analysis showed that lower risk gamblers successfully managed their gambling using quite unobtrusive self-regulation strategies such as setting limits around time and money spent gambling, maintaining awareness of the risks and keeping gambling social. In contrast, higher risk gamblers often had trouble controlling their gambling with these methods and were likely to initiate much more stringent methods of control including abstinence from gambling and Help Seeking. In addition to these self-initiated strategies, some people discussed externally imposed limitations such as family or financial commitments and disapproval from people around

them. Externally imposed strategies were not included in Phase Two as the focus of this study was self-initiated strategies to control gambling.

Chapter Three

Phase Two Study: Exploratory Factor Analysis of Accessibility and Self-Regulation Strategies

The findings from Phase One together with the broader literature were used in this second phase of the study to further investigate the multiple aspects of accessibility and self-regulation. Items were developed based on Phase One and relevant literature and exploratory factor analyses were used to create new subscales measuring different dimensions of accessibility and self-regulation. These were then analysed in terms of their relationships to demographics and other variables of interest.

It was hypothesised that exploratory factor analyses conducted on both accessibility and self-regulation would result in multiple factors. Given the lack of prior research in this area, no specific hypotheses were made regarding the number or exact composition of factors. Research questions were posed in terms of the relationships accessibility and self-regulation had to other variables as follows:

- Are (a) accessibility and (b) self-regulation related to demographic characteristics (gender, age, and ethnicity)?
- Are (a) accessibility and (b) self-regulation related to other variables known to relate to gambling behaviour (irrational cognitions about gambling, financial stress, gambling frequency, gambling urges, and gambling problems)?
- Are aspects of accessibility related to self-regulation strategies?

This chapter presents the methodology and results of this study followed by a discussion and interpretation of the results.

3.1 Method

3.1.1 Participants

The sample for this study consisted of 303 participants, 184 women (*M*=26.30 years of age, *SD*=10.88 years) and 119 men (*M*=26.56 years of age, *SD*=9.31 years). Thee additional participants were excluded from the sample as they reported that their country of residence was not Australia and accessibility can be markedly different between regions. At this stage the available contacts in terms of social and problem gamblers had been exhausted. A concentrated effort was put into recruiting a substantial number of people from different cultural minorities such as Chinese, Vietnamese, Arabic, as prior research has shown that people from separate cultural groups differ in terms of their gambling preferences, beliefs and attitudes (Clarke, et al., 2006; GAMECS Project, 1999; Victorian Casino and Gaming Authority, 2000; Zheng & Walker, 2006). These disparate groups proved difficult to recruit despite a number of recruitment strategies and the final sample was skewed towards people born in Australia who identified as having an Australian cultural background. Time restrictions on the study prevented any further recruitment of these groups. The lack of diversity restricted the type of cultural comparisons which could be made in the current study. Further research designed to investigate differences between people from different cultural groups on the variables of interest should be undertaken.

3.1.2 Measures

Participants were asked about general demographics and frequency of gambling on a variety of different activities using a 5-point scale ranging from 1 (*Never*) to 5 (*Once a week or more*). They were also asked a few additional questions about their spending on gambling, income level, and gambling history. This permitted some understanding about past and present gambling problems from the perspective of the individual. Several psychological measures were also given, which are described below.

The Gambling Related Cognitions Scale (GRCS; Raylu & Oei, 2004a). This scale screens for five gambling-related cognitions as follows:

- *Illusion of control*: four items relating to an individual's belief in his/her ability to control the outcome of a game via skill, knowledge or rituals (e.g., "I have specific rituals and behaviours that increase my chances of winning")
- *Predictive Control*: six items measuring the degree someone thinks he/she can predict wins (e.g., "Losses when gambling are bound to be followed by a series of wins")
- *Interpretive Bias*: four items measuring the degree to which an individual attributes successes to personal skill and losses to outside influences (e.g., "Relating my winnings to my skill and ability makes me continue gambling")
- *Gambling Related Expectancies*: four items regarding expectations of the outcome of gambling behaviour (e.g., "Having a gamble helps reduce tension and stress")
- *Inability to Stop Gambling*: five items measuring the lack of belief an individual has in his or her ability to resist gambling (e.g., "My desire to gamble is so overpowering").

Each scale is scored on a 7-point scale ranging from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*) with higher scores indicating a greater level of that cognition. Mean subscale scores are obtained by summing the items for relevant subscale and dividing by the number of items in the subscale. The five subscales have shown moderate to high internal consistency (Illusion of control α=.87, predictive control α=.77, interpretive bias α=.91, gambling related expectancies α=.87, inability to stop gambling α=.89), and validity analyses have been conducted which demonstrated significant positive correlations between the subscales and measures of anxiety, depression, stress and motivation to gamble; variables expected to correlate with both gambling problems and gambling-related irrational cognitions. Further, the subscales discriminated significantly between problem and non-problem gamblers in expected ways (Raylu & Oei, 2004a).

The Gambling Urge Scale (Raylu & Oei, 2004b) is a six item scale designed to measure gambling urges (e.g., "All I want to do now is to gamble"). Participants were asked the degree to which they agreed or disagreed with each item on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Scores are calculated by summing responses with higher

scores indicating stronger urges to gamble. The scale has shown good reliability (Cronbach's α=.81) and validity was demonstrated with significant, albeit weak, positive correlations with measures of gambling-related cognitions, gambling related motivations, measures of anxiety, depression and stress and a moderate positive correlation with a measure of gambling problems (Raylu & Oei, 2004b).

The *Problem Gambling Severity Index* (PGSI), a component of the Canadian Problem Gambling Index (Ferris & Wynne, 2001) was again used to measure presence and severity of gambling problems. A full description of this measure can be found in Chapter Two.

Financial Stress A series of questions measuring financial stress was taken from an Australian Housing and Urban Research Institute study into housing affordability (Burke, et al., 2007). The questions measure a variety of indicators of financial stress (e.g., "It is a constant struggle to pay regular bills"). One question was adapted slightly to reflect the current study's gambling focus. Responses were scored on a 5-point Likert-type scale where 2 *(Strongly Disagree)* and 6 *(Strongly Agree)*. Respondents are also given the option of responding with "Not relevant to me". Scale scores were obtained by summing across items. Internal consistency for this scale was excellent (α=.89).

3.1.3 Procedure

Ethics approval for this study was obtained from the relevant University committee. One of the researchers again contacted key stakeholders at community and dedicated counselling services to inform them about the study and gain their agreement to display recruitment flyers and notify clients of the opportunity to take part in the study. Participants were recruited via paper based flyers advertising the study displayed at public libraries across the state and in dedicated gambling counselling services; university and community electronic noticeboards; community and gambling websites including our dedicated gambling website; electronic mail-outs to university groups; an electronic search engine and verbal invitations at university lectures. Interested people could either contact the researchers for further information and to have a printed questionnaire mailed out to them or they could visit our dedicated website which had a link to an online version of the questionnaire.

Participants completed the questionnaires in their own time. Online responses were sent anonymously to a central database accessible only by the researchers while paper based questionnaires were returned to the researchers in a pre-printed return envelope. Over 90% of participants chose to complete the questionnaire online.

3.2 Results

3.2.1 Initial Results

The majority of participants reported an Australian ethnic identity, with 14% reporting a European background and 7% reporting an Asian ethnic background (see Table 1 below).

Table 1

Ethnic Identity of Participants

Country/Region	*n*	%
Australian	220	73.6
European	41	13.7
Asian	22	7.1
New Zealand	6	2.0
North American	3	1.0
Other	7	2.3

N=303 *Note:* European ethnic background included British, German, Italian, Swedish, Serbian, and Croatian. Asian background included Chinese, Vietnamese, Malaysian, Thai, Pakistani, and Sri Lankan.

Participants were measured on their frequency of gambling across different activities. Results can be found in Table 2 below. The most frequent types of gambling were EGMs outside the casino (e.g., at clubs or hotels) and on cards.

Single factor multivariate analyses of variance (MANOVAs) were used to compare men and women and problem and non-problem gamblers on their frequency of gambling on each of the listed activities (see Table 3 for means and standard deviations). In order to control for type I error, univariate comparisons were considered significant at $p<.005$ within each MANOVA (Tabachnick & Fidell, 2007). The results showed that there was a significant difference in

Table 2

Frequency of Gambling across Activity

Gambling Activity	Frequency							
	Never		Sometimes (less than once/month)		Fairly often (a few times/month)		Frequently (once a week or more)	
	n	%	*n*	%	*n*	%	*n*	%
Gamble on anything	17	5.6	157	52.0	44	14.6	83	27.5
Play cards[a]	103	34.3	141	47.0	17	5.7	39	13.0
Bet on horses/dogs	127	42.1	134	44.4	15	5.0	26	8.6
Bet on sports	144	47.7	115	38.0	19	6.3	24	7.9
Bought lottery or scratch-it tickets	87	28.8	174	57.6	23	7.6	18	6.0
Bet on gaming tables	158	52.3	123	40.7	15	5.0	6	2.0
Played EGMs at a casino	108	35.8	171	56.6	12	4.0	10	3.3
Played EGMs outside a casino (e.g, club)	115	38.1	131	43.4	20	6.6	36	11.9
Played bingo	208	68.9	88	29.1	2	0.7	4	1.3
Played pool or bet on other game	207	68.5	79	26.2	10	3.3	6	2.0
Internet gambling	240	79.5	28	9.3	10	3.3	24	7.9
Other[b]	268	89.9	19	6.4	7	2.3	4	1.3

N=302, [a]*n*=300, [b]*n*=298

Table 3

Mean and Standard Deviation of Frequency of Gambling across Activity

	Gender				Problem Gambler Status			
	Females (*n*=181)		Males (*n*=115)		Non-Problem Gambler (*n*=233)		Problem Gambler (*n*=61)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Play cards	0.94	1.03	2.00	1.52**	1.27	0.13	1.67	1.51
Bet on horses/dogs	0.76	0.95	1.53	1.46**	0.88	1.08	1.75	1.54**
Bet on sports	0.76	1.04	1.45	1.45**	0.92	1.12	1.49	1.62*
Bought lottery or scratch-it tickets	1.36	1.09	1.24	1.22	1.23	1.07	1.66	1.33
Bet on gaming tables	0.49	0.79	1.21	1.11**	0.65	0.92	1.25	1.11**
Played EGMs at a casino	1.01	0.99	1.12	1.13	0.89	0.88	1.70	1.32**
Played EGMs outside a casino (e.g, club)	1.16	1.30	1.48	1.44	0.93	1.03	2.66	1.60**
Played bingo	0.50	0.84	0.32	0.60	0.36	0.66	0.72	1.02*
Played pool or bet on other game	0.36	0.79	0.80	1.06**	0.45	0.81	0.85	1.25*
Internet gambling	0.17	0.63	1.13	1.62**	0.47	1.14	0.85	1.44
Other	0.11	0.52	0.32	0.85*	0.14	0.56	0.41	0.99

*p<.005, **p<.001

gambling frequency between men and women Wilks' Lambda = .72, (F(12, 283) = 9.15, p<.001, partial η^2=.28. Univariate tests showed that men gambled significantly more often on cards, horses/dogs, sports, gaming tables, pool/other games, the internet and other activities (Cards F(1, 294) = 50.77, p<.001, partial η^2=.15; Horses/Dogs F(1, 294)= 30.08, p<.001, partial η^2=.09; Sports F(1, 294)= 22.70, p<.001, partial η^2=.07; Gaming Tables F(1, 294) = 42.14, p<.001, partial η^2=.13; Pool/Other Games F(1, 294) = 16.74, p<.001, partial η^2=.05; Internet F(1, 294) = 51.30, p<.001, partial η^2=.15; Other Activities F(1, 294) = 7.05, p<.005, partial η^2=.02), although overall participation on bingo, pool/other games, the internet and other games was very low, on average, for both genders.

There was also a significant difference in gambling frequency between non-problem and problem gamblers Wilks' Lambda = .67, (F(12, 281) = 11.49, p<.001, partial η^2=.33. Univariate tests showed that problem gamblers gambled significantly more frequently on horses/dogs, sports, gaming tables, EGMs at the casino and outside the casino, bingo and pool/other games (Horses/Dogs F(1, 292) = 26.11, p<.001, partial η^2=.08; Sports F(1, 292) = 10.34, p<.005, partial η^2=.03; Gaming Tables F(1, 292) = 18.41, p<.001, partial η^2=.06; EGMs at Casino F(1, 292) = 32.93, p<.001, partial η^2=.10; EGMs outside Casino F(1, 292) =104.76, p<.001, partial η^2=.26; Bingo F(1, 292) = 11.21, p<.005, partial η^2=.04; Pool/Other Games F(1, 292) = 9.29, p<.005, partial η^2=.03) with the strongest effect seen in terms of gambling on EGMs outside the casino. Again overall participation was very low, on average, for bingo, pool/other games the internet and other activities for both problem and non-problem gamblers.

Participants were measured on their current problem gambling symptomatology and asked about current and past gambling problems. The measure of current gambling problems showed that the majority were non-problem gamblers, with 21% of participants being over the threshold for gambling problems (see Table 4 below).

Table 4

Problem Gambling Status

Level of Gambling Problems	*n*	%
Non-Problem	153	50.8
Low risk	47	15.6
Moderate risk	38	12.6
Problem gambler	63	20.9

N=301

Men (*M*=5.00, *SD*=6.32) displayed significantly more symptoms of problem gambling than women (*M*=3.25, *SD*=6.29) $F(1, 299)=5.56$, $p<.05$. Interestingly only 32 of the 63 people rated by the PGSI as probable problem gamblers considered themselves to have current gambling problems. A further 11 reported past problems from which they had recovered. The majority of people reporting past or present gambling problems identified EGMs as the form which led to problems.

3.2.2 Operationalising Accessibility

The Stage One qualitative research found that accessibility could be grouped according to the following themes: *Geographical Accessibility*, *Temporal Accessibility, Social Accessibility, an Accessible Retreat* and *Within Venue Accessibility.* These findings together with a comprehensive literature review and brainstorming among the primary researchers provided the main source of data for the development of items for the two access scales. A list of 60 items was generated which formed a set of potential reasons that gamblers could endorse to indicate (a) what attracted them to particular gambling venues, and (b) what kept them returning to particular venues. The stems for the two access scales (which comprised the same set of items) were: "The following is important to my *initial attraction* to gambling venues:" and "The following contributes to me *continuing* to gamble at certain venues". The response options comprised a 7-point scale ranging from 1 (*disagree very much)* to 7 (*agree very much).*

The 60 items were trialled for readability and face validity with a small group of gamblers and gambling researchers. Several items were removed because they (a) appeared to measure concepts other than access, or (b) were ambiguous/involved a double negative, or (c) were considered overly repetitive. The final list comprised 43 items, identical for each scale.

Factor Analysis of Reasons for Initial Attraction (IA) to Gambling Venues

Principal Axis Factoring factor analyses were conducted with oblique rotations to permit correlated factors to emerge (Tabachnick & Fidell, 2007). The first factor analysis employed Kaiser's criterion with a Scree plot to gain an idea of the number of factors present in the data. Initial analysis suggested that the data was suitable for factor analysis and extracted seven factors with eigenvalues greater than one. The Scree plot suggested a maximum of five distinct factors but possibly as few as two. It was decided to conduct a systematic examination of two, three, four and five factor solutions for applicability. Systematic testing of the four possibilities revealed that the two factor solution showed the clearest and most meaningful solution. Three items were problematic in this solution either failing to load substantially on either factor (below .40) or cross loading at >0.4 on both. These items were removed from the analysis and the two-factor solution re-analysed. This solution attained Thurstone's simple structure and explained 49.9 % of the variance in item responses. The solution had 40 items, no cross loadings >0.4 and all communalities >0.3. Table 5 displays items associated with each factor.

Table 5

Items relating to Initial Attraction (IA) to Gambling

Good Entertainment	**Accessible Retreat**
A place with friends	
Able to dress up and feel confident	Minimal distractions
Other (non-gambling) activities available	Venues where I won't be interrupted
People my own age	Close to work
Able to meet new people	Offers an escape from daily life
People are well dressed	Venue is on way home from work/study
A lively atmosphere	Can use same gaming machine/same game
Cues to help control gambling	Can gamble anonymously
Treated with respect by staff	Venue is open late at night/early in morning
Sophisticated surroundings	Can use a loyalty card
Staff will tap me on the shoulder if needed	ATMs are easily accessible
Feel comfortable speaking my own language	No other entertainment options
A cheap day or night out	A quiet venue
Venue is clean	Close to where I live
Availability of food and drink	Comfortable surroundings
Safety and security of the venue	
Easy to play games	
Close to public transport	
People from a similar culture / ethnicity	
People of the same gender	
Casual / 'laid back' atmosphere	
Availability of parking	
Skill-based gambling activities available	
A venue that has giveaways/promotions	
Able to gamble for a long time without losing a lot	
The feng shui of the venue	

The first factor, named **IA-Good Entertainment** related to the level of initial attraction to a gambling venue that was perceived as being a place to be with friends, with activities other than gambling and where one could dress up and have a cheap and lively night out; in other words venues which provided a pleasant and social atmosphere together with a variety of gambling and non-gambling activities. The second factor, named **IA - Accessible Retreat** related to the level of attraction to a gambling activity or environment because it was perceived as geographically and temporally accessible, comfortable and familiar, and it allowed an anonymous escape from life with few interruptions or distractions.

Factor Analysis of Reasons for Continued Gambling (CG)

Principal Axis Factoring factor analyses were conducted with oblique rotations to permit correlated factors to emerge (Tabachnick & Fidell, 2007). The first factor analysis again employed Kaiser's criterion with a Scree plot to explore the number of distinct factors present in the data. Initial analysis suggested that the data was suitable for factor analysis. Five factors with eigenvalues greater than one were extracted and the Scree plot suggested either two or four distinct factors. The five factor solution did not display clear factors so it was decided to conduct a systematic examination of two and four factor solutions. The two factor solution showed the clearest and most meaningful solution of the two. One item failed to load substantially on either factor (below .40) and two failed to show discriminability (loading similarly on two factors). These three items were removed from the analysis and the two-factor solution re-analysed. This solution attained Thurstone's simple structure and explained 58.2% of the variance in item responses. Table 6 displays items associated with each factor.

Table 6

Items relating to Continued Gambling (CG)

Good Entertainment	**Accessible Retreat**
A place with friends	
Able to dress up and feel confident	Minimal distractions
Other (non-gambling) activities available	Venues where I won't be interrupted
People my own age	Close to work
Able to meet new people	Offers an escape from daily life
People are well dressed	Venue is on way home from work/study
A lively atmosphere	Can use same gaming machine/same game
Cues to help control gambling	Can gamble anonymously
Treated with respect by staff	Venue is open late at night/early in morning
Sophisticated surroundings	Can use a loyalty card
Staff will tap me on the shoulder if needed	ATMs are easily accessible
Feel comfortable speaking my own language	No other entertainment options
A cheap day or night out	A quiet venue
Venue is clean	Close to where I live
Availability of food and drink	
Safety and security of the venue	
Easy to play games	
Close to public transport	
People from a similar culture/ethnicity	
People of the same gender	
Casual / 'laid back' atmosphere	
Parking available	
Skill-based gambling activities available	
A venue that has giveaways/promotions	
Able to gamble for a long time without losing a lot	
Warm in winter/cool in summer	
Good range of betting options	

The first factor, named **CG-Good Entertainment** related to the level at which gambling or gambling venues were viewed as being a reasonable form of entertainment; something which was safe, cheap local, and which offered a social, pleasant atmosphere as well as a variety of activities. The second factor, **CG-Accessible Retreat** related to the level at

which gambling was undertaken because it was geographically and temporally accessible, familiar and offered an anonymous escape from life with few interruptions or distractions.

These two factors relating to continued attraction to gambling were very similar to the initial attraction factors. In the interests of keeping scales as concise and reliable as possible it was decided to remove badly performing items related to either scale from both measures, thus leaving 38 items in each, 25 in the first factor and 13 in the second (for both measures). The initial and continuing access factors showed some differences in loadings across items but they were essentially very similar. Please contact authors for a copy of the complete factor loadings for each Factor Analysis and/or complete scales.

Internal consistency was calculated for each of the two factors. Cronbach alphas were high in all cases, as follows: IA-entertainment .95; IA-retreat .91; CG-entertainment .97; CG-retreat .93.

3.2.3 Examination of Demographic Characteristics and Relationships of Interest for Accessibility

Subscales were constructed by summing the items on each factor to enable analyses to be conducted examining the characteristics of these new factors. A series of MANOVAs were conducted to test whether there were significant differences in the accessibility factors across gender, cultural/ethnic group[2] and gambler status (see Table 7 for means and

[2] Detailed comparisons across cultural group were unable to be conducted due to small numbers in many ethnic groupings, therefore participants were grouped into larger clusters and comparisons conducted between the two largest groups; those from Anglo/European backgrounds (i.e., Australian, British, European etc.) and those from Asian backgrounds (China, India etc.).

Table 7

Mean and Standard Deviation of Accessibility Factor Scores across Demographic Groups

Factor	Gender				Ethnic Background				Problem Gambler Status			
	Female (*n*=184)		Male (*n*=119)		Anglo/European (*n*=276)		Asian (*n*=22)		Non-Prob. Gmblr. (*n*=238)		Prob. Gmblr. (*n*=63)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Initial Attraction												
Good Entertainment	100.12	36.37	97.26	33.42	98.71	35.26	102.55	36.88	98.59	36.61	102.41	28.02
Accessible Retreat	43.72	118.65	43.87	18.01	43.24	18.43	47.59	17.19	39.67	16.30	59.70	17.04**
Continued Attraction												
Good Entertainment	96.95	40.15	95.76	38.45	95.86	39.56	102.64	41.06	95.52	40.86	100.02	31.49
Accessible Retreat	42.94	19.74	41.87	18.97	41.95	19.45	47.00	18.82	38.51	17.35	57.38	18.65**

$p<.01$*, $p<.001$**, Prob. Gmblr. = Problem Gambler

standard deviations). In order to control for type one error univariate contrasts were considered significant at $p<.01$. There were no significant gender differences on the measure of accessibility Wilks Lambda=.98, ($F(4, 298) = 1.55$, $p>.05$. Univariate tests confirmed there were no significant gender differences on any of the access factors (Initial Attraction: Good Entertainment $F(1,301) = .48$, $p>.05$; Accessible Retreat ($F(1,301) = .00$, $p>.05$. Continued Attraction: Good Entertainment $F(1,301) = .07$, $p>.05$; Accessible Retreat ($F(1,301) = .22$, $p>.05$).

MANOVAs also showed no significant differences on accessibility scores according to ethnicity Wilks Lambda=.99, ($F(4, 293) = .39$, $p>.05$. Univariate tests confirmed the absence of significant differences between ethnic groups on any of the access factors (Initial Attraction: Good Entertainment $F(1,296) = .24$, $p>.05$; Accessible Retreat ($F(1,296) = .1.15$, $p>.05$. Continued Attraction: Good Entertainment $F(1,296) = .60$, $p>.05$; Accessible Retreat ($F(1,296) = .1.38$, $p>.05$). In view of the small sample size for those from Asian backgrounds it is possible that there were significant differences between these groups but that the sample was too small to detect them.

There was a significant difference between problem and non-problem gamblers on scores on the accessibility measure Wilks Lambda=.70, ($F(4, 296) = 31.50$, $p<.001$, partial $\eta^2=.30$. Univariate tests showed there were no significant differences between problem and non-problem gamblers' scores on either their initial or their continued attraction to gambling as Good Entertainment (Initial Attraction: $F(1, 299)= .60$, $p>.05$; Continued Attraction: $F(1, 299) = .66$, $p > .05$). Problem gamblers scored significantly higher on both initial and continued attraction to gambling which provided an Accessible Retreat (Initial Attraction: $F(1,299)= 73.80$, $p<.001$, partial $\eta^2=.20$; Continued Attraction: $F(1,299) = 57.11$, $p < .001$, partial $\eta^2= .16$).

Pearson bi-variate correlations were calculated to examine the relationships among access factors and age as well as a range of gambling related variables (see Table 8 below). These showed that scores on Good Entertainment had only weak or non-significant relationships

Table 8

Correlations between Accessibility and Variables of Interest

Variable	IA-Initial Attraction to Gambling		CG-Reasons for Continued Gambling	
	Good Entertainment	Accessible Retreat	Good Entertainment	Accessible Retreat
Age	-0.03	0.22**	-0.04	0.20**
Frequency of Gambling	0.21***	0.48***	0.23***	0.41***
Gambling Problems	0.07	0.53***	0.09	0.48***
Financial Stress	0.22***	0.43***	0.25***	0.45***
Gambling Urges	0.07	0.47***	0.07	0.38**
Irrational Cognitions				
Illusion of Control	0.20***	0.33***	0.20**	0.31***
Predictive Control	0.24***	0.45***	0.27***	0.39***
Gambling Expectations	0.21***	0.49***	0.25***	0.45***
Inability to stop Gambling	0.07	0.51***	0.10	0.46***
Interpretative Bias	0.24***	0.51***	0.28***	0.47***

n=303, *p*<.05*, *p*<.01**, *p* <.001***

with age, financial stress, gambling-related cognitions, gambling frequency, gambling urges and gambling problems. Those who scored high on gambling as Good Entertainment had a slight tendency to gamble more frequently, experience more financial stress and score higher on irrational gambling cognitions than those who scored low on Good Entertainment. There were significant, positive, moderate strength relationships between scores on gambling as an Accessible Retreat and scores on financial stress, gambling-related cognitions, gambling frequency, gambling urges and gambling problems. People who scored high on measures of gambling as an Accessible Retreat tended to score higher on financial stress, irrational cognitions about gambling, gambling frequency, gambling related urges and problems than those who scored low on Accessible Retreat. Gambling as a retreat also had weak but significant positive correlations with age, older people being more likely to see this factor as important to access.

3.2.4 Operationalising Self-Regulation Strategies

The Stage One qualitative research found that strategies to control the level of gambling could be grouped in the following themes: *Setting Limits, Maintaining Awareness, Keeping it Social, Abstinence,* and *Help Seeking.* These results together with the literature on Help Seeking and self-regulation strategies as well as brainstorming among the key researchers resulted in the development of 27 items representing possible self-regulation strategies. After consideration seven items were removed as they were considered overly repetitive. The final list comprised 20 items. The stem for the self-regulation scale was: “People sometimes have strategies to help them avoid gambling too much. On the following scale could you please rate the extent you use any of the following strategies to limit your gambling.” Responses were rated on a 4-point scale from 1 (*Never do this*) to 4 (*Often do this*).

Principal Axis Factoring factor analyses were conducted with oblique rotations, requesting the extraction of factors with eigenvalues greater than one (Kaiser’s criterion) and a Scree

plot. Initial analysis suggested that the data was suitable for factor analysis, with four extracted factors having eigenvalues greater than one. The Scree plot suggested one to two distinct factors with a maximum of four. A systematic examination was therefore conducted on solutions containing one, two, three or four factors for applicability. Systematic testing of the four possibilities revealed that the four factor solution showed the clearest and most meaningful solution. One item failed to show discriminability, loading similarly on two factors ("set a time limit on gambling"). This item was removed and the four-factor solution re-analysed resulting in Thurstone's simple structure. This solution explained 61.8 % of the variance in item responses. Table 9 displays items associated with each factor. Please contact authors for details on factor loadings and full item content.

Table 9

Items relating to Self-Regulation Strategies

Social Experience	**Self-Limiting**
Only go to venues with alternative activities Avoid solo gambling Ask a friend to look out for me (at venue) Go to gambling venues with friends	Consider negative consequences of gambling Keep track of money spent on gambling Talk to friends/family about gambling Limit alcohol consumption whengambling Focus on other hobbies Set and stick to a gambling budget Spend time with family/friends
Avoidance	**Help Seeking**
Avoid passing certain locations Avoid going to certain places Ask friends/relatives to manage money Keep busy with other activities (to avoid gambling temptation) Avoid taking credit cards to venues	Cut up my credit cards Get professional help (for gambling) Seek voluntarily exclusion (from venues)

The **Social Experience Strategies** factor related to strategies designed to ensure the experience remained social rather than gambling oriented**.** The **Self limiting strategies** encompassed strategies around putting self-imposed limits on the amount of time and money spent gambling, considering the consequences of excessive gambling and balancing gambling with other hobbies. A third factor related to **Avoidance Strategies** included avoiding venues and restricting access to money at venues. Finally, the **Help-seeking strategies** factor involved serious strategies; cutting up credit cards, self-excluding from venues and seeking professional assistance. Internal consistency was acceptable for the four factors as follows: Social Experience strategies α=.77, Self-Limiting α=.86, Avoidance strategies α=.80, Help Seeking strategies α=.77.

3.2.5 Examination of Demographic Characteristics and Relationships of Interest for Self-Regulation Strategies

Subscale scores were calculated for each factor by summing the individual items to enable demographic and other variable comparisons to be conducted. A series of MANOVAs were conducted to test for significant differences between demographic groups (see Table 10 for means and standard deviations). Again univariate comparisons were considered significant at $p<.01$ to control for Type One error.

Table 10

Mean and Standard Deviation of Self-Regulation Factor Scores across Demographic Groups

Factor	Gender				Ethnic Background				Problem Gambler Status			
	Female (*n*=184)		Male (*n*=119)		Anglo/European (*n*=276)		Asian (*n*=22)		Non-Prob. Gmblr. (*n*=238)		Prob. Gmblr. (*n*=63)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Self Limiting	13.97	5.97	16.11	5.84*	14.71	5.99	14.90	6.32	13.84	5.90	18.70	4.61**
Help Seeking	3.67	1.59	3.67	1.60	3.62	1.50	3.81	2.14	3.34	1.21	4.92	2.19**
Avoidance	7.64	3.90	7.57	2.81	7.54	3.52	7.62	2.64	6.69	2.75	11.23	3.77**
Social Experience	6.66	3.24	6.71	3.00	6.62	3.12	7.05	3.02	6.59	3.20	7.11	2.85

$p<.01$*, $p<.001$**, Prob. Gmblr.=Problem Gambler

A MANOVA showed that there was significant gender difference on the scores on measures of self-regulation (Wilks' Lambda = .94 (F(4, 290) = 4.71, p<.001, partial η^2=.06). Follow up univariate contrasts showed that that men scored significantly higher on Self-Limiting strategies on average than women (F(1,293)=9.23, p<.01, partial η^2=.03) but there was no difference between genders on any of the other factors (Help Seeking F(1,293)=.00, p>.05; Avoidance F(1,293) = .02, p>.05; Social Experience (F(1,293)=.02, p>.05).

A MANOVA also showed no significant difference between people from different ethnic groups on their scores on use of self-regulation strategies (Wilks' Lambda=1.00 (F(4,285)=.19, p>.05). Follow up univariate tests also showed no significant difference across ethnic groups in the use of the four self-regulation strategies (Self-Limiting F(1,288)=.02, p>.05; Help Seeking F(1,288)=.29, p>.05; Avoidance F(1,288) = .01, p>.05; Social Experience (F(1,288)=.37, p>.05). Finally, a MANOVA also showed that problem gamblers were significantly more likely to score higher on self-regulation strategies compared to non-problem gamblers (Wilks' Lambda=.62 (F(4, 288)=43.62, p<.001, partial η^2=.38). Univariate tests showed that problem gamblers were more likely to score higher on use of Self-Limiting, Help Seeking and Avoidance strategies but there was no difference between the groups in scores on limiting gambling by keeping it socially oriented (Self-Limiting F(1,291)=35.61, p<.001, partial η^2=.11; Help Seeking (F(1,291)=55.66, p<.001, partial η^2=.16; Avoidance (F(1,291)=111.34, p<.001, partial η^2=.28; Social Experience (F(1,291)=1.35, p>.05).

Pearson bi-variate correlations were calculated to explore the relationships among self-regulation strategies and age as well as various gambling related variables (see Table 11). These showed that age had a very weak positive correlation with scores on three of the self-regulation strategies and a very weak negative relationship with scores on the Social Experience subscale. Older people had a very slight tendency to score higher on measures of self-regulation involving Self-Limiting, Avoidance and Help Seeking and a very slightly tendency to score lower on controlling gambling by keeping it a Social Experience than younger people.

Table 11

Correlations between Self-Regulation Strategies and Variables of Interest

Variable	Self Limiting	Help Seeking	Avoidance	Social Experience
Age	0.13*	0.15**	0.15**	-0.14*
Frequency of Gambling	0.41***	0.03	0.26***	0.04
Gambling Problems	0.35***	0.34***	0.55***	0.06
Financial Stress	0.20**	0.17**	0.28**	0.03
Gambling Urges	0.22***	0.23***	0.37***	0.00
Irrational Cognitions				
Illusion of Control	0.13*	0.17**	0.16**	0.05
Predictive Control	0.33***	0.15**	0.29***	0.10
Gambling Expectations	0.43***	0.10	0.30***	0.08
Inability to stop Gambling	0.31***	0.31***	0.41***	-0.01
Interpretative Bias	0.40***	0.14*	0.28***	0.05

N=302, $p<.05$*, $p<.01$**, $p<.001$**

The correlations between gambling related variables and scores on Self-Limiting were weak to moderate, positive correlations. People who scored high on measures of controlling gambling by Self-Limiting had a tendency to also score higher on measures of irrational cognitions, financial stressors, gambling frequency, gambling urges and gambling problems than those low on the Self-Limiting measure. There were also weak to moderate positive correlations between Avoidance strategies and gambling related variables. People who scored high on measures of self-regulation by Avoidance tended to score higher on measures of irrational cognitions, financial stress, gambling frequency, gambling urges and problems than those who scored low on the Avoidance measure.

There were generally weak to very weak relationships between Help Seeking and gambling related variables, people who scored high on the measure of using Help Seeking to control gambling had a very slight tendency to also score high on measures of irrational gambling cognitions, financial stress and gambling urges. There were moderate correlations between this strategy and measures related to loss of control, such that those who scored high on the Help Seeking measure had a tendency to score higher on gambling problems and inability to stop gambling than those who scored low on Help Seeking. Finally, there were no significant correlations between managing gambling by ensuring it remained a Social Experience and any of the gambling-related variables.

3.2.6 Relationship between Access and Self-Regulation

Pearson bi-variate correlations were conducted to provide an initial examination of the relationships between accessibility and self-regulation (see Table 12 below). There showed there were weak relationships between measures of Good Entertainment and measures of self-regulation strategies Self-Limiting and Social Experience. People who scored high on the Good Entertainment subscales had a slight tendency to score higher on the measures of self-regulation related to keeping the experience social and Self-Limiting than those who scored low on Good Entertainment. There was only a very weak correlation between the Good Entertainment measures and the self regulation by Avoidance measure and no significant relationship between this measure and self-regulation by Help Seeking.

Table 12

Correlations between Accessibility and Self-Regulation Strategies

Variable	Self Limiting	Help Seeking	Avoidance	Social Experience
IA - Good Entertainment	0.35***	0.01	0.19**	0.33***
CG – Good Entertainment	0.36***	-0.00	0.18**	0.31***
IA – Accessible Retreat	0.37***	0.24***	0.38***	0.15*
CG – Accessible Retreat	0.34***	0.22***	0.37***	0.15*

N=303, $p<.05$*, $p<.01$**, $p<.001$**

There were weak, positive relationships between the measures of Accessible Retreat and self-regulation measures of Self-Limiting, Avoidance and Help Seeking. People who scored high on the measures of Accessible Retreat had a slight tendency to also score high on measures of self-regulation related to limiting the time and money spent, Avoidance and getting professional help. There was only a very weak relationship between the Accessible Retreat measures and the measure relating to controlling gambling by keeping it social.

3.2.7 Internet Gambling

Internet gambling products are still comparatively new with only a small percentage of the population participating. Therefore, little is known about the type of people who may be attracted to this form of gambling. Certain aspects of this form of gambling, including its high accessibility, anonymity, and facilitation of cognitive escape, mean that it has already been identified as a potentially risky form of gambling for certain groups (Griffiths, 2003). Some demographic comparisons were therefore conducted to describe this group.

Just over 20% of participants reported gambling on the internet. Men (M = 1.16, SD = 1.62) gambled more frequently on the internet compared to women (M = .17, SD = .63; $F(1, 300) = 55.28$, $p<.001$, partial $\eta^2=.16$), and problem gamblers (M = .86, SD=1.44) gambled on the internet more frequently compared to non-problem gamblers (M = .49, SD = 1.16; $F(1, 298) = 4.61$, $p<.05$, partial $\eta^2=.02$). Pearson bi-variate correlations showed that older people had a tendency to gamble more on the internet (r=.40, p<0.001) and those who enjoyed internet gambling had a tendency to gamble more often on anything (r=.48, p<0.001), report gambling because it was an Accessible Retreat (AC-Accessible Retreat r=.13, p<0.05) and report managing their gambling by Self-Limiting (r=.24, p<0.001).

3.3 Summary and Discussion of Phase Two Findings

3.3.1 Initial Results

Results showed that the majority of participants gambled fairly infrequently (i.e., less than once a month) but that a quarter gambled once a week or more. Fairly frequent gambling was most common on cards and EGMs outside the casino.

Men gambled more frequently, more extensively and had more gambling problems which was similar to other research findings (e.g., Abbott, Volberg, & Ronnberg, 2004; McBain & Ohtsuka, 2001; Welte, Barnes, Tidwell, & Hoffman, 2008). Problem gamblers gambled more frequently on many gambling forms, particularly those identified as presenting greater risks to gamblers. This relationship was strongest for EGMs located outside the casino.

3.3.2 Accessibility Scale Development

The results of the two exploratory factor analyses were very similar indicating that similar aspects of accessibility are important in initial and continued attraction to gambling and venues. This section therefore combines discussion for both aspects. The final factors which were extracted related to gambling as Good Entertainment and venues as an Accessible Retreat.

The Good Entertainment factor emphasised social accessibility and showed that gambling venues which attracted a fairly homogenous group of people, provided a fun, social experience, were perceived to be affordable and safe, and where gambling was presented as one aspect of a wider entertainment experience were viewed as more accessible than those that did not provide these attractions. The internal consistency of this factor was excellent. This factor reflected the Phase One theme of *Social Accessibility* and provided further empirical evidence to support the contention that social accessibility is an important aspect of accessibility (Eltridge & Delfabbro, 2006; Productivity Commission, 1999).

Follow up analyses showed that this aspect of accessibility was likely to be equally important to both men and women, people from different ethnic backgrounds, people of different ages and both problem and non-problem gamblers. There were only weak relationships between measures of gambling as Good Entertainment and measures of gambling frequency, financial stress and irrational cognitions around gambling. Further, there was no relationship between this factor and either gambling urges or gambling problems. These results suggest that being attracted to, and using gambling as social entertainment within a wider experience is likely to appeal to a wide section of the community and will not necessarily lead to gambling problems.

The potential risk attached to social accessibility, however, should not be entirely discounted. Local social spaces which are geographically and temporally accessible, on neutral ground, social, warm and welcoming, are slowly diminishing (Oldenburg, 1989). The gradual reduction in alternative social spaces, particularly in outlying suburbs where lifestyles are more likely to centre on isolated hubs of home, work and shopping (Oldenberg), may mean that gambling venues become one of a limited number of social entertainment options. This could be particularly the case for people on their own who feel uncomfortable going to the movies or eating out when alone. Problem gamblers are lonelier than non-problem gamblers (Grant & Kim, 2002; Porter, et al., 2004; Thomas & Moore, 2003; Trevorrow & Moore, 1998) and the warm, welcoming, safe and social atmospheres of EGM venues can be important drawcards for this group (Morrison, 2004; Surgey, 2000; Thomas, et al., 2009). Therefore, while gambling as a social entertainment option may not, by itself, lead to gambling problems, the attraction of the social atmosphere may combine with other factors to lead to excessive gambling.

The other major accessibility factor to emerge from the analysis was Accessible Retreat. This factor gathered together items relating to geographic and temporal accessibility in addition to gambling as an anonymous retreat from problems of daily life, and was particularly relevant to people with few alternative entertainment options. The internal

consistency of this factor was excellent. This factor related well to the qualitative themes of the same name.

Follow up analyses showed that although there were no differences in the level of attraction to gambling as an Accessible Retreat based on gender or ethnic background, older people had a slight tendency to score higher on this measure than younger people and problem gamblers scored significantly higher on gambling as Accessible Retreat than non-problem gamblers. Correlations with other gambling-related variables showed that people who scored high on gambling as an Accessible Retreat had a moderately strong tendency to also score higher on gambling frequency, irrational cognitions about gambling, financial stress, gambling urges and problems than those who scored low on Accessible Retreat.

Problem gamblers rely more on avoidance or emotion-based coping strategies than non-problem gamblers (Getty, Watson, & Frisch, 2000; Gupta, Derevensky, & Marget, 2004; Scannell, et al., 2000; Shepherd & Dickerson, 2001; Thomas & Moore, 2003) and this group are motivated to gamble because it provides an accessible and easy way of temporarily escaping from problems (New Focus Research, 2003; Surgey, 2000). The present research extends this understanding showing that gambling provides a physical as well as cognitive retreat from problems. Further, the results show that reliance on gambling as an accessible retreat from problems is positively correlated with gambling problems and other variables known to be associated with gambling problems.

The Phase One study had conceptually distinct themes related to geographic accessibility, temporal accessibility and Accessible Retreat but the factor analysis clustered these three themes together into a single factor. This should not be considered to be contradictory, but rather indicating that these themes can be grouped together under a broader conceptualisation of accessibility where gambling provides a geo-temporally Accessible Retreat from stresses and problems (Oldenburg, 1989).

The split between the two accessibility factors partially supported research by Elridge and Delfabbro (2006) and confirmed that geo-temporal accessibility should be seen as distinct

from social accessibility. Eltridge and Delfabbro similarly found that problem gamblers were more likely to select a venue that was geographically accessible than irregular gamblers. In contrast to Eltridge and Delfabbro's finding that irregular gamblers were more likely to return to venues with pleasant staff, the present study found problem and non-problem gamblers were equally likely to be attracted to the social accessibility of venues. This suggests that non-problem gamblers see gambling as another entertainment option and judge it on that basis, returning to venues which provide a good social experience. Problem gamblers also value this aspect but are likely to also prioritise the geographical and temporal accessibility of venues and their ability to provide an oasis from problems.

Interestingly, within venue accessibility split across the Good Entertainment and Accessible Retreat factors. Items relating to having a cheap night out, convenient parking, and whether venues offered a variety of games (easy and skill based) and prizes or promotions factored into Good Entertainment. In other words venues which offered variety and convenience at low cost increased the entertainment value of a gambling option. In contrast, items relating to the familiarity of the venue (loyalty cards, being able to access the same machine or game) and the availability of ATM/EFTPOS machines, factored into Accessible Retreat.

These findings again support the theory that accessibility is multidimensional. This wider conceptualisation of accessibility and its relationship to gambling behaviour and gambling motivation should be further explored. These findings can then be fully incorporated into models of problem gambling which at present accessibility as one-dimensional and peripheral to explanations.

3.3.3 Self-Regulation Strategies Scale Development

The self-regulation strategies factored into meaningful groups which reflected the Phase One findings to a large degree. As was the case with accessibility, some themes clustered together into single factors which did not contradict the thematic analysis but rather reflected a broader conceptualisation of self-regulation. In line with the Phase One findings,

the factors also delineated according to the degree of restriction placed on the gambler. All factors achieved acceptable to good internal consistency.

The first factor, Self-Limiting related to limiting the time and money spent gambling and maintaining awareness about the risks involved in gambling. Interestingly, this factor also included items related to balancing the time spent gambling with additional activities and hobbies. This factor cohered with the Phase One themes of setting limits and maintaining awareness about gambling risks. It also presents an interesting parallel in terms of the discussion around social accessibility of gambling, suggesting that people are often aware of the need to balance gambling with other entertainment options.

Follow up analyses showed that males and problem gamblers scored significantly higher on the measure of Self-Limiting, but scores were similar for people from different ethnic backgrounds. There was also a very slight tendency for older people to score higher on Self-Limiting than younger people. There were weak to moderate, positive relationships between use of Self-Limiting strategies and the gambling-related variables, such that people who scored higher on the Self-Limiting measure also tended to score higher on measures of irrational gambling cognitions, of financial stress, gambling frequency, gambling urges and gambling problems. The positive relationships between this scale and gambling-related variables, including problem gambling, were slightly surprising given that prior research (Turner et al., 2005) and the Phase One findings showed that non-problem gamblers preferred to use this type of self-regulation. It is likely that these results reflect the fact that people who are experiencing problems with their gambling will implement a wider range and more of all regulation strategies, including those preferred by non-problem gamblers (Hodgins & El-Guelbaly, 2000).

The two most stringent self-regulation strategies also aligned with the Phase One results. The Help Seeking factor was similar to the Phase One theme of the same name, although the final factor related more to direct and professional methods of Help Seeking and did not include less formal Help Seeking such as obtaining assistance from family or friends, something which was discussed in the thematic analysis. This may have been because this

item referred to talking to family/friends about gambling rather than specifically referring to Help Seeking from this source. The Avoidance factor cohered well with the similarly named factor in the thematic analysis and related to avoiding venues completely. This factor also included items related to avoiding taking money or credit to venues.

Follow up analyses showed that problem gamblers scored significantly higher on the measures of Help Seeking and Avoidance but that there were no differences in scores on these measures on the basis of gender or ethnic backgrounds. There were only very weak relationships between age and scores on these factors, with older people having a very slight tendency to score higher on use of Help Seeking and Avoidance to regulate gambling compared to younger people.

The relationships between use of Avoidance strategies and gambling-related variables were very similar to those that were found in terms of Self-Limiting, such that people who scored higher on the self-regulation by Avoidance measure tended to also score higher on irrational gambling cognitions, financial stress, gambling frequency, gambling urges and gambling problems compared to those who scored lower on self-regulating by Avoidance. This self-regulation strategy had the strongest relationship to gambling problems of the self-regulation strategies supporting other research which has found that avoidance of gambling venues is a favoured self-regulation strategy for problem gamblers (Hodgins & El-Guebaly, 2000; Hodgins, et al., 1999).

Interestingly, Help Seeking, the control strategy which has previously been most closely aligned with gambling problems (Echeburúa & Fernández-Montalvo, 2005; Ladouceur, et al., 2007; Petry, 2005a, 2005b), had only weak to very weak relationships to most gambling related variables. Scores on self-regulation by Help Seeking did have moderate positive relationships to measures of gambling problems and inability to stop gambling; measures of loss of control. These generally weaker than expected relationships may be because these strategies are considered quite extreme, with prior literature showing that even problem gamblers prefer to deal with their problems on their own and that only a small proportion of

gamblers ever seek professional help for problems (Hodgins & El-Guebaly, 2000; Hodgins, et al., 1999; Nathan, 2003).

Lastly, the Social Experience measure cohered very well with the similarly named theme and related to regulating gambling by ensuring it remained a social, rather than strictly gambling experience. Interestingly, this factor also included using friends in a more direct manner to assist with keeping gambling under control. Scores on this factor had a very weak negative relationship with age, such that younger people had a very slight tendency to score higher on use of this strategy to manage gambling. No other demographic or gambling related variables were correlated with this strategy. This suggests that, as was the case with the Good Entertainment factor, all gamblers are equally likely to feel it is important that gambling remains a social experience rather than purely gambling-related experience.

3.3.4 Relationship between Access and Self-Regulation

Results showed aspects of accessibility did relate to self-regulation. People who scored higher on the Good Entertainment subscales had a slight tendency to also score higher on measures relating to regulating gambling by ensuring it remained social and putting limits around the time and money spent gambling than those who scored low on Good Entertainment. There was only a very weak correlation between scores on the Good Entertainment measure and scores on the Avoidance measure, and no significant relationship between Good Entertainment scores and those on Help Seeking.

In contrast, people who scored higher on the subscale measuring gambling as an Accessible Retreat tended to also score higher on measures relating to regulating gambling by Self-Limiting, Avoidance and Help Seeking than those who scored low on Accessible Retreat. There was only a very weak relationship between scores on Accessible Retreat and scores on controlling gambling by keeping it social.

3.3.5 Internet findings

The recent introduction of internet gambling presents a new form which is highly accessible but about which only limited information is available. Analysis showed that internet gamblers tended to be male, older, and were more likely to be frequent and problematic gamblers. Further, frequent internet gamblers had a slight tendency to say they gambled because it was an Accessible Retreat and use self-regulation strategies.

Chapter Four

Conclusions

Availability and accessibility are necessary precursors to any gambling activity. Conceptualisation and measurement of accessibility, however, has been inadequate and research needed to be conducted into the multidimensionality of access. Further, despite the fact that most people prefer to manage their gambling on their own, research has focussed on externally imposed strategies and treatments. Self-regulation strategies employed by gamblers to maintain control over gambling are still not well understood. Finally, consideration needed to be given to how accessibility relates to factors such as motivation and self regulation. Such knowledge may help to elucidate strategies that protect vulnerable individuals from increased access, thus informing prevention and treatment programs. This study extended prior research showing that accessibility is multidimensional and is related in specific ways to self-regulation strategies. Further, aspects of both accessibility and self-regulation differentiate those with gambling problems.

4.1 Key Findings – Accessibility

The Phase One qualitative research showed that accessibility is a multidimensional concept. People were attracted to gambling which was *geographically accessible* to home, work, community hubs and on regularly used routes. The high *temporal accessibility* offered by some forms of gambling and some gambling venues also increased accessibility, with both early openings and late closing proving to be an attraction to different sections of the community. *Social accessibility* was heightened by venues which provided a safe, welcoming, social atmosphere within a wider entertainment experience. Accessibility was also facilitated *within venues* with relaxed conditions of entry, easy access to funds, low individual outlays, simple games, courtesy buses and venue incentives increasing access. Finally, some venues provided an *Accessible Retreat* from problems for problem gamblers.

The Phase Two factor analysis consolidated the themes into two broad facets of accessibility. The *Good Entertainment* factor related to whether venues provided a fun, social, affordable and safe experience. The subscale did not differ according to demographic characteristic and did not have any significant relationship to gambling related cognitions, financial stress, gambling frequency or measures of gambling problems. This suggests that social accessibility of gambling will appeal to a wide section of the community and, by itself, is unlikely to lead to problem gambling.

The *Accessible Retreat* factor related to geo-temporal accessibility, and venues as an anonymous retreat from problems. Unlike Good Entertainment, this subscale had a significant and substantial positive relationship to gambling problems as well as to a variety of other variables known to be related to problem gambling including irrational cognitions about gambling, financial stress, gambling frequency and gambling urges. Gambling as a cognitive escape from problems is central to many explanations of problem gambling (Blaszczynski & Nower, 2002; Dickerson & Baron, 2000; Lightsey & Hulsey, 2002; Ricketts & Macaskill, 2003; Rockloff & Dyer, 2006; Wood & Griffiths, 2007b). This research extended understanding and showed that venues can provide a physical as well as cognitive retreat from problems.

These findings greatly extend understanding around this concept and how it relates to gambling behaviour. They provide empirical evidence supporting the theoretical contention that accessibility is multidimensional and that people have an awareness of the different aspects of accessibility. Further, the findings that there were substantial relationships between the geo-temporal retreat provided by gambling and a variety of variables known to relate to problems, but no such relationships between socially related accessibility and gambling-related variables suggests that this dichotomy is important. Gambling simply because it provides an easy entertainment option may be a relatively safe social activity but continued reliance on gambling because it is something which is always accessible and provides a retreat from problems may, for some vulnerable individuals, lead to excessive and problematic gambling.

It must also be acknowledged that the two facets of accessibility may combine to increase risks. The results of this and other research showed that gambling can provide a cognitive and physical retreat from problems. Venues which are geographically and temporally accessible and which also offer a warm, welcoming, social retreat from problems may hold a particular appeal to those who are looking for a temporary respite from problems and negative emotions. Lonely people, for example, may be particularly attracted to the social atmosphere as well as the geo-temporal retreat.

This wider conceptualisation of accessibility and these complex relationships between motivation, accessibility and gambling behaviour should be explored further. The results can then be incorporated into explanatory models of problem gambling which currently present accessibility as a minor and peripheral part of explanations.

The geo-temporal findings also suggests that the spatial distribution and opening hours of EGMs in particular remains problematic (Productivity Commission, 1999). Governmental policy which caps the overall number of EGMs may have little impact on accessibility as this does not affect venue numbers. Market over-supply means that it is rare for all machines in a venue to be occupied (Abbott, 2006; Delfabbro, 2008). It has been argued that unless EGM numbers are substantially reduced, the industry will simply remove under-performing machines with little or no effect on gambling behaviour or revenue collected at the venues (Delfabbro). It is further argued that a reduction in the number of venues where EGM gambling is available may significantly contribute to harm minimisation (SA Centre for Economic Studies, 2005). The Canadian Senate, for example, has proposed the adoption of new legislation to limit the installation of EGMs to casinos, betting rooms and racetracks rather than across bars and pubs as a way of limiting accessibility to machines (Robitaille & Herjean, 2008).

4.2 Key Findings – Self-Regulation Strategies

The Phase One study found that there were several major themes relating to self-regulation of gambling. *Setting Limits* related to limiting time and money spent gambling and separating winning from original stakes. Control was also enhanced by *Maintaining Awareness* around the reality of gambling behaviour by expecting to lose, relating spending to other items from the real world and maintaining awareness of the risks posed by gambling. Retaining gambling as a *Social* rather than purely functional experience was a regulation strategy which aligned with the attraction of gambling as a social experience. These strategies were more likely to be viewed as reliable and successful forms of self-regulation by non-problem gamblers. Problem gamblers were also likely to control excessive gambling by *Abstinence* and replacing gambling with other, more adaptive hobbies. Finally, some found the need to *Seek Help* from friends or family, mutual help groups or instigation of self-exclusion orders. In addition to these self-regulation strategies, people noted some *externally imposed limitations:* financial or family commitments and disapproval/restrictions placed by close others.

Phase two condensed these self-regulation themes into four factors. The *Self Limiting* factor related to placing self imposed restrictions around the time and money spent gambling, maintaining awareness about the risks involved in gambling and balancing gambling with other activities and hobbies. This strategy was used significantly more often by men and problem gamblers. People who scored high on the subscale measuring use of Self-Limiting also tended to score higher on measures of irrational gambling cognitions, financial stress, frequency of gambling, gambling urges and gambling problems than those who did not use Self-Limiting strategies. This probably reflects the fact that people who are more frequent or problematic gamblers will instigate a wide range of deliberate and strategic self-regulation interventions to bring gambling back under control, including those preferred by non-problem gamblers (Hodgins & El-Guelbaly, 2000).

The *Avoidance* factor related to avoiding venues completely as well as avoiding taking money or credit to venues. This strategy was used significantly more often by problem

gamblers. People who scored higher on the subscale measuring use of Avoidance strategies to control gambling also tended to score higher on measures of irrational gambling cognitions, financial stress, frequency of gambling, gambling urges and gambling problems than those who did not use Avoidance as a control measure. The relative strength of these relationships cohered with other research finding that avoidance is a favoured self-regulation strategy for problem gamblers (Hodgins & El-Guebaly, 2000; Hodgins, et al., 1999).

The *Help-Seeking* factor related to direct and professional methods of seeking help including counselling and self-exclusion. This strategy was again used significantly more often by problem gamblers but, in contrast to the above, there were only very weak relationships between scores on the measure of Help Seeking as a control strategy and measures of irrational cognitions, financial stress, gambling urges and frequency. There were slightly stronger relationships between scores on the use this strategy and both gambling problems and inability to stop gambling. These relatively weak relationships may be because seeking professional help is only instigated by a relatively small proportion of gamblers (Hodgins & El-Guebaly, 2000; Hodgins et al., 1999; Nathan, 2003).

Finally, managing gambling by ensuring it remained a *Social Experience* rather than a gambling experience was discussed. This factor did not have any significant relationships with demographic characteristics or gambling-related variables suggesting it was equally likely to be seen as a way of managing gambling by many different groups of gamblers, including social and problem gamblers. This strategy is more about achieving balance in the way gambling is enjoyed than a consciously implemented strategy.

This research extends understanding into the ways that people regulate their own gambling behaviour. There were a variety of strategies which were shown to increase in strength from implicit attitudes towards gambling as a social activity and unobtrusive strategies around limiting time and money spent gambling, through to abstaining from gambling and seeking informal or formal help. Analyses showed that people with gambling problems scored significantly higher on their use of Self-Limiting, Avoidance and Help Seeking

strategies, indicating they are likely to implement a range of self-regulation interventions. Problem gamblers were less likely to find that they could adequately control gambling without recourse to abstinence or Help Seeking.

Subsequent analyses showed that there were interesting relationships between accessibility and self-regulation. People who scored higher on gambling as form of Good Entertainment also tended to score higher on measures of regulating gambling by ensuring it remained social and putting limits around the time and money spent gambling. In contrast, people who scored higher on gambling as an Accessible Retreat tended to also score higher on measures relating to regulating gambling by Self-Limiting, Avoidance and Help Seeking.

4.3 Methodological Considerations

This research greatly extended knowledge regarding accessibility and self-regulation strategies employed by gamblers and consistency in findings across multiple data sources increases confidence in the accuracy and validity of findings. It must be acknowledged, however, that both studies were based on convenience samples with participants asked to recall and self-report on past behaviour and beliefs. These methodological shortcomings prohibit definite conclusions on causality (Abbott & Clarke, 2007; Clarke, 2008).

Another limitation was the lack of participants from minority ethnic backgrounds. It was considered important to include participants from different ethnic and cultural groups (e.g., Chinese, Vietnamese, and Arabic) for culturally driven analysis; therefore sustained effort was put into recruiting people from a variety of backgrounds within both phases of the research. These disparate groups proved difficult to recruit despite a variety of data collection methods and the final Phase Two sample in particular was biased towards people reporting an Australian ethnic identity. The lack of diversity prevented detailed cultural comparisons although there were sufficient numbers to undertake some minority versus majority cultural group comparisons. It is possible that there are subtle differences between some cultural groups in terms of the gambling features which increase accessibility and

particular self-regulation strategies used. Research has shown that were important differences between different cultural groups in terms of gambling preferences, beliefs and attitudes (Clarke, et al., 2006; GAMECS Project, 1999; Victorian Casino and Gaming Authority, 2000; Zheng & Walker, 2006). Future research should be conducted specifically targeting data collection from these difficult to recruit groups. This would enable the necessary detailed cultural comparisons on accessibility and regulation strategies.

A final methodological consideration is that EGM gambling is extremely accessible within Australia[3] with venues spread throughout the suburban and regional areas as well as within the city confines. It has become a very popular and visible form of gambling. It is also the form most commonly associated with gambling problems in this country (Centre for Gambling Research, 2004a). Discussions around gambling and gambling problems in this region, therefore, can often become discussions about EGM gambling although this may never be verbally acknowledged. This slide from discussing gambling in general to discussing EGM gambling was addressed where it was found in the Phase One study such that interpretations of those sections of data were confined to EGMs. It was suspected that a similar type of bias may have occurred within Phase Two but it was not possible to test for this. The results regarding accessibility in particular must therefore be viewed as being potentially more applicable to EGM gambling than some other forms, particularly those which may take place outside a particular venue, such as scratch-it, raffle or lottery tickets.

4.4 Future Directions

This study developed new measures of accessibility to gambling and self-regulation strategies. These measures can be used in future research to further explore the relationship between both accessibility and self-regulation strategies and psychologically relevant variables. Do situational issues interact with accessibility or self-regulation strategies in specific ways, for example? It may be that the impact of a financial crisis, such as has been experienced in the wake of the recent global economic crisis, leads to a reduction in the use

[3] With the exception of Western Australia where EGMs are only available in the city-based casino (SA Centre for Economic Studies, 2005).

of Self-Limiting strategies as wagering is increased in a desperate attempt to improve the financial situation.

Future research should also be conducted to investigate in more detail how the different dimensions of accessibility interact with other morbid and co-morbid antecedent factors (e.g., mood disorders, situational stressors, coping styles) to influence gambling motivation and gambling behaviour. While gambling as good entertainment was not found to have a significant relationship with gambling problems in general, it may be that subsections of the population are more vulnerable to this form of accessibility. Individuals who are lonely and depressed, for example, may find the social aspects of accessibility of gambling a strong attraction. In contrast, someone who gambles as a form of relaxation with a partner may not be particularly interested in this aspect of venues.

Development of these multidimensional measures also means that future research can consider in detail how specific self-regulation strategies relate to different aspects of access. A full exploration of these relationships considering theoretical perspectives and the literature may help elucidate strategies that protect vulnerable individuals from increased access, thus informing prevention and treatment programs.

In addition, although some initial reliability and validity tests were conducted on these measures, further psychometric testing needs to be conducted with new samples of gamblers to confirm dimensionality. The measures in their current form are also fairly long. Item analysis should be conducted to reduce the number of items in the accessibility scales in particular as the extremely high internal consistency may indicate an overly long scale (DeVellis, 2003).

Scales might potentially be improved by the addition of items designed to measure other aspects of accessibility or self-regulation which were unable to be included in this study. Financial windfalls, such as an inheritance, a large win or even a one-off Governmental bonus, for example, may be spent at gambling venues by some individuals. It is not known, however, whether this relates more to specific sub-groups of the population, such as

problem gamblers, or whether most gamblers would see this increased monetary accessibility as money to be spent gambling. Finally, there were emerging aspects of gambling that were not covered in this project for which the concept of “access” may have particular relevance. For instance, the emergence of internet-based gambling may require particular research attention.

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Appendix One

Phase One Focus group interview script

Questions explored three general areas:

1. access
2. beliefs, values and cognitions
3. strategies of self regulation

These questions and prompts were designed to ensure that the research questions were covered in adequate detail. Focus groups were semi-structured so the exact form of questions were partly determined by participant responses, i.e., if areas of interest were covered spontaneously during discussions, direct questions may not have been asked, prompts were used if responses to questions were minimal and additional areas of interest which arose during interviews could be explored further by the researcher.

- **ACCESS**
  - Does the location of (and ease of access to) particular types of gambling influence your decision to participate? (*Prompts – child-care; parking, distance; buses; public transport*)
  - What do you think people are attracted to in choosing a preferred gambling establishment or type of gambling activity?
  - Why do you choose to visit certain gambling establishments or take part in certain gambling activities and not others (e.g., Visit casinos but not Tabarets or racing carnivals)
  - How far would you travel to access a gambling venue or opportunity?

❖ **BELIEFS, VALUES AND COGNITIONS**

- How important is winning for you?
- How likely are you to win?
- If money is your major motivation for gambling, how much would you need to win in order to stop?
- If money is not your major motivation, what is? (explore presence of different motivations listed in the research literature, e.g., excitement, boredom, depression, 'deserve' to win.)

❖ **SELF-REGULATION**

- What strategies do you use to limit your involvement in gambling?
- Do these strategies include avoiding particular locations and people associated with gambling?
- Can you visit a gambling venue without actually betting?
- Under what circumstances?

❖ **Ending question**: what sorts of things do you believe would help you/help others reduce/manage gambling if you needed to? (focus on changes that could be made in gambling venues, and in society at large)

Appendix Two

Phase Two Questionnaire

SWINBURNE GAMBLING ACCESS PROJECT

1. Age: _____ (in years)
2. Gender: Female ☐ 1 Male ☐ 2
3. Country of birth: _____
4. Ethnic identity _____ (e.g., Australian, Chinese, British, Jewish)
5. Postcode of usual residence _____

Your thoughts about gambling

Below are a few items on what you're thinking about or feeling when you're gambling. Please indicate (by ticking in the boxes) the extent to which you agree with the value expressed in each statement.

1	2	3	4	5	6	7
strongly disagree	moderately disagree	mildly disagree	neither agree or disagree	mildly agree	moderately agree	strongly agree

		1	2	3	4	5	6	7
1	Gambling makes me happier							
2	I can't function without gambling							
3	Praying helps me win							
4	Losses when gambling, are bound to be followed by a series of wins							
5	Relating my winnings to my skill and ability makes me continue gambling							
6	Gambling makes things seem better							
7	It is difficult to stop gambling as I am so out of control							
8	Specific numbers and colours can help increase my chances of winning							
9	A series of losses will provide me with a learning experience that will help me win later							
10	Relating my losses to bad luck and bad circumstances makes me continue gambling							
11	Gambling makes the future brighter							
12	My desire to gamble is so overpowering							
13	I collect specific objects that help increase my chances of winning							
14	When I have a win once, I will definitely win again							
15	Relating my losses to probability makes me continue gambling							
16	Having a gamble helps reduce tension and stress							
17	I'm not strong enough to stop gambling							
18	I have specific rituals and behaviours that increase my chances of winning							
19	There are times that I feel lucky and thus, gamble those times only							
20	Remembering how much money I won last time makes me continue gambling							
21	I will never be able to stop gambling							
22	I have some control over predicting my gambling wins							
23	If I keep changing my numbers, I have less chance of winning than if I keep the same numbers every time							

What attracts you to gambling?

This inventory lists different attitudes or beliefs that people can hold about gambling activities and venues. Read each statement carefully and decide how much you agree or disagree with it.
For each statement, use the following 1-7 scale to choose the number that best describes what **initially attracts you to gambling venues**. Because people are different, there are no right or wrong answers. To decide whether a given statement is typical of you, keep in mind what you are like most of the time. Try to avoid using the middle point of the scale (4), but rather indicate whether you generally agree or disagree with the statements.

1	2	3	4	5	6	7
Disagree very much	Disagree moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree moderately	Agree very much

	The following is important to my *initial attraction* to gambling venues:	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1	The safety and security of the venue							
2	Sophisticated surroundings							
3	There are people my own age							
4	Availability of parking							
5	Child care facilities							
6	A place I can be with my friends							
7	It is close to where I live							
8	The venue is clean							
9	A lively atmosphere – lots of people and action							
10	There are types of gambling available that are easy to play							
11	A quiet venue without too many people							
12	A good range of gambling or betting options							
13	There are people of the same gender							
14	The feng shui of the venue							
15	Comfortable surroundings, a feeling of ‘home’							
16	Being able to meet new people							
17	I can have a cheap day or night out							
18	I am treated with respect by management and staff							
19	ATMs are easily accessible							
20	I can gamble anonymously							
21	I can use a loyalty card							
22	Being able to use the same gaming machine, or play the same type of game, each time I visit							
23	Venues where I can sign up for voluntary exclusion if necessary							
24	People are well dressed							

1	2	3	4	5	6	7
Disagree very much	Disagree moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree moderately	Agree very much

	The following is important to my *initial attraction* to gambling venues:	**1**	**2**	**3**	**4**	**5**	**6**	**7**
25	Venues where staff will tap me on the shoulder if I've been there a long time or am gambling lots of money							
26	There are types of gambling available that are based on skill							
27	A venue that has giveaways, promotions, prize draws, etc							
28	I feel comfortable to speak my own language							
29	There are cues to help me control my gambling, such as easy to see clocks, information brochures, etc							
30	Venues where I won't be interrupted when I'm concentrating on gambling							
31	The availability of food and drink							
32	Somewhere I can get to by public transport							
33	People are casual and the atmosphere is 'laid back'							
34	The venue is on the way home from work/ study/ other major commitments							
35	There are other (non-gambling) activities available (e.g. cinemas, restaurants, live music)							
36	Being able to dress up and feel confident							
37	There are other people from a similar cultural or ethnic background							
38	It offers an escape from daily life							
39	The venue is open late at night or early in the morning							
40	It's warm in winter and cool in summer							
41	I can gamble for a long time without losing a lot							
42	A lack of other entertainment options							
43	There are minimal distractions (eg. clocks, lighting)							
44	It is close to work							

Now, we'd like you to think about what contributes to you **continuing to gamble at venues or returning to a venue**. Again use the 1-7 scale below to answer each question and remember there are no right or wrong answers. Try to avoid using the middle point of the scale (4), but rather indicate whether a given statement is typical of you most of the time.

1	2	3	4	5	6	7
Disagree very much	Disagree moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree moderately	Agree very much

	The following contributes to me *continuing* to gamble at certain venues:	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1	The safety and security of the venue							
2	Sophisticated surroundings							
3	There are people my own age							
4	Availability of parking							
5	Child care facilities							
6	A place I can be with my friends							
7	It is close to where I live							
8	The venue is clean							
9	A lively atmosphere – lots of people and action							
10	There are types of gambling available that are easy to play							
11	A quiet venue without too many people							
12	A good range of gambling or betting options							
13	There are people of the same gender							
14	The feng shui of the venue							
15	Comfortable surroundings, a feeling of 'home'							
16	Being able to meet new people							
17	I can have a cheap day or night out							
18	I am treated with respect by management and staff							
19	ATMs are easily accessible							
20	I can gamble anonymously							
21	I can use a loyalty card							
22	Being able to use the same gaming machine, or play the same type of game, each time I visit							
23	Venues where I can sign up for voluntary exclusion if necessary							
24	People are well dressed							

1	2	3	4	5	6	7
Disagree very much	Disagree moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree moderately	Agree very much

	The following contributes to me *continuing* to gamble at certain venues:	**1**	**2**	**3**	**4**	**5**	**6**	**7**
25	Venues where staff will tap me on the shoulder if I've been there a long time or am gambling lots of money							
26	There are types of gambling available that are based on skill							
27	A venue that has giveaways, promotions, prize draws, etc							
28	I feel comfortable to speak my own language							
29	There are cues to help me control my gambling, such as easy to see clocks, information brochures, etc							
30	Venues where I won't be interrupted when I'm concentrating on gambling							
31	The availability of food and drink							
32	Somewhere I can get to by public transport							
33	People are casual and the atmosphere is 'laid back'							
34	The venue is on the way home from work/ study/ other major commitments							
35	There are other (non-gambling) activities available (e.g. cinemas, restaurants, live music)							
36	Being able to dress up and feel confident							
37	There are other people from a similar cultural or ethnic background							
38	It offers an escape from daily life							
39	The venue is open late at night or early in the morning							
40	It's warm in winter and cool in summer							
41	I can gamble for a long time without losing a lot							
42	A lack of other entertainment options							
43	There are minimal distractions (eg. clocks, lighting)							
44	It is close to work							

How do you manage your gambling?

People sometimes have strategies to help them avoid gambling too much. On the following scale could you please rate the extent you use any of the following strategies to limit your gambling.

1	2	3	4
Never do this	Have done this at least once	Sometimes do this	Often do this

	To help me limit or manage my gambling, I…	**1**	**2**	**3**	**4**
1	Avoid walking or driving past certain locations				
2	Ask friends or relatives to mind or manage my money				
3	Avoid going to certain places like the Casino				
4	Set a target budget for my gambling, and stick to it				
5	Go to gambling venues with friends so I won't be tempted to gamble too much				
6	Set a time limit on how long I'll spend at a gambling venue				
7	Limit the amount of alcohol I consume while I'm gambling				
8	Keep myself busy with other activities so I'm less tempted to gamble				
9	Avoid taking my credit cards to gambling venues				
10	Avoid gambling alone				
11	Only go to gambling venues where there are other activities as well				
12	Have myself voluntarily excluded from a gambling venue				
13	Ask a friend to look out for me when I'm at a gambling venue				
14	Cut up my credit cards				
15	Get professional help to cope with my gambling				
16	Keep track of the money I spend on gambling				
17	Think about the negative consequences of excessive gambling that I have observed, heard about, or read				
18	Talk to my friends or family about my gambling activities				
19	Spend more time with family and friends				
	Focus on other hobbies, such as:				
20	Sport				
21	Art				
22	Dancing				
23	Education				
24	Gardening				
25	Volunteering				
26	Playing computer games				
27	Other				

How important is gambling to you?

We'd like to know about how important gambling is to you, and how much you want to do it. Please respond to the following statements by ticking how much you agree with each one.

1	2	3	4	5	6	7
strongly disagree	moderately disagree	mildly disagree	neither agree or disagree	mildly agree	moderately agree	strongly agree

		1	**2**	**3**	**4**	**5**	**6**	**7**
1	All I want to do now is to gamble							
2	It would be difficult to turn down a gamble this minute							
3	Having a gamble now would make things seem just perfect							
4	I want to gamble so bad that I can almost feel it							
5	Nothing would be better than having a gamble right now							
6	I crave a gamble right now							

Here are a few questions about your gambling activities **over the past 12 months**. Using the 0-3 scale below, for each question, please choose one option that most applies to you.

0	1	2	3
Never	Sometimes	Most of the time	Almost Always

	Thinking about the past 12 months, how often ….	**0**	**1**	**2**	**3**
1	Have you bet more than you could really afford to lose?				
2	Have you needed to gamble with larger amounts of money to get the same feeling of excitement?				
3	Have you gone back another day to try to win back the money you lost?				
4	Have you borrowed money or sold anything to get money to gamble?				
5	Have you felt that you might have a problem with gambling?				
6	Have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?				
7	Have you felt guilty about the way you gamble, or what happens when you gamble?				
8	Has your gambling caused you any health problems, including stress or anxiety?				
9	Has your gambling caused any financial problems for you or your household?				

Your Gambling History

The following are a few questions about gambling problems.

1. Are you currently experiencing problems with your gambling? **No** ☐ 1 **Yes** ☐ 2
   If Yes, what form or forms of gambling do you currently experience problems with?

   _____

   (e.g., pokies, sports betting, betting on horses or dogs)

2. Have you experienced problems with your gambling in the past from which you have now recovered? **No** ☐ 1 **Yes** ☐ 2

   If Yes, what form or forms of gambling have you experienced problems with in the past?

   _____

   (e.g., pokies, sports betting, betting on horses or dogs)

3. Please indicate the length of time you have experienced gambling problems (over your lifetime).

   _____

   (e.g., Never, For the last 6 months Over 10 years)

4. On the following scale, please circle the number which best represents how much you feel gambling has interfered with your life (where 0 means "not at all", 5 means "quite a lot" and 10 means "it took over my life").

0	1	2	3	4	5	6	7	8	9	10

5. Thinking of the different forms of gambling which have caused you problems over your lifetime, please list each form and rate them in terms of the degree to which they have caused problems out of a possible 100%.

   For example, if you have only had problems with the pokies it would be pokies – 100%. If you have experienced problems with both the TAB and the pokies you might rate TAB at 70% and the pokies at 30% etc.

   Only rate the gambling forms which have caused you problems. If you have never experienced problems with your gambling, move to the next question.

Form Of Gambling Which Has Caused Problems	% Rating
TOTAL	**100%**

How much time and money do you spend gambling?

1. Please indicate which of the following types of gambling you have done **in your lifetime**, and how often you gamble on them. If you have gambled on an activity at different levels over your lifetime (e.g. you gambled on the pokies every week for a while but now you only play the pokies a few times a year), please answer in terms of **your most frequent** behaviour (i.e. for the previous example you would answer weekly) . We are only interested in the gambling you have done **which involves real money**, that is, do not include gambling for sweets, tokens, favours etc.

1	2	3	4	5
never	once a year or less	more than once/year, but less than once/month	more than once/month but less than once/week	Once a week or more

	Done which of these for money?	**1**	**2**	**3**	**4**	**5**
a	Played cards					
b	Bet on horses/dogs					
c	Bet on sports					
d	Bought lottery or scratch-it tickets, e.g., Tattslotto					
e	Bet on gaming tables					
f	Played poker machines at a casino					
g	Played poker machines outside a casino (e.g., at a hotel or club)					
h	Played bingo					
i	Played pool or other game and bet on results					
j	Internet gambling					
k	Bet on something else (What? _____)					

2. What is the **largest** amount of money you have ever gambled **in one week**?

	tick one
(a) never gambled	
(b) between $1 - $99	
(c) between $100 and $499	
(d) between $500 and $999	
(e) between $1000 and $4999	
(f) $5000 or more	

3. Please give an average estimate of how much you have spent on gambling **in the last 12 months** (add up all types of gambling, e.g., lotto tickets, casino, pokies, etc) (One lotto ticket/week = about $300/year)

	tick one
(a) nothing	
(b) between $1 - $99	
(c) between $100 and $499	
(d) between $500 and $999	
(e) between $1000 and $4999	
(f) $5000 or more	

Your Financial Situation

1. Approximately how much was your total before tax income in the last 12 months?

	Tick one
(a) less than $30,000	
(b) $30,000 – $59,999	
(c) $60,000 – $89,999	
(d) $90,000 – $119,999	
(e) $120,000 or more	

2. Please indicate your level of agreement with each of the following statements:

1	2	3	4	5	6
Not relevant to me	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

		1	**2**	**3**	**4**	**5**	**6**
a	I can't afford a holiday of at least one week's duration each year						
b	I worry constantly about my financial situation						
c	I am unable to sometimes heat/cool my home						
d	It is a constant struggle to pay regular bills						
e	I am unable to pay my credit card off in full						
f	My family has sometimes gone without meals						
g	I don't have enough money set aside to meet unexpected expenses						
h	My children have missed out on school activities such as excursions and sports						
i	My children have had to go without adequate health and/or dental care						
j	The cost of my gambling puts stress on family/household relationships (i.e. we argue about money a lot)						
k	I feel trapped in an area with poor job prospects						
l	I feel trapped in an area where I do not want to live						

Thank you for your participation!