

Impact of Structural Characteristics of Electronic Gaming Machines (EGMs)

Major findings

A study commissioned by
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GRA commissioned Schottler Consulting Pty Ltd to undertake a study into Electronic Gaming Machine Structural Characteristics. This relates to the GRA research priority – Gaming Machine Standards – Better Consumer Protection.

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Glossary of terms used in the study

Australian/New Zealand Gaming Machine National Standard	This is a standard highlighting the rules and requirements of poker machines in Australia and New Zealand.
Bet meter	This shows the size of the bet placed on the EGM for each EGM spin or game.
Bet Only Won (BOW)	This was defined in the study as a win that is the same as the amount bet. For instance, winning \$0.30 and betting \$0.30.
Bet size	The size in dollars of bets placed on EGMs. Bets are typically made in credits (e.g., 1 credit, 2 credits) and when multiplied by lines bet, this can be converted to a dollar figure.
Collect Button	The Collect Button can be pressed by EGM players to take their money out of the poker machine.
Credit meter	This shows the total available credits for EGM play on the EGM screen.
Denomination (machine value)	The value of the poker machine such as a 1c, 2c or 5c machine (for example).
Double-up	See Gamble. This is the most common gamble game and requires players to typically pick one of two cards for the chance to double their win. It is a common feature of most Australian EGMs.
EGM	Abbreviation for Electronic Gaming Machine or a term used to describe poker machines in Australia.
EGM credit button	This is the button used to place bets on EGMs. Bets are made in credits (e.g., one credit, two credits etc.)
EGM service buttons	These allow players to call a gaming machine attendant to fix a machine, refill gaming machine hoppers or order drinks or food.
Extra credit button	A button that allows played to play large credits (e.g., 25 credits) and then to also add an extra 5 credits.
Feature	Defined in the study as a poker machine event involving special sound, music or lighting effects typically associated with the player receiving an opportunity to win bonus credits or other special bonuses.
Free spins	A free game or spin obtained during poker machine play.
Gamble	A feature on poker machines that allows players to gamble their winnings. Common games are double up for a chance to win double or 1 in 4 games (for a chance to win 4x the win).
Gambling Research Australia	Gambling Research Australia (GRA) is a partnership between the Commonwealth, State and Territory Governments to initiate and manage a national program of gambling research. Further information about the national research program may be obtained from www.gamblingresearch.org.au .
Game information menu/screen	This information is typically available under the Information or Menu button on Australian poker machines. It provides game play information and some information on the odds of winning in the game for players to read.
Largest Real Win	Following coding of all win events during the observational study, the largest real win (where a win was greater than the bet size) was coded and used in analysis.
Line based EGM	This is the most typical poker machine configuration in Australia and requires players to choose a bet and the number of lines they wish to bet on.
Lines played	The total lines players bet on a poker machine.
Linked jackpot	This is typically a wide area network jackpot where a number of machines across multiple venues are linked to allow larger jackpot prizes.
Losses Disguised as Wins (LDW)	Where players win less than their bet on an EGM (e.g., 40 credits are bet and only 10 credits are won).
Low risk gambler	EGM players who score 1-2 on the Problem Gambling Severity Index.
Maximum bet button	This is a single button that players can use to typically bet with maximum credits on all lines. It saves players pressing individual credit and line buttons.
Maximum credit button	This is the highest value credit button.
Mid range EGMs	This refers to the less popular, lower expenditure (per unit) poker machines in NSW. Mid range is used as a term, as they still have sufficient popularity to exist in the market. They are less popular rather than unpopular.
Moderate risk gambler	EGM players who score 3-7 on the Problem Gambling Severity Index.
Multi-game EGMs	Players can typically choose the EGM game they wish to play on a multi-game EGM (e.g., four games may be presented).

Multiple line selections	Refers to where players bet on more than a single poker machine line.
Multiway	A type of gaming machine where players purchase and bet on reels, rather than lines and have access to many ways (often 243 or even greater) of winning on the EGM. Three ways of winning is the basic selection and involves betting on a central line plus all positions on the first reel (and costs one credit). Purchasing reels one and two allows nine ways of winning and costs three credits, while purchasing all three reels provides 27 ways to win and costs 7 credits. Purchasing four reels then permits 81 ways of winning. Examples of Reel Power machines include the popular Indian Dreaming and Choy Sun Doa EGMs.
Near miss	This refers to the perception of a near-win on a poker machines. These are typically very subjective. One example may involve a player thinking they 'nearly won' after receiving three rather than four correct poker machine symbols.
Non-problem gambler	EGM players who score 0 on the Problem Gambling Severity Index.
Observational study	This refers to the observation of 222 EGM players playing poker machines during the study. Live machine events were recorded (e.g., free spins, features), along with player perceptions of different events during play.
OLGR NSW	The NSW Office of Liquor, Gaming and Racing (OLGR) is a branch within NSW Trade & Investment and is accountable for the development, implementation and integrity of the overall regulatory framework across liquor, registered clubs, charitable fundraising and gambling activities in NSW. Gambling activities regulated include gaming machines, wagering, lotteries, keno, art unions and raffles.
On-screen motivational messages	These are written messages that appear on some Australian EGMs when players win (e.g., Well Done!)
Pre-commitment system	This is a system for EGMs that permit players to (most typically) set a time and/or money limit as part of their gaming play. Reminder messages are provided when players reach their limit.
Problem gambler	EGM players who score 8 or higher on the Problem Gambling Severity Index.
RA	Abbreviation for Research Assistant. RAs were trained to collect data in the observational study.
Real Win (RW)	This was defined in the study as a win that is higher than the amount bet. For instance, winning \$1.00 when the bet was \$0.20.
Reel Power	A brand of Aristocrat EGM based on a multiway gaming approach. Players purchase reels rather than lines. Refer www.aristocrat.com.au for further details on Reel Power machines.
Reserve button	This button allows a player to take a break from play (typically for around 3 minutes) and permits the player to return to their machine to resume play after the break ends.
Risk for problem gambling	Risk for problem gambling is measured with an adapted version of the nine-item Ferris and Wynne (2001) original Canadian Problem Gambling Severity Index. Nine questions segment gamblers into non-problem, low risk, moderate risk and problem gamblers. Scale anchors were adapted for consistency with the measurement approaches used by most Australian State/Territory Governments.
Scatter symbol	This is an EGM symbol that typically can appear anywhere on an EGM rather than left to right. It usually provides a higher number of bonus points, although credits offered vary considerably between machines.
Scatter win	A win through a scatter symbol.
Server-based gaming	This method of gaming allows players to play an EGM where games are delivered from a central server. Players can typically choose a number of games.
Spin	This refers to a single EGM button press or a single EGM game.
Structural characteristic	Structural characteristics are the main type of physical characteristics of poker machines. The research brief provided by Gambling Research Australia was to examine the effects of EGM structural characteristics.
Top range EGMs	This refers to the most popular, highest-expenditure (per unit) poker machines in NSW.
Win meter	This shows the total available credits won during EGM play on the EGM screen. Some EGMs automatically transfer wins on the win meter to the credit meter.
Win multipliers	These are multipliers that multiply the win by a certain multiple. For instance, a win of \$2.00 with a multiplier of 5x would result in a win of \$10.00.

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Abstract

The aim of the current study was to identify EGM structural characteristics that impact EGM player behaviour and particularly the characteristics that affect problem gamblers. Commissioned by Gambling Research Australia (GRA), the study was designed to inform one of the key priority areas of the Australian national gambling research agenda - *Gaming Machine Standards – Better Consumer Protection*. Using a mixed-methods approach, the characteristics of EGMs were identified and their role in influencing EGM play excitement and the urge to continue play was examined. Study methods included: An analysis of the top 15 and mid-range 15 NSW games, EGM player interviews (N=20) and focus groups (N=4) and an observational and attitudinal study of EGM players (N=222). This latter stage was conducted within gaming venues where players regularly played (N=24 venues) at a time convenient to players, ensuring higher ecological validity than a laboratory setting. Study findings highlighted the following key insights:

Free spins

- Free spins are the most coveted and exciting aspect of EGM play
- Win multipliers during free spins led to higher levels of excitement for problem gamblers (compared to non-problem gamblers)
- Problem gamblers are more likely to think that 'free spins are coming' during play (compared to non-problem gamblers)
- Problem gamblers were prepared to spend more money to obtain a free spin (compared to non-problem gamblers)

Free spins in the vicinity of wins

- Problem gamblers rated a feature/free spin AFTER a large win as more exciting (than non-problem gamblers)
- Problem gamblers reported increasing betting upon getting a feature/free spin near a large win more frequently (than non-problem gamblers)

Features

- Getting a feature during a free spin was the most exciting event with respect to features
- Getting a feature right 'after you've won a big amount' was more exciting for problem gamblers (compared to non-problem gamblers)
- Features that give the impression of skill (including stopping tasks) may contribute to the illusion of control over gambling

Losses Disguised as Wins (LDW - where win is less than amount bet)

- Winning a higher proportion of an EGM bet was more exciting than winning a lower proportion
- EGMs displaying visual effects/sounds during LDWs or Bets only WOn may contribute to players believing that each are a 'win'
- The reinforcement rate of EGMs is around 34.3% of total spins (roughly 1 in 3 spins have positive reinforcement) (based on the total percentage of spins resulting in LDWs, Real Wins and where Bets Only were Won)
- While Real Wins were a better predictor of overall play excitement (with higher Real Wins associated with greater play excitement), LDW losses added uniquely to the prediction of EGM play excitement

Reel Power and Multiway EGMs (which require players to purchase and bet on EGM reels rather than lines)

- Many EGM players did not have good knowledge about how multiway EGMs generally worked
- Top characteristics of multiway EGMs were seen to include better win multipliers, larger wins and greater play excitement
- Attributes least characteristic of multiway EGMs were being able to understand the cost per spin, offering the best chance of winning and having pay lines that were easy to understand
- Bet size used for multiway EGMs was not observed to be higher than for regular lined based EGMs
- Reel Power EGMs (specifically) were perceived to have higher jackpot prizes and more win multipliers

Bet size and lines played (including results by machine denomination)

- Problem gamblers rated Max Bet buttons as more exciting (than non-problem gamblers) and used buttons more frequently
- Problem gamblers placed higher bets (53 cents per spin) than non-problem gamblers (35 cents per spin)
- Problem gamblers were more likely to think they must play all lines to avoid missing wins (compared to non-problem gamblers)
- 77% of all EGM players reported betting on all lines (including 84% of problem gamblers and 76% of non-problem gamblers)
- EGM players reported playing - on average - 21.6 lines on 1 cent EGMs (or 80% of available lines), 22.6 lines on 2 cent EGMs (or 77% of available lines) and 15.5 lines on 5 cent EGMs (or 82.5% of available lines)

Gamble buttons

- Gamble is used infrequently by EGM players and 1 in 2 gamble games (double-up) are more popular than 1 in 4 gamble games

Study conclusions

Overall study results highlight that free spins, features and win multipliers are the most exciting structural characteristics of EGMs. Results also showed that certain 'combination' characteristics (e.g., win multipliers during free spins) may have a greater impact on problem gamblers and special EGM characteristics (e.g., Max Bet buttons) may be used more frequently by problem gamblers (who also place higher bets). LDWs were also found to contribute uniquely to the excitement of EGM play. Reel Power EGMs may in part be popular due to the perception of such EGMs offering win multipliers, larger wins and greater play excitement.

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Key words – EGM structural characteristics, poker machines, gambler behaviour, Multiway, Reel Power, Losses Disguised as Wins, Near misses, Double Up, Free spins, Features

Executive summary

The purpose of the current study was to identify structural characteristics of Electronic Gaming Machines (EGMs) within Australia and to examine how different structural characteristics affect gambling behaviour (including particularly how EGM structural characteristics affect problem gamblers).

The current study was commissioned and funded by Gambling Research Australia (GRA) to meet an agreed research priority of GRA members: To conduct research to inform the development of gaming machine standards for improved consumer protection.

The major research question was:

What is the impact of EGM characteristics on gambling behaviours, and do such characteristics have a differential impact on problem gamblers and/or exacerbate problem gambling behaviour?

While the scope of study permitted analysis of the effects of many EGM structural characteristics, the impacts of the following types of EGM structural characteristics formed the core focus of the current study:

- Free spin features and the effect of free spin near wins
- Multiple line selections
- Relationship between machine value and number of lines played
- Double-up gambling feature
- The impact of Reel Power and multiway games on gambling expenditure and behaviour
- Bet size
- Features within a game
- Losses camouflaged as wins and frequency of wins – the payback schedule

There was additionally the objective to examine whether any one particular characteristic (or combination) occupies a gambler's thought processes or emotional state that extends expenditure/time at an EGM.

Methodology

Four modules were designed to examine key research questions using complementary research methods:

- Module 1. Literature review - A comprehensive overview of EGM structural characteristics and their effects was identified as the first important step in advancing knowledge about the impact of EGM characteristics. This identified the most common EGM structural characteristics and their relationship, if known, with problem gambling
- Module 2. Interviews and focus groups - Following identification of major Australian EGM structural characteristics, the project used qualitative research techniques (20 interviews and 4 focus groups) to explore their relevance to gamblers from various risk categories
- Module 3. Structural characteristics of top versus mid-range EGMs – This involved analysis of the key characteristics of top versus mid range EGMs based on data supplied by the NSW Office of Liquor, Gaming and Racing (as information was not in the public domain). Based on this analysis, the 15 top performing EGMs were identified, along with the mid range 15 (less popular) EGMs. Key characteristics of the top and mid range EGMs were analysed
- Module 4. Live EGM play observations – This involved observation of 222 players during EGM play and recording of machine events during EGM play. A key objective was to understand how different EGM structural characteristics and EGM play events (e.g., free spins, features) influenced play excitement and the urge to continue EGM play.

Urge to continue and play excitement, particularly as related to free spins and features, are constructs that have been previously associated with gambler adherence to pre-commitments (p77-82, Schottler Consulting Pty Ltd, 2010). As such, they were considered to be suitable proxies for this study's objective to examine whether certain EGM characteristics extend time or money spent. Some evidence from this prior study also suggested that play excitement may itself predict the urge to continue and urge to continue may in turn be positively associated with gamblers exceeding pre-commitments. In addition, other studies have found that EGM play may stimulate player arousal (excitement) (e.g., Wilkes et. al, 2009, Moodie and Finnigan, 2005) (The literature review also reviews findings of some past studies). Accordingly, excitement and urge to continue featured as key measurement constructs in the observational study.

Having cognitive measurement constructs was also seen as superior to merely measuring EGM expenditure alone, as it was recognised that many factors may affect expenditure on an individual EGM. Accordingly, establishing the association between EGM machine events and human cognitive constructs was viewed as a superior methodology to establish the impact of EGM structural characteristics. For these reasons, play excitement and urge to continue were used as key measurement constructs in the current study.

Caveats to readers

As the current study is exploratory in nature and is based on player observation in a real gaming environment, due care and caution should be applied to the interpretation of findings. Findings should be considered in the context of the observational methods (and the potential for players to be influenced by observers – which itself is difficult to measure), the complexities of coding live EGM play events and the sample size and nature of players participating in the research. Accordingly results should be considered indicative, rather than definitive and further research should be prioritised for more in-depth studies of key results.

MAJOR FINDINGS RELATING TO THE IMPACT OF EGM STRUCTURAL CHARACTERISTICS

Major findings are summarised in line with the key areas of research interest to Gambling Research Australia. The frequency of cognitions present in EGM player thought processes during EGM play, as discussed in this summary, are also graphically presented for reader reference in Figure 1.

(1) IMPACT OF FREE SPINS

Findings of research highlight that free spins are generally the most coveted and exciting aspect of gaming machine play (even more than features – although both are very exciting). Based on findings of a study involving both attitudinal and observational research with EGM players, free spins were generally rated as the most exciting EGM structural characteristic by all gamblers. The top three most exciting free spin characteristics overall involved getting (where 1=not at all exciting and 5=very exciting):

- Free spins during free spins (overall mean=4.8)
- Win multipliers during free spins (overall mean=4.7) (which multiply wins by a number – e.g., 10x)
- Free spins and winning from free spins (mean=4.7)

Key findings also suggested that getting win multipliers during free spins led to significantly higher levels of play excitement for problem gamblers, compared to non-problem gamblers (PG mean=4.8, NPG mean=4.4). This may suggest some potential for win multipliers to be associated with higher player persistence in problem gamblers.

Other findings highlighted that:

- Getting a single free spin was relatively unexciting for gamblers (mean=2.7) compared to getting multiple free spins at once (mean=4.5)
- Problem gamblers have significantly higher cognitive activity involving thoughts that free spins are coming (mean=4.1) during play compared to non-problem gamblers (mean=3.3)
- Not experiencing any free spins (or features) during a gaming session was described as leading to play persistence, as this is found to be frustrating for gaming machine players
- All gamblers have clear expectations of the amount they should have to spend to obtain free spins – EGM designs which do not provide a free spin within desired spending limits have potential to contribute to EGM play persistence

Money EGM players were prepared to spend for a single free spin (\$16.01 overall) was as follows:

Non-problem gamblers - \$12.24

Low risk gamblers, \$12.38

Moderate risk gamblers - \$16.94

Problem gamblers - \$23.79

- When the overall amount of \$16 (spending) was used as the reference point ('overall expectation') for one free spin (with EGMs as the basis of analysis), analysis showed that around 60% of EGM play sessions required players to spend more than \$16 on average for each free spin event achieved and only around 40% got a free spin within this overall average limit.

This may suggest that the fundamental design of many EGMs observed during the study may have potential to lead to play persistence. However, further research would obviously be required to validate this.

- Problem gamblers were prepared to spend significantly more money on EGM play to get a free spin – This itself suggests that EGM designs that have a low odds of providing free spins (relative to money spent) could potentially be more harmful for problem gamblers

(2) IMPACT OF FREE SPINS AND FEATURES IN THE VICINITY OF WINS

The effect of free spins and features in the vicinity of wins was also examined. This involved identifying the largest real win in each EGM played (a win greater than the amount bet) and then coding whether features and free spins occurred BEFORE, DURING or AFTER the real win. Play excitement and urge to continue were used as outcome measures. As both events often occur in tandem, however, it was difficult to separate each event.

General attitudinal research showed that:

- Getting a feature or free spin immediately AFTER a large win was found to be very exciting by all gamblers (overall means each=4.5).
- Problem gamblers reported getting a feature or free spin AFTER a large win significantly more exciting (mean=4.7) than non-problem gamblers (mean=4.2) (suggesting that this 'combination event' may be relatively more stimulating for problem gamblers)
- While all gamblers occasionally increased their betting on receiving a feature near a large win (mean=2.4) or a free spin near a large win (mean=2.3), overall means suggested that this does not happen very frequently (1=not at all often, 5=very often) (Implying that bets aren't typically increased by most players)
- However, problem gamblers reported increasing betting upon getting a feature near a large win (PG mean=3.0, NPG mean=1.7) or a free spin near a large win significantly more frequently than non-problem gamblers (PG mean=2.9, NPG mean=1.7) (Suggesting that the combination event could lead to increased betting by problem gamblers and thus could lead to harm for this segment)

When the impacts of free spins/features AFTER, BEFORE or DURING a real win on play excitement were examined, results showed that:

- Experiencing a real win DURING a feature or free spin significantly predicted overall play excitement and uniquely explained most of the variance in overall excitement (partial $r^2=.211$, $p<.001$)
- In comparison, getting a feature/feature spin BEFORE or AFTER a real win was not associated with play excitement when real wins occurring DURING a free spin or feature were already accounted for (although individually all events alone were quite exciting)

- The second most important unique predictors of play excitement (based on partial correlations) were:
 - The amount of money won on free spins (partial $r=.172$, $p<.01$), followed by;
 - The total monetary gain or loss on the EGM (partial $r=.145$, $p<.01$)
 - Money won from other features (excluding features that occurred on the largest real win) also contributed somewhat to play excitement, although this was only tending towards significance (partial $r=.102$, $p=.06$) (so this result should naturally be interpreted with caution)
- Real wins DURING a feature or free spin were additionally a strong unique predictor ($r=.174$, $p<.01$) of a player's urge to continue during EGM play
- Win multipliers during free spins were strong unique predictors of play excitement (partial $r=.146$, $p<.01$) and the urge to continue EGM play ($r=.141$, $p<.01$)

This may further suggest that win multipliers during free spins have greater potential to influence excitement and urge to continue than even real wins resulting from free spins or features.

Accordingly, results suggest that free spins/features DURING a real win have high potential to increase EGM play persistence (as compared to those BEFORE or AFTER a real win), as do win multipliers during free spins.

(3) IMPACT OF FEATURES

Features were defined in the study as any combination of special visual effects or sounds that were associated with players winning bonus points during EGM games.

Findings relating to features specifically showed that:

- While all gamblers found getting a feature generally quite exciting (mean=4.2), getting a feature during a free spin was the most exciting event with respect to features (mean=4.7)
- Problem gamblers have significantly higher cognitive activity involving thoughts that 'features are coming' during play (mean=4.1) compared to non-problem gamblers (mean=3.1)
- Getting a feature right 'after you've won a big amount' was rated as significantly more exciting for problem gamblers (mean=4.7) compared to non-problem gamblers (mean=4.2) (further highlighting that 'combination events' could be harmful)
- High excitement was also characteristic of features that had additional components including getting a second feature during a feature (mean=4.6), getting a linked jackpot feature (mean=4.5), getting a feature and multiple free spins during a feature (mean=4.5) and getting free spins during a feature (mean=4.3) (Problem gamblers were often a little more excited than non-problem gamblers with such events, but differences were not significant, suggesting similar responses overall)
- Not experiencing any feature during a gaming session was also described as leading to play persistence as this is found to be frustrating for gaming machine players
- Results suggested that players expected a feature for every ~\$18 spent. Problem gamblers were happy to spend slightly more (\$23.93) although the difference was not significant between non-problem and problem gamblers (so this difference should be interpreted with due caution)

Money EGM players were prepared to spend for a feature (\$17.62 overall) was as follows:

Non-problem gamblers - \$16.38
 Low risk gamblers, \$14.05
 Moderate risk gamblers - \$17.70
 Problem gamblers - \$23.93

The impact of feature characteristics on play persistence was also explored. Research showed that:

- Features that simulated another gambling game were least exciting (mean=2.4), while features that provided a chance to win a linked jackpot (mean=3.9) or involved selecting different options (like '10 spins and win 5x' your bet versus '15 spins and win 3x your bet') were most exciting (each mean=3.9)
- Three EGM feature characteristics were significantly more exciting for problem gamblers compared to non-problem gamblers: (A) Features that involved role playing a character (PGs mean=3.4, NPGs mean=2.4), (B) Features that gave the impression of a game of skill (PG mean=3.0, NPG mean=2.3) and (C) Features with funny characters (PG mean=3.4, NPG mean=2.5)

This may suggest that such feature characteristics could pose some harm to problem gamblers (Possibly due to higher problem gambler involvement in features and associated cognitive distortions)

- Qualitative research also confirmed that features that involved players performing stopping tasks may contribute to the illusion that players can control EGM game outcomes
- Whilst contributing to the entertainment value of EGMs, features that engendered higher player involvement are also reported as leading to greater play persistence

(4) IMPACT OF LOSSES DISGUISED AS WINS (LDWS) AND THE FREQUENCY OF WINS (THE PAYBACK SCHEDULE)

Around 48,920 EGM spins/games were coded during the study following live EGM play observations. Spin outcomes were coded as Losses Disguised as Wins (LDWs) (where wins were less than the amount bet implying a 'fake win'), Losses, Bets only Won (BOWs) (where only the bet size was won) and Real Wins (where the wins were greater than the bet size).

LDWs were found to have some stimulation effect for all EGM players. Specifically, results showed that:

- Winning a higher proportion of an EGM bet was generally more exciting than winning a lower proportion (e.g., winning $\frac{1}{4}$ of a bet - mean=1.3, winning $\frac{1}{2}$ of a bet - mean=1.7, winning $\frac{3}{4}$ of a bet mean=2.2 and winning same amount as bet mean=2.9)
- Getting a LDW close to the amount bet was also described in qualitative research as providing player's with the perception of a 'near win'
- Players believed that EGMs displaying visual effects or sounds during LDWs or Bets only Won (BOWs) may contribute to players believing that each are a type of 'win'
- Overall, gamblers were only somewhat likely to believe that LDWs implied that a big win must be getting close – However, this cognition was significantly higher in problem gamblers (mean=3.2) compared to non-problem gamblers (mean=2.2)

EGM player exposure to different spin outcomes was also analysed as part of the study. This data provide information on the general reinforcement and pay back characteristics of EGMs (based on 48,920 spins).

- Player exposure to different spin outcomes was as follows:
 - Losses – 65.6% of spins
 - Bet Only Won – 2.1% of spins
 - Real wins – 14.2% of spins
 - LDWs – 18% of spins
- This implies the total reinforcement rate of EGMs is around 34.3% of total spins overall (roughly 1 in 3 spins have positive reinforcement) (based on sum of the percentages of LDWs, RWs and BOWs)
- While all risk segments play EGMs with fairly similar pay back characteristics, problem gamblers used machines with a slightly higher proportion of Real Wins (14.6% of all spins), compared to non-problem gamblers (only 13.3% of all spins) – the same trend applied to all at-risk gamblers

- Based on observational data, analysis showed that all 'win' events (Real wins, BOWs and LDWs) contributed positively to overall EGM play excitement and the urge to continue play (the more of each, the greater the excitement and urge to continue) (when measured as counts)
- While Real Wins were a better predictor of overall play excitement (with higher Real Wins producing greater play excitement - $r=.341$, $p<.001$), LDW losses added uniquely to the prediction of play excitement ($r=-.191$, $p<.05$)

This may suggest that real wins are mostly responsible for play excitement and increased urges to continue, but lower losses associated with LDWs also uniquely influence play excitement.

- EGM players playing a larger percentage of all available lines (51-100%) may experience a significantly greater mean proportion of LDWs (relative to total EGM spins) - This result may provide some support for assertions of Harrigan et. al (2011) that the reinforcement rate of multiline EGMs may be greater than single (fewer) line machines

(5) IMPACT OF REEL POWER ON GAMBLER EXPENDITURE AND BEHAVIOUR

Reel Power and Multiway EGMs, which require players to purchase reels (usually up to 5) for betting rather than lines, were examined in the study. Findings showed that many EGM players did not have great knowledge about Reel Power/Multiway EGMs and did not know how they differed from line based gaming machines.

Attitudinal research showed that:

- Only 46.4% of EGM players had definitely heard the name Reel Power or Multiway on gaming machines. A further 20.5% indicated some level of 'vague' recognition (implying that 66.9% of all players had some level of awareness)
- Problem gamblers were significantly more likely to report playing Reel Power and Multiway EGMs (88.1% reporting definite or possible play), compared to non-problem gamblers (58.6% reporting definite or possible play) – The same trend applied to all at-risk gamblers (Though this is possibly only because they play all EGMs more regularly)
- Most EGM players do not see Reel Power and Multiway EGMs to have any distinctive characteristics that differ from regular gaming machines – The many 'ways' to win/lines and the purchasing of reels rather than lines are often not salient to many players (44% of players could not think of any differences)
- Based on unprompted recall of Reel Power and Multiway characteristics, only 4.2% of all EGM players mentioned that such machines required players to bet on reels (versus 50.3% for prompted recall) – This suggests that this characteristic is not well-understood
- The top characteristics of Reel Power and Multiway EGMs were seen to include better win multipliers (43% of EGM players), larger wins (33.3% of EGM players) and greater play excitement (33.1% of EGM players) (possibly due to multipliers particularly)
- Attributes seen to be least characteristic of Reel Power EGMs were being able to understand the cost per spin (only 7.7% saw this as a characteristic), offering the best chance of winning (only 9.3% saw this as a characteristic) and having pay lines that were easy to understand (only 14.1% saw this as a characteristic)
- One concerning aspect of Reel Power EGMs raised by EGM players related to a reported player tendency to use 'extra credits' button to qualify for free spins and features (e.g., Buttons with 25 + 5 credits – although note this is a characteristic that is not exclusive to Reel Power)
- When pay back characteristics of Reel Power/Multiway EGMs were compared to line based EGMs played during observations, analysis showed the following overall pay back characteristics:

Reel Power EGMs (Base: 7,947 spins)

- Bets only won - 1.8% of total spins
- Real wins - 12.3% of total spins
- Losses – 69.1% of total spins
- LDWs – 16.7% of total spins

Multiway EGMs (Base: 2,209 spins)

- Bets only won – 2.1% of total spins
- Real wins - 12.9% of total spins
- Losses – 71.2% of total spins
- LDWs – 13.8% of total spins

Regular lines based EGMs (Base: 38,764)

- Bets only won – 2.2% of total spins
- Real wins - 14.7% of total spins
- Losses – 64.6% of total spins
- LDWs – 18.5% of total spins

This data revealed that:

- Spins resulting in real wins were slightly lower on Reel Power EGMs (12.3% of spins) and Multiway EGMs (12.9% of spins), compared to line based EGMs (14.7% of spins)
- Spins resulting in losses were higher on Reel Power EGMs (69.1% of spins) and Multiway EGMs (71.2% of spins), compared to line based EGMs (64.6% of spins)
- Multiway EGMs had the lowest proportion of spins resulting in LDWs (only 13.8% of spins), Reel Power EGMs the second lowest (16.7% of spins) and regular line based EGMs had the highest (18.5% of spins) –

This may suggest that Reel Power and Multiway EGMs are unlikely to have a higher proportion of LDWs compared to regular line based EGMs

- EGM players playing regular line based EGMs rated that they had a significantly higher chance of winning (mean=2.7), compared to players playing Reel Power and Multiway EGMs combined (mean=2.4)
- During EGM play observations, there were no significant differences in the time (measured in total spins) or money EGM players spent on individual Reel Power/Multiway machines versus regular line EGMs

When individual feature characteristics were profiled for Reel Power/Multiway EGMs compared to regular lines based EGMs, analysis showed that, there were no significant differences between Reel Power/Multiway machines and Regular line based EGMs in terms of the money won during free spins or features (outside free spins), the largest real win (based on real win sizes), the number of free spin events, the sum of all free spin multipliers and the sum of win multipliers.

However, some noted differences included:

- Total win multipliers applied during free spins were somewhat higher for Reel Power EGMs (mean=3.5), compared to Multiway (mean=1.7) and regular line based EGMs (mean=2.5) (as noted during qualitative research – although the above result was not statistically significant)
- Reel Power machines had significantly higher top jackpot prizes (mean=\$6,846) compared to line based EGMs (mean=\$4,059) - The difference in jackpot prizes between Reel Power and Multiway EGMs combined (mean=\$6,291) versus regular line based EGMs (mean=\$4,059) was tending towards significance (so this latter result should be interpreted with caution)
- Based on EGM play observations, 25% of EGMs played by non-problem gamblers were Reel Power EGMs, while the same figure was 18.2% for problem gamblers. Additionally, around 1.5% of EGMs played by non-problem gamblers and 6.1% of EGMs played by problem gamblers were Multiway EGMs.

Results do not suggest a significant level of attraction of higher risk gamblers to Reel Power and Multiway EGMs (Based on play observation data).

- The mean bet size for Reel Power and Multiway EGMs per spin played during EGM observations was approximately 40 cents (per spin) and the mean bet size for regular line based EGMs was 50 cents (per spin) – No significant differences were noted between (mean) bet sizes used by non-problem and problem gamblers

Overall, results suggest that the multiway aspect of Reel Power/Multiway EGMs does not appear to have a differential impact on problem gamblers other than such machines often offer win multipliers, have linked jackpots, offer 'extra credit buttons' and are not well-understood by most gamblers in terms of the cost per spin (and the nature of reel betting). Some of those latter characteristics (e.g., multipliers, jackpots, extra credit buttons) have potential to lead to play persistence in all gamblers and especially problem gamblers, although these characteristics are distinct from the multiway characteristic.

From an analysis of NSW top and mid range EGMs, findings also suggested that only 4 of the top 15 EGMs were multiway as were 3 of the 15 'mid range' EGMs (the least popular). This further suggests that the multiway characteristic alone cannot be clearly attributed to reasons why certain EGMs have high expenditure. Authors believe it is likely to be more so due to characteristics and play dynamics of individual EGM games.

(6) IMPACT OF BET SIZE

The nature and impact of betting during EGM play was also considered in the current study. Findings confirm that the size of available bets is one key characteristic of EGMs likely to increase the potential for harm to problem gamblers. Findings showed that problem gamblers were significantly more excited by 2 and 5 credit bets particularly.

Specific results showed that:

- Problem gamblers rated Max Bet buttons as significantly more exciting than non-problem gamblers and also used these buttons significantly more frequently (suggesting such buttons may be harmful for problem gamblers)
- Max Bet buttons were also qualitatively reported as harmful for intoxicated players and did not provide a feeling of informed consent and control when gambling (as it was seen to be harder for players to keep track of expenditure)
- Extra credit betting buttons (e.g., 25 credits + 5 credits) which added further additional credits to the bet were seen as harmful by EGM players if they were required to be used to attain certain free spins and features (as free spins/features are highly coveted by all gamblers)
- Problem gamblers were significantly more likely than non-problem gamblers to hold a cognition during EGM play to bet high to ensure that the size of their wins would be maximised
- Observation of EGM play showed that problem gamblers placed significantly higher bets (53 cents per spin) than non-problem gamblers (35 cents per spin) – 11% of problem gamblers observed had a mean bet size of \$1 or higher and 24% had a mean bet size of 80 cents or more (per spin)
- The mean bet size per spin for different denomination EGMs was as follows - 1 cent EGMs (mean=42 cents), 2 cent EGMs (54 cents) and 5 cent EGMs (\$1.20 per spin) (only 1c, 2c and 5c machines were used during observations)
- Players reported not reflecting deeply about the total cost of each spin when choosing bets – Working out the cost per spin for some EGM denominations was also seen as difficult (e.g., 5 cent EGMs was more difficult to mentally calculate than 1 cent EGMs – especially when money was converted to irregular credits – e.g., \$10 converts to 200 credits was more difficult than \$10 converting to 1000 credits)
- Problem gamblers were significantly more likely to report betting in different patterns to confuse EGMs than non-problem gamblers – Observation also showed that they changed bets around 12.9 times per EGM play session compared to only 8.0 times in the case of non-problem gamblers (on average). There was no relationship, however, between total bet changes and total losses (based on the first EGM played)

(7) IMPACT OF MULTIPLE LINE SELECTIONS

Findings showed that most EGM players will play either all or most available EGM lines. This behaviour was primarily to avoid missing out on a win that could occur on a pay line not purchased. This was also the single most salient cognition that occurred to players during EGM play (also refer Figure 1). Results similarly showed that problem gamblers were significantly more likely to think they have to play all pay lines to avoid missing wins (mean=4.3), compared to non-problem gamblers (mean=3.7).

Other key findings relating to multiple line EGMs included:

- EGMs with 20 lines were rated by all EGM players as most exciting followed by machines with 50 lines – This is possibly due to such machines being a very common line configuration - Machines with 243 lines, such as Multiway EGMs, however, were generally rated as least exciting
- Problem gamblers rated EGMs with 50 and 243 lines as significantly more exciting than non-problem gamblers
- Betting on a single EGM line was seen by all gamblers as relatively unexciting compared to betting on all EGM lines – Problem gamblers also rated betting on all EGM lines as significantly more exciting than non-problem gamblers
- Around 77% of all EGM players reported betting on all lines (including 84% of problem gamblers and 76% of non-problem gamblers)

(8) RELATIONSHIP BETWEEN MACHINE VALUE AND LINES PLAYED

While some issues were noted in players understanding lines in the current study (implying some possible error in self-reported lines played), EGM players reported playing using an average of:

- 21.6 lines on 1 cent EGMs (or 80% of available lines)
- 22.6 lines on 2 cent EGMs (or 77% of available lines) and;
- 15.5 lines on 5 cent EGMs (or 82.5% of available lines)

Information on the lines played across EGMs by different denominations was not available for analysis (as such data are not held by the OLGR NSW). As such, the data above pertain only to observations of EGM play conducted in the current study (implying that data are an estimate only).

(9) IMPACT OF 'GAMBLE BUTTON' FEATURE IN EGMS

Gamble buttons, which allow EGM players to risk winnings for a chance to typically win double (1 in 2 card games) or quadruple (1 in 4 card games) their bet, are used infrequently during EGM play. Consequently, they could be argued to be of little consequence to all gamblers. Findings highlighted that the most popular form of gamble - double up - was used at least once in 8.2% of all EGM sessions and the one-in four-gamble function was only used in 1.8% of all EGM sessions (for a mean total use of only 0.8 times on average for each EGM play session).

Other findings suggested that:

- While differences were not statistically significant between non-problem gamblers and problem gamblers (for means or percentage use), problem gamblers appeared to have slightly higher use of the gamble button overall (used by 14.5% of problem gamblers and 5.6% of non-problem gamblers) (so this result should be interpreted with caution)
- Gamble buttons are reported to be only used for very small wins (as players did not want to risk losing winnings or shorten time at EGMs)
- Players were reported to be more vulnerable to the effects of gamble buttons when they were intoxicated or depressed and reported that such situations lead to lower inhibitions and greater risk taking behaviour
- EGM players are often not aware they can change gamble games from 1 in 2 (typically the default) to 1 in 4 or half gambles on many EGMs
- The average maximum win all EGM players reported being prepared to double up was \$12.18 – While problem gamblers appeared to be prepared to double up a little more money (mean=\$32.32) compared to non-problem gamblers (\$9.24), the difference was not statistically significant

- 1 in 4 gamble games were considered a little more exciting (mean=2.3) than 1 in 2 games (mean=2.2), but using the half gamble button was not considered very exciting (mean=1.7) - though attitudinally, 1 in 2 games were most preferred (71.6% of all gamblers)
- Having dual function buttons with gamble on EGMs was reported to be associated with greater accidental use of gamble buttons (where doubling up winnings was not intended) – although accidental use was not highly frequent overall (mean=1.6 – where 1=not at all, 5=very often)
- Presentation of prior gamble game outcomes on EGM screens leads to players believing they can predict the outcome of gamble games (implying that this characteristic should be avoided in EGM design)

(10) OTHER IMPORTANT STRUCTURAL CHARACTERISTICS

Other findings relating to a diverse range of other important EGM structural characteristics in the study included:

Near misses

- EGM player cognitive processes are highly oriented towards seeing near misses and there is some evidence that near misses need to be considered in future EGM design.

EGM players reported seeing near miss events quite frequently (mean=3.2) and problem gamblers were significantly more likely to report thinking they had nearly won due to near misses (mean=3.7), compared to non-problem gamblers (mean=3.0). In addition, problem gamblers were significantly more likely to be triggered to play on through near miss events (mean=3.7) than non-problem gamblers (mean=2.6)

- Near misses involving a greater number of symbols appeared to have a larger effect on players - For instance, receiving four symbols when five were required for a win was the most exciting type of near miss event (mean=2.6), while winning two symbols when three was required was less exciting (mean=1.8)
- Categories of events seen as near misses were identified in the study. These included:
 - Matching symbols appearing on the pay line without the right number of symbols (e.g., getting 3 with the 4th symbol missing)
 - Getting a screen full of winning symbols but lacking one or more to trigger a win
 - During a feature, achieving all but one of the feature objectives to trigger a win
 - Use of sounds or visual effects that highlight a likely win (also creating anticipation of the win) (e.g., hearing the Pink Panther theme sound, made players think the jackpot feature was close)
 - Symbol nudging reel effects (where a symbol stops then falls just above or below the pay line or starts spinning very slowly on the pay line)
 - Getting two symbols on free spin then the required third on the next free spin
 - Non-coverage of pay lines required to trigger a win (e.g., symbols fall on a pay line not bet on)
 - Machines lighting up or playing sound after a loss or win less than bet size
 - Getting symbols required for a win on one EGM that were not winning symbols on another
 - Getting a free spin with a lower free spin or win multiplier when a higher was desired
 - Getting several near misses (any type) in a row

Methods of winning

- Players often experience high levels of symbol confusion when card symbols had greatly different values across EGMs. An analysis of top and mid range 15 NSW EGMs also illustrates these differences
- Winning by getting more symbols in a row was generally regarded as more exciting than getting fewer symbols in a row (e.g., Means for winning were as follows - Five symbols in a row – 4.6, four symbols in a row – 3.7, three symbols in a row – 3.0)

- The multitude of EGM games on the market with similar branding, yet different winning symbol combinations and values (e.g., King is 40 credits on one EGM and 100 credits on another), was quite confusing to EGM players (termed 'symbol confusion' in this report). Some EGM players also believed that win credits and credits for common card symbols should be standardised across EGMs to avoid player symbol confusion and to avoid misleading players
- Problem gamblers also reported a greater frequency of being confused after seeing winning symbols on one EGM (mean=2.9) that were not winning symbols on another, compared to non-problem gamblers (mean=2.2)
- Problem gamblers were significantly more encouraged to play on as a result of symbol confusion between machines (mean=2.3), compared to non-problem gamblers (mean=1.5) (as it provided a feeling like the player was winning)

Game information menus/screens

- Overall, 49% of all gamblers indicated they had previously read the information in EGM menu systems. Based on unprompted reasons for reading such information, very few EGM players read the information to check game rules (1.9%), odds of winning (1.4%) or to understand pay lines (0.9%)
- EGM players found odds and game information in screens quite confusing and highlighted the need for improved and possibly consistent formatting of screens
- Clearer information on how to win and odds associated with the following was seen as critical:
 - Major jackpots
 - Features
 - Free spins
- Menu information suggesting the need to bet larger amounts to qualify for certain prizes was also viewed as a harmful characteristic of EGM screens (e.g., you must bet all lines and extra choice button to win the feature, you must play 243 lines to win certain prizes, increasing your bet increases your chance of winning)

Other EGM structural characteristics

- Players report occasional use of a wrong denomination EGM due to poor labelling of denominations on EGM screens (typically \$1 and 1 cent EGMs are confused)
- Many players report difficulty finding Collect buttons (for cashing out) – especially when buttons have dual functionalities
- Problem gamblers found breaks (mean=1.6) associated with use of EGM reserve buttons of significantly greater utility in helping them regain control of play than non-problem gamblers (mean=1.2) (1=No use, 4=Significant use)
- Electronic button and credit layouts (on-screen button layouts) were found to be confusing for players to use on multigame and server based EGMs
- EGM players believed that EGM denominations should also not be changed in the server or multi-game EGMs as this had potential to confuse players and lead to incorrect spending
- Some EGM players believed that sound and visual effects for losses/LDWs/Bets only won should be standardised across EGMs and to different loss events, so that players are not urged to continue play upon hearing or seeing sounds/visual effects after a loss
- While written motivational messages are used on some EGMs following wins (e.g., Well Done), player feedback suggests that these statements have fairly minimal effect on players

CHARACTERISTICS OF THE TOP AND MID RANGE EGMS (MOST POPULAR AND LESS POPULAR EGMS)

Based on a review of the more popular and less popular EGMS in NSW (top range and mid range EGMS), there were very few EGM characteristics that appeared to dominate the top 15 EGMS. Many – if not most – characteristics – were quite similar and the analysis suggested that it is probably more likely that EGMS are popular due to individual characteristics associated with game play and game design rather than any particular single characteristic. This is not to say that individual differences make no difference, but it appears that most characteristics are similar to the point where any differences between EGMS are not major and may thus be based on very subtle differences.

Reflecting this, both the top 15 and mid range 15 EGMS (in NSWs) had:

- Similar buttons that encouraged higher bets (8 of the top range and 7 of the mid range had a characteristic that encouraged players to place higher bets – e.g., X + X credit buttons) or required such buttons to be used to qualify for certain free spins and features
- Credits awarded were fairly similar, although the top range had slightly higher credits awarded than the mid range
- Four of the top 15 were multiway, as were 3 of the mid range 15 (Multiway EGMS are EGMS where bets are placed on reels rather than lines)
- The average maximum bet of the top range was fairly similar to the mid range (\$7.40 v \$8.20), as was the average maximum available lines (although lines were slightly higher in the top range - 69.2 lines v 62.8 lines)
- The average Return to Player (RTP) was very similar across the top versus mid range (though again, a small difference is apparent - 89.9% v 89.4%)
- The top mean free spins available in the top range was 16.6 and 25.9 for the mid range EGMS (suggesting that while free spins are the most popular attraction to EGM players, EGMS with the most number of free games aren't necessarily the most popular)
- Though the maximum prize was higher in the mid range than top range (\$6,113.10 v \$4,589.80) and 6 of the top 15 had linked jackpot functionality compared to only a single EGM in the mid range
- A total of 10 games each in the mid range and top range had win multipliers – with an average multiplier effect of 20.8 for the top range and 18.3 for the mid range (again, this difference is small, but still may be detected by consumers)

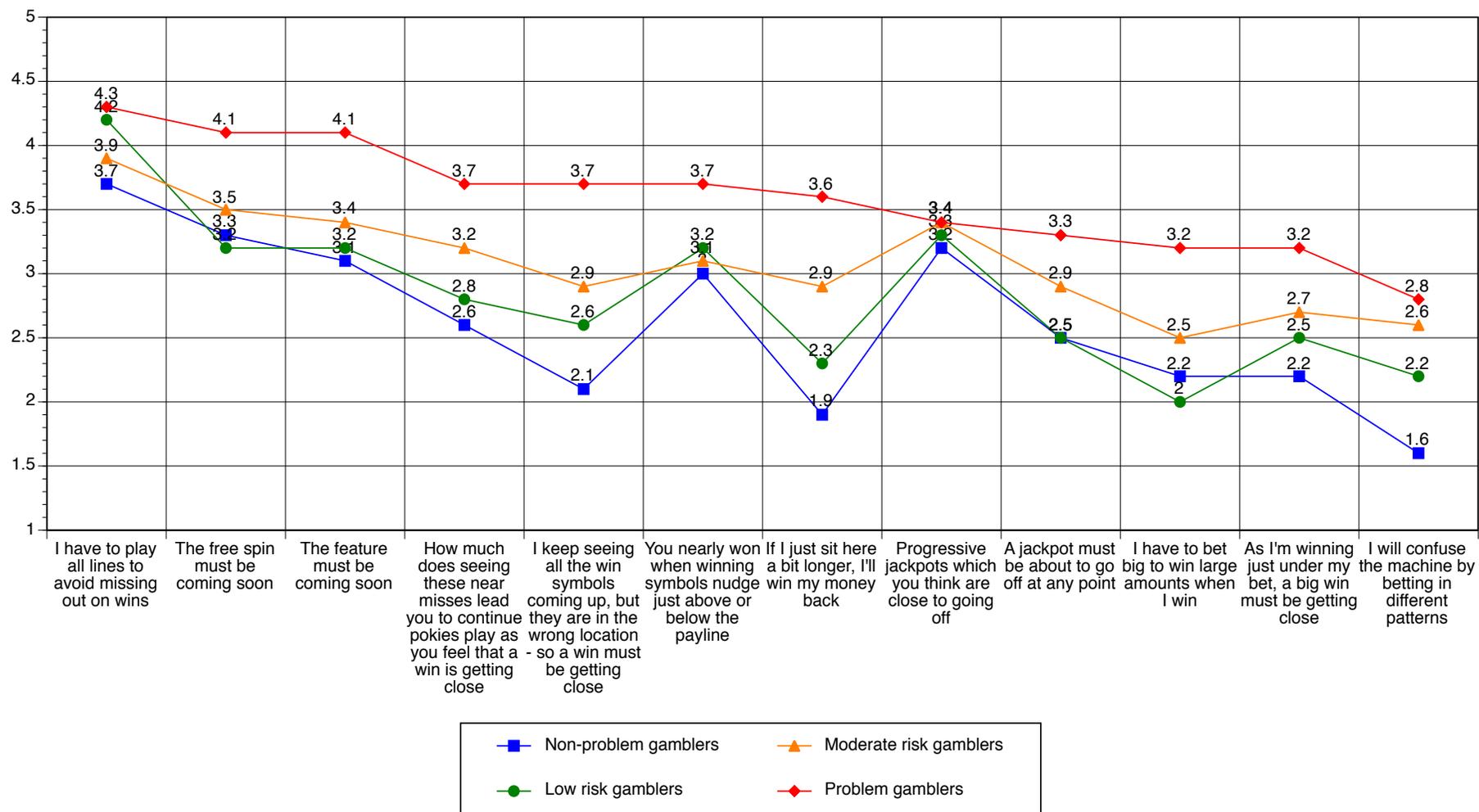


Figure 1. EGM player cognitions – The frequency with which cognitions occur during EGM play (1=not at all often, 5=very often)

Discussion of key findings and insights

The study to explore EGM structural characteristics has identified and examined the effects of a vast range of aspects of poker machine design on player cognitions and behaviour. While it is quite difficult to link all such aspects directly to EGM expenditure, the study has identified how many characteristics can influence player excitement and the urge to continue during EGM play. These variables have also been previously linked to player's exceeding pre-commitments during EGM play (Schottler Consulting Pty Ltd, 2010) and for this reason, they present a useful framework for examining how best to design EGMs to prevent gambling harm.

Impact of free spins – some discussion points

One of the most significant findings of the current study related to the impact of free spins on EGM players. It is clear from much previous research that free spins are highly coveted by EGM players and are quite integral to players being satisfied with their EGM play experience (e.g., AIPC, 2006; Livingstone and Woolley, 2008; Hamilton et al, 2013). In the current study, some evidence suggested that multiple free spins were not only exciting for all players, but 'combination events' (where free spins were accompanied by other 'exciting' machine events) were often found to be even more exciting.

There was particular evidence to suggest that 'free spins during free spins' were associated with higher levels of play excitement, as were 'features during free spins' and 'win multipliers during free spins'. In addition, problem gamblers were much more excited by win multipliers during free spins than non-problem gamblers. Observation of actual EGM play similarly showed that win multipliers during free spins were a strong predictor of play excitement and the urge to continue during play (and were better predictors than even real wins resulting from free spins or features during EGM play). This is particularly interesting in view of assertions by Livingstone and Woolley (2008) who proposed that limiting multipliers (and free spins) may have potential to reduce excessive gambling.

From an EGM design perspective, such results may highlight that game designs that present win multipliers during free spins could be potentially associated with greater levels of impaired control for problem gamblers. This is of course still somewhat speculative and requires further research. However, it does highlight the potential for these impacts.

There may also be potential to further research the maximum number of free spins that could be conceivably offered concurrently during EGM play. Indeed, study results suggested that multiple free spins were far more exciting than single free spins, so there is potential to examine the upper limit of free spins that may be associated with gambling harm. While the current study was unable to quantify the precise relationship between concurrent numbers of free spins and play excitement, it is plausible that games with larger numbers of concurrent free spins *may* be associated with a greater level of impaired control during EGM play. Accordingly, gaining an understanding of the relationship between the number of concurrent free spins and play excitement may be worthy of further research. It is also apparent that some games encountered in the study had very high numbers of concurrent free spins (e.g., 88x free spins), along with large win multipliers during free spins.

A further interesting finding of the current study related to the amount that players expected to spend to obtain a free spin. Players believed that they should spend no more than \$16 per session of play (on average) to obtain a free spin. Qualitative research highlighted that not receiving a free spin was often associated with play persistence. Analysis of observational data then showed that only 40% of all play sessions observed actually produced a free spin within this expenditure range.

While individual machines will obviously present free spins at different probabilities, this itself *may* suggest that the fundamental design of some EGM brands could be theoretically associated with increased levels of play persistence (for all players). It is also noteworthy in this context that the preparedness of problem gamblers to spend a significantly *higher* amount to obtain a free spin (around \$24 on average) could also imply that problem gamblers are pre-disposed to spend more on EGMs that have low probabilities of free spins (as they 'continue on' in the hope of a free spin coming).

A related study finding concerned the extent that free spins occupied the thoughts of EGM players during play. Problem gamblers were more likely to hold a cognition that 'free spins were coming' during EGM play than non-problem gamblers. As problem gamblers are continually thinking that free spins are coming, it seems plausible that this itself may explain why problem gamblers reported increasing their bets when they received a free spin near a large win. It is noteworthy, however, that the AIPC (2006) study found that gamblers would increase bets before a free spin and would then return to a base level after free spins. As this highlights a cognitive effect of free spins on problem gamblers, it also points to the potential for messaging during EGM play to 'break' this cognition. The precise nature of messages that could achieve this, however, would require further investigation.

Impact of free spins and features in the vicinity of wins – some discussion points

The current study has provided some new insights into how free spins and features in the vicinity of wins may influence EGM play. Such events had to be examined in tandem in the current study, as they were typically very hard to separate during play. This was achieved by coding the largest real win on an EGM (defined as a win that was greater than the amount bet) and then coding whether free spins and features occurred near the largest real win.

Findings showed that experiencing a real win directly from a feature or free spin was most uniquely associated with player excitement and the urge to continue. This was also found to be a far more powerful predictor than just getting a free spin or feature before or after a real win. Accordingly, this further highlights the true 'power' of free spins resulting in wins and that such events have great potential to influence excitement and the urge to continue during play.

It was also noteworthy in study results that problem gamblers rated getting a feature or free spin after a large win significantly more exciting than non-problem gamblers (based on self-report attitudinal data). Moreover, problem gamblers were more likely to report increasing bets upon getting a free spin or feature near a large win (compared to non-problem gamblers). Such results could suggest that exciting 'combination events' may lead to increased betting by problem gamblers and thus could potentially be associated with possible harm.

This also points to the need for further scholarly research to develop a conceptual framework to better understand the types of EGM machine events that may be associated with gambling harm. In this respect, the current study has only 'scratched the surface' of identifying these events, but does provide some emerging evidence to justify why the effects of machine events and 'combination events' should be further studied.

Impact of features – some discussion points

While free spins are a common type of gaming machine 'feature', the current study also examined the more complex series of bonus events that are typical of poker machine play. Termed 'features' in the study, such events typically involve a series of visual effects or sounds and are frequently associated with the opportunity to win bonus points.

Similar to previous findings relating to free spins, results showed that getting a feature during a free spin was most exciting, as was getting a feature generally. This itself highlights the excitement value of features and also further points to the greater excitement value of free spins. Findings similarly showed that features with a range of special 'qualitative' characteristics were also quite exciting. These included getting a second feature during a feature, getting linked jackpot features, getting a feature and multiple free spins during a feature and getting free spins during a feature.

Three feature characteristics were also found to be significantly more exciting for problem gamblers, compared to non-problem gamblers – (A) Features involving role playing of a character, (B) Features that give the impression of a game of skill (e.g., stopping tasks) and (C) Features with funny characters.

While it is not entirely clear why such characteristics are more exciting for problem gamblers, it is plausible that problem gamblers are more excited by any type of feature that engenders a greater level of play involvement or perceived skill in EGM play. It is particularly noteworthy in this context that qualitative feedback by players suggested that stopping tasks in features (e.g., hitting a button to stop cars, to release a ball etc.) contributed to the perception that the outcome of an EGM game could be influenced. Interestingly, this was also reported by some players who were nevertheless quite aware that the outcomes were still at random.

Accordingly, this highlights the potential for research to further consider the impact of feature design on problem gamblers. It seems from study results that features that involved tasks that could influence a player's perception of control over an EGM or involve a player to a level where they lose awareness over their play could be problematic for higher risk segments of gamblers. Ascertaining specific criteria for involvement, however, is challenging, as this is also reported to be a characteristic that makes EGM play intrinsically stimulating.

Supporting the potential harm associated with stopping tasks, Ladouceur and Sévigny (2005) illustrated that games with stopping features contributed to an illusion of control in gamblers. Their evidence showed that 57% of gamblers felt they could control a game outcome by activating a stop button. Parkes and Griffith (2006) also proposed that the major features present in UK fruit machines appeared to create the perception of 'involvement and skill'. Such results thus clearly highlight that these characteristics may be harmful. There is also a need to examine in research whether games have feature characteristics that differentially impact problem gamblers or have general characteristics that may create unusually high levels of perceived control over play or play involvement.

Impact of losses disguised as wins (LDWs) and the frequency of wins (the payback schedule) – some discussion points

Following coding of nearly 49,000 EGM spin outcomes (based on EGM player observation), results of the current study showed that winning something was generally considered by players as better and more exciting than winning nothing at all. In addition, winning a higher proportion of the bet was somewhat more exciting than winning a lower proportion. Obtaining LDWs (where wins are less than the amount bet) was similarly described in qualitative research as providing the perception of a 'near win'.

Based on analysis of EGM payback schedules played in the study, around 34.3% of total EGM spins were found to have some level of 'reinforcement value'. Of these spins, 18% involved LDWs, 2.1% involved 'Bets Only (being) Won' and 14.2% involved 'Real Wins' (where wins were higher than the amount bet). When the payback characteristics of EGMs preferred by problem gamblers were analysed, results suggested that problem gamblers may play EGMs with a slightly higher proportion of real wins (14.6%) (compared to non-problem gamblers - 13.3%). However, it is unclear as to whether this difference is indeed actually noticed by problem gamblers or is merely an artefact of sampling. For this reason, this finding needs to be interpreted with caution. Given that problem gamblers often have great knowledge of EGMs, however, it is conceivable that they may indeed be able to 'detect' machines with slightly more favourable pay back characteristics. If this is the case, this may then raise the need to research the impact of high payback machines on the basis that they may be more frequently used by problem gamblers.

Another significant overall finding from the study relates to the relative impact of LDWs. Based on real EGM play data, LDW losses significantly added to the prediction of EGM play excitement over and above real wins (which were also a predictor of play excitement). This may suggest that LDWs do play some role in influencing play excitement. EGM players reporting playing a larger percentage of all available lines (51-100% lines) were similarly found to be exposed to a greater mean proportion of LDWs (relative to total spins) than players reporting playing only 0-50% of lines.

Together, such findings may provide some indirect support for the assertions of Harrigan et. al (2011) that the reinforcement rate of multiline EGMs is greater than single line machines. However, a key limitation of this data is that analysis was based on lines reported to be played which was also likely to be associated with reporting error (as players sometimes struggled to report the precise lines they played).

If LDWs do contribute to EGM play excitement, this may point to a need to further research the impact of LDWs as an EGM spin outcome (including researching whether a greater proportion of LDWs could contribute to gambling harm). This issue would also require much further research and investigation.

As some players in the current study reported that EGMs sometimes presented visual effects or sounds during LDWs (although some players also reported that these were far less exciting than those presented for wins), how LDWs are presented to players could similarly be researched from a harm-minimisation perspective.

To fully understand the effect of LDWs, more in-depth studies examining player responses to LDWs within individual machine brands could similarly be undertaken. Harrigan and Dixon (2009) found, for instance, that certain EGMs in the Canadian market produced a higher frequency of LDWs than actual wins. It was similarly interesting to note that the proportion of total spins that were LDWs in the current study (18%) was considerably lower than the proportion identified in EGMs examined by Harrigan and Dixon (2009). Indeed, the authors reported that LDWs (based on 5,000 spins) for the EGM 'Money Storm' were 29.7% of spins on a 20-line game.

The exact reason why LDWs influence play excitement also requires further research. Jensen et al (2013) purported that LDWs may be associated with the perception that players are 'winning more often' and that associated music and visual effects may hide monetary loss. In the current study, it was apparent that problem gamblers held a stronger belief (than non-problem gamblers) that LDWs implied that a 'big win must be getting close'.

Accordingly, this may suggest that LDWs could have a greater effect on problem gamblers. This conclusion would also be supported by previous findings that suggest that problem gamblers strongly believe that other types of wins are coming (e.g., 'free spins and features are coming' during EGM play). This may thus be related to the general high level of cognitive activity in problem gamblers focused on 'winning'.

Impact of Reel power EGMs on gambler expenditure and behaviour – some discussion points

Findings of the current study showed that many EGM players had very limited or only a 'vague' understanding of Reel Power and Multiway EGMs. Reflecting this, only 46.5% of players reported 'definitely' hearing the name Reel Power or Multiway and following prompting, only 50.3% knew that such machines required players to bet on reels (possibly the most fundamental characteristic).

Together, awareness results alone seem to suggest that it is *fairly* unlikely that the Reel Power or Multiway aspect of EGMs are *solely* responsible for high gaming machine expenditure or leading players to spend more than they can afford. Indeed, if players don't really understand the true meaning of 'multiway', it is hard to then link such machines to harmful expenditure. Observational research also supported this by finding no significant differences in the time (measured in total spins) or money EGM players spent on Reel Power/Multiway machines versus regular line based EGMs (overall). Furthermore, no differences were also noted in mean bet size.

While this study could not identify a definitive link between the multiway characteristic of EGMs and harmful gambling expenditure, it is still feasible that certain individual brands of Reel Power or Multiway machines *are* highly attractive and could still lead to players to spend more than they can afford. If this occurs, however, it may be more likely to be due to other characteristics that are more well-understood or appreciated by players.

In this respect, study results provide some evidence to suggest that perceived characteristics of Reel Power/Multiway EGMs were seen to include win multipliers (43% of players), larger wins (33.3%) and greater play excitement (33.1%). Attributes *least characteristic* included the ease of understanding the cost per spin (only 7.7% saw this as a characteristic of such machines), offering the best chance of winning (9.3%) and having pay lines that were easy to understand (only 14.1% saw this as a characteristic).

Accordingly, it is plausible that some of the more popular known characteristics explain the popularity of certain Reel Power or Multiway EGMs. Based on qualitative player feedback, it seems likely that the availability of multipliers on some Reel Power/Multiway EGMs *may* account for higher gaming revenues observed on individual machines, along with other general characteristics such as attractive free spins, features and play dynamics. In addition, players reported higher anecdotal use of 'extra' credit buttons (25 + 5 credits) on such EGMs, as these buttons were often required to qualify for certain features/free spin events and were required to ensure that players did not 'miss out' on possible wins (such buttons were also required to be used to 'cover off' all pay lines – a noted preference of most gaming machine players).

Livingstone and Woolley (2008) suggested that the high multi-line betting available in Reel Power EGMs may explain differences in Reel Power EGM expenditures, although this was proposed to increase the mean bet size (which the current study did not find). Griffiths (1993) similarly suggested that the presence of multipliers had potential to lead to higher gaming expenditures and that multipliers that offered choices (e.g., x4, x5, x10) were potentially influential, given that they increased involvement in games. Accordingly, these may be factors that lead some players to spend larger amounts on Reel Power/Multiway EGMs. It should also be noted in this context that these are also characteristics of other 'regular' line based EGM brands.

A further possible explanation for the popularity of certain Reel Power and Multiway EGMs may also lie in the lower level of player understanding about of the cost of playing such machines. It was acknowledged by players that it was somewhat difficult to work out the 'cost per spin' on such EGMs, compared to line based machines. This was primarily to do with the purchasing of reels – instead of lines - which was poorly understood. Conceivably, it is possible that lower awareness of the cost per spin could be *somewhat* associated with players losing track of expenditure during play (leading to greater expenditure).

Higher expenditure in Reel Power/Multiway EGMs, however, could *not* be attributed to a greater proportion of LDWs in the current study (where amounts won are less than the amount bet), as study findings showed that LDWs of Reel Power and Multiway machines played during the study were - if anything - lower than LDWs for regular line based EGMs played.

Analysis of EGM play dynamics during the study also showed that total win multipliers applied during free spins for Reel Power EGMs particularly (mean=3.5) were higher than both for Multiway (Mean=1.7) and regular line based EGMs (Mean=2.5). Moreover, Reel Power machines had higher top jackpot prizes, compared to line based EGMs. The actual types of machines chosen by players similarly showed that only 18.2% of EGMs played by problem gamblers were Reel Power, compared to 25% played by non-problem gamblers (implying that problem gamblers chose a slightly lower proportion of machines that were Reel Power, if anything) (although given that this difference was not statistically significant, it should be interpreted with due caution). From this perspective, this provides some indirect evidence to suggest that problem gamblers may not be any more attracted to Reel Power machines (Multiway machines that were not Reel Power brand specifically were too infrequently encountered to draw definitive trends between risk segments).

Accordingly, results may suggest that characteristics such as the availability of multipliers and high jackpots could explain the attractiveness of such machines. Such findings also highlight the need to research the effect of other 'combinations' of characteristics on players (e.g., machines with 'multipliers and jackpots' could be theoretically more attractive and thus harmful to problem gamblers, as could machines with 'extra credit buttons and multipliers' – for instance). As there are so many varied and different characteristics of gaming machines, much further research will be naturally required to fully understand these characteristics. The limitations of the observational approach to the current study also need to be considered when interpreting all trends pertaining to Reel Power.

Impact of bet size – some discussion points

Extensive previous research has established a fairly clear relationship between problem gambling and higher bet sizes (e.g., McMillan et. al 2003; Schottler Consulting Pty Ltd, 2010, Australian Productivity Commission, 1999). Supporting this, the current study also identified through live play observation that problem gamblers do indeed place significantly higher bets (53 cents per spin) than non-problem gamblers (35 cents per spin).

While it is of course difficult to know the extent to which mean bet size in the study was representative of *most* problem gamblers, it is noteworthy that only 11% of problem gamblers had a mean bet size of \$1 or higher and 24% had a bet size of 80 cents or higher. Accordingly, this is considerably lower than \$1 which has been suggested a useful 'maximum bet size' to prevent high EGM expenditure (e.g., Productivity Commission's 2010).

Indirectly, this may highlight that lower bet sizes may be associated with lower levels of expenditure by problem gamblers. Given that mean bet size also increased for higher denomination EGMs (generally) (e.g., mean bet size for 5 cent EGMs was \$1.20 per spin versus 42 cents for 1 cent EGMs), the total bet size for different EGM denominations also needs further research from a harm minimisation perspective.

One new piece of evidence from the current study is the potential for 'max bet buttons' to be harmful to EGM players. Problem gamblers rated such buttons as significantly more exciting than non-problem gamblers and reported using these buttons significantly more frequently. This research finding may itself suggest that such buttons could be associated with an increased level of harm to problem gamblers particularly (given that they use buttons more frequently). In addition, max bet buttons were also seen as harmful for players when intoxicated, as they did not encourage a high level of informed decision-making about expenditure (as players could not readily calculate in their mind how much it was costing every time they used such buttons).

The potential harm of max bet buttons is also further supported by the finding that problem gamblers were more likely to believe that they must bet high during play to maximise the size of their wins (compared to non-problem gamblers). In addition, 'extra credit buttons' (which effectively allow players to also increase bets – e.g., 25 credits + 5 extra credits) were also viewed as harmful by EGM players and particularly harmful when buttons were required to qualify for certain free spin/feature events (bearing in mind the evidence that suggests that free spins/features spins are highly coveted by all EGM players).

Impact of multiple line selections and the relationship between machine value and lines played – some discussion points

While the current study presents some limitations in that line data used in analysis was only self-reported by EGM players (given the cognitive load associated with observation of lines bet on during play), findings of the current study *do* suggest that EGM players are still highly driven to play most or all available EGM lines. In addition, the study provides evidence that problem gamblers are more likely to think that they have to play all lines to avoid 'missing wins' than non-problem gamblers. This itself suggests that problem gamblers are highly likely to choose the highest number of lines, no matter how many are available on an EGM.

Accordingly, such findings may imply that machines with extraordinarily high numbers of lines may be associated with potentially higher levels of harm for problem gamblers and potentially, for all players (as all lines will mostly be used by players). Current study findings also suggest that EGM harm may be directly associated with the total cost per spin, given that most players will play all lines.

In this respect, an EGM with a high number of lines may not be associated with high expenditure if use of all lines is only associated with a modest cost per spin (total bet). A review of the 15 top range EGMs in NSW also revealed fairly limited differences between the actual lines available on popular EGMs (i.e., most 'regular' line based machines had 20-25 lines with fairly limited variation overall). As such, the study confirms the original proposition of Walker (2003), that players mostly do prefer playing maximum lines and that this is primarily to avoid missing out on wins.

It was observed during the study that availability of scatter symbols frequently reinforced player behaviour to bet on all lines (as symbols could fall anywhere to produce a win without having to be left to right, for example). This in turn may emphasise that it is also important to research how other 'combination' characteristics - such as the presence of high bonus point scatter symbols with large numbers of available lines - may impact players.

A limitation of the current study is that it has been quite difficult to thoroughly explore the relationship between machine denominations and the number of lines played. This was in part due to the use of self-report data on lines played, the small available study sample and also due to the limited range of denomination machines played in the study (Only 1 cent, 2 cent and 5 cent machines were played). It was also not possible to gain access to line based data, as it was not held by OLGR NSW.

Study results suggested, however, that roughly 22-23 lines were played on average for 1 and 2 cent EGMs and that this would probably be around ~80% of total available lines on a machine. Generally speaking, it seems fairly likely that 1-cent and 2-cent EGMs would not vary significantly in terms of the average numbers of lines played. This is likely to be because most players will play virtually all or most lines on such EGMs and most machines frequently have around 20-25 lines (i.e., While some machines do have large numbers of lines, the bulk of machines available on the market tend to have a relatively restricted range of total lines).

In the case of 5 cent machines, however, it is far more likely that lines played will be fewer simply because five-cent EGMs on the market have fewer available lines. Nevertheless, it was interesting to observe in the study that still roughly 80% of available lines on such machines were played (bearing in mind the limitations of self-report line data).

Accordingly, in considering the potential harm associated with lines for different EGM denominations, it seems plausible to conclude that possibly 80% of any machine's lines may be played on average, regardless of the denomination. It also needs to be considered that problem gamblers are much more likely to use higher denomination EGMs (e.g., 5 cent EGMs), so would invariably always be spending a higher amount per spin than non-problem gamblers.

Impact of gamble feature on EGMs – some discussion points

The impact of double up or the 'gamble feature' commonly available on EGMs was also examined in the study. A review of top and mid range EGMs showed that most machines have either 1 in 2 or 1 in 4 gamble features that allow players to risk winnings. Based on study results, findings showed that gamble is only very infrequently utilised by EGM players and 1 in 2 is generally more popular than 1 in 4.

For this reason, as a structural characteristic, 'gamble' buttons could be argued to be of limited potential harm and can only pose harm to the limited extent they are used. Reflecting this, double up was used at least once in only 8.7% of all EGM sessions and the one-in-four gamble feature was only used in 1.8% of all EGM sessions (for a mean total use of only 0.8 times on average for each EGM play session). The limited use of gamble has also been identified by Walker (2003), who found that under 6% of player wins were doubled-up and that 71% of players never doubled-up.

While gamble buttons are used infrequently, some evidence from the study highlighted the possibility that problem gamblers *may* use such buttons somewhat more frequently than non-problem gamblers (14.5% of problem gamblers used gamble versus only 5.6% of non-problem gamblers). Though this difference was not statistically significant, so should be interpreted with due caution. However, this may be in part due to the low base rate of use of gamble and the study sample size. In this context, it is noteworthy that the previous Schottler Consulting Pty Ltd (2010) observational study did find that problem gamblers used double up more often than non-problem gamblers.

In spite of limited use, from a research perspective, there is still potential to consider the circumstances around when 'gamble' may be harmful to players or how it could contribute to harm. One of the reasons why players did not use gamble was often reported to be because it had potential to shorten their time at a machine. This itself may imply that players who lose from gamble have potential to spend more than they had planned simply because their time at an EGM would be shortened. This could also be argued to be more pertinent to problem gamblers, who require more time at an EGM to feel satisfied with play.

It should also be noted that the study did not examine these types of 'downstream' effects of gamble (e.g., if losing from gamble frustrated players to play longer) simply because of the very low base rate use of gamble. Accordingly, this could be a possible avenue for further research. If downstream effects were identified, it may also be worthwhile researching how changes to maximum win size (that can be applied to gamble) influence player control over gambling.

The accidental pressing of gamble was reported by some players and particularly in the case of EGMs with 'dual functionality' buttons. This may highlight that the availability of dual functionality buttons may be associated with some level of unintended use. Research could thus be undertaken to ascertain whether new structural characteristics – such as 'confirmation screens' (do you want to gamble this amount? Hit Yes or No)– could be associated with higher levels of informed consent about button functionality. In addition, as presenting gamble outcomes on EGM screens was reported to influence player feelings that gamble outcomes can be predicted, this characteristic could be inferred to be associated with some level of gambling harm.

Impact of near misses – some discussion points

Findings of the current study illustrate that EGM player cognitive processes are highly geared towards seeing near miss events during EGM play. While the study cannot yet quantify these effects, preliminary insights highlight that problem gamblers are more pre-disposed to seeing 'near miss' events than non-problem gamblers. In addition, problem gamblers were *also* more likely to report play persistence from these events. Interestingly, this converges with findings of a study by Chase and Clark (2010), who asserted that responses to near misses in disordered gambling are far greater than for non-problem gambling.

The current study has identified a range of categories of machine events that could be seen by EGM players as 'near misses'. As EGM reels can be theoretically designed to limit or maximise near misses (e.g., Harrigan, 2008), it would be useful if this topic was the subject of further more systematic research and investigation. In particular, it would be important to first further define near miss events on EGMs (as perceived by players) and then record the frequency of near miss events during gaming machine play. Such research may then help establish a link between the occurrence of near misses and EGM play persistence. It would also be hypothesised from the results of the current study that near misses could have a much larger impact on problem gamblers, given that their cognitive processes are oriented towards seeing near miss events.

In turn, this also point to the potential to research and define the characteristics of gaming machine reel designs that minimise near misses. Findings similarly raise the possibility to conduct research to identify a method of providing near misses that may help prevent any negative effects associated with near misses (e.g., perhaps by providing warnings, messages, player information and so forth). This could potentially be the subject of experimental studies.

It is noteworthy in this context that near miss effects have been prevented in the Ontario Minimum Technical Standards for EGM Equipment (2007) (although it is uncertain how effective this is, given that near misses are quite variable and as shown in this study, difficult to define). Falker and Horbay (2006) also assert in this context that there is currently no standard requirement for symmetrical or balanced reels in the Australian EGM standard (that is, a requirement for each symbol to appear at the same frequency on each reel).

Livingstone and Woolley (2008) assert that elimination and reduction of near miss effects has potential to reduce excessive gambling. Accordingly, while the issue requires much further research, this study would concur that near misses could have some potential to exacerbate problem gambling (although it is unclear to what extent).

Methods of winning across EGMs – some discussion points

A further finding of the current research related to reported player confusion about the considerably variable credit values offered for common cards symbols in EGMs. This was reported to 'confuse' players and it was also seen as confusing when different credits were awarded for the same number of common symbols (e.g., one machine offers 200 credits for four Kings, while another offered 50 credits for four Kings). Most relevant to current study objectives, problem gamblers reported a greater frequency of being 'confused' after seeing winning symbols on one EGM that were not winning symbols on another and problem gamblers were also more likely to report 'playing on' as a result of this 'symbol confusion' (compared to non-problem gamblers).

It is unclear why problem gamblers reported this effect more often than non-problem gamblers. This may be due to the greater EGM play experience of problem gamblers or possibly because symbol confusion across different EGM brands is somehow perceived as 'near misses'. Accordingly, this could also be the subject of further research. In addition, given that players generally report confusion over changing credit values for common card symbols, it would be interesting to research the effects of EGMs with common versus different card symbol values to see how they are perceived from a player perspective.

The potential for different symbols to impact players could also be investigated – especially in terms of the effects on play persistence. It could be hypothesised that a machine offering 200 credits for a certain symbol is more attractive than a machine offering 100 credits (even though the machine with 100 credits may pay out just as much as the machine with 200 credits). The review of top and mid range EGMs also further highlights the value of such a study, as considerable credit value differences exist across many Australian EGMs.

Game information menus on EGMs – some discussion points

Game information menus were generally found to be of limited utility to most EGM players interviewed in the study. It was reported that much information presented on these screens was confusing and in many cases, unclear. There was seen to be a particular need for improved presentation of information on jackpots, features and free spins on game information screens.

A review of some content of screens also showed that certain information could be interpreted as misleading or encouraging higher betting. This included suggestions that players must bet on lines or use extra credit buttons to qualify for features (which was a legitimate requirement of some EGMs) and general statements such as 'increasing your bet increases your chance of winning'. Given the difficulty experienced by players in navigating this information, there would be great benefit in conducting research to identify ways to present game information screens to make information easy to understand. If information is clear, this will help ensure higher levels of informed decision making about play including a clear understanding of the odds of winning during EGM play. In the study, many players remained confused about the probability of winning different features, free spins or jackpots on individual machines.

Other important findings – some discussion points

A number of other miscellaneous findings worthy of mention have also emerged from the study. Most notably, a number of human factor style issues were identified with some gaming machine button designs and button layouts. For instance, players reported accidentally using \$1 EGMs thinking they were 1 cent EGMs, reported some confusion over certain button layouts (particularly screen layouts on multi-game EGMs) and some difficulty was reported finding 'Collect buttons' on certain EGMs (for cashing out).

Given these findings, further research may help to examine the size of fonts that players could best see on EGMs, the best ways to present 'Collect' or dual functionality buttons on EGMs and how visual or audio effects on EGMs could be presented to players in a way which minimises gambling harm (e.g., visual or audio effects for different win or spin outcomes, LDWs etc.). These may also be useful topics for experimental research though perhaps in real-life venue settings. Accordingly, a range of human factor issues could be researched to understand how EGM players interact with and make decisions when playing EGMs.

Study conclusions

Key findings of the current study have identified the possible effects of a wide range of EGM structural characteristics on EGM player cognitions and behaviours. While the study has been able to include behavioural evidence through use of an observational methodology - like *all* research studies - findings of the current study need to be evaluated in the context of the study methods, the source of the study sample and sample recruitment approaches, the potential for observational influence (which will clearly occur, although it is difficult to measure the extent) and the limitations of the sample size. It should also be considered that a larger proportion of the players recruited for the observational study were female and that gender differences may in part explain some of the observed results.

Possibly both a strength and limitation of the research, however, is that findings have been based on a real life setting in real venues. This provides some increased ecological validity of study findings in spite of the obvious limitation that players were undoubtedly influenced to some degree through the observational process (as has been documented to occur in virtually all observational research studies). Whilst a challenging methodology to design and implement, this study has also illustrated that it is feasible to examine the link between EGM machine events and player cognitions during play in a real gaming setting.

Such a method may also potentially provide a future research framework for studying the effects of EGMs and the linkage between EGM structural characteristics and gambling harm. If EGM effects can be researched from a cognitive and behavioural perspective (especially with real players – including non-problem and problem gamblers), this may contribute to a greater understanding of how EGM design may affect gambling behaviour and how certain EGM characteristics may be associated with increased gambling harm.

While the results of the study have produced useful insights into the possible effects of structural characteristics, readers should also consider that other processes may also account for observed results. In particular, it is plausible that many of the differences between non-problem and problem gamblers may be attributable to problem gamblers being relatively more interested in such characteristics or alternatively had more experience with such characteristics. From this perspective, much further research will be needed to fully understand the effects of all structural characteristics and to understand the more complex relationships between individual structural characteristics of EGMs and gambling behaviour.

Introduction

Background to current study

The purpose of the current study was to identify structural characteristics of Electronic Gaming Machines (EGMs) within Australia and to examine how different structural characteristics affect gambling behaviour (including particularly how EGM structural characteristics affect problem gamblers). The current study was commissioned and funded by Gambling Research Australia (GRA) to meet an agreed research priority of GRA members: *To conduct research to inform the development of gaming machine standards for improved consumer protection.*

While the scope of study permitted analysis of the effects of many EGM structural characteristics, the impacts of the following types of EGM structural characteristics formed the core focus of the current study:

- Free spin features and the effect of free spin near wins
- Multiple line selections
- Relationship between machine value and number of lines played
- Double-up gambling feature
- The impact of ReelPower™ and multiway games on gambling expenditure and behaviour
- Bet size
- Features within a game
- Losses camouflaged as wins and frequency of wins – the payback schedule

There was additionally the objective to examine whether such characteristics differentially impacted problem gamblers and to identify whether any one particular characteristic (or combination of characteristics) occupies a gambler's thought processes or emotional state that extends expenditure or time at an EGM.

Methodology

Four modules were designed using different approaches – qualitative and quantitative – to examine key research questions. Methods are described as follows.

Module 1. Literature review

A comprehensive overview of EGM structural characteristics and their effects was identified as the first important step in advancing knowledge about the impact of EGM characteristics on player behaviour. The purpose of the literature review was to identify the most common EGM structural characteristics and understand their relationship, if known, with problem gambling and gambling persistence.

While the literature reviewed focused on more recent Australian studies, it also considered relevant research from other international jurisdictions including Canada, the US and New Zealand. A range of evidence was evaluated in the review including work sourced from peer-reviewed journals, regulatory reviews, government documents and industry publications. The review also yielded a range of possible areas worthy of further exploration in the project.

Module 2. Interviews and focus groups

Following identification of major Australian EGM structural characteristics, the project used qualitative research techniques to explore their relevance to gamblers from various risk categories particularly including low risk, moderate risk and problem gamblers. Given the detail discussed in this stage, all participants were regular – at least weekly - EGM players. This ensured that respondents clearly understood the characteristics being explored and could reflect on their own behaviour and experiences in relation to different characteristics.

A range of stimulus materials including screen shots and YouTube clips showing the major features of gaming machines was compiled for this stage of the study. This permitted discussion of how such characteristics influenced player cognitions, emotions and behaviours during play.

Interviews

During the early qualitative stage of the project, semi-structured, exploratory interviews were held with weekly EGM players in NSW (N=7) and QLD (N=13). Players were recruited in several ways. In NSW, a Facebook advertisement was, with the permission of the page administrator, placed on a local buy-sell-swap closed group. Regular EGM players interested in discussing the topic of EGM characteristics were sought.

Five of the NSW participants were recruited in this way and a further two were referred from this initial group. The 13 Queensland based players were recruited from venues and associated snowballing. Interviews typically lasted between 1 and 1 ½ hours. At the conclusion of interviews, players were given a \$70 shopping voucher as compensation for their time.

The protocol used to explore the qualitative effects of EGM characteristics is in Appendix A. Key themes were identified during a literature review and included topics such as:

- Player preferences and effects of EGM cabinet/screen design, lighting/colours, branding and music
- EGM button layout and bet/line use (i.e. lines and credits, game information and other related buttons)
- Player knowledge and use of Reel based EGMs (particularly Reel Power and Multiway EGMs)
- Free spins and features and the effect of free spins near wins
- Motivational words appearing on EGMs during a win
- Player understanding of EGM symbols and symbol preferences
- Near miss events during EGM play
- Player use of double-up
- Losses Disguised as Wins (LDWs) (defined as where a win is lower than the bet made)
- The frequency of wins during EGM play and associated player payback schedule preferences

Focus groups

To further inform the study's research objectives, four focus groups were held each comprising eight to nine players to explore issues raised during interviews in a broader group setting. All players were at-risk regular (at least weekly) EGM players. Groups were held at gaming venues in Northern NSW and in Brisbane. One of the venues also assisted in recruiting two of the four focus groups. Each session lasted for 1 ½ hours and participants were compensated for their time with a \$70 shopping voucher. Issues explored in groups were the same issues as explored during interviews (Refer Appendix A). Two focus groups were also recruited through player snowballing, venue referrals and recruitment using a market research panel. All focus group participants were aged between 25-70 years and included an even mix of males and females.

Module 3. Structural characteristics of top versus mid-range EGMs

This involved an analysis of the key characteristics of top versus mid range EGMs based on data supplied by the NSW Office of Liquor, Gaming and Racing. Based on GRA advice about similarities between jurisdictions in EGMs and the extensive work required in each jurisdiction to compile data, NSW was used as the jurisdiction for analysis.

To support this analysis, OLGR NSW liaised with the NSW Licensed Monitoring Operator (LMO) to obtain mean expenditure data (per EGM) for EGMs in NSW. This was also necessary given that information was not in the public domain. Based on this analysis, the 15 top performing EGMs were identified, along with the mid range 15 (less popular) EGMs. The term 'mid range' was used to define less popular EGMs, rather than 'unpopular', given that all EGMs must have some popularity to remain in the market. EGM performance was assessed by the LMO based on a combination of expenditure per unit and number of units in the market.

After the top and mid range EGMs were identified, the next stage involved analysis of the structural characteristics of the top and mid range EGMs. As obtaining information was very involved (and took many months for the OLGR NSW to source the information), for practical reasons, OLGR NSW limited the analysis to the top 15 and mid range 15 EGMs.

Key characteristics of the top and mid range EGMs were then coded as far as available data permitted. While the intention was to systematically code all information, this occasionally proved difficult, given the wide variation in the data formats presented. Chapter 2 presents key findings of this analysis.

Module 4. Live EGM Play Observations

The key objective of the next stage of the research was to explore findings of the qualitative stage by observing EGM play live in a real venue setting. This involved asking regular EGM players to give informed consent to having an interviewer observe how they play EGMs (e.g., lines, bets made) and then having survey style questions asked following EGM play (to study how different EGM characteristics affected the player experience).

Live EGM data collection

The live observational methodology developed for the current study was based on a method utilised in an earlier GRA pre-commitment study (Schottler Consulting Pty Ltd, 2010) and the more recent GRA jackpots study (Central Queensland University, 2014). However, the methodology was further enhanced in the current study to meet GRA research objectives.

Live observation of EGM play was necessary to break new ground in understanding how EGM characteristics and play dynamics may affect gambling behaviour. Part B of the survey form (Refer Appendix B - Quantitative Survey Instrument) was also used to record the key characteristics of each EGM played during player observations.

Recruitment of participants

A total of 222 regular EGM players took part in the study. Four main participant recruitment streams were used for this stage of the study – venue recruitment, snowballing and Facebook and community advertising. In the first instance, a range of venues in New South Wales, Queensland and Victoria were approached and asked to consider contributing to the study by permitting the observational component to be conducted on site. Venue support in the recruitment of regular EGM players to the project was also requested.

In total, 24 venues supported the study after contact was made with an estimated minimum of 120 venues (though given the high number of refusals, total refusals can only be estimated). All venues were given a Player Information Sheet to distribute to possible participating players that clearly explained the aim of the study and the observational method that would be used. It also advised that players would be thanked for their time with a \$70 shopping voucher.

Each venue-recruited player was asked, at the conclusion of their session, if they could recommend other regular players for the study. This allowed some snowballing to recruit additional players.

Several other players were also recruited via Facebook advertisements and other community advertisements and networks. In each case, after informed consent to contact the player to discuss the study was sought, each player was called by the field manager to explain the project in detail including the observational method and the types of questions that would be asked in the study. Players were also informed that they were under no obligation to play and could play for as long or as short as they preferred. Similarly, players were also encouraged to do what they normally do during play as the intent was to make the observation as true to real life as possible. This also meant that the interviewer would meet the player at a time when the player reported they would regularly play EGMs.

A profile of the gender and age of study participants is in Table 1. Participant reported past gambling behaviour is in Table 2. As EGMs were largely similar across jurisdictions, sampling across different venues and locations was primarily to cover a wide range of EGMs and players. For this reason, there was also no need to balance samples evenly across jurisdictions. In total, 222 observations were conducted in the three major Australian states with the largest populations and highest numbers of EGMs - New South Wales (N=115), Queensland (N=85) and Victoria (N=22).

The nine-item Problem Gambling Severity Index (based on an updated January 2003 version prepared by Wynne) was used to measure risk for problem gambling, with the five-point adapted scale anchors used in several Australian jurisdictions (e.g., In Victoria and Queensland for instance, anchors are Never, Rarely, Sometimes, Often and Always). This was to permit consistency with measurement approaches used in other Australian jurisdictions.

When reviewing key findings of the study, it should also be noted that some analyses are based on respondents (EGM players) and some analyses are based on total EGMs played. The latter was also possible as individual ratings were made for each EGM played and many players opted to play more than a single EGM.

Table 1. Demographic profile of study participants (N=222, October 2013 - April 2014)

Age and gender of participants	% EGM play observations			
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers
18-24yrs	9.5	7.8	20.8	14.0
25-34yrs	16.7	7.8	11.1	23.3
35-49yrs	9.5	7.8	23.6	18.6
50-64yrs	16.7	28.1	20.8	34.9
65yrs+	47.6	48.4	23.6	9.3
Male	40.5	34.4	39.7	41.9
Female	59.5	65.6	60.3	58.1

Table 2. Reported gambling history of study participants (N=222, October 2013 - April 2014)

Study subjects	Mean or %							
	Non-problem gamblers		Low risk gamblers		Moderate risk gamblers		Problem gamblers	
	Mean	N	Mean	N	Mean	N	Mean	N
Times pokies play per month (times)	6.8	40	8.7	64	9.0	73	9.9	42
Reported length of typical pokies session (minutes)	58.8	39	65.8	63	73.3	70	102.7	42
Money spent in an average play session (\$)	32.6	40	39.7	63	64.1	72	77.1	43

Within-venue live EGM play observational methodology

Upon meeting the player within the venue at the agreed time, the Research Assistant (RA) would spend some time confirming that the player clearly understood the project and methodology and would ask the player to read and sign an informed consent statement. This was a further check measure to ensure that the player understood that there was no obligation to play for any particular length of time and had made other considerations prior to participating in the study.

A short series of pre-play questions was also asked to explore the average expenditure and length of time that they player would normally play. The player was then asked to play as they normally preferred to play, while the researcher observed the player for the duration of their play session.

During the observation of EGM play, the RA recorded the credit meter and bet changes selected by players during play along with the key characteristics of the EGM selected by the player. This included information such as the:

- EGM name and number
- Information on the major jackpots
- Whether the machine was reel-based (or otherwise – to allow coding of Reel Power, Multiway and regular line based EGMs)
- The number of available lines or reels on the EGM
- The numbers on each EGM credit button
- The EGM denomination (e.g. 1c, 2c, \$1 etc.)

Once this data had been captured, the participant would commence play. The RA would stand to the side and slightly behind the player and record several events including the money in/out of the EGM, each change in the credit meter and the size of each bet. Each bet/credit meter change was recorded on a new line in the data sheet. Wins were then able to be calculated post-observation.

Other play events recorded by the RA as they occurred included free spins, features, use of the gamble or double-up, breaks in play and any other money in or money out events. Given the complexity of data recording on live EGMs, all interviewers for the study were recruited based on their prior familiarity with EGM play dynamics. Key codes used during the observational phase are in Table 3.

Table 3. Codes used to record live EGM play dynamics

Codes used in observational study		Description
\$ In	e.g., In \$50	Loaded \$50 onto credit meter
S	Free spin e.g., Sx5	5 Free spins. S was also used to designate single free spins.
D	Double-up e.g. D2 (2 cards) D4 (4 cards) D1/2 (half gamble)	Player use of double up or gamble functions. These permit players to potentially double or quadruple their money on a win.
F	Feature	An abnormal or atypical machine event that occurs infrequently and may go for longer period and is typically more visually stimulating. Features are typically associated with winning bonus points or free spins.
M	Multiplied win – whether in a free spin or feature, a win was multiplied (e.g., Mx2).	This was recorded when wins were multiplied during play or during a free spin or feature.
R	Pressed reserve button	This was recorded when players pressed the reserve button.
B	Break	As true to life play was encouraged, players taking breaks during play were recorded.
I	Player pressed game information button	This was coded when player pressed game menu buttons.
TW	Take win	This was when the player pressed a button to transfer the amount from the win meter to the credit meter, enabling the money won to be used for play.
\$ Out	\$5	This was recorded when money was cashed out.

Figure 2 shows an extract from one player's session on a 1c EGM. Using this example, it can be seen that:

- The player inserted \$20 into the machine, as shown in the \$ column
- The credit meter on this 1c EGM thus displayed 2000 credits (C1)
- The first bet placed was 50 credits (which in this case equals 50c) and the credit meter changed to 1950 implying the first game resulted in a loss equal to the bet size
- The player won a set of 10 free spins after the second spin (Sx10 was recorded)
- A 3x win multiplier was won on one of these 10 spins
- At the end of play, the player had zero credits left implying all money put in (\$20) was spent

Figure 2. Example observational data recording sheet for live EGM play observations

\$	C1	B1	W1	C2	B2	W2	C3	B3	W3	C4	B4	W4	C5	B5	W5
Does this EGM increment wins in (A) credit meter change or (B) win meter change (CIRCLE)															
1450	2000	50		2660	50		1480	50		1130	50		40	40	
	1950	50		2610			1430			1080			0	—	
	S x 10			2570			1380			1030					
	M x 3			2940			1370			980					
	2930	50		2500			1310			930					
	2890			2450			1260			880					
	2840			2400			1210			830					
	2790			2380			1160			780					
	2740			2350			1310			730					
	2690			2300			1260			720					
	2640			2260			1230			670					
	2590			2220			1230			620					
	2550			2170			1170			770					
	2500			2160			1150			720					
	2450			2110			1130			670					
	2400			2070			1090			620					
	2350			2020			1030			570					
	2300			1980			980			520					
	2250	∇		1930			930			470					
	2210	50		1880			880			430					
	S x 10			1830			820			380					
	M x 2			1810			790			330					
	2730	50		1870			740			280					
	2740			1720			700			260					
	2690			1670			1250			210					
	2640			1620			1220			160					
	2790			1570			1210			110					
	2760	∇		1530	∇		1180	∇		80	∇				

Post observation questions

At the conclusion of play on each EGM, a short series of post-observation questions were asked of the player. They were asked to rate, on a scale of 1-5 (1=not at all, 5=very):

- How exciting the session, free spins and features were and
- How strong the 'urge to continue' play was for the EGM player

Excitement and urge to continue were used as key outcome measures based on previous evidence from a 2010 GRA study examining factors influencing adherence to pre-commitments. This study found that a player's urge to continue and play excitement (especially due to features) were both positively associated with a player's tendency to exceed EGM pre-commitments (p77-82, Schottler Consulting Pty Ltd, 2010). Several measures of play excitement were also found to be directly related to the urge to continue play. This included both overall play excitement and excitement associated with features. For this reason, both excitement and urge to continue play were used as major measures when studying the effects of EGM structural characteristics. Further background on the rationale for these measures is also presented in the literature review.

Single-item measures had to be used during data collection to ensure that time spent collecting data did not interrupt the process of play any more than what was required (administering long instruments with multiple scale items would have interrupted play significantly and distracted players from enjoyment of EGM play).

Post-observation each player was also asked if they knew the winning combination of symbols for the top three prizes and to rate how often they were thinking the following:

- I will bet high to ensure that when I do win I win lots of money
- I've got a better overall chance of winning on this machine
- I must buy all the pay lines on this machine to avoid missing a win

Finally, each player was asked to recall how many credits and lines, on average, they bet during that session. This entire process was repeated for any and each subsequent EGM played.

Once the player indicated that they had finished play, the RA then administered 'Part C' of the survey. One of the EGM's played (generally the last one) was selected and the player was asked to read and rate the clarity of on-screen play information/game rules and highlight anything that they thought was unclear or misleading. Players were also asked if they had ever read the information in the past.

Later, once the attitudinal questions were administered to the player, the RA returned to this EGM and recorded or drew the button panel layout. In a limited number of instances (approximately 5%) photographs were taken, with the permission of the venues, of the top and belly cabinet panels of machines.

Attitudinal survey questions

The final part of the survey was administered by the RA at a location within the venue, but away from the gaming floor. This involved quite a number of questions and often took at least 30 minutes. Players were asked to rate a range of machine events using a scale where 1=not at all and 5=very exciting. These were consistent with the research questions described earlier. Finally, the nine-item Problem Gambling Severity Index (Ferris & Wynne, 2001) was administered. A \$70 shopping voucher was then mailed to participants (centrally coordinated by the project manager) with a letter thanking each for their participation in the study.

Informed consent

In recognition that this is a very complex project, strict methodological and ethical procedures that accord with those detailed in the Australian Code for the Responsible Conduct of Research were followed in the study.

The researchers provided each player with the opportunity to not participate after hearing information about the study and the methodology and only proceeded to schedule an interview if players were happy to take part as per the informed consent protocols. Some potential participants opted-out at this stage.

Before each interview, all players also read and signed an informed consent acknowledgement form as supplied by the RA to the player. This further emphasised information already verbally discussed with players on the phone prior to the interview (e.g., if players were pre-recruited as being interested in the study by the venue) and before the commencement of the observation session including:

- The purpose of the study and that the research was being undertaken for Gambling Research Australia
- That participation was completely voluntary
- That players would be observed during play and that players were already regular EGM players
- Results were strictly confidential and would not identify individuals
- Further details could be supplied for finding out more about study if players desired
- That the player had considered possible impacts of playing pokies as part of the study and that no potential or actual harms to themselves or their families would occur as a result of study participation
- Provision of the Gambling Help Line number (1800 858 858) and online counselling forum (gamblinghelponline.org.au)

Report structure

Key findings of the current report are presented in Chapters as outlined below. Following each section of the report, a number of summary insights are also captured. To permit a holistic understanding of study results, key findings of qualitative and quantitative research are also integrated within a single report Chapter.

Major sections of the report are as follows:

- > **Chapter 1:** The impact of EGM structural characteristics on gambling behaviour - A literature review
- > **Chapter 2:** Key structural characteristics of top versus mid range Australian EGMs
- > **Chapter 3:** Influence of EGM structural characteristics from an attitudinal and behavioural perspective

Caveats relating to findings and interpretation of trends

As in all exploratory research, key findings of the study should be considered indicative, rather than definitive. Limitations of the study should be considered in terms of the types of samples recruited, the generalisability of findings to all gamblers, sample sizes and research methodologies (including the use of observational research through a shadowing technique). In particular, an observational methodology will always influence respondents to some degree, so this should be considered when interpreting key findings.

As many analyses have been undertaken and the study is exploratory in nature, the potential for Type I errors should similarly be considered (where statistical significance is identified, in spite of there being no actual difference in results). In addition, readers may wish to refer to the size of t- and z-test values when interpreting the likely size of observed statistical differences (This will provide some indication of the size of any statistical differences observed).

It should similarly be considered that some feedback provided by respondents may represent personal opinions and thus, may not always be of a factual nature (i.e., perceptions only are measured in some parts of the study).

Chapter 1:
The impact of EGM
structural characteristics
on gambling behaviour -
A literature review

Introduction to the literature review

While it is clear from much gambling research that there is a link between EGMs and problem gambling, still very little is understood about exactly *how* the structural characteristics of EGMs affect gambling behaviour. There is also a particular interest in how different characteristics may influence problem gambling. By reviewing literature on the effects of EGM structural characteristics, the current review attempts to both identify and summarise the key findings of relevant scholarly research. As EGM structural characteristics are wide and varied, this review has by necessity been comprehensive. However, some areas were considered outside the scope of the current review and study and have not been reviewed in-depth for this reason (e.g., jackpots and pre-commitment). However, some general research findings are presented. This is also because Gambling Research Australia has previously commissioned separate studies about these topics specifically.

Within this context, key findings from recent literature are structured as follows:

- Bet size and lines used during betting
- Relationship between machine denominations and lines/bets
- Free spins, features and the effect of free spins near wins
- Frequency and nature of wins – the payback schedule
- Machine branding, sounds, lighting and advertising
- Near misses during EGM play
- Losses Disguised as Wins (LDW)
- EGM spin rate
- Double-up or gamble buttons
- EGM note acceptors and credit display
- Multiway EGMs (including Reel Power EGMs)
- EGM payment methods
- EGM jackpots
- How EGMs influence gamblers and problem gamblers

While past research has provided many useful insights into how gamblers interact with EGMs, there is still much to be learned and understood about the precise effects of EGM structural characteristics on gambling behaviour. As noted by Parke and Griffiths (2006), it is likely that the characteristics of gaming machines play some role in the development and maintenance of patterns of gambling and possibly in the development of problem gambling (e.g., Livingstone and Woolley, 2008; AIPC 2006; Dickerson & Baron 2000; Griffiths 1993). Griffiths (1993) also argued that structural characteristics may be responsible for reinforcement of gambling activity and may facilitate excessive gambling behaviour. Similarly, Cornish (1978) asserted that by identifying how structural characteristics influence gambling, this could provide insight into how cognitions are influenced and distorted during gambling.

Prior to identifying the effects of structural characteristics, however, it is important to identify the specific types of characteristics that have potential to affect gamblers when playing gaming machines. Livingstone and Woolley (2008) categorised structural characteristics into two key groups - Primary structural characteristics and secondary structural characteristics. Primary characteristics were described to include the core technology of the EGM, the reinforcement schedule, reel spin speed and the configuration of line betting, credits, reel symbol ratios and note acceptors. Secondary characteristics, in contrast, were said to include the more superficial aspects of machines such as artwork, lighting and sound effects.

While there is no agreed approach to categorising EGM structural characteristics, the current review has attempted to summarise literature on the major characteristics of gaming machines. Within this context, the aim of the current literature review is to comprehensively examine scholarly research to identify the effects of poker machines and in turn, identify the types of characteristics that may contribute to the development and maintenance of problem gambling. As in all areas of research, it is also acknowledged that available literature has many gaps and there is still much to be learned about the effects of structural characteristics overall.

It should also be considered that some overseas research literature (e.g., literature researching the characteristics of UK fruit machines) may not be directly relevant to Australia, given that different jurisdictions have EGMs with different structural characteristics. Accordingly, while useful and relevant to the review, all findings in such literature may not always be directly relevant to Australian EGMs.

Bet size and lines used during betting

The way gamblers bet when playing gaming machines is arguably one of the most well-researched of all EGM structural characteristics. This is also because the choice about bets and lines is fundamental to gaming machine play. A common finding in gambling research relates to the tendency of problem gamblers to bet higher amounts than non-problem gamblers. McMillen et al. (2003), for instance, identified in a Victorian study that 86% of EGM players gambled on more than a single line and nearly 50% gambled with multiple credits (per line).

In an observational study of EGM players (to observe how gamblers made bets during play), Schottler Consulting Pty Ltd (2010) also found that moderate risk and problem gamblers used a higher number of multi-credit bets during gambling (compared to lower risk gamblers). It was similarly found that use of multi-credit bets added the prediction of play excitement, over and above play involvement, venue promotions/prizes, loyalty points and incentives, dreaming about winning, venue staff friendliness and the total free spins received during play. These results held, even after controlling for risk for problem gambling. Reasons for players using multi-credit bets were also reported to include the perception that one could 'win more money' (45%) and to 'increase the chance of winning' (17%).

Other studies have identified a link between multiple credit bets and problem gambling at a population level. The Australian Productivity Commission (1999) found that 70% of problem gamblers reported betting multiple credits (compared to only 36% of non-problem gamblers) and 27% of problem gamblers reported betting 'often or always' on more than a single line per spin (compared to only 16% of non-problem gamblers). Reducing bet size was also described as a useful strategy for addressing problem gambling.

Livingstone and Woolley (2008) found in a telephone survey that most gamblers preferred to make minimum bets on multiple or maximum lines. Compared to non-problem gamblers, problem gamblers were less likely to make minimum bets on multiple lines and were disproportionately over-represented in the group making medium bets on multiple or maximum lines. In further qualitative study, the same authors identified that problem gamblers reported scaling up and down their bets in response to different machine events (e.g., wins). Blaszczynski, Sharpe and Walker (2001) examined the impact of various EGM modifications in NSW and found that, after reducing the maximum from \$10 to \$1, EGM players gambled for shorter periods, made fewer bets, lost less money and smoked and drank less on the modified machines, in comparison to control machines. It was also proposed to affect problem gamblers much more than non-problem gamblers, as they were three times more likely to bet greater than \$1 on EGMs.

Millhouse and Delfabbro (2008) found that problem gamblers showed a slightly stronger preference for EGMs with a greater number of lines than non-problem gamblers. This was also one of the very few observable differences in preferences between risk segments.

Williamson and Walker (2001) observed 220 players in the NSW Casino to monitor and record their betting patterns. Players betting using the same number of lines and bets for at least five spins were said to have a betting 'strategy'. Based on the study, the authors coined the term 'maximin' to describe the common strategy (in 45% of players) to bet maximum lines with the minimum bet (i.e., 1 credit for 20 lines). Furthermore, 10% of players bet using the maximum bet with maximum lines and 1-2% used the minimum bet with minimum lines. Results of the study were also confirmed in a laboratory study by Delfabbro, Falzon, and Ingram (2005).

Walker (2003) explored the reasons for use of the maximin strategy. Three reasons for use of the strategy were noted. These included to avoid missing out on wins associated with lines not being selected, to ensure that players could capitalise on scatter symbols (which often trigger free spins/features and can be anywhere to produce a win) and to increase their chance of getting bonus features. Such results suggest that there is something quite 'exciting' about the use of high credit bets during poker machine play.

Key points in summary - Bet size and lines used during betting:

- Problem gamblers may bet higher amounts than non-problem gamblers
- Higher credit bets appear to be used by problem gamblers as they believe that this will increase their chance of winning
- Minimum bets on maximum lines is generally the betting pattern used by most non-problem gamblers
- Maximum lines are used by most EGM players – This appears to be because players do not wish to miss wins on pay lines they have not played or do not wish to miss scatter wins which may fall on any line
- There is some evidence that bets may be changed in response to different EGM events – however, precise trends remain unclear

Relationship between EGM denominations and lines/bets

There has been limited research to examine the relationship between machine denominations and line and bet patterns. However, it is generally accepted that problem gamblers will be likely to play higher denomination gaming machines. For instance, a Victorian study found that, relative to non-problem gamblers, problem gamblers were significantly more likely to play \$1 machines and the denominations preferred by most problem gamblers were the two cent (26.80%) and five cent machines (26.48%) (Hare, 2009). The Australian Productivity Commission (1999) also suggested that problem gamblers were more likely to play \$1 denomination machines than other players and that they tended to play a greater number of lines, and bet more per line generally.

Research by Livingstone and Woolley (2008) provides indirect evidence about the relationship between machine denominations and lines and bets. Among the 'top 250' EGM games operated in South Australia in 2004-05 and 2005-06, four games were reported to stand out as the 'highest' performing EGM games. These were Shogun, Shogun 2, Indian Dreaming and Dolphin Treasure. Shogun and Shogun 2 were exclusively one dollar games, whereas Indian Dreaming and Dolphin Treasure were one or two cent games. The authors then concluded that Shogun and Shogun 2 attracted high Net Gaming Revenues (NGRs) due to high average bets, whereas Indian Dreaming attracted high turnover due to high utilisation.

In a telephone survey of 180 regular gamblers undertaken by the authors, both Indian Dreaming and Dolphin Treasure were disproportionately favoured by problem gamblers (although this was admittedly not a strong relationship). It was concluded that Shogun 2 and Shogun achieved relatively high NGR because of high average bets, whereas Indian Dreaming achieved comparatively high NGR because of comparatively high average levels of utilisation. While not stated by the authors, it is also plausible that, as Reel Power EGMs, Indian Dreaming and Dolphin Treasure may have also had high NGR due to an overall player preference to bet multiple lines due to the high availability of scatter wins (i.e., players may purchase all reels in Reel Power machines to avoid missing out on wins appearing on reels which are not purchased).

Key points in summary - Relationship between EGM denominations and lines/bets:

- Problem gamblers may be likely to play higher denomination gaming machines – especially \$1 denomination machines
- However, still very little is understood about how EGM denominations relate to bets on credits and lines for different EGMs (though most gamblers will play Maximin on most EGMs)
- Some EGMs may attract high NGRs due to high credit bets. Other EGMs may attract high NGRs due to high utilisation
- Certain EGMs may be favoured by problem gamblers such as Indian Dreaming and Dolphin Treasure (both Reel Power EGMs)

Free spins, features and the effect of free spins near wins

Many research studies have found that gaming machine features are very attractive to gamblers and may explain why gamblers spend more money on gaming than they can afford. For instance, Schottler Consulting Pty Ltd (2010) undertook a shadowing study to record live EGM play of 200 participants. The factors influencing adherence to monetary pre-commitments were then analysed. Based on findings of the study, players were found to be more likely to exceed their EGM expenditure limits if they experienced an increasing number of free spins (after moving from the first to second EGM) and experienced high excitement from features received during EGM play. Total free spins received during play was also found to positively predict overall EGM play excitement.

A qualitative study with problem gamblers in treatment by AIPC (2006) found that most gamblers were excited by free games and particularly valued the higher odds paid on wins occurring during free game features. This was attributed to the sense of satisfaction associated with playing for free. The authors reported that many gamblers would up-scale their bets in anticipation of winning free spins and then would return to a base strategy after free spins (typically playing minimum bets on multiple or maximum lines).

The reasons why free spins and features are exciting are of research interest. Livingstone and Woolley (2008) advocated that free spin features of EGMs are very attractive to gamblers and provide secondary reinforcement during gaming machine play. A further recent study by Hamilton et al (2013) examined the specific machine features which attracted non-problem versus problem gamblers to Video Lottery Terminals in Canada. Results showed that problem gamblers were more attracted to games that were 'winning-focused' and these games resulted in greater excitement, faulty gambling beliefs and more dissociation than 'entertainment-focused' games. The authors then suggested that VLT selection for the marketplace should be 'entertainment-focused' rather than 'winning-focused' into the future. It was also noteworthy that, while both problem and recreational gamblers liked features, problem gamblers didn't like machines with low bonus features and would postpone gambling waiting for machines with a higher bonus.

In spite of gaming machine features being wide and varied (apart from free spins which are frequently considered a type of feature), there has been very little research into the effects of different feature game styles in gaming machine play. Many gamblers report enjoyment of features that are 'games within games' and anecdotally report high excitement from exposure to features during play. It is plausible that the satisfaction associated with features is in part due to the opportunity that features provide for winning (often there is a chance to win big) and the satisfaction that different types of feature games provide to players.

A common characteristic of feature games in Australian gaming machines involves gamblers having to press buttons to 'stop' the EGM at a point during feature play. For instance, one Australian EGM has a 'clown feature' that requires gamblers to stop the game to release a ball from the clown into a slot. While a random event, such features could be theorised as increasing the illusion of control. Experiments by Ladouceur and Sévigny (2005) provide some evidence to support the possible effects of having gamblers 'stop' reel spins during gambling. During the study, gamblers were able to 'stop' virtual reels spinning at any point during play. The purpose was to test whether introduction of a stopping device increased the illusion of control. Findings showed that, following exposure to a stopping device, 87% of gamblers believed the virtual reel display would differ depending on when they activated the stop button. A total of 57% also believed that this could control the outcome of the game and 41% believed that some level of skill was involved in the decision about when to hit the stop button. A second experiment similarly showed that gamblers with access to a stopping device played twice as many games as a control group. Together, such findings may indicate that introduction of game features that create an illusion of control could be harmful to gamblers and particularly problem gamblers (who illustrate a higher tendency to possess the illusion of control).

Parke and Griffiths (2006) discussed the types of feature games available in UK gaming machines. These were interestingly categorised to include (p154): 1) Lapper features - where prizes are won by doing circuits (i.e., laps) on a game board. 2) Trail features - where prizes are won by progressing up a 'trail' in the hope of winning a jackpot or top feature, 3) Hi-lo ladder features - where prizes are won by advancing up a prize ladder by successful gambles (i.e., gamblers guess whether the next number on the game board will be higher or lower) and 4) Grid features - another variation of the 'hi-lo' game where progression is made by successful gambles.

There was a noted trend in the UK for many fruit machines to have multiple features in the same game. Other variants have a series of small features linked to a major jackpot feature. Parke and Griffiths (2006) noted that features are generally developed based on the principle of involvement and skill. Both were described as increasing the psychological involvement of the gambler and were seen to have potential to lead to increased play excitement and support the maintenance of play behaviour. Both Griffiths (1990) and Parke and Griffiths (2006) asserted that the gradual introduction of more complex features over time (as compared to basic features like nudges, hold and gamble buttons in early fruit machines) may have contributed to the creation of 'perceived skill' during play.

Bonus features are also described as a type of 'feature' that would influence gambler involvement and perceptions of skill. Examples of bonus features in the UK were described to include skill stops, shuffles, superholds, trail boosts, feature hits, free skill, win spins, the selector, the re-spin and the stopper. Secret functions were a further common characteristic of fruit machine features. One subtle example in the UK related to a 'Simpsons fruit machine' where a verbal cue forewarned that a secret play may be on offer. Other common 'secret' functions included use of the cancel button to give hints or slow down tasks that are skill related, the three holds rule where the third symbol will always be a match if held twice before (assuming two winning symbols are being held) and a guaranteed win after holds following a nudge. All three types of 'secret' features were described as increasing the illusion of control in players. The authors similarly argued that machines with features would often be far more attractive to players than machines which offered higher winning, because those features encouraged greater player involvement.

Millhouse and Delfabbro (2008) conducted a conjoint study examining feature preferences of EGM players. Key structural characteristics of EGMs were manipulated to identify characteristics that most appealed to problem and non-problem gamblers (based on part-worth estimates). This included manipulations of machine denomination, prizes, bonus features and the number of lines available on machines. While machine denomination emerged as the most important feature of EGMs (especially low denomination machines as these provided players with more time on an EGM), bonus features were observed as the second most important structural characteristic. They were theorised to be popular, as bonus features provided players with the opportunity to gain 'something for nothing'. Interestingly, bonus features were also preferred by *both* problem and non-problem gamblers (with the difference between segments not statistically significant).

Given the potential harm of certain gaming features, Livingstone and Woolley (2008) advocated that limiting the number of free spins and the multiples by which win payouts are increased during free spins may reduce excessive gambling. However, it was acknowledged that the view relating to reduction of multipliers was speculative. The Australian Productivity Commission (2010) similarly highlighted the need for more research into Australian EGM features by concluding - *Some features of jackpots are problematic and may impact disproportionately on problem gamblers. This should be the subject of further research (Chapter 11.1).*

Key points in summary - Free spins, features and the effect of free spins near wins:

- Free spins and features may be associated with EGM play excitement and in part explain why some gamblers exceed their limits
- One study has found that gamblers may up-scale their bets in anticipation of winning free spins and then down-scale their bets following free spins
- Features which are 'winning-focused' may appeal more to problem gamblers, than features which are 'entertainment focused'
- Problem gamblers appear to be attracted to features which offer high rather than low bonuses
- Features with stopping devices and those which promote high player involvement may have potential to affect problem gamblers, given the potential for such features to create an illusion of control or focus player attention away from losses
- Large free spin multipliers applied to wins may have potential to harm problem gamblers, however, this is still largely unclear from research

Frequency and nature of wins – the payback schedule

Ferster and Skinner (1957) identified several decades ago that reinforcement schedules can shape human behaviour. This followed Skinner's early work on the now widely accepted theory of operant conditioning (Skinner, 1938). As reinforcement schedules are a fundamental part of EGM play (EGMs operate on variable ratio schedules), they remain a key topic of research interest. However, still very little is known about how different EGM reinforcement and payback schedules (including prize schedules) influence gambling behaviour.

A few studies provide some insight into possible effects of EGM reinforcement schedules. A study by Freeman and Mitchell (2010) identified the payout characteristics or volatility of EGMs in NSW. Several different concepts were said to influence a machine's payout characteristics. This included the volatility of the game, the standard deviation of payouts and the Return to Player (RTP). A low volatility game would thus provide players with a steady flow of smaller prizes, whereas a game with high volatility would provide higher value, more erratic prizes. The authors also noted that different EGMs can have similar standard deviations (a quasi measure of payout schedule) and some will pay more frequently, while others pay more erratically. In addition, the volatility of a game was said to affect RTP, as the expected minimum and maximum RTP range (its tolerance) can be affected.

Based on key findings of their analysis, Freeman and Mitchell (2010) argued that there was an overall market preference for moderate volatility games in NSW. When using the Taylor Fry method to categorise games by skewness and volatility (using a game's standard deviation), the authors concluded that there was no type of specific reinforcement schedule that made a game popular. Accordingly, there was not found to be any specific payback 'schedule' which created popular games, however, there was a noted market preference for moderate volatility games.

At present, many Australian EGMs have much longer term pay back schedules based on theoretical RTPs that only occur after hundreds of thousands (or extremely large numbers) of games. In this context, it is also noteworthy that fruit machines in the UK have different payback schedules to Australian EGMs, as they are based on a compensator, rather than a Random Number Generator (RNG). However, research to date has not compared the relative harm-minimisation benefits of these different approaches.

Delfabbro et al (2005) conducted experimental research by manipulating reinforcement schedules and other variables during gambling. Other variables included lighting, the speed of play and bets. Players appeared to show preferences for any factors that had potential to increase reinforcement. This was also argued to explain why people would often place minimum bets on maximum lines. Players were wanting to extend the number of wins that provide reinforcement. Delfabbro & LeCouteur (2003) similarly argued that Random Ratio (RR) schedules are very effective in maintaining gambling behaviour, given that gamblers learn the value of waiting for wins (i.e., that eventually they will win something).

Coates and Blaszczynski (2013) conducted a study to examine the relationship between gambler EGM choice and machine volatility. One purpose of the study was to assess whether subjects could discern the better payout rate of two simulated EGMs. The two EGMs did not differ in average payback, but one machine was more volatile (or produced more wins) than the other. Key findings showed that participants discriminated between EGMs with varying payout rates, however, contrary to expectations they gambled more on EGMs with lower payout rates. The authors also asserted that the availability of multi-credit and multi-line machines may explain this trend. However, there was acknowledgement that subjects were university students.

Harrigan (2009) advocated that hourly rates of loss for gaming machines could be decreased if all games had a lower volatility index. As problems gamblers typically incur very high losses, this finding is of interest. Low volatility was said to be best achieved by lowering jackpot prize amounts and keeping games with the same payback percentage (thus permitting a greater number of smaller prizes). A regulation or a standard for machine volatility was also suggested (e.g., a regulation such as - EGMs must have a standard deviation of 10 maximum) or a regulation that states that, for a certain number of games (e.g., 1200), the 90% confidence interval of return to player should be within a certain range.

How payback schedules influence rates of gambling is also of research interest. Such information could conceivably be used to design EGM games less harmful to players. However, still very little is even understood about how wins affect players (other than that all wins are attractive). Research by some authors has indicated that wins do affect the rate of play. For instance, both Dickerson (1992) and Delfabbro & Winefield (1999) found that, following small wins, gamblers increased their play rate and following large wins, play rates were slowed. Together, such results may suggest that EGM payback schedules and perhaps warnings during EGM wins (e.g., to remain in control following a win) could be theoretically designed to assist players to remain in control of their gambling.

Key points in summary - Frequency and nature of wins – the payback schedule:

- While the relationship between problem gambling and EGM volatility remains unknown, there may be an overall market preference for medium volatility EGMs
- While most gamblers have been found to show preferences for EGMs which offer greater levels of reinforcement, the relationship between problem gambling and EGM volatility is unclear
- The availability of multi-credit and multi-line EGMs may imply that it is difficult for gamblers to discern the precise payback schedules of EGMs
- Some evidence suggests that small wins may increase the rate of play and large wins may slow down the rate of play

Machine branding, sounds, lighting and advertising

The overall branding or appearance of gaming machines can be considered a key type of structural characteristic. Parke and Griffiths (2006) advocated that machine branding may influence players to the extent that it increases player familiarity with machines and increases the overall attractiveness of a machine. The power of familiarity is also supported by research by Griffiths & Dunbar (1997). The authors used common examples of machine branding to explain how these may influence behaviour. Common techniques used in branding were described to include celebrity association, use of trusted brands (which may lead players to assume they are unlikely to lose a lot of money as a machine is 'trustworthy'), use of TV show branding (which may lead players familiar with the TV show to assume they can use skill as they 'know' the show and characters) and fun (some machines are novel and interesting to play due to sound effects and game dynamics).

Gaming machine sounds have similarly been found to affect EGM play. Griffiths & Parke (2003) suggest that colourful or exciting sounds may give players the impression that winning is more common than losing and may serve to reinforce gambling behaviour. Other sound effects have also been noted on machines. For instance, Parke and Griffiths (2006) identified that UK fruit machines have a sound that increases in pitch and speed to encourage players to make quick decisions. Edworthy, Loxley, & Dennis (1991) were also noted to call this the 'perceived urgency' effect. Background music was also described by Griffiths and Parke (2005) as a key area for future research, given the possibility that music may increase player confidence, increase arousal, relax players or even lead players to disregard previous EGM losses.

Similar to Australian EGMs, EGMs in the UK are noted by Griffiths & Parke (2003) to use verbal or written reinforcers to encourage players during play (e.g., Words such as 'Well done' shown after each spin resulting in a win). Words noted as common in the UK included phrases such as 'You're cool', 'You're genius' and 'Thank you. Come again'. However, apart from noting such phrasing, there is no specific research available on these in the gambling research literature.

The colour of machine lights is similarly a characteristic with potential to influence EGM play. Papers by authors such as Griffiths and Swift (1992) and Stark, Saunders, & Wookey (1982) provide evidence that use of red lighting may be more arousing to EGM players. However, this is a very under-researched field. A study by Spenwyn et al (2010) involved experimental manipulation of light and music speed for roulette gambling in four separate experimental conditions - (1) gambling with fast tempo music under white light, (2) gambling with fast tempo music under red light, (3) gambling with slow tempo music under white light and (4) gambling with slow tempo music under red light. Key findings suggested that music tempo influenced betting speed, but the same effect was not found for light. In addition, fast tempo music under red light was found to be associated with faster gambling.

A further study by Bramley (2012) cites evidence on the effects of music from other areas of research. Fast tempo music was found to increase the speed of eating (Roballey et al., 1985), drinking (McElrea & Standing, 1992), moving through a supermarket (Milliman, 1982) and even activities such as reading (Kallinen, 2002). In the field of exercise, music tempo was also found to influence the speed of pedalling (Waterhouse, Hudson & Edwards, 2010) and faster treadmill speeds (Edworthy and Waring, 2006). A meta analysis of eight studies was also quoted as concluding that there was an association between faster music tempo and faster behaviour (Kämpfe, Sedlmeier & Renkewitz, 2011). Accordingly, it is likely that the same affects may apply to EGM gambling.

While there is not significant in-depth research on how poker machine advertising affects gamblers (also because poker machine advertising is largely limited through regulation), research from some related fields provides some indirect evidence about the possible effects of poker machine advertising. For instance, Morasco et. al (2007) examined the effects of advertising on poker machine gamblers who were trying to stop gambling. Results showed that 37% of players found 'reminders' of gambling (such as advertising signage) as a trigger in their relapse behaviour. Hing and Haw (2010) similarly found that EGM player views that venues conducted 'external advertising' and kept players 'informed about what's going on' in a venue were venue-based factors that were associated with at-risk gambling.

Key points in summary - Machine branding, sounds, lighting and advertising:

- EGM branding and sound and lighting have potential to lead players to 'trust' EGMs or disassociate from losses, though exact effects remain unknown
- The effect of motivational words displayed to players after EGM spins is unknown, though has been hypothesised as potentially reinforcing
- Fast music tempos may influence the speed of betting during EGM play
- Use of red lights on EGMs may be linked to faster gambling
- Poker machine advertising has potential to influence at-risk gambling

Near misses during EGM play

Near misses include EGM play scenarios where a player is led to believe that they have 'nearly' won. As such, near misses may involve obtaining two symbols when three are required for a win or obtaining three symbols when four are required. While a small number of authors have examined near miss effects during EGM play (e.g., Côté et al. 2003; Chase & Clark, 2010), relatively still very little is understood about how near misses may affect gambling or may exacerbate problem gambling. In addition, there are still no clear principles to govern the appropriate use of near misses in gaming machine design (e.g., what constitutes a near miss itself may have wide definitions).

Clark et al (2009) conducted an experimental study with recreational gamblers to examine how different areas of the human brain are affected by near misses and 'real' wins using a simplified slot machine task. Neural activity of the brain was measured under different experimental conditions. Findings of the study interestingly showed that, while not as exciting as full wins, near misses recruited the same 'reward circuitry' of the human brain as monetary wins.

A further follow-up by Chase and Clark (2010) involved a similar experiment to examine how near miss effects were moderated by risky gambling behaviour. Gambling severity was measured using the South Oaks Gambling Screen and brain images were studied following simulated gambling tasks involving near misses. Results showed that, increasing gambling severity was associated with a greater response to near misses during the simulated gambling task. Authors of the study then concluded that it was likely that responses to near misses in disordered gambling are far greater than for non-problem gambling. Based on observed differences, neurobiological similarities were also said to exist between pathological gambling and drug addiction.

Slightly different effects of near misses were identified by Dixon et al (2011). This study examined the psychophysical responses of 65 subjects to wins, losses and near misses while playing a slot machine simulator. Effects were measured based on changes in heart rate and skin conductance. Based on results of the experiment, the authors found that skin conductance responses were significantly larger for near misses (than for either wins or losses) and heart rate deceleration was also larger for near misses (than for either wins or losses). Interestingly, however, the authors found no differences in the effects based on a gamblers risk status for problem gambling. The observed arousal patterns were explained as being due to gambler 'frustration' of just missing a big win.

Other research has illustrated that increasing the frequency of near misses may positively affect gambling persistence. Cote et al (2003), for instance, conducted an experiment using a video lottery terminal game. Near wins were defined as obtaining two identical symbols when three were required to win. Subjects in the experimental group were exposed to near misses such that 27% of total losses were near misses. In comparison, the control group were not exposed to near misses. Key findings of the study illustrated that subjects in the 'near-miss' experimental group played more games than the control group (in fact, 33% more overall). Findings were then used to conclude that near misses may affect the overall motivation of gamblers to continue to gamble in the context of losses.

Billieux et al (2011) undertook a study to examine whether 'trait-related gambling cognitions' (e.g., beliefs that certain skills or rituals can influence winning) could influence gambling behaviour in response to near misses. Subjects were involved in a slot machine task that delivered near miss outcomes, along with wins and full losses. Participants completed a survey with measures including the Gambling-Related Cognitions Scale (GRCS; Raylu & Oei, 2004b), the South Oaks Gambling Screen (Lesieur & Blume, 1987) and a social desirability bias scale (DS-36 - Tournois, Mesnil, & Kop, 2000). Gamblers who had a high illusion of control (as opposed to 'ritual oriented' luck or superstitious cognitions) showed strong gambling persistence after being presented with near miss outcomes than those with a lower illusion of control. The authors then concluded that near misses may increase the perceived illusion of control during gambling.

Dixon et al (2013) conducted an experiment to examine a further aspect relating to the effects of near misses. The purpose of the experiment was to examine how near misses affected the timing of initiation of the next spin (in other words, how quickly subjects pressed the spin button). This outcome measure was coined the Post-Reinforcement Pause (PRP) and was measured along with a measure of skin conductance response (SCR). Following experimental manipulation of near misses (and other win/loss scenarios), results showed that near misses with jackpot symbols (landing on the first two reels) produced larger SCRs than regular losses and other types of near misses. In addition, PRPs in this near miss scenario were smaller than for all wins and for all regular losses. The pattern of large SCRs and small PRPs was also described as extending gambling behaviour, on the basis that near misses were 'frustrating' outcomes for gamblers.

Possibly providing some evidence to support limited effects of near misses is a study by Sharpe, Blaszczyński, and Walker (2004). The authors attempted to overcome the basic three line simulation EGMs used in previous experiments by testing near miss effects in more realistic simulated machines. Subjects were presented with 200 graphical representations of machine outcomes from Aristocrat's Queen of the Nile Game using 1, 5 and 20 line formats. Interestingly, very few near miss events were actually seen as 'near misses' by subjects and problem gamblers were even less likely to identify the events correctly. A further experiment examined the effects of near misses, however, play rates and betting behaviour did not vary across the experimental conditions. Together, results of both studies were used to conclude that near misses may not be as important as originally expected in the maintenance of EGM behaviour.

The basis of near miss effects has also been explained by several researchers. Griffiths (1991) advocated that near misses may affect gamblers on the basis that they perceive that they are 'nearly winning'. Dixon and Schreiber (2004) also found some support for this theory, when subjects in their experiment rated near misses as being 'closer to a win' than to a total loss. Reid (1986), in comparison, proposed that near misses cause frustration based on a 'frustration hypothesis'. Near misses were proposed to trigger further play as gamblers attempted to reduce their frustrated state. In a very early paper, Skinner (1953) theorised that near misses extend gambling behaviour because they act as a form of reinforcement. Côté et al (2003) also proposed that near misses could increase a gambler's expectancy of winning momentarily '*which may prolong gambling and increase betting*' (p437). A further theoretical perspective includes near misses being explained by entrapment (Brockner and Rubin, 1985). This refers to when individuals escalate their commitment to a previously chosen course of action to justify or 'make good' on their prior investments. Kahneman & Tversky (1982) also explained the psychological effect of near misses due to frustration (from 'nearly winning'), resulting from cognitive regret. Accordingly, continuing to play helps reduce the frustration and consequently, the regret. Sundali et al (2012) similarly summarises the basis of many theories to explain near misses by stating that - *The primary finding in gambling near-miss research seems to be that a near miss on a slot machine will lead a player to continue playing either because the player believes that the chances of winning on the next spin of the wheel have increased or because the player has become aroused and presumably wants to maintain/eliminate that feeling* (section 1.1).

Evidence supporting the harmful effects of near misses has led some jurisdictions in Canada to prevent the design of near misses in gaming machine devices. The Ontario Minimum Technical Standards for Electronic Gaming Equipment (2007), for instance, prohibits frequent use of near miss effects in gaming machine reel outcomes (p48):

'20.4.1 Games with reels must meet the following requirements for each of the game's reels: a) For single-line games, jackpot symbols may not appear in their entirety more than 12 times, on average, adjacent to the payline, for every time they appear on the payline' (p48, AGCO Minimum Technical Standards for Electronic Gaming Equipment v.1.00). The same rule is also applied to multi-line games. In 1989, the Nevada Gaming Commission also banned algorithms used to create near misses used by a major slot machine manufacturer.

Strickland and Grote (1967) interestingly noted a concept of relevance to near misses - that many first reels on UK fruit machines tended to have a larger proportion of winning symbols than the second reel (which has a larger proportion of winning symbols than the third reel and so forth). As such, players would be likely to see a winning symbol early in the result sequence.

Harrigan (2008) also showed that, in spite of the regulations against near misses, some manufacturers use a technique called 'award symbol ratio' to program machines to display near misses (a) above and below the payline and (b) on the payline (when the highest paying symbol occurs on the payline on two reels and above or below it on the third reel) at a rate higher than at random. It is also further claimed that this practice is considered acceptable to the gaming machine regulator in US states such as Nevada. Harrigan (2007) similarly reported that a technique called clustering is used by equipment manufacturers in the US to create a high number of near misses. Under clustering, the probabilities of symbols on the reel map associated with the Random Number Generator do not match the probabilities of the symbols associated with the physical reels displayed to gamblers. This implies that symbols shown to gamblers may occur at a higher probability and have potential to influence player perceptions of the overall probability of certain winning outcomes. The technique was also described by a gaming laboratory head in Nevada based hearings into EGM design as follows (as cited in Harrigan 2007):

Slots made by companies other than Universal, Allen testified, did 'cluster' blanks above and below jackpot symbols on reel strips, such as placing most of the 12 blanks on a reel above and below a 7 symbol. The practice was done on the disproportionate slots, using software capable of assigning 32 software stops on a reel with 22 physical symbols. That way, players would normally see a 7 or another jackpot symbol above and below the payline more often in a losing game—a near miss. However, again, Allen said, the individual reel stops on those machines were nonetheless chosen at random, and a jackpot symbol would not appear any more or less often than a blank or any other symbol.

Harrigan (2007) argued that use of virtual reels and clustering with blanks adjacent to the high paying symbols can lead to the perception of 'near misses' (above and below the payline). EGMs could, however, be created without clustering by having a requirement that on the virtual reel there be only a single blank adjacent to each paying symbol. The author similarly proposed that mismatches between physical and virtual reel probabilities may lead to gamblers, and especially problem gamblers, misrepresenting the underlying probabilities of winning during EGM play.

Accordingly, in some jurisdictions, concerns have been raised about near misses being inadvertently programmed into EGM designs. In spite of regulations to prevent such issues, it remains unclear the extent to which this is monitored by many regulators. In addition, there are still many unknowns relating to both what gamblers perceive as near misses and additionally how EGM programming in Australia may lead gamblers to perceive near misses during EGM play.

The Gaming Technologies Association Player Information Booklet includes a description of EGM reel design in Australia. According to the booklet, there can be 35 possible stopping positions on each gaming machine reel and symbols associated with each possible stopping position are programmed into games. Each of the 35 stopping positions has an equal chance of being selected as the chosen symbol to stop on the centre line. In addition, the symbol chosen by the RNG is determined separately for each reel in a machine. However, while this may be seen as a way to prevent near misses, Falkiner and Horbay (2006) additionally add that there is no standard requirement for symmetrical or balanced reels in the Australian standard (or in other words, a requirement for each type of symbol to appear at the same frequency on each reel). This also appears to be mentioned by the Australian Gaming Technologies Association (GTA) Booklet on EGMs, that states that it is often the case that a jackpot symbol is only assigned to a single stopping position on a reel. Accordingly, asymmetric weighting of symbols – as opposed to asymmetric reels – is prohibited in Australian jurisdictions. The Falkiner and Horbay (2006) paper also quotes Fox (1959) as commenting on the 'cleverness' of asymmetric EGM reels:

'A glance at the arrangement of the symbols, given above, reveals the devilish cleverness of the setup. There are three bars on the second dial to raise hopes of a jackpot, but only one bar on the last dial. On the second dial, there are no lemons which ruin a player; but four lemons on the third dial lower the boom on him' (Fox, 1959, p142 – Cited in Falkiner and Horbay, 2006).

Falkiner and Horbay (2006) advocate that unbalanced reels may create gambling harm – 'The failure of regulatory authorities to apply the strict standards applicable to other casino games to reel EGMs exposes players to a totally unacceptable risk. Unbalanced reel design enables EGMs to present to the player screens which are rich in symbols but which are designed to limit winning combinations in a manner incommensurate with the appearance of the screen' (p 17, Falkiner and Horbay 2006). Moreover, the authors emphasised that unbalanced reel design may be the major factor in the maintenance of problem gambling, as gamblers perceive that they cannot lose (which would be the case if the reels were balanced). In addition, they assert that EGM manufacturers should submit for government approval balanced reels and provide this information to gamblers on EGMs (showing balanced reels with numbers of each symbol per reel and the size of reels).

While there is still much to be understood about how near misses affect gamblers, it is clear from most studies to date that near misses may be likely to increase gambling persistence. Livingstone and Woolley (2008) also advocate that elimination or reduction of the near-miss effect has potential to reduce excessive gambling and regard near misses as a 'structural characteristic' that is likely to increase risky gambling behaviour. Strong opponents of near miss EGM programming such as Harrigan (2008) have also attempted to document that many gaming machines in the US are in fact programmed to deliver more near miss outcomes than would occur with random sampling alone. Accordingly, the near miss presents a topic of key research interest for Australian jurisdictions.

Key points in summary - Near misses during EGM play:

- Near misses may influence all gamblers and particularly problem gamblers and gamblers with a high illusion of control, although many precise effects remain unknown
- Increasing the frequency of near misses may affect gambling persistence
- Near misses with jackpot symbols may trigger high skin conductance responses in gamblers
- Techniques used to create the illusion of near misses include virtual reel mapping/clustering (so that reels displayed do not match actual reels) and unbalanced reels (where winning symbol probabilities are unbalanced across EGM reels)
- In Australia, according to the Gaming Technologies Association (GTA), some EGMs have unbalanced reels

Losses Disguised as Wins (LDW)

Apart from the possibility of perceiving 'near misses' during gambling, gamblers are continually exposed to situations where amounts won are less than amounts bet. This phenomenon has been termed by Dixon, Harrigan, Sandhu, Collins, and Fugelsang (2010) as a 'Loss Disguised as a Win' (LDW), or as 'fake wins' by Wilkes, Gonsalvez, and Blaszczyński (2010). As noted in Jensen et. al (2013), when a player wins anything on a gaming machine, the machine will typically highlight wins with winning lights and music. In comparison, when there is a loss, the machine will go into a state of 'quiet' in both an auditory and visual sense.

Several studies have investigated the effects of LDWs. Harrigan and Dixon (2009) identified that many multiline games produce a higher frequency of LDWs than actual wins. This study involved a computer simulation of Lobstermania, a popular type of Canadian slot machine. By playing an average of 15 lines, the authors found that players would only receive LDWs on 32% of spins. In comparison, a gambler betting on a single line and bet would only receive wins on 5% of spins. It was noted that only multiline games would be associated with LDWs, as single line games generally produced wins greater than the bet (in the latter example, the 5% of spins were actual wins where the amount won was higher than the bet size).

A further study by Harrigan et. al (2012) examined LDWs in a slot machine called Money Storm. Following 5,000 spins on a single line game and then a 20-line game, the authors found both variants provided a 90.5% pay back percent (returned to player). As such, using multiple lines did not increase the actual money won by the player, so it was hypothesised that LDWs may explain the difference. Reflecting this, the reinforcement rate on a 20-line game was much higher than the reinforcement rate on a single line game. It was found that 29.7% of spins on the 20-line game were LDWs versus 15.4% on the one-line game. When added together with the actual win rates for the 20-line (18.2% were wins) and 1-line game (15.4%), the total reinforcement rates of games were calculated to be 47.8% for the 20-line game and 15.4% for the 1-line game. This was then used to conclude that multiline games are particularly reinforcing by mainly through the differences in numbers of LDWs.

A further study by Dixon et al. (2010) examined whether subjects who were 'novice' slot machine players would respond to LDWs in the same way as regular gamblers. Based on recording of skin conductance responses following wins, LDWs and regular losses on a 15-line machine, results showed significantly greater responses to LDWs in subjects relative to regular losses. A presentation by Harrigan (2010) concluded that certain types of slot machines are likely to have a greater number of LDWs than others. While a full analysis of all slot machines is not available, Harrigan (2010) has attempted to measure the rate of LDWs for several machines in Canada. An interesting finding of this research is that Reel Power machines (manufactured by Aristocrat) produced a greater number of LDWs than other types of slot machines. In addition, the author asserted that, the more lines you play, the more that LDWs are incurred, implying that this could also be a reason why players prefer the maximin strategy, as coined by Walker (2003).

Jensen et al (2013) conducted an interesting experimental study examining Lobstermania LDWs. Subjects in the study were university students and each was randomly assigned to play either a three-line (fewer expected LDWs) or a six-line (relatively more expected LDWs) game. To keep the amount wagered consistent, the three line players bet two credits per line (i.e., six credits wagered), while the 6 line players bet a single credit per line. A total of 200 spins were played and spin outcomes were examined (i.e., a real win, a LDW or a loss). Survey style ratings on the arousal and excitement from the play and similar questions were then answered and participants estimated how many times they thought they won in the first 200 spins. Following survey questions, a further 50 spins were played and participants verbalised what they were thinking after each spin. Key findings confirmed most expected results. Participants playing the six-line game experienced significantly more LDWs during play than the three-line participants. Wins were also statistically controlled in the analysis. In addition, participants in the six-line group estimated that they won on significantly more spins than those in the three-line group. Results were then used to conclude that participants who experience more LDWs believe that they are 'winning more often' than participants who experience fewer LDWs. The authors also asserted that music and visual effects played during LDWs may hide monetary loss and lead players to believe they are winning when they are not.

Key points in summary – Losses Disguised as Wins (LDWs):

- Multiline EGM games may produce a higher frequency of LDWs than actual wins
- The total reinforcement rate of EGM games can be largely attributed to the high overall proportion of LDWs
- Gambler responses to LDWs may be higher than real losses (where no money is won)
- Reel Power machines (manufactured by Aristocrat) may be associated with a higher number of LDWs than other types of EGMs
- EGM players who experience more LDWs may believe that they are 'winning more often' than EGM players who experience fewer LDWs
- Music and visual effects played during LDWs may hide monetary loss and lead EGM players to believe they are winning when they are not

EGM spin rate

Spin rates of EGMs have been a topic of some interest in the gambling research literature. Blaszczynski et al (2001) examined modifications to EGMs (relative to unmodified EGMs) in NSW. The modified machines had changes to spin rates (from 3.5 to 5 seconds), note acceptors (\$20 maximum notes with \$50 and \$100 notes removed) and had a maximum bet size of \$1 (reduced from \$10). Unsurprisingly, a higher percentage of problem gamblers not only used higher denomination notes, but also played at a faster rate of play (higher than 5 seconds per spin). In addition, a higher percentage of problem gamblers placed bets over \$1 and the greater the preference for large bets, the more severe the gambling problems.

In a further paper based on the Blaszczynski et al. (2001) study, it was also concluded that a lower bet size may help reduce gambling harm and may itself be the best strategy for problem gamblers (Sharpe et al. 2005, 518). However, reducing spin rate was not seen to have the same utility in being able to reduce harmful gambling. In addition, it was acknowledged that problem gamblers do play faster than non-problem gamblers.

Yet another paper by Blaszczynski et al (2005) explored whether slower spin rates affected gambler enjoyment and satisfaction with gambling. The authors' hypotheses were confirmed. However, slower spin rates did not deter gamblers from gambling, rather just affected their satisfaction and enjoyment from the experience. Ladouceur and Sévigny (2006) observed that increased EGM play speed was associated with larger monetary risks and lower awareness of the number of EGM games played by gamblers. Interestingly, however, slowing down play speed did not negatively impact gambler motivation, nor affect the control gamblers had over the time and money spent on play.

Based on analysis of slot machine design parameters, Harrigan (2009) advocated that lowering spin rates may have a harm-minimisation benefit to the extent that it is likely to reduce the speed of play. For example, reducing spin rate from 3 to 4 seconds per spin could reduce an hourly rate of loss by 25%. Based on the assumption of a machine with 90% RTP, Harrigan calculated that 3 seconds per spin would equate to expenditure of \$120 per hour, 4 seconds per spin would equate to \$90 per hour, 5 seconds per spin to \$72 per hour and 6 seconds to \$60 per hour. Harrigan's (2009) suggestions were then to implement three key measures to reduce gambling harm – *'Limit the maximum wager to one dollar (as also suggested by the Productivity Commission's 2009), Limit the volatility of the game (such as a standard deviation of 10 or less) and - slow games to 5 or 6 seconds per spin* (p7, Harrigan, 2009). Accordingly, key findings of several studies provide some support for lowering of EGM spin speeds as a way to minimise gambling harm.

Key points in summary – EGM spin rate:

- Problem gamblers may play EGMs at a faster rate than non-problem gamblers
- Slowing spin rate may affect gambler satisfaction with EGMs to some level, though may not deter gamblers from EGM play
- Faster play speed may be associated with larger monetary risks and lower awareness of the number of EGM games played
- Slowing play speed may reduce EGM expenditure per hour
- Slowing reel spin to 5-6 seconds per spin may reduce expenditure to \$72 or \$60 per hour (based on an EGM with 90% RTP)

Double-up or gamble buttons

While not as much research has been undertaken on player use of double-up, a few studies are available to provide some evidence about both its use and effects during gaming machine play. Double-up games typically provide an opportunity for players to 'double their winnings' during EGM play. It is also commonly referred to as the 'gamble' button on the EGM. In some games, players must pick 1 of 2 cards to double their money and in other games, they pick other combinations such as 1 of 4 cards (to quadruple their money). Matching the correct card suit then leads to a win and money is either doubled or quadrupled depending on the game. In some machines, half gambles are also permitted allowing a part of the win to be staked.

Walker (2003) summarises the results of several studies examining double-up in gaming machine players. The overall observation from this paper was that EGM players can be somewhat reluctant to use double-up and particularly when they have obtained a large win. One analysis of player use of double-up on Aristocrat EGMs at a Sydney venue showed that just under 6% of players' wins were doubled-up. A further study showed that 71% of players never doubled-up and 67% believed it was too risky. This is also somewhat ironic given that the odds associated with double-up games are typically better than EGM odds generally. The reason for not using double-up was also explained as an attempt to avoid regret in line with Kahnemann & Tversky (1984) prospect theory.

In spite of the limited use of double-up, Schottler Consulting Pty Ltd (2010) found in an observational study of EGM players that problem gamblers (and higher-risk segments more generally) tended to use double-up more frequently on average than non-problem gamblers. This was also seen to indicate that higher-risk segments of gamblers may show a predisposition towards risking winnings for the prospect of a large return. Accordingly, this may provide some evidence that double-up could present some harm to higher risk segments of gamblers.

Key points in summary – Double-up or gamble buttons:

- EGM players may be reluctant to use double-up and particularly for large wins – One study estimated that as low as under 6% of EGM players use double-up
- EGM players may not use double-up as they view it as 'too risky'
- However, while use of double-up by problem gamblers is limited, one study found higher usage of double-up by problem gamblers compared to non-problem gamblers

EGM note acceptors and credit display

Attempts by different jurisdictions to reduce or avoid note acceptors in gaming machines illustrates the commonly held view that note acceptors may influence overall EGM expenditure. Several studies have also verified some effects of changing note acceptors in EGMs. Brodie, Honeyfield, and Whitehead (2003), for instance, examined how EGM expenditure changed following the introduction of \$20 maximum note acceptors on EGMs. A survey of 359 EGM players showed that 61% approved of the limit and a further 28% also supported additional note acceptor reductions. Following the introduction of \$20 note acceptors, up to 20% of surveyed EGM players reported reducing their expenditure. Moreover, this trend was also found to be much higher in problem gamblers with up to 40% reducing their expenditure and gambling less frequently. This result is similarly supported by findings of a study by Haw (2000) that observed a link between EGM note acceptors and overall machine turnover.

The study by Schottler Consulting Pty Ltd (2010) observed that problem gamblers showed a tendency to use both high value notes in note acceptors more than non-problem gamblers. When notes used for gaming play were analysed, results showed that most players fed in \$20 (55% of players) or \$10 amounts at a time (41% of players) prior to drawing down money. However, problem and moderate risk gamblers fed in far larger amounts such as \$50 before commencing play (respectively 25% and 27% of each segment). In addition, even when coins were used, 9% of total coin feeds of problem gamblers were \$20 or higher (before money was drawn down) and this again was higher compared to non-problem gamblers (where 1% of total coin feeds were \$20 or higher).

A study examining the impact of removal of note acceptors in Norwegian slot machines was conducted by Hansen and Rossow (2010). This study particularly explored how the gambling behaviour of adolescents changed longitudinally across three points in time. Total samples comprised 20,000 students at each wave. Key findings showed no changes in problem gambling prior to changes to note acceptors. After note acceptors were removed, however, rates of problem gambling dropped by 20%. Gambling frequency also reduced 20% and the proportion of adolescents gambling frequently decreased by 26%.

The Responsible Gambling Council of Ontario (2006) held an expert forum to identify views on the modifications to EGMs that would have the greatest impact on problem gambling. This was conducted on behalf of the Saskatchewan Liquor and Gaming Authority. Based on expert views, fast speed of play, direct electronic fund transfers (which allow patrons to access bank or credit card funds directly while sitting at an EGM – not available in Australia), the appearance of near-misses and bill acceptors were the key structural characteristics observed as most important contributors to problem gambling. Eliminating direct transfers and bill acceptors were also identified as key changes thought to have potential to *reduce* problem gambling.

After players insert notes or coins into a machine, they typically receive a screen display indicating the amount of credits or money (in dollars and cents) they have inserted into the machine. For instance, \$10 may be converted to 1,000 credits or be shown as \$10.00 on the credit meter. Some studies have asserted that converting money into credits may contribute to faster EGM play rate, given that it may create a perception that gamblers have a running credit on the machine or contribute to the perceived tokenisation of money (Griffiths, 1993).

Schellinck and Schrans (2001) conducted a study to explore possible changes to gaming machines that may assist with problem gambling. Interestingly, one result of their study was that, when the credit meter on a machine was changed to display cash rather than credits, it attracted the highest awareness level of all other features changed (with 94-100% of participating players noticing the display change). The cash display was also the second most preferred responsible gambling feature of EGM players (liked by 58% of regular players), following the availability of an on-screen clock. Displaying the credit meter in cash - rather than credits - was also seen as the most effective responsible gambling feature in assisting money management (a view held by 46% of players). Though respondents who liked the display of cash (rather than credits) did not appear to change their gambling behaviour in any way.

Key points in summary – EGM note acceptors and credit display:

- Higher note acceptors may be associated with higher EGM expenditure
- Reducing note acceptors may be associated with reductions in EGM expenditure
- Problem gamblers may load higher denomination notes and coins onto EGM credit meters, compared to non-problem gamblers, prior to drawing down on funds
- One study associated removal of note acceptors with a reduction in adolescent problem gambling
- Conversion of money to EGM credits may be associated with faster EGM gambling
- EGM players may prefer the display of cash rather than credits on EGM credit meters and see this as a useful responsible gambling feature

Multiway EGMs (including Reel Power EGMs)

Reel Power EGMs are examples of a poker machine brand (manufactured by Aristocrat) that offer players multiple ways of winning. This is often why they are termed 'multiway' machines. Players purchase reels, rather than lines and in turn have access to many ways (often 243 or even greater) of winning on the EGM. Three ways of winning is the basic selection and involves betting on a central line plus all positions on the first reel (and costs one credit). Purchasing reels one and two allows nine ways of winning and costs three credits, while purchasing all three reels provides 27 ways to win and costs 7 credits. Purchasing four reels then permits 81 ways of winning. Examples of Reel Power machines include the popular Indian Dreaming and Choy Sun Doa EGMs. Multiway machines contrast to regular machines that involve purchasing of multiple lines during the betting process.

Livingstone and Woolley (2008) are two of the very few authors to explore how multiway gaming machines - like Reel Power - affect gambler behaviour. One key structural characteristic of Indian Dreaming was seen to be the method of betting offered by Reel Power machines. Using Reel Power, players purchase reels and cover many more lines than regular machines. The authors interestingly concluded that, as multiple line betting is associated with larger bets (particularly to cover more winning pay lines), higher average bets on machines like Indian Dreaming (a Reel Power machine) may be due to the greater number of lines that can be played.

Supporting this theory, their analysis of net gaming machine revenues in South Australia showed that Indian Dreaming achieved much higher average bets than other machines (average bet of 50c) – like the popular Dolphin Treasure – at the same credit value (average bets 33-43c per bet). This was also reported to represent a difference of 14-34% in average bet size between the two machine types. The availability of many more lines on Reel Power machines was also described by the authors as constituting a risk factor for excessive gambling and for transition to problem gambling. In comparison, higher net revenues for other (non-Reel Power) EGMs – such as Shogun and Shogun 2 - were attributed to higher risk on account of higher bet size availability.

The authors concluded that Reel Power betting was one of three structural characteristics that increased the risk associated with EGM gambling. This was said to be because - *'Reel betting extends the options of line betting on small credit value machines, leading to increased actual average bet sizes in excess of those achieved on comparable credit value machines that only allow line betting (example is Indian Dreaming incorporating Reel Power™ technology)* (p18, Livingstone and Woolley 2008). They also concluded that other risk factors were high credit value games (as they produced high average bet levels) and maximum line betting on small credit value bets leads to increased average bet sizes.

Apart from the above study, very little research has explored how Reel Power machines influence player behaviour. A known characteristic of Reel Power EGMs is that such machines allow players to win through scatters rather than strictly left to right (although there are also variations that require winning left to right). In addition, they often offer multipliers in the context of wins (e.g., x4, x5, x10). Griffiths (1993) asserted that multiplier potential of an EGM was an influential structural characteristic, as it served as an inducement to play. It was also expected that offering players 'choices' on multipliers may increase the level of gambler involvement in games. Accordingly, while still very little research is available on the effects of Reel Power EGMs (including whether players understand how these machines operate), there is some research to suggest that EGM players may find such EGMs more involving.

Key points in summary – Multiway EGMs (including Reel Power EGMs):

- Reel Power EGMs may have higher than average bets due to the large number of lines that can be played
- EGMs may attract high net gaming revenue at the same denomination due to Reel Power betting (which involves purchase of reels rather than lines)
- Offering EGM players choices of multipliers is a common feature of Reel Power EGMs and these have been theorised as increasing player involvement in EGM play
- There is currently no research on whether EGM players understand the differences between Reel Power and regular line based EGMs

EGM payment methods

Different machine based payment methods are a further emerging type of structural characteristic present in Australian EGMs. Current payment methods include cash and coins, Ticket-in Ticket-out (TiTo) technology and smart cards or magnetic stripe gaming cards (typically associated with cashless gaming accounts). Some EGMs also provide pre-commitment and responsible gaming messaging either via peripheral gaming machine devices or through the EGM itself during manufacturing. While responsible gambling messaging and pre-commitment are outside the scope of this study, payment methods represent one important type of structural characteristic that may conceivably influence problem gambling.

While little research is available to inform the impact of different EGM payment methods, some research has examined both TiTo technology and use of cashless cards for gaming. Nisbet (2005), for instance, found that cashless gaming allowed quicker movement of players from EGM to EGM and was also found to be very convenient by EGM players. Carr-Gregg (2013), in a paper on ticket in ticket out gambling, also concluded that there was some evidence that Ticket-in Ticket-out technology was helpful to both problem gamblers and potential problem gamblers.

An early trial of card based gaming by the Queensland Government additionally supported this conclusion (Queensland Office of Gaming, Liquor and Racing, 2005), as players using card based gaming were found to play a higher number of machines compared to those not on cashless gaming. Feedback from this study also suggested that cashless gaming was seen to be very convenient for players. A further study examining pre-commitment at an RSL Club in Queensland showed that players reported less waiting for hand-pays with cashless gaming and enjoyed the convenience of being able to leave gaming machine venues without having to drawn down on small amounts on the credit meter (as such amounts could be easily transferred back to the gaming card) (Schottler Consulting Pty Ltd, 2009).

Parke et. al (2008) conducted a comprehensive review of cashless gaming for the UK Gambling Commission. Based on the common feature of cashless gaming systems to be able to provide cash accounts, the authors concluded that gamblers will typically underestimate monetary expenditure on gaming machines and advocated that expenditure statements would help in expenditure monitoring. Indeed, the authors cited evidence from studies by Nisbet (2005) that 67% of respondents found account summaries useful and the Schellinck and Schrans (2007) finding that over two-thirds of gamblers looked at their account summaries at least once over a six-month period.

The Australian Productivity Commission (2010) also concluded that there was a strong argument to display expenditure over a longer term to players if cashless accounts were used - *This provides strong grounds for the screen display of player transaction records that inform people about the total cost of play they have experienced over the last year, not just the cost of the current session (Section 11.8)*. Accordingly, it is possible that cashless, TiTo and cash based payment methods may conceivably affect both gambling and problem gambling in some way. However, further research is needed to fully understand these effects.

Key points in summary – EGM payment methods:

- While cashless gaming and Ticket In Ticket Out gaming are available payment technologies for EGMs, it remains unclear whether such methods could be associated with increased risks of gambling harm. However, there is some evidence that such methods may increase the speed of player movement from EGM to EGM and that most players find such methods quite convenient
- Expenditure accounts are one benefit of cashless gaming and there is some evidence that providing expenditure to EGM players may assist players

EGM jackpots

Jackpots are a structural characteristic of EGMs that have received reasonable research attention. Jackpots can exist across groups of machines within a venue, or 'in a network with other sites ... a percentage of the money bet is allocated to a separate jackpot pool' (Maxgaming, 2010, p. 15). The large prizes associated with linked jackpots, according to gaming machine monitoring group Maxgaming (2010, p. 15), 'enhance machine popularity.' There is now reliable evidence to suggest that the presence and size of jackpots may have an impact on the behaviour of gamblers and progressive and linked jackpots are prevalent in Australian gaming venues.

Some studies have found that gamblers erroneously believe that they know when jackpots are about to be won (Hing & Nisbet, 2010; Productivity Commission, 2010). Players in the Hing and Nisbet (2010) study reported closely monitoring jackpot levels and playing these machines – or encouraging others to do so – when they appeared to be 'close' to their stated limit. The Productivity Commission (2010) also noted the challenges associated with jackpots as being related both to their potential to aggravate gambling problems, while contributing substantially to gaming enjoyment for many players. The Commission consequently recommended further research into the effects of jackpots (Productivity Commission, 2010).

A recent detailed investigation for Gambling Research Australia, conducted by Central Queensland University (2013), investigated the likelihood that jackpots and linked jackpots increase risky gambling behaviour and gambling related harm, while also examining the effect of jackpots on the player gaming experience. Researchers used both an experimental laboratory simulation and a modified version of the observational method used in the current observational study. Findings showed that EGM jackpots intensify player behaviour and are more attractive – and therefore potentially harmful – to at-risk gamblers (Central Queensland University, 2013). Accordingly, such findings provide some research evidence to suggest that jackpots as a structural characteristic of EGMs may have potential to present some level of harm to at-risk gamblers.

How EGMs influence gamblers and problem gamblers

The exact mechanisms through which EGMs affect gamblers and exacerbate problem gambling are still being explored in research. A few studies, however, provide some indirect indication of how EGM structural characteristics and play dynamics may affect gamblers. A study by Moodie and Finnigan (2005), for instance, compared the autonomic arousal of frequent gamblers with infrequent gamblers and non-gamblers while playing fruit machines. Autonomic arousal was measured as a proxy for the player experience of 'excitement' during play. Supporting the value of excitement as a measurement construct, results of the study showed that both wins and bonuses ('features') increased play excitement via arousal. It was also noteworthy that they also had some effect on all three experimental groups (even infrequent gamblers). A further study examining psychophysiological responses to win and loss events during EGM play was undertaken by Wilkes et. al (2009). This study measured both skin conductance level (SCL) and heart rate (HR) of university students after various EGM win and loss events. Compared to pre-play baseline measures, both SCL and HR increased after wins were presented (although interestingly not to losses). As arousal increased following win events, this may suggest a link between machine events - such as winning - and general player arousal (or conceivably, general play excitement).

The link between play excitement and exceeding play pre-commitments on EGMs was also explored in a study by Schottler Consulting Pty Ltd (2010). This study identified a direct link between machine events and players exceeding pre-commitments. Players were more likely to exceed their EGM expenditure limit, if they experienced an increased number of free spins (after moving from the first to second EGM), were highly absorbed in play, reported high excitement from features and experienced strong urges to continue play. Findings thus may suggest that such factors could play some role in EGM players *not* keeping to pre-commitments. Several variables were additionally found to predict player urges to continue play. These included excitement experienced during features, overall excitement from EGM play and excitement from free spins. While small samples prevented more detailed path analyses, a possible link between play excitement and the urge to continue EGM play was highlighted.

Accordingly, such findings provide some evidence to suggest the possible value of measuring play excitement and the urge to continue when examining the impacts of EGM structural characteristics. However, much further research is also needed to fully understand how specific characteristics contribute to problem gambling. Indeed, while there is limited research on alternative mechanisms and processes, it is plausible that many more complex relationships exist. However, arousal theories (play excitement) do provide one possible mechanism to account for how EGM characteristics *may* affect gambling behaviour.

Chapter 2:
Key structural
characteristics of top
versus mid range
Australian EGMs

Introduction

As part of the study, the key structural characteristics of top range versus mid range EGMs were examined (i.e., the most popular and less popular EGMs). Mid range was used as a term to describe less popular EGMs, given the truly unpopular EGMs would be typically removed from the market.

Given that EGM brands did not vary significantly across Australian states and territories and given that the time to source technical data was considerable (as advised by the NSW Office of Liquor, Gaming and Racing, OLGR), data based on the jurisdiction of NSW was considered representative of major types of EGMs in Australia. To ensure confidentiality of the characteristics of manufacturer's individual EGMs, only general trends are presented in this section of the report (This was a requirement of the OLGR NSW due to intellectual property considerations).

The analysis revealed a range of insights about the structural characteristics associated with the top and mid range EGMs. Areas analysed were limited to available data and included the characteristics of machines that may encourage gamblers to place higher bets, differences in the number of credits awarded for different EGM scatter symbols and card symbols, differences in how features and free spins are awarded and differences and similarities in other EGM characteristics.

As it was not possible to link these characteristics specifically to problem gambling, they were only examined as part of a general analysis of differences in basic machine characteristics across popular and less popular EGMs. From this perspective, understanding characteristics associated with higher per unit expenditure may provide some indication as to why machines with certain structural characteristics are more or less popular. Accordingly, this is largely a qualitative analysis supplemented with some quantitative information. Background is also presented on the number of EGMs within Australia/New Zealand and on the current National gaming machine standard to provide context to the analysis.

Key findings of the analysis are presented as follows:

- Background on EGMs and EGM standards in Australia and New Zealand
- Methodology used to analyse characteristics of top versus mid range EGMs
- Key findings of the analysis of top versus mid range EGMs
- Key findings in summary

Caveats to readers

As the analysis was conducted based on top and mid range EGMs in the state of New South Wales, it is possible that some trends may or may not apply to other Australian states (as NSW as a jurisdiction may have different EGM denominations, note acceptors and so forth, compared to other Australian states). However, as brands of EGMs generally across states are frequently very similar, results are likely to be reasonably indicative of most Australian jurisdictions.

Background on EGMs and EGM standards in Australia and New Zealand

EGMs within Australia and New Zealand

Across Australia, the Queensland Office of Economic and Statistical Research (OESR) estimated that there were approximately 196,694 gaming machines across Australia during 2011-2012 and approximately 17,266 EGMs in New Zealand. Nearly half of all EGMs (approximately 49%) in Australia are in the State of New South Wales and nearly one quarter (23%) are in Queensland. All states with the exception of Western Australia have gaming machines in pubs, clubs and casinos (Western Australia only has gaming machines in a single casino in Perth). Within New Zealand, gaming machines are also distributed across pubs, clubs and in six casinos.

Table 4. EGMs in Australia and New Zealand during 2011-12
(Source: Australian Gambling Statistics, 1986-87 to 2011-12, 29th edition, Published February 2014)

State	EGMs	State	EGMs	State	EGMs
NSW	95,610	South Australia	13,658	Western Australia	2,000
Victoria	28,376	Tasmania	3,690	Northern Territory	2,222
Queensland	46,152	ACT	4,986	New Zealand	17,266

Australian/New Zealand Gaming Machine National Standard

The Australian/New Zealand Gaming Machine National Standard (Revision 10.3 - 13 December 2012) currently governs the basic standards for EGMs across Australia and New Zealand. This document sets out standards common to all jurisdictions relating to both gaming machines and game design and serves to guide testers in testing machines for compliance with the Standard. Examples of characteristics within the National Standard include cabinet identification, hardware and software requirements, cash input systems, game play, metering requirements, artwork display and jackpots.

Specific examples are in **Box 1**.

Box 1. Examples of standards from the Australian/New Zealand Gaming Machine National Standard (Revision 10.3 - 13 December 2012) (Some jurisdictions also apply jurisdictional specific requirements)

- 3.8.1 - The artwork must display sufficient information to the player to indicate the available player options
- 3.8.2a - Each player entitlement meter (Credit, Bet and Win) must :-
 - a) be displayed in \$-and-¢ and credits (unless 1 credit = \$1), and
 - b) be of the same size in both forms
- 3.8.5 - In regard to multi-line games, each individual possible line which is activated as a lit selected line (by betting additional credits) must be clearly indicated by the gaming machine, so that the player is in no doubt as to which lines are being bet on.
- 3.8.6 - For multi-line games, the payline(s) won must be clearly highlighted to the player. This may be accomplished by drawing a line over the symbols on the payline and/or flashing of winning symbols and/or line selection box. Where there are two or more winning patterns, a sequential indication of each winning pattern must be given by flashing the participating symbols or highlighting the symbols and associated payline.
- 3.9.9 A gaming machine must display the following information to the player:
 - a) The player's current credit balance;
 - b) The current bet amount;
 - c) All possible winning outcomes, or be available as a menu item or help menu;
 - d) Win amounts for each possible winning outcome or be available as a menu or help screen item;
 - e) The amount won for the last completed play (until the next play starts, or following player input related directly to the next play); and
 - f) The player options selected (e.g. bet amount, lines played) for the last completed play (until the next play starts, or following player input related directly to the next play)
- 3.9.17 - The Nominal Standard Deviation (NSD) of a game must be no greater than 15.
While the standard deviation of individual components of a game (e.g. feature games, metamorphic sequences etc.)

Box 1. Examples of standards from the Australian/New Zealand Gaming Machine National Standard (Revision 10.3 - 13 December 2012) *(Some jurisdictions also apply jurisdictional specific requirements)*

- may exceed 15, the NSD of the whole game must not exceed 15.
- 3.9.21 - A game must not automatically exit a feature before the feature has been completed.
- 3.9.22 - Autoplay is prohibited.
- 3.9.23 - A maximum of five consecutive Gamble attempts per single play may be made following a win. The first Gamble attempt must only be offered at the completion of all other game elements (i.e. Gamble game elements can only be offered as the last elements of a play).
- 3.9.25 - If Gamble is offered on the result of bonus/feature games, only moneys not transferred from the win meter to the credit meter may be wagered on the Gamble feature.
- 3.9.28 - Partial transfer of winnings to the Gamble feature is acceptable (e.g. half stake Double-up) however amounts not wagered on a Gamble element must be transferred to the player's Credit meter:-
 - a) At the time the player selects partial Gamble,
 - b) Immediately after the completion of the Gamble element, or
 - c) Immediately after the completion of the play.
- 3.9.29 - Gamble may offer other multipliers other than two (2) e.g. "pick a suit" where four outcomes may be offered provided that the other requirements of this section are met (e.g. a 100% RTP).
- 3.9.32 - If Auto Gamble is provided, automatic entry to a Gamble feature should only be activated upon a win from a primary game or completion of a feature game(s). It must be possible for the player to disable the Auto Gamble feature at any time. If Auto Gamble is used, the player should be given the option to exit the Gamble feature without playing.
- 3.9.33 - Games that are not completely independent of player's history (i.e. metamorphic) must:
 - a) Display clearly to the player which game rules apply to the current game state;
 - b) Display to the player sufficient information to indicate the current status towards the triggering of the next metamorphosis of the game (e.g. if the game collects tokens towards a feature, the number of tokens missing or the total number required to trigger the metamorphosis must be indicated along with the number of tokens collected at that point);
 - c) Not adjust the likelihood of a metamorphosis occurring, based on the history of prizes obtained in previous games (i.e. games must not adapt their theoretical return to player based on past payouts); and
 - d) Not be misleading. If a game's metamorphosis is triggered after accruing a certain number of tokens or combination of tokens of different kind, the probability of obtaining like tokens must not deteriorate as the game progresses (e.g. for identical tokens it is not permitted that the last few tokens needed are more difficult to obtain than the previous tokens of that kind).
- 3.9.57 - All games are to be fair to players in that the game must not be designed to give the player a false expectation of better odds by falsely representing any occurrence or event. For example, games (and features within games) that incorporate an illusion of control in that players are offered an option which appears to provide an opportunity to influence the outcome of a game using skill, when in fact the outcome cannot be influenced by the use of skill and/or the outcome has already been determined, are not acceptable.
- 3.9.57a - The display of the result of a game outcome must not be misleading or deceptive to the player (e.g. must not improperly indicate a near-miss).
- 3.9.59 - Games from a manufacturer must not have the same name as another game from the same manufacturer if the rules of the game are different.
- 4.2.8 - All game instructions on the artwork must be easily interpreted, not ambiguous, and sufficient to explain all game rules.
- 4.2.9 - There must be sufficient game instructions to allow a player to determine the correctness of prizes awarded.
- 4.2.15 - Game instructions that refer to the entire game (i.e., Global Instructions) must be indicated with "ALL". Global Instructions that have exceptions (e.g., All wins left to right only except scatters) must indicate the exceptions with wording such as "EXCEPT".
- 4.2.29 - The coin input denomination and tokenisation of the game must be stated using the message "\$Y = Z Credits" or "Y¢ = Z Credits" (where Y is the token value and Z is the number of credits for each token) regardless of whether or not the game is tokenised. For example, a 5c, \$1 tokenised game must have the message "\$1 = 20 Credits" displayed. A 20c non-tokenised game must have the message "20¢ = 1 Credit".
- 4.3.12 - If the function of a symbol changes (e.g., a non-substitute symbol becomes a substitute symbol during a feature), or the symbol's appearance changes, (e.g., a red ball changes to a blue ball in a feature) the artwork must clearly describe this change of function or appearance and any special conditions that may apply.
- 4.3.24 - Where winning patterns are paid on lit lines only, the artwork must include the statement "All wins on lit lines only except [X] [Y] and [Z]" where [X] [Y] and [Z] are the exceptions to this rule (e.g., scatters, feature wins etc.)
- 4.3.38 - The artwork must explain all rules relevant to free games.

While many of the requirements for software, hardware and cabinetry are quite prescriptive, the Standard provides little guidance on the design of features and free spins. This is also given the difficulty of defining the full range of feature and game play characteristics that can be potentially developed. As stated in the Standard - *It is not possible to define a standard for all kinds of game features that may be developed over time (p77, 4.3.34).*

Each state/territory of Australia – along with New Zealand - also issue an Appendix to document any variations within the jurisdiction from the National Standard (Example differences are in Table 5). Differences are wide and varied to reflect nuances of the gaming regulatory environment within different jurisdictions. It is also notable that different jurisdictions have different approaches to everything from standard deviations of winning to information display requirements to advertising standards for EGM artwork.

Table 5. Examples of jurisdictional specific differences from the Australian/New Zealand Gaming Machine National Standard

State	Examples of jurisdictional specific differences from the National Standard
NSW	<ul style="list-style-type: none"> • 2.1.1(a) NS 3.9.17 Standard Deviation is not in effect in NSW, however the methodology to calculate the SD is to be used in the NSW submission requirements • 2.4.96 - Gaming machines must display the current local time on-screen
Victoria	<ul style="list-style-type: none"> • V3.16 The following requirements apply to redemption of small credit values less than the minimum legal coin value (currently 5 cents) e.g. 1 or 2 x 2 cent credits: <ul style="list-style-type: none"> a) It is not permitted for the gaming machine to round the odd credits down to zero or up to the minimum legal coin value (e.g. 5 cents). b) All appropriate gaming machine meter updates must reflect “un-rounded” amounts. c) Permissible methods for handling of such small credit values are: <ul style="list-style-type: none"> i. Elimination of small credit values with an approved ‘Residual Credit Removal Play’ feature as described in that section. ii. Leave the credits of a value less than 5c on the gaming machine and available for play. iii. Allow cash ticket or cancel credit to include the amount of less than 5c and to round up or round down the amount when the ticket or credit receipt is redeemed. • V9. Responsible Gambling - V9.1.1 Artwork must not - <ul style="list-style-type: none"> a) Be factually incorrect b) Be misleading or deceptive c) Suggest that playing a gaming machine is likely to improve a person's social status d) Suggest that playing a gaming machine is likely to make a person more attractive to others e) Suggest that playing a gaming machine is likely to result in a person's financial betterment f) Describe money spent in playing a gaming machine as an investment g) Suggest that a player's skill can influence the outcome of a game that is purely a game of chance; or h) Suggest that a person's chances of winning a prize are influenced by the length of time for which a person plays a game. • V9.1.2 - Game name must not - <ul style="list-style-type: none"> a) Suggest that playing a gaming machine is likely to improve a person's social status b) Suggest that playing a gaming machine is likely to make a person more attractive to others c) Suggest that playing a gaming machine is likely to result in a person's financial betterment d) Be misleading or deceptive e) Describe money spent in playing a gaming machine as an investment f) Suggest that a player's skill can influence the outcome of a game that is purely a game of chance; or g) Suggest that a person's chances of winning a prize are influenced by the length of time for which a person plays a game. • V9.1.3 - Games can offer what might otherwise appear to be an illusion of control if it is clear to players that no action of the player can influence the outcome of the game or any element of the game. Advice to players may be provided in the static artwork or via game play information which makes clear and in readily available and visible format that no action of the player can influence the outcome of the game.

State	Examples of jurisdictional specific differences from the National Standard
	<ul style="list-style-type: none"> V9.2 - For a game approved by the Commission after 1 January 2003, unless the game is to be operated in the approved "specified area" the spin rate or interval between spins on the gaming machine must not be less than 2.14 seconds per play. V9.4.1. - The time of day must be displayed by a time display which may be located on the video screen of the gaming machine. V9.16.1 - Requirements for Electronic Player Information display
Queensland	<ul style="list-style-type: none"> Q1.1.3 - The minimum bet for a game must not exceed: b) 25c for Clubs and Hotels with credit denominations of 20c or less; or i) \$1 for Clubs and Hotels with a credit denomination of \$1. Q3.74.3 – Player Information Display requirements – Requirements for statements - "In order to win this prize, you will need to play at least XX LINES / WAYS / PATTERNS at YY credits per LINE / WAY / PATTERN.", where XX is the number of lines, ways or patterns that needs to be played in order to win the maximum prize, YY is the maximum number of credits and LINES / WAYS / PATTERNS is the appropriate descriptor of the game type. Example - "In order to win this prize, you will need to play at least 1 Reel at 25 credits bet per reel cost." Q4.1.4 - Artwork must not contain statements that indicate the chances of winning a prize increase with an increasing bet.
South Australia	<ul style="list-style-type: none"> SA1.3A - Applications for Games with New Features - Applicants are advised that an application for approval of a game which offers new features, characteristics or qualities should be preceded by or accompanied by information and a detailed submission as to why the game will not lead to an exacerbation of problem gambling
Tasmania	<ul style="list-style-type: none"> T3.1 - Games are not to have a component of physical skill. T3.3 - Game features that increase the speed of play will not be permitted. T3.5 - A maximum limit of 50 possible lines is permitted. T3.6 - The Nominal Standard Deviation (NSD) of a game must be no greater than 18. T3.8 - Virtual implementations of actual games of pure skill may be acceptable, provided such games are implemented in a manner such that no component of skill is required to play the game on a gaming device. T3.14 - Metamorphic games will be prohibited. T3.15 - If the net win of a play is less than the total credit bet any audible affirmation associated with the win will be subject to close regulatory scrutiny, and any display of "congratulatory" messages is prohibited. T3.23 - Gamble features in games are only permitted to have a maximum multiplier of four. T3.32 - Depiction of currency on artwork is prohibited.
Northern Territory	<ul style="list-style-type: none"> NT.2.7 - Wide area multi-venue gaming machine jackpots are not permitted in the NT. NT.3.5 – Games having a Nominal Standard Deviation (NSD) greater than 15 (refer clause 3.9.17 of the National Standards) are subject to the following requirements: <ul style="list-style-type: none"> - Where the game variation RTP (not including RTP from a jackpot) is less than or equal to 88%, the NSD for the game variation shall be no greater than 15. - Where the game variation RTP (not including RTP from a jackpot) is greater than 88%, the NSD for the game variation may be greater than 15, on the condition that the lower 95% confidence limit for the variation at 150,000 games is greater than 80.409% NT.3.20 - TITO systems for use within NT Casinos shall be evaluated and approved on a case by case basis.
Western Australia	<ul style="list-style-type: none"> Misleading Features: 8ii. - Inaccurate perceptions of control or near miss displays are not permitted.
New Zealand	<ul style="list-style-type: none"> (i) NS 3.9.17 - Where clear evidence has been provided to the tester that the game will provide the expected rate of return, then the NSD of 15 can be exceeded. The supporting data and NSD value must be included in any recommendation for approval. DIA9.2 - Elective Information Display (viii) to include:

State	Examples of jurisdictional specific differences from the National Standard
	<p>(a) Odds of winning the game (including the 5 top and bottom winning combinations); and</p> <p>(b) The average winnings paid out to players of the game over a particular period of time or a particular number of plays; and</p> <p>(c) The maximum and minimum player spend rate for the game.</p> <p>(xiii) Player information is the following information generated and displayed on the screen of a gaming machine:</p> <p>(a) the duration of the player's session of play; and</p> <p>(b) the amount, expressed in dollars and cents, that the player has spent during the player's session of play; and</p> <p>(c) the player's net wins or net losses during the player's session of play.</p> <ul style="list-style-type: none"> • DIA9.3 Interruptive Information Display - (i) Player information, as referenced in section 9.2 (xiii), must be displayed during a player's session of play at random intervals. The random intervals must be triggered during a set period of time not less than five minutes. The set period can occur between 0 and 30 minutes, but the actual display of the information must not exceed 30 minutes after the start of the session of play or the cessation of the last interruptive display of player information.

NSW has also developed a 'prohibitive features register' to identify features of EGMs banned in NSW. NSW Gaming Machine Prohibited Features Register revision F (28 November 2011) includes a range of features suspected as problematic for problem gambling or inappropriate for EGMs and have included:

- non-linear pay tables (where the top prize varied depending on the amount bet)
- a free game limit to address a trend for free games to be increasing significantly (e.g., 100 free games)
- display of legal tender on artwork
- use of verbal inducements on an EGM
- use of a very large top prize as an advertising inducement (which required maximum bets)
- mixing high and low denominations on EGMs
- requirements for a minimum bet to win the top prize
- a button which prompted players to increase their bet to play all lines
- ante bets increasing without a corresponding increase in Return to Player (RTP) and;
- gaming machine headphone operation

Such registers may also provide guidance to Original Equipment Manufacturers (OEMs) about features of EGMs that may be harmful or inconsistent with responsible gambling.

Methodology used to analyse characteristics of top versus mid range EGMs

Background

The NSW Office of Liquor, Gaming and Racing (OLGR) provided support to the current project by undertaking an analysis to identify the top versus mid-range EGMs in NSW (for 2012-13). This was based on both expenditure per EGM and the number of EGM units (by game type) available state-wide.

This data were sourced through the OLGR NSW in consultation with the Licensed Monitoring Operator (LMO) for NSW (as this data was not in the public domain). Overall trends were then reported to ensure that any characteristics of individual EGMs were not identified (due to manufacturer confidentiality considerations).

As the retrieval process was very involved for the OLGR, the analysis was limited to the top and mid-range 15 EGMs (a sample of 30 EGMs in total). This presented some opportunity to examine the structural characteristics associated with popular EGMs and mid range EGMs (which were less popular).

The term 'mid range' was used, as unpopular EGMs are typically removed from the market (implying that mid-range EGMs are still somewhat popular, though less popular). Given EGMs are very similar nationally, the analysis of NSW EGMs was seen to be sufficiently indicative of EGMs in other Australian jurisdictions.

Methodology

Based on available data, the top and mid range EGMs were coded as far as data allowed. It should be noted in this context that data do not contain expenditure associated with specific EGM denominations, rather specify the range of denominations available for specific EGM games (e.g., machine X has a 1c, 2c and 5c variant) and other general characteristics. Specific expenditure information by denomination was not available in OLGR NSW data.

Accordingly, analysis related to general game play characteristics, game dynamics and other data such as maximum bets, maximum lines available and so forth.

As data held by OLGR NSW on different machines varied, coding should be taken as indicative as it was based on available information. It should also be noted that coding was very difficult in some situations as data formats varied somewhat depending on the EGM manufacturer and the year when the data were produced.

A note to readers – Only general trends provided in reporting due to intellectual property considerations

Readers should note that this is ONLY a summary of key findings prepared for public review to ensure that individual EGM details remain confidential due to intellectual property considerations. Manufacturers submit details of their products prior to approval consideration under provisions of the Gaming Machines Act (which provides for confidentiality of submitted information).

Key findings of the analysis of top versus mid range EGMs

EGM characteristics encouraging gamblers to place higher bets

A range of EGM characteristics was identified from analysis of the top versus mid range EGMs that may encourage gamblers to place higher bets on EGMs. A total of 8 of the top range EGMs and 7 of the mid range EGMs had this type of characteristic, with some variations observed.

A common characteristic of EGMs was to have a button encouraging higher bets such as a 'X credits + X credits' buttons. For some EGMs, such buttons had to be used if players wanted to be eligible for certain features. For instance, some EGMs required 'extra' bets for eligibility for extra free spins or special features or to be eligible for 'scatter' or multiway wins (wins that can be anywhere on an EGM rather than the traditional left to right).

Other buttons merely offered players an opportunity to spend more per bet. As a qualitative analysis, there were no clear differences between the top and mid range EGMs relating to characteristics encouraging higher bets. However, it should be noted that no data were available on how often different characteristics were used in EGMs.

Number of credits awarded for EGM scatter symbols

All EGMs in the top and mid range 15 had scatter symbols as a characteristic of game play. The most common configuration was for scatter symbols to pay in 'any' direction and only 5 machines in total had scatter symbols that paid only from left to right.

While some scatter symbols resulted in free spins or features, the most common trend was for scatter symbols to award credits. The credits awarded for different scatter symbol numbers showed that the top range EGMs awarded slightly higher scatter credits for scatter wins than mid range EGMs. Once again, however, the limitation of this analysis is that trends were only able to be based on the top 15 EGMs and mid range 15 EGMs.

Credits awarded for different EGM card symbols

The use of card symbols is a common characteristic of virtually all EGMs in the Australian gaming machine market. Card symbols are thus a standard part of EGM play. However, credits awarded for card symbols during EGM play differ greatly between the top and mid range EGMs.

Analysis suggested that, for the major card symbols, mean credit values were higher for the top range EGMs (compared to the mid range EGMs) for 13 out of the 19 card symbols. In contrast, for only 5 of the presented card symbols, credit values were higher for the mid range EGMs (compared to the top range EGMs).

Key differences in how features and free spins are awarded across EGMs

The features and free spins of top versus mid range EGMs showed great diversity in game play dynamics. Four of the top 15 games were multiway EGMs (Multiway EGMs are EGMs where bets are placed on reels rather than lines), along with 3 of the mid range EGMs. Analysis of the maximum free spins of EGMs showed that the mean top free spins available in the top range EGMs was 16.6 and the mean top free spins in the mid range EGMs was 25.9.

Win multipliers of EGMs showed that the top range EGMs had 10 games offering win multipliers (which multiplied amounts won on a win) with an average multiplier effect of 20.8. A total of 10 games within the mid range EGMs also had multipliers with an average multiplier effect of 18.3. Accordingly, qualitatively, the popularity of EGMs cannot be easily attributed to a large number of available free spins or multipliers.

Key differences in EGM bets, lines and other available data relating to EGMs

The bets, lines and other data relating to the top and mid range EGMs were coded. The average maximum bet of top range EGMs was fairly similar to the mid range EGMs (\$7.40 v \$8.20), as was the average maximum lines (69.2 v 62.8 lines). The maximum prize was higher in the mid range EGMs than the top range EGMs (\$6,113.10 v \$4,589.80).

The average RTP (Return to Player) percentage was very similar across the top range and mid range EGMs (89.9% v 89.4%). Twelve EGMs in the top range also had standard jackpot functionality versus 10 of the mid range EGMs. It was also apparent that 6 EGMs in the top range had linked jackpots functionality versus only a single EGM in the mid range.

Other common characteristics of top versus mid range EGMs

Analysis of other EGM characteristics across the top versus mid range EGMs also showed that:

- All offered players the opportunity to gamble or double-up winnings and frequently offer 'half gamble' functionality on the same button as gamble (achieved via a double button press)
- Most 'gamble' games offer players the opportunity to double or quadruple winnings based on selecting a card suit or number
- Virtually all EGMs pay on left to right wins and scatters are paid anywhere
- Most EGMs use a dual credit display showing wins in both credits and money – However, the credit display is typically the primary display and the money the secondary smaller display below
- Virtually all EGMs in both the top range and mid range had 5 video reels – very few offered additional reels as part of the EGM game
- Virtually all EGMs had more than a single variant which allowed different lines or denominations (and bets) to be programmed with different RTP percentages or standard deviations (a measure of pay out volatility) (However, data were not available on expenditure for specific denominations)
- Presentation of game play rules, credits and information varied considerably on EGMs – While this showed clear diversity in the way EGMs are promoted, it was noteworthy that:
 - The different structures of game rules and prizes presented on cabinets in some cases make it difficult to read and understand how features are awarded – In particular, the volume of text is difficult to read in many cases without close and careful examination
 - It is unclear across some EGMs whether features could be awarded once or multiple times during free spins. In many cases, this information was inconspicuous or hard to find given the vast available text on some machines

Other observations about the NSW EGM market

Other observations about the NSW EGM market include the following:

- The predominant EGM types are multiline EGMs
- Most EGMs are video reel based machines
- Most EGM units are 1c, 1c or 2c or 1c, 2c or 5c EGMs

Key findings in summary

Analysis of top and mid range EGMs revealed a range of interesting differences. In spite of some differences, in most cases, it was difficult to ascertain whether observed differences may account for the overall popularity of EGMs. In addition, as no data were available on how often players interacted with different EGM characteristics, it was not possible to draw firm conclusions about the impact of different characteristics observed.

However, analysis did reveal a number of possible differences and similarities in the characteristics of top versus mid range EGMs, along with some characteristics that may potentially be associated with increasing levels of gambling harm. Most notably, this included EGMs with characteristics that encouraged players to place higher bets (e.g., X + X credit buttons) or linked use of such buttons to feature/free spin eligibility. The possible presence of higher mean credits for card symbols in top range EGMs (compared to mid range) is similarly noteworthy, as is the presence of more machines with linked jackpot functionality.

As previously highlighted, however, all trends should be interpreted with due care and caution given that only a very small sample of EGMs was able to be examined in the exercise. Accordingly, results should be considered indicative, rather than definitive.

Key points in summary

- There were an estimated 196,694 gaming machines in Australia during 2011-2012 (and 17,266 in New Zealand)
- The Australian/New Zealand Gaming Machine National Standard (Revision 10.3 - 13 December 2012) provides a broad standard governing the acceptability of different EGM characteristics – individual jurisdictions also have additional jurisdictional specific standards
- A total of 8 of the top range EGMs and 7 of the mid range EGMs had a characteristic that encouraged players to place higher bets (e.g., 'X credits + X credits' buttons) or required players to use such buttons to be eligible for free spins and features
- The most common configuration was for scatter symbols to pay in 'any' direction and only 5 machines in total had scatter symbols that paid only from left to right - credits awarded for different scatter symbol numbers showed that the top range EGMs awarded slightly higher scatter credits for scatter wins than mid range EGMs
- The use of card symbols is a common characteristic of virtually all EGMs in the Australian gaming machine market. For major card symbols, mean credit values were higher for the top range EGMs (compared to the mid range EGMs) for 13 out of the 19 card symbols. In contrast, for only 5 of the presented card symbols, credit values were higher for the mid range EGMs (compared to the top range EGMs)
- Four of the top 15 games were multiway EGMs (where bets are placed on reels rather than lines), along with 3 of the mid range EGMs
- The mean top free spins available in top range EGMs were 16.6 and 25.9 for mid range EGMs. The top range EGMs had 10 games offering win multipliers (which multiplied amounts won on a win) with an average multiplier effect of 20.8. A total of 10 games within the mid range EGMs also had multipliers with an average multiplier effect of 18.3
- The average maximum bet of top range EGMs was fairly similar to the mid range EGMs (\$7.40 v \$8.20), as was the average maximum lines (69.2 v 62.8 lines). The maximum prize was higher in the mid range EGMs than the top range EGMs (\$6,113.10 v \$4,589.80)
- The average RTP (Return to Player) percentage was very similar across the top range and mid range EGMs (89.9% v 89.4%). Twelve EGMs also had standard jackpot functionality versus 10 of the mid range EGMs. Six EGMs in the top range had linked jackpot functionality versus only a single EGM in the mid range
- Presentation of game play rules, credits and information varied considerably on EGMs – While this showed clear diversity in the way EGMs are promoted, understanding key differences in the way different EGMs award free spins/features/bonuses generally was difficult

Chapter 3:
Influence of EGM
structural characteristics
from an attitudinal
and behavioural
perspective

Introduction to study methodology

In line with project brief, the current study sought to investigate the influence of a wide range of EGM characteristics on EGM player behaviour. The quantitative method devised for the investigation included a mix of observation of live EGM play (N=222 players) and conduct of surveys of player attitudes toward EGM events that occurred during play. Data were also supplemented with qualitative interviews and focus groups. The following content describes the methodology in detail used in the current study.

Live EGM data collection method

The live observational methodology developed for the current study was based on a method utilised in an earlier GRA pre-commitment study (Schottler Consulting Pty Ltd, 2010) and the more recent GRA jackpots study (Central Queensland University, 2014). However, the methodology was further enhanced in the current study to meet GRA research objectives. Live observation of EGM play was necessary to break new ground in understanding how EGM characteristics and play dynamics may affect gambling behaviour. Part B of the survey form (Refer Appendix B - Quantitative Survey Instrument) was also used to record the key characteristics of each EGM played during player observations.

Field worker recruitment and training

A total of 17 field workers (research assistants or RAs) were trained on the observational data collection methodology used in the project. All were required to have extensive experience playing EGMs, good attention to detail and good interpersonal skills. Their ability to quickly discern and record different EGM events was key to accurate data collection and as such this skill formed the basis of training. This included recruitment of EGM players with an interest in data collection through advertising job boards and other existing networks.

Each initial training session was around 2 hours long and included up to three field workers. In addition to being briefed on the nature and scope of the project, they received instruction on safe fieldwork protocols, informed consent procedures and accurate data collection. The data collection instrument was also explained in detail. As training was conducted within gaming venues, considerable time was then devoted to live piloting of the survey with a focus on the observational component. Interviewers were not permitted to collect data until evidence was available that they understood the study and were able to record data accurately.

A key benefit of the small group approach to training was the ability to check for inter-coder reliability. This was a highly useful process as it allowed comparison of a range of data including the number and size of bets and coding of features and free spins. This process was repeated across a range of EGMs during the training session to ensure interviewer exposure to a variety of EGM events and types. Field workers were in constant contact with a field supervisor during the data collection period and interviews were continually validated to ensure the quality of data collection of each interviewer.

Recruitment of EGM players

A total of 222 regular EGM players took part in the study. Four main participant recruitment streams were used for this stage of the study – venue-assisted recruitment, snowballing and Facebook and community advertising. In the first instance, a range of venues in New South Wales, Queensland and Victoria were approached and asked to consider contributing to the study by permitting the observational component to be conducted on site. Venue support in the recruitment of regular EGM players to the project was also requested.

Each participating player was asked, at the conclusion of their session, if they could recommend other regular players for the study. This snowball recruitment method was the most successful in terms of the overall number of players who consented to participate. Several other players were also recruited via Facebook advertisements and other community advertisements and networks.

In each case, after consent was received to contact the player to discuss the study, the field manager called to explain the project in detail including the observational method and the types of questions that would be asked in the study. Players were also informed that they were under no obligation to play and could play for as long or as short as they preferred. Similarly, players were also encouraged to do what they normally do during play as the intent was to make the observation as true to real life as possible. This also meant that the interviewer would meet the player at a time when the player reported they would regularly play EGMs at a venue of their choice.

A profile of the gender and age of participants is in Table 6. Participant reported past gambling is in Table 7.

Table 6. Demographic profile of study participants (N=222, October 2013 - April 2014)

Age and gender of study participants	% EGM players			
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers
18-24yrs	9.5	7.8	20.8	14.0
25-34yrs	16.7	7.8	11.1	23.3
35-49yrs	9.5	7.8	23.6	18.6
50-64yrs	16.7	28.1	20.8	34.9
65yrs+	47.6	48.4	23.6	9.3
Male	40.5	34.4	39.7	41.9
Female	59.5	65.6	60.3	58.1

Table 7. Reported gambling history of study participants (N=222, October 2013 - April 2014)

Study participant gambling history	Mean or %							
	Non-problem gamblers		Low risk gamblers		Moderate risk gamblers		Problem gamblers	
	Mean	N	Mean	N	Mean	N	Mean	N
Times pokies played per month (times)	6.8	40	8.7	64	9.0	73	9.9	42
Reported length of typical pokies session (minutes)	58.8	39	65.8	63	73.3	70	102.7	42
Money spent in an average play session (\$)	32.6	40	39.7	63	64.1	72	77.1	43

Recruitment of venues

As EGMs were largely similar across jurisdictions, sampling across different venues and locations was primarily to cover a wide range of EGMs and players. For this reason, there was also no need to balance samples evenly across jurisdictions. In total, 222 observations were conducted in the three major Australian states with the largest populations and highest numbers of EGMs - New South Wales (N=115), Queensland (N=85) and Victoria (N=22). These results are summarised in Table 8. Interviews took place between October 2013 and April 2014.

In total, 24 venues supported the study and a number of these agreed to recruit players. Managers in these venues were given a Player Information Sheet to distribute to potential participants that clearly explained the aim of the study and the observational method that would be used. It also advised that players would be thanked for their time with a \$70 shopping voucher.

Several venues were either unable to recruit or unwilling to ask players to participate. They were, however, happy for the researchers to bring players on site for interviews. That is, players recruited outside the venues were asked where they typically played and those venues contacted. The manager was informed of the research and advised that one or more of their customers had consented to participate and that their venue was the preferred location. In most but not all cases permission was granted.

Table 8. Summary of the number of participating venues and players by State (N=222, October 2013 - April 2014)

State	Venues	Players
New South Wales	11	115
Queensland	11	85
Victoria	2	22
Total N	24	222

Informed Consent

In recognition that this is a very complex project, strict methodological and ethical procedures that accord with those detailed in the Australian Code for the Responsible Conduct of Research were followed in the study. In particular, the researchers provided each player with the opportunity to opt-out after hearing information, over the phone, about the study objectives and the method. An interview was only scheduled if players were happy to take part as per the informed consent protocols. Several potential participants opted-out at this stage.

Before each interview, all players also read and signed an informed consent acknowledgement form as supplied by the RA to the player. This further emphasised information already verbally discussed with players on the phone prior to the interview including:

- The purpose of the study and that the research was being undertaken for Gambling Research Australia
- That participation was completely voluntary
- That players would be observed during play and confirmed that players were already regular EGM players
- Results were strictly confidential and would not identify individuals
- Further details could be supplied for finding out more about the study if players desired
- That the player had considered possible impacts of playing pokies as part of the study and that no potential or actual harms to themselves or their families would occur as a result of study participation
- Provision of the Gambling Help Line number (1800 858 858) and online counselling forum (gamblinghelponline.org.au)

Within-venue live EGM observational methodology

Upon meeting the player within the venue at the agreed time, the Research Assistant (RA) would spend some time confirming that the player clearly understood the project and methodology and would ask the player to read and sign an informed consent statement. This was a further check measure to ensure that the player understood that there was no obligation to play for any particular length of time and had made other considerations prior to participating in the study.

A short series of pre-play questions was also asked to explore the average expenditure and length of time that the player would normally play. The player was then asked to play as they normally preferred to play, while the researcher observed the player for the duration of their EGM play session.

During the observation of EGM play, the RA recorded the credit meter and bet changes selected by players during play along with the key characteristics of the EGM selected by the player. This included information such as:

- EGM name and number
- Information on the major jackpots
- Whether the machine was reel-based or multiway (or otherwise)
- The number of available lines or reels on the EGM
- The numbers on each EGM credit button
- The EGM denomination (e.g. 1c, 2c, 5c, \$1 etc.)

Once this data had been captured, the participant would commence play. The RA would stand to the side and slightly behind the player and record several events including the money in/out of the EGM, each change in the credit meter and the size of each bet. Each bet/credit meter change was recorded on a new line in the data sheet. It was not necessary to record win meter readings, as this was able to be calculated post-observation, as the difference between the current and previous credit meter reading less the bet.

Other play events recorded by the RA as they occurred included free spins, features, use of the gamble or double up and any other money in or money out events. Given the complexity of data recording on live EGMs, all interviewers for the study were recruited based on their prior familiarity with EGM play. Key codes used during the observational phase are in Table 9.

Table 9. Codes used to record live EGM play dynamics

Codes used in observational study		Description
\$ In	e.g., In \$50	Loaded \$50 onto credit meter
S	Free spin e.g., Sx5	5 Free spins. S was also used to designate single free spins.
D	Double-up e.g. D2 (2 cards) D4 (4 cards) D1/2 (half gamble)	Player use of double up or gamble functions. These permit players to potentially double or quadruple their money on a win.
F	Feature	An abnormal or atypical machine event that occurs infrequently and may go for longer periods and is typically more visually stimulating. Features are typically associated with winning bonus points or free spins.
M	Multiplied win – whether in a free spin or feature, a win was multiplied (e.g., Mx2).	This was recorded when wins were multiplied during play or during a free spin or feature.
R	Pressed reserve button	This was recorded when players pressed the reserve button.
B	Break	As true to life play was encouraged, players taking breaks during play were recorded.
I	Player pressed game information button	This was coded when player pressed game menu buttons.
TW	Take win	This was when the player pressed a button to transfer the amount from the win meter to the credit meter, enabling the money won to be used for play.
\$ Out	\$5	This was recorded when money was cashed out.

Table 10 shows an extract from one player's session on a 1c EGM. Using this example, it can be seen that:

- The player inserted \$20 into the machine, as shown in the \$/event column
- The credit meter on this 1c EGM thus displayed 2000 credits (C1)
- The first bet placed was 40 credits (which in this case equals 40c) and the credit meter changed to 1960 implying the first game resulted in a loss equal to the bet size
- A second bet of 40 credits was placed
- The player won a feature from this bet, making a choice of 13 free spins with an 8x multiplier
- The net win from this feature was 1440 credits (\$14.40), being the difference between 3480 and 1960 less the 60c/60c bet
- Several further bets of 60 credits were placed
- The player cashed \$30 out

Table 10. Example extract of data recorded during an EGM observation

\$/event (A1)	Credit meter (C1)	Bet Meter (B1)
In \$20	2000	40
	1960	40
FC x 13 spins, Mx8	3480	60
	3430	60
	3390	60
	3330	60
	3270	60
	3210	60
	3150	60
	3090	60
	3050	60
Out \$30	3000	

At the conclusion of play on each EGM, a short series of post-observation questions were asked of the player. They were asked to rate, on a scale of 1-5:

- How exciting the session, free spins and features were and
- How strong their 'urge to continue' play was for the EGM player

In addition to questions about play excitement and the urge to continue, each player was also asked if they knew the winning combination of symbols for the top three prizes and to rate how often they were thinking the following:

- I will bet high to ensure that when I do win I win lots of money
- I've got a better overall chance of winning on this machine
- I must buy all the pay lines on this machine to avoid missing a win

Finally, each player was asked to recall how many credits and lines, on average, they bet during that session. This entire process was repeated for any and each subsequent EGM played.

Once the player indicated that they had finished play, the RA then administered 'Part C' of the survey. One of the EGM's played (generally the last one) was selected and the player was asked to read and rate the clarity of on-screen play information/game rules and highlight anything that they thought was unclear or misleading. Players were also asked if they had ever read the information in the past.

Later, once the attitudinal questions were administered to the player, the RA returned to this EGM and recorded/drew the button panel layout. In a limited number of instances (approx. 5%) photographs were taken, with the permission of the venues, of the top and belly cabinet panels of machines.

Attitudinal survey questions

The final part of the survey was administered by the RA at a location within the venue, but away from the gaming floor. Players were asked to rate excitement associated with a range of machine events (more generally) using a scale where 1=not at all and 5=very exciting. These items were consistent with the research questions described earlier. A separate section asking players about their awareness of Reel Power and Multiway type EGMs was also administered. The final version of the attitudinal stage typically took between 20-40 minutes to administer.

At the conclusion of the survey players were asked to self-complete the nine-item PGSI although in many cases they preferred this to be interviewer-administered. A \$70 shopping voucher was then mailed to each participant thanking him or her for participating in the study.

Observational data coding

The observational play data was subsequently transcribed and coded (over 48,000 spins). This data included, for each EGM played, money in/out, spins, features or other events, changes in the credit meter and each bet made. From this basic data set it was possible to use formulas to calculate several further bet-related variables that would form the basis of further analysis including:

- Count of bets by size
- Count of changes in bet size
- Size of each bet in dollars (converted from credits)
- Money placed into and taken out of the EGM to calculate EGM expenditure
- Losses Disguised as Wins (LDWs) as dollar value (negative)
- Count and value of real wins
- Count and value of bets only won
- Count and value of bets lost
- Count and value of coding errors

All values were converted to dollars, with special care taken for the values for games with a denomination greater than 1c. In cases where denomination data were missing (as occasionally occurs with paper and pencil surveys), it was also able to be inferred through the credit meter reading associated with insertion of the first note into the EGM (e.g., \$20 in = 2,000 credits implies a 1 cent EGM).

The next step in the process was to examine the coding errors. While the volume of initial coding errors was less than 1% per cent of total bets (only 0.73% of spins), it was possible to correct many of these. For example, observer handwriting was an issue in some of these errors, with '0's appearing as a '6' and being entered as such. Most other coding errors were the result of missed bets. These were clearly identifiable where players had little variation in their bet size and corrected via the insertion of a new equivalent bet. Of the 48,920 spins across all EGMs played 358 had coding errors (0.73% of all spins recorded). A high proportion of paper surveys (including other self-report data) were also checked for data entry or other errors to ensure the completeness of the final quantitative data set.

Interviews and focus groups

In addition to the observational research, the project used qualitative research techniques to explore their relevance to gamblers from various risk categories particularly including low risk, moderate risk and problem gamblers. This included 20 interviews and 4 focus groups with regular – at least weekly – EGM players. This ensured that respondents clearly understood the characteristics being explored and could reflect on their own behaviour and experiences in relation to different characteristics. Information obtained from the qualitative phase has been integrated into the observational study report section to further illustrate findings relating to the major EGM structural characteristics studies (For further details on the qualitative methodologies and participant recruitment, refer the introduction section of the report).

Key themes examined during the qualitative research included topics such as:

- Player preferences and effects of EGM cabinet/screen design, lighting/colours, branding and music
- EGM button layout and bet/line use (i.e. lines and credits, game information and other related buttons)
- Player knowledge and use of Reel based EGMs (particularly Reel Power and Multiway EGMs)
- Free spins and features and the effect of free spins near wins
- Motivational words appearing on EGMs during a win
- Player understanding of EGM symbols and symbol preferences
- Near miss events during EGM play
- Player use of double-up
- Losses Disguised as Wins (LDWs) (defined as where a win is lower than the bet made)
- The frequency of wins during EGM play and associated player payback schedule preferences

Measurement constructs used in the current study – Excitement and the Urge to continue

As previously highlighted, urge to continue and play excitement, particularly as related to free spins and features, are constructs that have been previously associated with gambler adherence to pre-commitments (p77-82, Schottler

Consulting Pty Ltd, 2010). As such, they were considered to be suitable proxies for this study's objective to examine whether certain EGM characteristics extend time or money spent. Some evidence from this prior study also suggested that play excitement may itself predict the urge to continue and urge to continue may in turn be positively associated with gamblers exceeding pre-commitments. In addition, other studies have found that EGM play may stimulate player arousal (excitement) (e.g., Wilkes et. al, 2009, Moodie and Finnigan, 2005) (The literature review also reviews findings of some past studies). Accordingly, excitement and urge to continue featured as key measurement constructs in the observational study.

In addition, play excitement was also used in the general attitudinal component survey questions (conducted away from the gaming environment) to differentiate the impact of different EGM characteristics on player behaviour. Urge to continue was also piloted initially in the general attitudinal survey for the same attitudinal measures, but had to be removed as both ratings were too fatiguing for players. However, play excitement ratings were retained as they were considered meaningful and well-accepted by study participants.

Having cognitive measurement constructs was also seen as superior to merely measuring EGM expenditure alone, as it was recognised that many factors may affect expenditure on an individual EGM. Accordingly, establishing the association between EGM machine events and human cognitive constructs was viewed as a superior methodology to establish the impact of EGM structural characteristics. For these reasons, play excitement and urge to continue were used as key measurement constructs in the current study.

Types of EGMs selected and EGM selection methods

As described in earlier sections of this report, gamblers were surveyed in their regular EGM venue and were asked to play as they would normally during the live observation component of the study. The characteristics of the EGMs played by gamblers are in Table 11. In many cases, more than one machine was played by EGM players, with a maximum of nine EGMs. Three players also had their observational data mostly discarded due to too many errors in the recording of credit meter and bet changes by observers. However, other attitudinal data were used where correct and available from the general attitudinal survey. Other missing data across surveys were also handled in the same manner (i.e., surveys were not discarded if data were missing as other data could often be used).

Table 11. Characteristics of EGMs played. (N=222 EGM players, October 2013 - April 2014)

EGM characteristic	Unit	Observational sample
EGMs played	Total EGMs	377 machines
EGMs played	Mean EGMs	1.7 machines per player
EGMs played	Range	1-9 machines
Multiway EGMs	Number of EGMs	83 EGMs
Regular line based EGMs	Number of EGMs	294 EGMs
Mean EGM expenditure per EGM	Mean per EGM	\$7 loss (\$9 median)
Total spins played per EGM	Mean per EGM	131 games (86 median) (13 minutes per EGM)

Statistical testing

Statistical analyses used to test for significant differences between gambling risk segments included t-tests (for continuous measures) and z-tests (for categorical measures) (with two-tail tests always undertaken). In addition, regression and correlational analyses (including partial correlations to explore unique variance) were also used in some sections of the report to examine predictive multivariate relationships. The type of analysis is also indicated at the bottom of each table for reader reference. A result of $p < .05$ indicates that the chance of two results between the same is less than 5% (and indicates statistical significance).

Caveats for readers

As in all exploratory research, readers should consider key findings of the current study as indicative rather than definitive. It should also be noted by readers that some analyses are based on respondents (the EGM players) and others are based on EGMs played (as excitement ratings and machine events were recorded for individual EGMs). As many analyses have been undertaken and the study is very exploratory in nature, the potential for Type I errors should similarly be considered (where statistical significance is identified, in spite of there being no actual difference in results). In addition, readers may wish to refer to the size of t- and z-test values when interpreting the likely size of observed statistical differences (This will provide some indication of the size of any statistical differences observed).

Section structure

The current section of the report integrates qualitative and quantitative research findings and presents key results to inform the major study objectives. This included examining just about all possible EGM characteristics that could be examined in a study of this nature within the constraints of the research methodology and the capacity of observers to record EGM data.

The report section is structured as follows:

- EGM bets from an attitudinal and behavioural perspective
- EGM lines from an attitudinal and behavioural perspective
- Free spins and features from an attitudinal and behavioural perspective
- Losses Disguised as Wins (LDWs) and EGM pay back schedules from an attitudinal and behavioural perspective
- Methods of winning on EGMs from an attitudinal and behavioural perspective
- EGM near misses from an attitudinal and behavioural perspective
- Reel Power and Multiway EGMs from an attitudinal and behavioural perspective
- Gamble buttons for risking EGM winnings from an attitudinal and behavioural perspective
- EGM jackpots from an attitudinal and behavioural perspective
- Other miscellaneous EGM structural characteristics from an attitudinal and behavioural perspective

EGM bets from an attitudinal and behavioural perspective

Background

EGM betting is one of the most fundamental structural characteristics associated with gaming machines. Players are required to choose a bet size (in conjunction with typically a number of lines) and the size of the bet determines both the overall cost of EGM games and the size of any wins. Players must typically select a bet in the form of machines credits with the cost of credits based on the machine denomination. For instance, an EGM player may elect to place a 1 credit bet on a 20-line machine of 1-cent denomination, implying that the overall cost of the EGM game (per spin) is 20 cents.

As a fundamental structural characteristic of EGM play, a number of attitudinal and behavioural questions relating to betting practices of gamblers were investigated in the study. This included questions about how players selected bets, the excitement associated with different types of bets (e.g., multi-credit versus single credit bets) and actual betting behaviour observed during live EGM observations.

Excitement of single versus multi-credit bets

Betting using single versus multiple credits was investigated as part of the attitudinal component of the study. This involved asking EGM players to rate their excitement as associated with betting either one-credit per line, two-credits or five credits during EGM play. Attitudes towards betting with different credit levels are in Table 12. Findings overall showed that gamblers generally rated multi-credit bets far more exciting, with five credit (mean=3.0) and two credits (mean=2.7) considered more exciting than single credit bets (mean=2.5).

While no differences were observed by risk segment for single credit bets (all segments found this relatively unexciting), compared to non-problem gamblers (mean=2.1), problem gamblers rated their excitement as significantly higher for two credit bets (mean=2.8) [$t=-2.3(81)$, $p<.05$]. A similar result was apparent for five credit bets. Problem gamblers found this significantly more exciting (mean=3.6), compared to non-problem gamblers (mean=2.8) [$t=-2.2(81)$, $p<.05$]. Findings also interestingly showed that at-risk gamblers (low risk, moderate risk and problem gamblers together) found two credits more exciting than non-problem gamblers [$t=-3.2(218)$, $p<.01$].

The difference in mean excitement between single and five credit bets is also noteworthy within each risk segment. While the mean difference in excitement ratings for non-problem gamblers was only 0.2 between one credit and five credit bets, the mean difference for problem gamblers was a much larger mean difference of 1.4. Accordingly, this tends to suggest that shifting to higher credit betting may be relatively more exciting for problem gamblers relative to non-problem gamblers.

Table 12. Attitude toward EGM lines and credit selections - Results by risk for problem gambling (N=219-220, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all exciting, 5 = very exciting)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Betting one credit only per line	2.6a	2.8a	2.4a	2.2a	2.5
N	42	63	73	42	220
Betting two credits per line	2.1a	2.8b	2.9b	2.8b	2.7
N	42	64	73	41	220
Betting five credits per line or more	2.8a	2.8a	3.1a,b	3.6b	3.0
N	41	63	73	42	219

Question: On a scale from 1 to 5, where 1=not at all and 5=very exciting, please rate the extent to which the following are exciting (Base: All gamblers) (Significant differences at a pair wise comparison level denoted by different letters within each row at $p<.05$)

Qualitative research provided some indirect insights into why gamblers elected different bet sizes during EGM play. As a general rule, bet size was determined based on the player's desire to spend time at an EGM and as a function of the player's budget. Many players would often limit their bet to a single credit per line, as multiple credit betting would imply too little time on an EGM - *If I want to go out for half an hour, there is no point going there and playing \$1.25 (per spin). If I sit on my 25c per spin, I can get half an hour out of it.*

Multi-credit bets were similarly seen by players as being associated with a higher overall chance of winning and a greater chance of winning features and free spins - *If you play a high amount, the chance of a win of a jackpot is higher; I just increase the bets to win more; When you bet larger amounts, you're more likely to get features. Like the mining one and a \$4 bet and it came to me three times. I only win big when betting big.*

Excitement of using maximum credit buttons

While multiple credit betting is clearly more exciting than single credit betting, the excitement associated with use of special 'maximum credit buttons' (Often termed 'Max Bet' buttons) has not been previously investigated. To this end, all EGM players were asked to rate the excitement associated with use of a Max Bet Button during EGM play.

It should be noted that Maximum Bet buttons are conceptually different to the highest credit button on EGMs. They are typically buttons that permit players to choose the maximum number of both lines and credits for EGM play. Some EGMs also have special 'Extra credit' on Max Bet Buttons that permit players to add an extra bet to the top available bet (e.g., Some machines have 25 credit buttons and then an extra button that has 25 + 5 extra credits for a total of 30 credits per spin).

Mean EGM player excitement associated with the use of Max Bet buttons is in Table 13. For all gamblers, the Max Bet button was generally seen as only a little exciting (mean=2.1). Findings also showed that problem gamblers (mean=2.7) rated use of these buttons as significantly more exciting than non-problem gamblers (mean=2.0) [$t=-2.2(78)$, $p<.05$].

Table 13. Attitude toward the Max bet button - Results by risk for problem gambling (N=206, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all exciting, 5=very exciting)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Excitement associated with use of the Max Bet button	2.0a	1.9a	2.1a	2.7b	2.1
N	39	57	69	41	206

Question: On a scale from 1 to 5, where 1=not at all and 5=very exciting, please rate the extent to which the following are exciting. (Base: All gamblers) (Significant differences at a pair wise comparison level denoted by different letters within each row at $p<.05$)

EGM players were additionally asked to indicate how often they used Max Bet buttons during EGM play (on a scale where 1 is not at all to 5 very often). The mean frequency of use is in Table 14. Findings suggested that Max Bet buttons were only rarely used (mean=1.7). However, problem gamblers reported using Max Bet buttons significantly more often than non-problem gamblers [$t=-2.00(70)$, $p<.05$].

Table 14. Frequency of use of the Max bet button - Results by risk for problem gambling (N=201, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all, 5=very often)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Frequency of use of Max Bet buttons on EGMs	1.7a	1.5a	1.7a	2.3b	1.7
N	34	57	70	40	201

Question: On a scale from 1 to 5, where 1=not at all and 5=very often, if available, how often do you use the Maxbet button? (Base: All gamblers) (Significant differences at a pair wise comparison level denoted by different letters within each row at $p<.05$)

A number of perspectives on Max Bet buttons emerged from qualitative research. EGM players generally saw maximum bet buttons as a potentially harmful type of EGM button configuration. This was because the presence of a maximum bet button did not encourage players to think about the bet they were placing and could be too easily pressed without thought about the cost of play.

Some players also believed that use of Max Bet buttons constituted 'reckless' behaviour and would be dangerous when players were drinking alcohol or were feeling depressed. Some players felt that using a Max Bet Buttons would increase their chance of winning. For this reason, most players advocated that Max Bet buttons were a potentially harmful structural characteristic of gaming machines.

Comments included:

- *I never use the Maximum Bet button. It is way too much money. You feel too reckless using it, as you aren't encouraged to think about how much the spin really costs you*
- *I think that people should always set it themselves. Not just have the Max Bet button. It would be a bit safer for people overall. With Max Bet buttons, you may not know how much the Max Bet is. So you need to be careful and go through the scale of 5x, 10x or whatever is on the buttons. A lot of the machines won't tell you the dollar value you're betting with, unless you start playing. So you should always be given this information up front*
- *With Max Bet buttons, it makes me think of going hard on the gambling. It gives the psychological feel of a rush using that button. It's different from actually choosing the maximum credit button. If you have bills and you're still pushing max, it worries you a bit. But I have pressed it and have won the jackpot as well. I often think I can stay there for hours and do the minimum or I can go for broke and use the Max Bet*
- *I think the Max bet button makes it a bit easier - but I think it's dangerous for irresponsible people without thinking. It's a glorified button. So using it is an ego thing. When you're drinking, you have to be careful that you don't push the Max Bet. It can be dangerous*
- *I don't tend to use the Max Bet button. You use it a few times, then you lower the bet. You think you're increasing the chance of winning when you're using it*
- *I have used Max Bet buttons. I think there could be harm if people weren't aware what the button does. Otherwise, I don't think it's a problem. I think when people are drinking, it's an issue having Max Bet buttons. People drink and they lose track of their spending when playing Max Bet buttons*

The configuration of EGMs with 'Extra Credit' buttons was also seen as a potentially harmful machine characteristic by players. Such machines would encourage players to spend more money in spite of the cost of the bets not being clear. This was also seen as making it difficult for players to track their expenditure.

In addition, many EGMs were reported to require players to use 'Extra Credit' buttons to qualify for certain EGM features or free spins. Linking such buttons to the potential for features and spins was seen as particularly harmful as players were highly motivated to obtain such features.

Comments about 'Extra credit' buttons included:

- *I find it is easier to be able to play normally, than use those 'Plus +5 credit' buttons. It is easier for me to keep track of what I'm doing and what I'm spending*
- *I don't like those Extra credit buttons – like plus 5 credits - as you're too tempted to play them. On some machines, you have to play them to get certain features so people feel compelled to use them*
- *Those +5 credit buttons can be dangerous. You can't really calculate the cost of the spin in your mind and you often feel obligated to play them just to get the top feature*
- *Sometimes - on some machines - the maximum lines is 20, on others it is 25. Then there is another big button that adds another 5c credit. I like to use those buttons at times. But you don't often know what you're spending when you use those buttons. It's like +5 credits - how much is that?*
- *I don't like those sneaky 'plus 5 credits buttons', where they add a number of credits to the spin. You can do your 25 lines with 5 credits per line and you can add 5 credits to that. They boggle the mind at times as you lose track of the cost of your spins*

Generally, most EGM players advocated that smaller bet buttons would be better for players, given that the availability of large credit buttons would increase the total expenditure of players per EGM spin (as there would always be EGM players who use the maximum simply because it is available) - *I can't think of any way to make them safer but perhaps no high bets would help - like no more than \$1 bets.*

EGM player cognitions about bet size during EGM play

EGM players were asked to indicate how often they thought about betting high as a way to win money during EGM play. This perception was measured based on focus group findings indicating that many players held a perception that betting high would both yield larger and more frequent wins (including wins associated with features and free spins). Results are in Table 15. Results showed a significant difference between non-problem and problem gamblers [$t=-3.2(83)$, $p<.01$]. Problem gamblers reported thinking about betting higher to win lots of money significantly more often (mean=3.2) than non-problem gamblers (mean=2.2).

Table 15 – Cognitions about bet size as self-reported by EGM players - Results by risk for problem gambling (N=222, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all, 5=very often)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
I will bet high to ensure that when I do win I win lots of money	2.2a,b	2.0a	2.5b	3.2c	2.5
N	42	64	73	43	222

Question: Using a scale where 1=not at all and 5=very often, when you are playing pokies on this machine today, how much did each of the following occupy your minds and thoughts? (Base: All gamblers) (Significant differences at a pair wise comparison level denoted by different letters within each row at $p<.05$)

Comments from qualitative research also highlighted that players would bet more to win jackpots - *When you have a progressive big jackpot, you play it more as you hope it'll go off. People bet more as they want the jackpot. When you bet larger amounts, you're more likely to get features. Like the mining one and a \$4 bet and it came to me three times. I only win when betting big; If you play a high amount, the chance of a win of a jackpot is higher. So you bet big to win big.*

Size of bets played during EGM play

Actual betting behaviour of EGM players was observed during EGM play as part of the observational methodology. Individual bets were recorded with each EGM game (spin) played by observers. Following conversion of credits bet to dollars, the mean bet size associated with EGM was calculated. The mean size of bets placed during EGM play is presented in Table 16. The average bet size was 46 cents per spin across all EGM players and all EGMs played (all machine denominations). Findings showed that problem gamblers placed a significantly higher average bet size (53c per spin) than non-problem gamblers (only 35 cents per spin) [$t=-2.5(78)$, $p<.05$].

For descriptive purposes, the average overall bet size for each risk segment is also outlined in Table 16. This shows that 23.7% of problem gamblers had a mean bet size of 80 cents or more per spin, while the same was true for only 9.5% of non-problem gamblers. Interestingly, only 10.5% of problem gamblers observed had a mean bet size of \$1 or higher.

Table 16. Size of bets placed during EGM play – Results by risk for problem gambling (N=213, October 2013 – April 2014)

Bet size across all EGMs played	Mean and median bet size (\$) and % Gamblers (for mean bet size categories)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
<i>Mean overall bet size</i>					
Mean	0.35a	0.44a	0.52a	0.53b	0.46
Median	0.25	0.35	0.39	0.41	0.33
N	42	64	69	38	213
<i>Mean bet by size categories</i>					
Mean 0-10c per bet	7.1	3.1	5.8	2.6	4.7
Mean 10c-20c per bet	19	7.8	10.1	5.3	10.3
Mean 20c-40c per bet	57.1	45.3	36.2	39.5	43.7
Mean 40c to 50c per bet	4.8	18.8	14.5	13.2	13.6
Mean 50c to 80c per bet	2.4	15.6	20.3	15.8	14.6
Mean 80c to less than \$1 per bet	2.4	6.3	7.2	13.2	7.0
Mean \$1 or over per bet	7.1	3.1	5.8	10.5	6.1
N	42	64	69	38	213

Observational data – Bet frequency was recorded live during EGM play and mean bet size calculated (Base: All observed EGM players with usable bet size and bet frequency data) (Significant differences at a pair wise comparison level denoted by different letters within each row at $p<.05$)

Mean bet size for different EGM denominations

The relationship between credits bet and machine denomination was also examined in the study. Observers recorded the credits bet during EGM play and credits were converted to dollars following observations for analysis purposes. This effectively allowed the bet size for different EGM denominations to be compared (as credits have different values based on machine denominations played). Only 1 cent, 2 cent and 5 cent machines were played during observations.

The mean and median bet for the different machine denominations used by players during the study are in Table 17. This highlights that the mean bet size per spin for 1 cent machines was only 42 cents, while the mean bet size for 2 cent and 5 cent machines was respectively 54 cents and \$1.18 per spin. A two sample t-test was conducted (using an immediate form given the data structure) to assess the difference in bet size. This revealed that the mean bet size for 5 cent machines was significantly higher than 1 cent machines [$t=-5.8(201)$, $p<.001$]. This trend also emerged when comparing two cent and 5 cent machines [$t=-1.8(212)$, $p<.05$].

Table 17. Size of bets placed during EGM play by EGM denomination – Results by risk for problem gambling (N=11-192, October 2013 – April 2014)

Bet size	Mean and median bet size (\$) by denomination of EGM		
	1 cent EGMs	2 cent EGMs	5 cent EGMs
Mean	0.42a	0.54b	1.18b
Median	0.31	0.52	0.76
Standard deviation	0.29	0.30	1.39
N (EGMs played)	192	22	11

Observational data – Bet frequency was recorded live during EGM play and mean bet size calculated for each EGM denomination played (Base: All observed EGM players with usable bet size and bet frequency data) (Significant differences at a pair wise comparison level denoted by different letters within each row at $p<.05$)

Display of credits bet on EGMs

Based on qualitative research, most EGM players did not reflect deeply about the cost of each spin while playing EGMs. There was a view, however, that it was generally easier to work out the cost of a spin for 1 cent machines than for other machine denominations. There was similarly a strong preference for money – rather than credits – to be displayed on an EGM to help players mentally calculate the cost of each spin. In this respect, display of credits – such as in older style machines – was seen to make it increasingly difficult to work out the cost of EGM spins.

Players additionally reported some confusion over where decimals were required to convert credits to dollars and particularly for higher denomination EGMs (For example, where 2000 credits was displayed after a \$20 note was entered into a 5c EGM, this made it difficult for players to calculate the cost per spin in dollars). This was seen to decrease player awareness of their gaming machine expenditure. For this reason, most players advocated the need for all EGMs to clearly display the cost of each game in dollars and cents to ensure that players were well-informed about their expenditure.

Qualitative comments highlighting credit display issues included:

- *The credit-bet-win information is vital. It tells me how much I am betting, how much I've won. I'd much prefer to see the amount in dollars than credits. There are some machines that show funny numbers that I don't like. It is an accurate figure, but I can't remember what decimal it is. That is quite confusing, because you have to look down the bottom to see what it is. It is confusing, because sometimes you look at the number and you think you've won but you really haven't*
- *Some machines I just don't get. With some big machines, you put \$10 in and it might say 600 credits. I don't get that. Is it a 25c machine? They're confusing, so I kind of stay in one end, with all the one centers*
- *It's when changing denominations of machines, you need to recalculate it all in your mind. Especially when it's 50c or whatever. If I went to a 5c machine, I'd have to calculate how much it would be per bet. A 2c machine is easier to understand, as it's easy to double the figure in your mind. But the 50c is quite mind-boggling*

- *To be able to see the credit and how much you are winning, that is pretty good. But for some machines it's harder to read the numbers. They might have commas, little dots between each figure. They are all different and there's no consistency out there*
- *Most of the lines and the betting is the same, so you don't find it hard to work out the cost per game. It only gets difficult when you go to a bigger (higher) value machine*
- *When they say \$1 = 1,000 credits, it can be quite confusing. It's hard to work out. Trying to convert credits in your mind is hard. Why can't they put it in money! My mum will have a press and think it's a 1 center and it's dollar. I think it's hard to see the difference between a 1 center and a dollar machine. It's very confusing - even for me as a pokies expert*
- *It's easy to work out the cost of a spin. Some of the machines tell you the cost per spin. If you go 1 credit and 3 reels, it'll tell you the cost of the spin. It hasn't always done that. I like this, as you need to know. I find the old machines are harder to work cost per spin. Mainly as they show money in credits rather than dollars and cents*
- *I like it when they show money in dollars, not credit alone. I think it's more concentration to work out what money is implied by credits than having money alone*
- *I find machines displaying credits could be clearer if money amounts are written*
- *I find virtually all machines easy to work the cost per spin. It's only when you're not aware that a machine is a 5c machine. Sometimes you play and suddenly realise, it's a 5c machine. You go - whoops. A mistake. But if you're watching and paying attention, it's not too bad*
- *Machines that list 10 credits to a dollar aren't very easy to understand. Many higher value machines are not labelled clearly*

Screen-based credit button lay-outs were generally not well-liked by EGM players. Some players also felt that this configuration made it less likely that players would change bets as pressing the virtual on-screen button was seen as inconvenient. There was similar comment that on-screen bets often had a different layout compared to regular buttons and that this would sometimes 'catch' players out who were unaware of differences - *If I see a new machine, I usually work it out pretty quickly. I think though that some new players could get caught out. The ones where you have to touch the machine to up or lower your bet catches people out. But it doesn't take long to work it out.*

Changing bets to confuse the EGM

The extent EGM players reported changing bets to confuse an EGM is in Table 18. While overall results suggested that this happened infrequently for EGM players overall (mean=2.3), findings revealed a significant difference between problem and non-problem gamblers. In particular, problem gamblers tended to hold this faulty cognition significantly more often (mean=2.8) than non-problem gamblers (mean=1.6). [$t=-4.2(76)$, $p<.001$]. In addition, it was interesting to note that the same trend held for all at-risk gamblers (mean=2.5), relative to non-problem gamblers [$t=-4.6(79.4)$, $p<.001$].

Table 18. Changing bets to confuse an EGM during play - Results by risk for problem gambling (N=222, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all, 5=very often)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
I will confuse the machine by betting in different patterns	1.6a	2.2b	2.6c	2.8c	2.3
N	42	64	73	43	222

Question: Using a scale where 1=not at all and 5=very often, when you are playing pokies, how much do each of the following occupy your mind and thoughts?...? (Base: All gamblers) (Significant differences at a pair wise comparison level denoted by different letters within each row at $p<.05$)

Actual changing of bets during EGM play

The tendency of EGM players to alter their bets during EGM play was also investigated as part of the post-observation analysis. This was achieved by coding the number of times that players increased and decreased their bets during EGM play. Bet changes associated with expenditure of the last few credits were excluded from this coding (as bets would be primarily changed by all gamblers to 'get rid' of remaining small credits). Results of the analysis are shown in Table 19. Overall, gamblers changed their bets around 9 times per EGM play session. While differences were not statistically significant, findings showed that problem gamblers tended to change their bets nearly 13 times during play, while non-problem gamblers changed their bets only 8 times during play.

Table 19. Times bets were changed during EGM play –
Results by risk for problem gambling (N=213, October 2013 – April 2014)

Types of bet changes	Mean times bets were changed during EGM play				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Total times bet decreased	3.5a	2.8a	4.9a	6.2a	4.2
Total times bet increased	4.5a	3.5a	5.1a	6.7a	4.8
Times bets changed (increased or decreased)	8.0a	6.3a	10.0a	12.9a	9.0
N	42	64	69	38	213

Observational data – Bet changes including increases and decreases were coded following EGM play observations (Base: All observed EGM players with usable bet size and bet frequency data) (Significant differences at a pair wise comparison level denoted by different letters within each row at $p < .05$)

Changing bets was reported in qualitative research as a strategy to 'confuse' or 'reset' an EGM. Increasing bets was seen as a strategy to lead players to win more money. Illustrative comments about reasons for bet changes included:

- *I change the buttons to confuse and reset the machine*
- *I change my bets from \$1 to \$5 at times without actually spinning and then I press it back down to 2 lines or \$2 or whatever. I change the buttons to confuse and reset the machine*
- *I just increase the bets to win more. I mix up the bets a fair bit, as I like to think about my bets. I think this can confuse the machine a bit*

Bet changes in the context of losses

As qualitative research highlighted that some gamblers would use a strategy of increasing their bets when they were losing in an attempt to recoup losses (*Sometimes you try to get back up if you've been down, so you increase your bets*) the relationship between bet changes (increases/decreases) and overall losses was examined as part of the observational data analysis for the first EGM played (as all players played at least a single EGM).

Findings, however, showed no statistically significant correlation between total bet changes (or decreases/increases) and the total money won or lost on the first EGM played. All EGM data were additionally converted to longways format (With EGMs instead of respondents as the unit of analysis) to examine any correlations between losses and bet changes for all EGMs played. However, findings were again not statistically significant, with no relationship between overall losses by EGM and bet changes made (neither increases nor decreases).

Bet size in the context of the largest real win

A further part of the analysis conducted using observational data identified the largest real win experienced on the first EGM played. This was identified from credit meter readings whilst taking account of bet sizes for the spin associated with a real win. The largest real win was defined as the largest win that also exceeded the EGM players bet size associated with the win (e.g., Winning \$2 when the bet size is 50c was considered a real win, however, winning 40 cents was not defined as a real win, as this was effectively lower than the bet size).

The average bet size before and after the largest real win for the first EGM played is shown in Table 20. As results by risk for problem gambling were of most interest, this was the focus of the analysis. As shown, while there was no statistically significant difference between non-problem and problem gambler bet sizes before the largest real win, problem gamblers had a significantly larger bet (\$0.55) after the largest real win, compared to non-problem gamblers (\$0.30) [$t=-3.3(70)$, $p<.01$]. This also appeared to suggest that, if anything, problem gamblers maintained their bet size, while the bet size was decreased by non-problem gamblers (perhaps in an effort to retain the money won consistent with a 'cut your losses and leave' strategy).

Table 20. Bet size associated with the largest real win on first EGM played – Results by risk for problem gambling (N=213, October 2013 – April 2014)

Average bet size before and after real wins	Mean bet size before and after largest real win (\$)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Average bet size before largest Real Win (first EGM played)	.62a	.44a	.62a	.51a	0.54
Average bet size after largest Real Win (first EGM played)	.30a	.47a,b	.57b	.55b,c	0.49
N	42	64	69	38	213

Observational data – The largest real win was identified for the first EGM and bet sizes calculated before and after the real win (within 3 bets either side of the win) following EGM play observations (Base: All observed EGM players with usable bet size and bet frequency data) (Significant differences at a pair wise comparison level denoted by different letters within each row at $p<.05$)

KEY FINDINGS RELATING TO EGM BETS

Key points in summary – EGM bets

- Problem gamblers were significantly more excited by 2 credit bets and 5 credit bets than non-problem gamblers
- Problem gamblers rated Max Bet buttons as significantly more exciting than non-problem gamblers and also used these buttons significantly more frequently
- Max Bet buttons were also seen as harmful for intoxicated players and did not provide a feeling of informed consent and control when gambling (as it was seen to be harder for players to keep track of their expenditure when using such buttons)
- Extra credit buttons (e.g., 25 credits + 5 credits) which added further additional credits to the bet were seen as harmful by EGM players if they were required to attain certain free spins and features (as these are highly coveted by all gamblers)
- Problem gamblers were significantly more likely than non-problem gamblers to hold a cognition during EGM play to bet high to ensure that the size of their wins would be maximised
- Observation of EGM play showed that problem gamblers placed significantly higher bets (53 cents per spin) than non-problem gamblers (35 cents per spin) – 11% of problem gamblers observed had a mean bet size of \$1 or higher and 24% had a mean bet size of 80 cents or more (per spin)
- The mean bet size per spin for different denomination EGMs was as follows -
1 cent EGMs (mean=42 cents), 2 cent EGMs (54 cents) and 5 cent EGMs (\$1.20 per spin)
- Players did not reflect deeply about the total cost of each spin when choosing bets – Working out the cost per spin for some EGM denominations was also seen as difficult (e.g., 5 cent EGMs was more difficult to mentally calculate than 1 cent EGMs – especially when money was converted to irregular credits – e.g., \$10 converting to 200 credits was more difficult than \$10 converting to 1000 credits)
- Screen based button layouts were seen as confusing by EGM players and made bet and line selections difficult (and led to player reluctance to change bets)
- Problem gamblers were significantly more likely to report betting in different patterns to confuse EGMs than non-problem gamblers – Observation also showed that they changed bets around 12.9 times per EGM play session compared to only 8.0 times in the case of non-problem gamblers (on average)
- There was no relationship, however, between total bet changes and total losses (based on the first EGM played)
- Following a real win, problem gamblers maintained their bet size, while the bet size was decreased by non-problem gamblers

EGM lines from an attitudinal and behavioural perspective

Background

Lines are a further fundamental part of the player experience when playing EGMs. Players must not only choose a machine that meets their expectations in the number of available lines for play, but also must select one or more of those lines to place their bets. To this end, the study examined a range of measures relating to the overall excitement associated with EGMs with different line configurations and the excitement associated with betting different numbers of lines during play. In addition, players were asked to confirm the specific lines they played after live EGM play observations. Self-report of lines was used as the data collection methodology given the need for observers to closely monitor bet and credit meter readings. However, it was generally easy for observers to validate the information provided by EGM players as most players tended to play all available machine lines during play (although some players did make errors reporting lines as they had not really understood how lines were on some types of EGMs – like multiway machines, for example).

Excitement of EGMs with small versus large numbers of lines

The first area of investigation examined reported player excitement associated with EGMs with different line configurations. While it is possible for gamblers to choose the number of lines on which they bet, it is also possible to select from EGMs with a different maximum number of available lines. Results relating to the perceived excitement of different line EGM configurations are in Table 21. EGMs with 20 lines (a very common EGM configuration) were rated most exciting overall (mean=3.6), followed by machines with 50 lines (mean=3.1). Interestingly, however, machines with 243 lines were not considered very exciting. This may be due to lower player familiarity with this line configuration (243 lines are also a common line configuration of Reel Power EGMs).

Some interesting differences also emerged by risk segment. While problem gamblers most preferred EGMs with 50 lines (mean=3.7) or 20 lines (mean=3.6), they found machines with 50 lines significantly more exciting (mean=3.7) than non-problem gamblers (mean=2.7) [$t=-3.6(79)$, $p<.01$]. In addition, machines with 243 lines were also significantly more exciting for problem gamblers (mean=3.2) than non-problem gamblers (mean=2.2) [$t=-2.6(79)$, $p<.05$].

Table 21. Attitude toward playing EGMs with different total available lines - Results by risk for problem gambling (N=209-222, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all exciting, 5 = very exciting)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Playing a machine with 20 lines	3.3a	3.8a	3.5a	3.6a	3.6
N	42	64	73	43	222
Playing a machine with 50 lines	2.7a	3.1a	3.0a	3.7b	3.1
N	42	62	72	42	218
Playing a machine with 243 lines	2.2a	2.7a,b	2.7a,b	3.2b	2.7
N	41	59	69	40	209

Question: On a scale from 1 to 5, where 1=not at all and 5=very exciting, please rate the extent to which the following are exciting. (Base: All gamblers) (Significant differences at a pair wise comparison level denoted by different letters within each row at $p<.05$)

Excitement associated with different EGM line selections

The relative excitement of EGMs with different numbers of available lines was also assessed from an attitudinal perspective. Findings are presented in Table 22. All risk categories of gamblers found betting on one EGM line relatively unexciting (all gambler mean=1.3). Betting all lines on an EGM was relatively more exciting for all players (mean=4.3). Problem gamblers similarly found betting on all lines significantly more exciting (mean=4.5) than non-problem gamblers (mean=3.9) [$t=-2.2(71)$, $p<.05$].

Table 22. Attitude toward EGM lines and credit selections - Results by risk for problem gambling (N=221-222, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all exciting, 5 = very exciting)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Betting one line on a poker machine	1.3a	1.2a	1.3a	1.3a	1.3
N	42	64	73	43	222
Betting all lines on a poker machine	3.9a	4.5b	4.3a,b	4.5b	4.3
N	42	64	73	42	221

Question: On a scale from 1 to 5, where 1=not at all and 5=very exciting, please rate the extent to which the following are exciting. (Base: All gamblers) (Significant differences at a pair wise comparison level denoted by different letters within each row at $p<.05$)

EGM players were asked to reflect on the extent to which they bet on all pay lines to avoid missing out on a win. Results are in Table 23. Findings generally indicated that this was a practice of most EGM players (with an overall mean=4.0, this occurred quite frequently). Comparisons of risk segments also showed a slight trend that was tending towards statistical significance (at $p=.05$). Problem gamblers showed a slightly stronger tendency to buy all pay lines to avoid missing wins than non-problem gamblers [$t=-2.0(75.6)$, $p=.05$]. There was additionally a tendency for all players to report betting on 100% of lines when playing pokies generally.

Table 23. Self-report cognitions about betting on all pay lines to avoid missing wins - Results by risk for problem gambling (N=221-222, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all, 5=very often) Gamblers (%)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
<i>Betting on all lines to avoid missing wins</i>					
I must buy all pay lines to avoid missing a win (mean)	3.7a	4.2a,b	3.9a,b	4.3a	4.0
N	42	64	73	43	222
<i>Tendency to bet on all lines</i>					
Percent betting on 100% of lines (%)	76.2a	81.0a	68.5a	83.7a	76.5
N	42	63	73	43	221

Question: Using a scale where 1=not at all and 5=very often, when you are playing pokies on this machine today, how much did each of the following occupy your minds and thoughts? (Base: All gamblers) When playing pokies generally, how many lines on average do you play? (categories of lines prompted) (Significant differences at a pair wise comparison level denoted by different letters within each row at $p<.05$)

Qualitative research also confirmed that EGM players would generally play all lines, as they feared missing out on wins, if fewer lines were played. The tendency to play all lines on jackpot machines was also described to be particularly important, as players did not wish to miss out on jackpots.

Illustrative comments highlighting the rationale for line selections included:

- *When there is a jackpot, you play all the lines. You don't want to miss out on wins*
- *Some machines are up to 250 lines. I like machines with lots of lines. More lines implies a better chance of winning*
- *I never play just a couple of lines, as you don't win as much money. You will also miss out on a win. You can get a win on 5 lines and if you haven't played them you miss out*
- *I like to play multiple lines so you get the wins anywhere whatsoever. You have to play the whole bank of lines*
- *I play the whole 25 lines or 100 lines. You don't play 1c for 1 lines, it's not logical, as you have 100 chances of winning if you play 100 lines. So you don't miss out on the win*
- *I play machines to the most number of lines, rather than playing a dearer machine and play fewer lines. You are playing the whole board then, rather than the whole screen missing out on an opportunity to win*
- *I can't get what I want (i.e., the feature) by doing anything less than the maximum number of lines*
- *If it is a 25c machine, you can't play 25, you've got to play smaller amounts. There's no way I'd play less than the maximum lines as you don't want to miss out on a win*
- *I always do maximum lines. I never go down. I'll alternate how much money I'm betting, but always play maximum lines. You don't want to miss out obviously on any wins that may come up*
- *If I am on a smaller machine, I'll bet bigger. My bets are typically based on the denomination of the machine. But I'll always play maximum lines no matter what machine value I play*

Difficulty associated with understanding EGM pay lines

While covering total available lines was important to players, the actual configuration of pay lines was seen to be less important. Most players also felt that pay lines were quite confusing as many would 'criss-cross' in what seemed to be illogical directions. For this reason, most EGM players were happy to allow machines to simply identify whether they had won on a certain pay line through music and lighting. Comments about pay lines included:

- *I find it hard to understand the pay lines. I look at the drawings where they draw the lines. That's easier to see. But otherwise it's impossible to work out. Sometimes you get a certain feature on a pay line, you get more money. Some machines I don't like how they pay. I expect everything to be covered. Some machines go this way or that way. So you think you're going to win on a pay line and then you work out that you didn't because the pay lines are bizarre. So I leave those machines*
- *Most pay lines have numbers on both sides, so you can see the numbers flash. Mostly. Some don't. Others have criss-crossing of the lines. Some are very confusing. You don't worry so much about the definitions of pay lines. Just whether your money goes up*
- *You tend not to think much about pay lines when you're playing machines. You just keep the feature in your mind. You let the machine work out the pay lines. You often roll the next spin before you've seen what you've won. I like playing all the lines generally. Always. Otherwise you could miss out on a prize*

Difficulties with on-screen presentation of lines

The presentation of line buttons on the screen was reported by players to be a newer machine characteristic that could confuse players. This characteristic would require players to press an on-screen button to change or select different line combinations. This was reported as more difficult to see and particularly difficult for older players with poor eyesight to see. As a result of this characteristic, many players reported accidental pressing of unintended line (or bet) combinations. For this reason, players advocated both the need for visually clear buttons where it was easy to see the exact number of lines and standardisation of line and bet buttons across all EGMs. Comments included:

- I find the lines presented on screens very confusing. Sometimes you press accidentally the wrong lines. In other cases, lines and credits are reversed compared to what is on the typical button panel. So you press the wrong button at times. I think they should all be standardised*
- There's a standard way a machine is presented. Credits are on the top and lines are on the bottom. Lately with all the brands coming in, they are all different now. So it's starting to introduce confusion to players. The one on the screen is particularly confusing and hard for people to see*
- I think the on-screen machines (with line buttons on the screen) are not as safe for players. It's harder to see the screen based line buttons. You get on the next machine and it's vice versa so you spend the wrong amount, just because you accidentally press the wrong button*
- Sight is an issue for people. The ones on the screen are much harder to see than the manual buttons. They are so small in size*
- Some of the machines have how much you're gambling on the top buttons and the lines on the buttons. Some have the buttons in reverse. So you automatically bet more money than you expected. My mum is vision-impaired and she couldn't see the buttons. So I have to set up the buttons for her to go. On one type of machine, the max bet is on the bottom right. On the new machines, it's on the bottom left. The amounts you bet is reversed, but the lines are still on the top. So they need to be standardised overall. So the betting should be consistent overall in the way they present buttons.*
- I think the one where you push buttons on the screen versus the buttons are confusing. You press the wrong button often because it's different to what you're used to or you can't see the writing on those small screens*
- There's another machine that confusing for me too. There's a single button and you look on the screen to see the lines to see whether you're playing 3, 5 or 15 lines. It's pretty hard to understand and I couldn't work out how to play it. People wouldn't be able to see it*

A further structural characteristic relating to lines considered harmful by players was the inability to change lines played on certain EGMs. Two players reported that they had encountered a machine that did not permit changing of lines. This was seen as harmful as it did not encourage EGM players to think about their expenditure during play - *One machine I know has 50 lines, but you can't reduce lines. The machine has 50 lines - it's called 50 Lions. You cannot reduce your lines. It's a lot of money if you don't want to play 50 lines. It's a 2 center, so it's expensive. You can't reduce the lines to play the multiple credits. So you can't up your credits without playing 50 lines. You should be able to use multiple credits at times, without having to pay double cause you have to use 50 lines.*

Lines of EGMs and lines selected during observations

The mean available lines on EGMs (as played during observations) by denomination are in Table 24. As shown, the lines available in 5 cent denomination EGMs played were generally lower (18.2 lines on average) than 1 cent (27.1 lines on average) and 2 cent denomination EGMs (29.2 lines on average). As EGMs were too few in number in the 2 cent and 5 cent denomination category, significant differences could not be reliably calculated. However, results clearly highlight that higher denomination machines such as 5 cent machines typically have fewer lines. This is also a common structural characteristic of many higher denomination EGMs.

Table 24. Lines available on the EGM played and lines bet on by EGM players – Results by EGM denomination (N=222, October 2013 - April 2014)

EGM characteristic	Denomination of EGMs played (mean lines and % lines bet on)		
	1 cent EGMs	2 cent EGMs	5 cent EGMs
Mean lines available on EGMs used during observation of EGM play (recorded by interviewers)	27.1 lines	29.2 lines	18.2 lines
N	340 EGMs	25 EGMs	11 EGMs
Mean lines bet on by EGM players (as self-reported by EGM players)	21.6 lines	22.6 lines	15.5 lines
N	340 EGMs	25 EGMs	11 EGMs
Mean lines bet as a percentage of total lines (based on means above)	79.7% available lines bet on	77.4% available lines bet on	85.2% of available lines bet on

Observational data – (Base: All observed EGM players with data on the available lines on each EGM they played – recorded by observers)

All EGM players taking part in observations were additionally asked to self-report the lines they played for each EGM. This was primarily because the cognitive load placed on observers recording credit meter and bet changes was already very high to also record the lines played per spin. In addition, it was apparent from early piloting that most players tended to play the same lines each spin, so this did not vary significantly within each session of play.

As shown in Table 24, most EGM players reported playing a very high percentage of all available lines on average. Based on mean lines bet as a simple overall proportion (as shown in Table 24) of mean available lines, most EGM players generally bet on 80% of lines for 1 cent denomination machines, 77% of lines for 2 cent denomination machines and 85% of lines for 5 cent denomination machines. It should also be noted that Reel Power machines will tend to inflate the overall mean as many have high numbers of available lines.

It should be noted that interviewers observed some error in respondent reporting of lines and it was clear that some respondents did not have a good understanding of the lines they played in each machine. However, data were still recorded as reported. This may of course indicate some level of error in respondent reporting of lines played and illustrates that some EGM players do not attend closely to lines as a key structural characteristic. It is also possible that bets made are thought about more so than lines, simply because players have a tendency to play most or a large proportion of available lines (hence the latter requires less consideration than bets placed).

KEY FINDINGS RELATING TO EGM LINES

Key points in summary – EGM lines

- EGMs with 20 lines were rated by all EGM players as most exciting followed by machines with 50 lines – This is possibly due to such machines being a very common line configuration - Machines with 243 lines, such as Multiway EGMs, however, were generally rated as least exciting
- Problem gamblers rated EGMs with 50 and 243 lines as significantly more exciting than non-problem gamblers
- Betting on a single EGM line was seen by all gamblers as relatively unexciting compared to betting on all EGM lines – Problem gamblers also rated betting on all EGM lines as significantly more exciting than non-problem gamblers
- Virtually all EGM players bet on all lines to avoid missing out on wins
- Around 77% of all EGM players reported betting on all lines (including 84% of problem gamblers and 76% of non-problem gamblers)
- While some issues were noted in players understanding EGM lines (implying some possible error in self-reported lines), players reported playing an average of 21.6 lines on 1 cent EGMs (or 80% of available lines), 22.6 lines on 2 cent EGMs (or 77% of available lines) and 15.5 lines on 5 cent EGMs (or 82.5% of available lines)
- EGM players generally found it difficult to understand EGM pay lines (which typically criss-crossed many ways) and did not show a tendency to cognitively process pay lines (most players preferred to leave it to the EGM to work out a win)

Free spins and features from an attitudinal and behavioural perspective

Background

Consistent with many other research findings, free spins and features are typically reported by EGM players as the most coveted characteristic of EGMs. Free spins are commonly offered on most gaming machines and offer the opportunity for EGM players to obtain free EGM games (spins) and in some cases, a combination of games (e.g., free spins often come in multiples such as 5x or 10x free spins). Features in the study were defined as special visual or audio events during EGM play that typically provide a more stimulating experience for players and typically allow an opportunity for players to win bonus points or even free spins. In other cases, win multipliers (which multiply wins) are offered during features. In many cases, free spins and features appear concurrently.

While free spin and feature events are exciting generally, it is unclear whether problem gamblers are differentially impacted by such machine characteristics. In order to explore such issues, different types of features and free spin events were categorised and examined in the study. Players were also asked about the effect of features and free spins on other behaviours, such as betting patterns and about their expectations regarding the frequency and expectations for free spins and features to feel enjoyment from EGM play. Measures were also assessed using both attitudinal and EGM play observation data.

Overall effect of free spins

Player perceptions of the overall effect of free spins on their gambling behaviour were examined in the attitudinal component of the survey. The unit of measurement was 'excitement', as associated with different free spin combinations including magnitude (i.e., number of free spins won) and the presence of multipliers on free spin wins. These results are presented in Table 25.

Getting a single free spin was relatively unexciting for gamblers overall (mean=2.7) compared to other free spin events. Getting free spins during free spins was most exciting (mean=4.8) followed by getting a feature during free spins (mean=4.7), getting win multipliers during free spins (e.g., 2x, 10x, 15x) (mean=4.7) and getting multiple free spins at once (mean=4.5). While there was little difference in mean excitement ratings between risk segments for most free spin events (implying all were found to be quite exciting), problem gamblers found win multipliers during free spins significantly more exciting (mean=4.8), than non-problem gamblers (mean=4.4) [$t=-2.2(63.2)$, $p<.05$].

Table 25. Attitude toward free spins - Results by risk for problem gambling (N=220-222, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all exciting, 5=very exciting)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Getting a single free spin	2.7a	2.7a	2.5a	2.7a	2.7
N	42	63	72	43	220
Getting multiple free spins – (e.g. 10 free spins) – at once	4.4a	4.8b	4.4a	4.5a,b	4.5
N	42	64	73	43	222
Getting win multipliers during free spins – (e.g. 2x, 10x, 15x)	4.4a	4.8b	4.6a,b	4.8b	4.7
N	42	64	73	43	222
Getting free spins during free spins	4.6a	4.8a	4.8a	4.8a	4.8
N	42	64	73	43	222
Getting a feature during a free spin	4.7a	4.7a	4.6a	4.7a	4.7
N	42	64	73	43	222

Question: On a scale from 1 to 5, where 1=not at all and 5=very exciting, please rate the extent to which the following are exciting (Base: All gamblers) (Significant differences at a pair wise comparison level denoted by different letters within each row at $p<.05$)

Qualitative research provided some insight into the excitement offered by various free spin events and there was a general trend for excitement to increase, the more free spins were obtained during play - *If you win multiple free spins, you feel quite excited. It's like - Bring it on! If you win big (like \$200) and then get a free spin on top of that, you are ultra excited.* Another gambler contrasted the excitement of different types of free spins – *For me, it's the features during the free spin. That's really attractive. Other ones where the free spin, then a feature occurs are also just as exciting. Quite a few of the machines just give you a (single) free spin.*

Other players commented that, while they found free spins within free spins exciting, they were concerned about the effect of too many free spins on EGM play persistence:

- *When you get a free spin within a free spin that is excellent! I don't think there should be free spins on free spins. It wouldn't make me too driven to play on*
- *I think some machines have free spins within spins. You get extra games on the free games. That sends me over!*

Similarly, while the experience of getting multiple free spins was satisfying in itself, winning from free spins was even more exciting for players, especially where these wins involved multipliers - *Winning during a free spin is good because usually there are multipliers during the free spin. So there is a good chance, I will win a big amount.* Reflecting player beliefs that more available lines increases the chance of a win, players also believed that free spins triggering all pay lines were an attractive spin characteristic, again because of the perception of an increased chance to win – *When free spins trigger all pay lines, that's exciting as you have a greater chance to win.*

Overall effect of features

While free spins are essentially a type of gaming machine 'feature', some EGMs have special features that consist of more complex machine events and experiences. In this respect, a feature may include special lighting, visual or sound effects on a machine that typically provide an opportunity for a player to win bonus points. Many also include free spins. Features can range from the simple to those that are intricate and complex, such as requiring the collection of tokens across multiple spins. Some features also involve 'stop' buttons, choice of characters or allow a choice of different win options (e.g., win 10x free spin with a 2x win multiplier or 5x free spins and a 10x win multiplier).

Player attitudes toward features were examined in the general attitudinal survey following EGM play observation. Excitement related to the presentation of features during play is shown in Table 26, while the excitement associated with different feature types is shown in Table 27.

As shown in Table 26, all gamblers find getting a feature during play quite exciting (mean=4.2). High excitement was also characteristic of features that had additional components including getting a second feature during a feature (mean=4.6) (this received the highest rating), getting a linked jackpot feature (mean=4.5), getting a feature and multiple free spins during a feature (mean=4.5) and getting free spins during a feature (mean=4.3).

Getting an opportunity to replay a feature scored lowest overall for all gamblers (mean=3.9), with problem gamblers also rating this the least exciting of all feature events presented (mean=3.8). While there were no significant differences between mean scores for risk segments, problem gamblers found each feature combination slightly more exciting than non-problem gamblers (so this result should be interpreted with caution).

Table 26. Attitude toward features - Results by risk for problem gambling
(N=217-222, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all exciting, 5=very exciting)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Getting a feature during pokies play	4.2a	4.4a	4.2a	4.2a	4.2
N	42	64	73	43	222
Getting a linked jackpot feature during pokies play	4.4a	4.4a	4.6a	4.5a	4.5
N	42	64	71	43	220
Getting free spin during a feature	4.1a	4.4a	4.2a	4.3a	4.3
N	42	64	72	42	220
Getting an opportunity to replay a feature	4.0a	3.9a	3.8a	3.8a	3.9
N	42	62	72	42	218
Getting a feature and multiple free spins (like 10x at once)	4.3a	4.7b	4.5a,b	4.5a,b	4.5
N	42	64	72	42	220
Getting a second feature during a feature	4.3a	4.7b	4.6a,b	4.5a,b	4.6
N	41	63	71	42	217

Question: On a scale from 1 to 5, where 1=not at all and 5=very exciting, please rate the extent to which the following are exciting. (Base: All gamblers) (Significant differences at a pair wise comparison level denoted by different letters within each row at $p < .05$)

Many EGM players commented on the general attractiveness of features during qualitative research. It was clear that most EGM players felt very driven to 'experience' the unique characteristics of features and particularly features on new machines. Overall feedback suggested that features were highly coveted by players and especially linked jackpot features (features that are associated with winning a jackpot). Illustrative comments included:

- *When I play a machine and get a free spin, you don't know how the features or free spins work, so you want to get them. So I say I go for a free spin. So if I didn't get a free spin, you keep going*
- *I think with free spins and features, it's obviously the money, but also the variety it offers. It's psychologically satisfying*
- *I look for different features - especially new machines. They are the most exciting thing in pokies*
- *If you don't win a free spin, you get out of the machine*
- *I like the linked features at the top of the bank. You associate winning a feature with a jackpot in these big banks. The big jackpots are linked between pubs and it'll say \$25,000 won at my local venue. You know that someone is winning outside the venue you're playing. They really motivates you to play*

There was also much evidence presented in the qualitative component of the research to suggest a strong role for features in play persistence and possibly leading to harmful EGM play:

- *When I'm playing, the feature is definitely going through my mind. I want to win a prize that doesn't come up all the time. That's why I like the machines with the extra jackpot rather than the normal game*
- *Features are definitely on the top of my mind when I play. If you don't get one, you'll often keep playing on. You may have \$15 on the credit meter and then before you get to \$10 when you're pulling out, you just get two feature symbols, but it's not enough to trigger it. So you think I must keep going to really to get that feature. When you then go past the \$10, the feature thing won't come up again for ages. I think on some machines, it's deliberate that they have programmed the machine like this*
- *Trying to get the feature keeps you going. The jackpot definitely also keeps you going as well*
- *I do love the features as a gambler. But as a gambler that doesn't want to bet, they are the worst thing around. They would be the most addictive thing for anybody. If you couldn't get the free games, there wouldn't be as many gamblers*
- *When I see someone getting a free spin or feature, it triggers me to play another machine. If it's a big win, you are really attracted. Features are quite different now. It's not just 777 but there's things flying around and it's exciting!*

Excitement of different feature characteristics

Given the highly attractive nature of features to all gamblers and suggestions in the literature that some features were 'winning' focused while others were 'entertainment' based, the study explored differences between various feature types. Consequently, gamblers were asked to rate how exciting they found nine different characteristics of features, including those that had the potential to give an illusion of control. One example of such a feature is the clown feature in the Carnival Jackpot machine, where players hit a stop button to drop the ball in a clown game. Results are presented in Table 27.

Overall mean excitement levels associated with different feature types ranged from not very exciting, for features that simulate another gambling game (mean=2.4), to quite exciting for features that provide a chance to win a linked jackpot (mean=3.9) and features that involve selecting different win and spin options (like '10 spins and win 5x' your bet versus '15 spins and win 3x your bet') (also mean=3.9). Interestingly, higher overall ratings were for the two features that describe an opportunity to 'win'. The differences between the mean ratings for non-problem versus problem gamblers, however, were not significant.

Problem gamblers found eight of the nine feature characteristics somewhat more exciting than each other gambling risk segment. All groups thought features that played for a short period of time were relatively unexciting, with the same mean score for non-problem (mean=2.9) and problem gamblers (mean=2.9).

Features that involved role playing a certain character were significantly more exciting for problem gamblers (mean=3.4), compared to non-problem gamblers (mean=2.4) [$t=-3.5(81)$, $p<.01$], as were features that give the impression of a game of skill (Non-problem gambler mean=2.3 versus problem gambler mean=3.0) [$t=-2.2(83)$, $p<.05$]. Features with funny characters were also perceived as more exciting for problem gamblers (mean=3.4) than non-problem gamblers (2.5) [$t=-2.8(82)$, $p<.01$].

Given these interesting differences, differences between at-risk (low risk, moderate risk and problem gamblers as a group) and non-problem gamblers were also examined. Results showed that at-risk gamblers rated both feature types as significantly more exciting than non-problem gamblers. At-risk gamblers found features involving role playing characters more exciting (mean=3.1) than non-problem gamblers (mean=2.4) [$t=-2.9(216)$, $p<.01$]. In addition, at-risk gamblers were also more excited by features that mimicked the feeling of skill or control (mean=3.1) than non-problem gamblers (mean=2.3) [$t=-2.9(216)$, $p<.01$]. While these reasons for these differences are unclear, findings from qualitative research highlight that at-risk gamblers may find such features more attractive because they increase the level of player involvement in the EGM game. It was similarly clear from the qualitative data that most EGM players saw features that provided players with a choice – of character or the size of the multiplier on wins – as a current trend in gaming machine design that was a much sought-after characteristic.

Table 27. Attitude toward different characteristics of features - Results by risk for problem gambling (N=215-222, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all exciting, 5=very exciting)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Features which allow you to pick different options like: 10 spins and win 5x your bet v. 15 spins and win 3x your bet	3.7a	3.9a	4.0a	4.0a	3.9
N	42	64	72	43	221
Features that involve you role playing a certain character	2.4a	2.9a,b	3.0b	3.4b,c	2.9
N	42	64	71	41	218
Features with funny characters that make you laugh	2.5a	2.7a	2.8a	3.4b	2.8
N	41	64	72	43	220
Features which give the feeling of playing a game of skill or control – e.g. a clown mouth funnelling balls into a slot	2.3a	2.5a	2.9b	3.0b	2.7
N	42	63	72	43	220
Features that give you the chance to win a linked jackpot	3.7a	3.9a	3.9a	4.2a	3.9
N	42	64	72	43	221
Features where you watch and don't do anything	2.9a	3.5b	3.2a,b	3.4a,b	3.3
N	42	64	72	43	221
Features which play for a long period of time	3.4a	3.6a	3.6a	3.8a	3.6
N	42	64	73	42	221
Features which play for a short period of time	2.9a	2.7a	2.7a	2.9a	2.8
N	42	63	73	43	221
Features where you play a gambling game (e.g. cards or playing reels on another EGM)	2.4a	2.3a	2.4a	2.8a	2.4
N	40	62	71	42	215

Question: On a scale from 1 to 5, where 1=not at all and 5=very exciting, please rate the extent to which the following are exciting. (Base: All gamblers) (Significant differences at a pair wise comparison level denoted by different letters within each row at $p < .05$)

Some players suggested during qualitative research that they would spend more time on EGMs where they could become more involved in a feature, as this made game play more interesting and satisfying. Having to touch the screen to make decisions was also seen as a fun method of involving players. Other players felt that interaction with features sometimes gave players a feeling that they could control the game outcome.

Specific player comments about features that encouraged involvement and made play more enjoyable included:

- *There are machines that I consider fairly standard, they have features whereby you can win so many spins and move on and then there are the other ones that give you a feature and ask you to select an option, giving you various multipliers and options. I love these machines much more than the simple ones*
- *They have features that offer you different options - they are great to play. I like the Choy Sun (Reel Power). Some are more games and less multipliers and vice versa. Some of the features have games that you can choose to play. They entice you a lot*
- *I tend to like the ones you have some involvement in. I find them most exciting, compared to the random down ones which randomly pop up. They are not as exciting*
- *When you get the feature on the Queen of the Nile, you touch ladies on the screen and you can win \$10. You can get the major and the mini. I like touchscreens as it really draws you in. You get into the game and feel. I get really involved in it*
- *The new features on new machines are more complex, but that's good, as I like to use my brain thinking and be entertained. I think that features that involve you more, will lead you to spend more than your limit. The mine one when you have to think more, you get more involved (reference to Where's the Gold). It's like an entertaining TV show, so you don't want to leave it. The machine is requiring your assistance*

Qualitative research also provided insight into the characteristics of features that made players laugh, noting these were also quite exciting and fun for many gamblers:

- *The one-cent Monkey Machine is fun. The noise of the monkey is funny. It'll give you a choice of 4 different features. You choose a multiplier and there's another one where he climbs the coconut tree. So there are 4 or 5 features in that. The choice makes the game more fun, so you spend more*
- *I am intrigued by features. I like the 50 Lions African thing. The rhino comes along and it makes me laugh all the time. It really gets to me. The features are also occasionally funny. I like different features, not the boring features. A boring one is where you just get a free spin and that's it. But others where you get a free spin and then a feature comes up. I think the ones where you have to do something are good - like picking a crown, as you can get mini and major jackpot or times three or whatever. So your mind is focusing on what you win on the feature*

Some features were also said to give the perception to players that they could 'control' the game outcome. This was attributed to player involvement such as stopping tasks, where players had to press a button as part of the game play. Some examples of games that increased the player illusion of control included:

- *The clown game gives you the feeling of control. You try to get the ball in the clown's mouth. So you feel in control of it. You know you can't, but it's human nature to feel that you can control it*
- *The matador and the bull feature gives you the feeling of control over the machine*
- *You've involved in most features these days. I like that. Even with the clowns where you put the ball in the fun park. You have to get it in the hole*
- *The sports cars and the train feature seem to give you a feeling of control. Like you can influence the result*
- *I think the one where you drop eggs (balls) like a clown at the show makes you think you are controlling the machine. The machine can be left to drop when ready, but you can push one of two buttons to decide where it falls. It does give you the impression that you can control it. If you win, you feel like you're controlling the machine. It gives the feeling of control and accomplishment*
- *I love features overall. Like Money Train, a feature comes up across a few machines. It comes up with five trains and you decide when the trains stop and if you get the train, you get different points. The more points you get, the more the bonus. They are most interesting*

A further characteristic of features found attractive to players was the ability to pick up extra bonuses or multipliers and being able to retrigger features or free spins. Several players commented on the relative attractiveness of games with this characteristic:

- *When I was playing Hollywood Fortune, you get a multiplier of 2x for your free spins, so you win heaps of extra free spins. So the money goes up with that machine. I like how multipliers work with free spins*
- *One machine in this place has a wonderful feature. It has three Blue Mountains and the men come up. In the feature, you get features. You pick up multipliers. I love those*
- *With Indian Dreaming, when get free spins, if you get x2, it's more exciting than a general free spin. I've seen a lot of people win a lot from these. They give good bonuses*
- *I like those machines where you can choose how many games you have and what multiplier. So if you are more engaged, you are more likely to keep playing*
- *I feel like I have control like when I'm picking boxes or a character, as you're more in control and get involved in it. Picking makes it more interesting overall than just 20 odd free spins alone. I think the characters coming up like a dog or whatever. You enjoy having a choice*
- *The categories of features are ones where you have to pick things, ones where it just happens and there's also multiplier ones. I find it more fun where you have a pick a character. There are ones where it appears you have to pick something like another gambling game - like pick a briefcase to get three of a kind. That's a feature example where the feature has another gambling game. It's like Deal or No Deal*
- *Where's the Gold is fun as you pick five options and you get a multiplier for free games*

In addition, features that took longer to play were seen as more attractive. This is also possibly because such features were seen to be more involving than shorter features. Similarly, the longer the feature, the more likely a player was to believe that they had an increased chance of winning. Comments about the effect of feature length included:

- *The length (of the feature) has an effect, because to me it means that I am winning more, so I will stay there longer. If it is in terms of games, I prefer to win more games and stay a bit longer and you have that extra chance so you stay. I also like bonus multipliers*
- *I prefer longer features because there is more time and more chance of winning something*

A few players interviewed made comment about the appeal of games that required collection of tokens to move to different play levels (although such games had been played in other jurisdictions). Players found such games attractive as, like many other feature types, they increased their level of involvement in and interaction with games. Comments included:

- *I have played some where you get tokens. There's a Gold Miner one and there are characters in the game. If you had a couple of friends with you, you have a laugh. I enjoyed that quite a lot as it gives you a bit of choice*
- *At the casino, a ball fills up with energy on one game and every time you win, you get a chance to go to a different level. So you become interested in the feature. You get more involved in it*

Noises associated with features was also described as quite attractive:

- *I get excited when there are alarms or noises when you get the free spins. That's much more exciting overall. The new one I've been playing is a bowling alley. When the ball hits the free spins, it hits the bowling pins. That's really loud and it's really good. People turn around as it's very loud and exciting*
- *Symbols aren't that exciting. But colours and sounds of free spins are very exciting. When I hear that noise, it gets me every time. I would turn around a fair bit and look and then it makes me play a machine*
- *You can get the Clowns and the Cars and the jackpot features. The sound they make is great. I push the button when the cars zoom past the second time. Usually when I do that, I capture a car. I listen for the noise the cars make. It's really a fun sound*

There was also the suggestion that involvement with the features can increase time spent at the machine:

- *I also like the jackpot features - I play 88 Fortunes. There are 12 symbols and you have to pick 3 the same. Usually you get the mini jackpot from picking 3 the same. The machine presents 12 symbols and you've got to pick 3 of the 12. They have to be the same. I've won the mini heaps of times. The mini isn't much - it's between \$20-\$40. I like these features that get you making decisions. They are fun so I spend more on these types of machines*
- *I like the features on all the machines, as there's more chance to win and they are often interactive. If you get 2 subs within the feature you get more free games. Touching the screen is fun too. They actively involve you in it and entice you to play*

While the evidence from most qualitative comments regarding the features suggests a direct link between excitement and involvement, and that for some players this means more money spent, a few players suggested that this also led to more money being spent and that this was harmful:

- *For someone that does have a gambling problem, I think the features themselves are the most harmful things. I know myself and my long-suffering partner, it is getting the feature that is the most important thing. Not getting the feature has been shown to me to be one of the main reasons people put more money in. I've just spent \$20 and it didn't even look like you were giving me the feature. There is this sense of being ripped off. To make things better, I'll allow it to rip me off for another \$20 or \$50*
- *I think that some features are harmful. You tend to bet more to get the feature. So I think that's harmful as it's encouraging people to bet more. If I have \$200, it encourages me to bet more as I'm targeting the features. When you get the free spin and you don't get paid as much, that's frustrating as well. That hooks people as well as you bet more to get the money*

Excitement of features and free spins after a big win

Player behaviour in relation to the proximity of big wins to a feature or free spin was also examined in the attitudinal component of the survey. Results are in Table 28. Findings showed that this was considered to be very exciting overall (mean=4.5). In addition, problem gamblers found getting a feature after a big win significantly more exciting (mean=4.7) than non-problem gamblers (mean=4.2) [$t=-2.1(48)$, $p<.05$].

Table 28. Attitude toward features and free spins after a win - Results by risk for problem gambling (N=221-222, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all exciting, 5=very exciting)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Getting a feature right after you have just won a big amount	4.2a	4.7b	4.5b	4.7b	4.5
	42	64	72	43	221
Getting a free spin right after you have just won a big amount	4.3a	4.7b	4.5a,b	4.6a,b	4.5
N	42	64	72	43	221

Question: On a scale from 1 to 5, where 1=not at all and 5=very exciting, please rate the extent to which the following are exciting. (Base: All gamblers) (Significant differences at a pair wise comparison level denoted by different letters within each row at $p<.05$)

Players participating in the qualitative research reported that wins in the vicinity of free spins and features typically added to the stimulation of gaming machine play. In this sense, any win in the vicinity of another win was very exciting, no matter how either win came about.

Comments reflecting the general excitement that two wins in close proximity included:

- *Getting a large win and then a feature or free spin is exciting. It's like you're like winning all the time. The sequence of continual wins is what gets you excited*
- *I like winning free spins during a feature. I got 170 free spins in a single game. That was on Hollywood Fortune. It's very exciting to get that amount of free spins. I've also got 200 odd free spins. When I get more free spins, I feel like continuing*

A few players suggested that two wins in close proximity were exciting because they created the expectation of further wins. Players said they would modify their behaviour by increasing their bet size in response:

- *If features occur near a large win, it has an effect because the next time you get a large win, you will up your bet as you think the free games will come. You think if you get them once you, you can get them again*
- *I think if you get a win before the free spins, it indicates to me that I am going to get a win during the free spins, and I would keep playing after the free spin (whether or not I get it during). So my perception is if I am winning outside of the free spins, I am going to win during them*

Cost of a free spin or feature

In recognition of the importance of free spins and features to the player experience, participants were asked how much money they thought would be reasonable to spend to encounter one of these EGM events. The mean and median dollar values are presented in Table 29 by risk segment.

All gamblers thought they should spend no more than \$16 per session of play on average to obtain a free spin and around \$18 for a feature. Results were also significantly different between risk segments. There was an \$11 difference between amounts for non-problem gamblers (mean=\$12) and problem gamblers (mean=\$24) [t=-2.6(60), p<.05]. This higher threshold for problem gamblers is consistent with the notion that problem gamblers are willing to spend more in anticipation of a large win.

When the overall amount of \$16 (spending) was used as the reference point 'overall expectation' for one free spin (with EGMs as the basis of analysis rather than players), analysis showed that around 60% of EGM play sessions involved spending more than \$16 on average for each free spin event achieved and only around 40% of sessions got a free spin within this overall limit.

This may thus suggest that the fundamental design of many of the EGMs observed during the study may have some potential to lead to play persistence. However, further research would obviously be required to validate this (although this may present a method of working out how best to design EGMs to avoid play persistence).

Table 29. Attitude toward money spent for a free spin or feature – Results by risk for problem gambling (N=218, October 2013 - April 2014)

EGM characteristic	Mean (\$)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Spend (\$) for a free spin (Mean)	12.24a	12.38a	16.94a	23.79b	16.01
Spend (\$) for a free spin (Median)	7	10	10	20	10
N	41	64	72	41	218
Spend (\$) for a feature (Mean)	16.38a,b	14.05a	17.7a,b	23.93b	17.62
Spend (\$) for a feature (Median)	10	10	15	15	10
N	40	64	71	43	218

Question: How much money should the average player have to spend to get at least one feature/free spin? (Base: All gamblers) (Significant differences at a pair wise comparison level denoted by different letters within each row at p<.05)

It was also clear from qualitative research that many players had expectations that a certain level of poker machine spending would yield a certain number of free spins or features. If this was not achieved, players would tend to play on and risk spending more than they had intended to spend - *For most machines, it's less than 7 presses to get a win of some sort. So I count the presses to get a win. It continues me to play if it doesn't happen.*

Changes in betting patterns related to free spins and features

Players were asked to consider how frequently they increased their betting, if at all, in response to free spin and feature events. Results are presented in Table 30. This shows that all gamblers claimed to occasionally increase their betting when they get a feature near a large win (mean=2.4), or a free spin near a large win (mean=2.3), though means represent that this does not happen very frequently for most risk segments (with the highest mean only 3).

Non-problem gamblers reported modifying their bet size when a feature is near a large win very infrequently (mean=1.7). Low risk (mean=2.2) and moderate risk (mean=2.6) gamblers were slightly more inclined to modify their bets in relation to these events, while problem gamblers (mean=3.0) suggested they increased their bets quite often. The difference between non-problem and problem gamblers for increasing betting size when receiving a feature near a large win was statistically significant [$t=-5.0(83)$, $p<.001$]. This may suggest that problem gamblers are more inclined to increase their bets in these circumstances.

A similar trend also presented for changes to betting when players received a free spin near a large win. Problem gamblers were significantly more likely to increase their bet size (mean=2.9) than non-problem gamblers (mean=1.7) [$t=-3.9(75)$, $p<.001$].

Table 30. Attitude toward increasing betting when get a feature or free spins - Results by risk for problem gambling (N=221-222, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all, 5=very often)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Increase betting when get a feature near a large win	1.7a	2.2b	2.6b,c	3.0c	2.4
N	42	64	73	43	222
Increase betting when get a free spin near a large win	1.7a	2.0a	2.6b	2.9b	2.3
N	42	63	73	43	221

Question: On a scale from 1 to 5, where 1=not at all and 5=very often, how often do you increase your betting when ...? (Base: All gamblers) (Significant differences at a pair wise comparison level denoted by different letters within each row at $p<.05$)

Betting higher credits to obtain free spins was frequently reported as a strategy used by EGM players. In this respect, multi-credit bets were seen to be more likely to lead to free spins than single credit bets. Comments made by players during qualitative research included the following:

- *Many people bet higher to get the free spins as they're more likely to come*
- *The one thing is in your head is to get the free games. This is on the forefront on your mind. More so than the features I guess as they are more frequent. The jackpot is also there on your mind of course. You look at other players and if you see someone who isn't getting the free and leaves, you'll go straight on it. Then you start ramping up your bet to get the free spins*

Given the desire for free spins, EGM players reported that advertising promoting the number of free spins was something they particularly attended to when choosing an EGM. Comments included:

- *I look out for the one which has more free spins. I definitely look out for 25x and 15x3 and you choose how you're going to be paid. I never choose x1, but I would choose 15x. They are much more attractive. It's the variety and the choice. Being able to choose is good*
- *I look out for how many free spins a poker machine offers. Some machines have 10 free spins, some 6. The bigger the free spins, the better the chance of winning, the more they will lead you to spend. I like the ones with lots of free spins - like 15x-25x free spins are the best. They are generally the biggest that I see advertised*

EGM player cognitions about the frequency of free spins and features

EGM players were asked to indicate how much they thought about free spins and features during play, including that a feature and free spin must be due soon. Results are in Table 31. Findings showed that both features and free spins occupied player minds during EGM play. Differences between non-problem and problem gamblers were also statistically significant. Problem gamblers reported thinking more often (mean=4.1) than non-problem gamblers (mean=3.3) that free spins were coming [$t=-3.2(81)$, $p<.01$]. Similarly, problem gamblers (mean=4.1) were more likely to think features were coming than non-problem gamblers (mean=3.1) [$t=-3.9(72)$, $p<.001$].

Table 31 – Cognitions about frequency of free spins and features as self-reported by EGM players - Results by risk for problem gambling (N=222, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all, 5=very often)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Free spins must be coming soon	3.3a	3.2a	3.5a	4.1b	3.5
N	42	64	73	43	222
Feature must be coming soon	3.1a	3.2a	3.4a	4.1b	3.4
N	42	64	73	43	222

Question: Using a scale where 1=not at all and 5=very often, when you are playing pokies, how much do each of the following occupy your minds and thoughts? (Base: All gamblers) (Significant differences at a pair wise comparison level denoted by different letters within each row at $p<.05$)

Free spins/features in the vicinity of wins

As part of the analysis of observational data, the largest real win as experienced by EGM players (for each EGM played) was coded from analysis of EGM credit meter and bet size changes. Real wins were defined as wins that were greater than the amount the player had bet (implying a true win). Once the largest real win was identified within each EGM play session (with one per EGM identified), three different types of events were coded.

The first coded event involved identifying whether the largest real win itself resulted from a feature or free spin. The second event coded was whether there was a feature or free spin BEFORE the largest real win (within three spins) and the final event coded was whether a feature or free spin occurred AFTER the largest real win (within three spins). Accordingly, the position of features and free spins in relation to the largest real win was able to be identified.

All EGM play sessions were then converted to long format with EGMs as cases (as many respondents played more than a single EGM). As each individual EGM had several excitement ratings (overall play excitement, feature excitement, free spin excitement) and a rating of the player's urge to continue play, all ratings could be matched to observational data (for each EGM played) to determine the level of excitement associated with the three coded events.

Results of this analysis are in Table 32. While all three events were considered as quite exciting, ratings of overall EGM play excitement appeared to be highest when a feature or free spin occurred BEFORE the largest real win (mean=3.2) and when the real win involved a feature or free spin (mean=3.1) and somewhat lower when a feature or free spin occurred after a real win (mean=3.0).

Findings also showed that overall play excitement was generally higher for all three coded events, compared to when each event did not occur. However, only one item was statistically significant. Specifically, a real win involving a feature or free spin was associated with significantly higher ratings of overall play excitement (mean=3.1), compared to when a real win was not a feature or free spin (mean=2.3) [t=6.4(336), p<.001]. This highlights the very exciting nature of experiencing a real win through a feature or free spin.

The association between the three coded events and urge to continue was also examined. This showed that urge to continue was highest when a real win involved a feature or free spin (mean=2.7) and urge to continue was also significantly higher than when a real win did not involve a feature or free spin [t=5.1(350), p<.001].

Feature and free spin excitement was also examined. This is a more specific type of excitement measure as it involved asking players to rate their excitement with features or free spins specifically after playing each EGM. Feature specific excitement was highest (mean=3.1) when a feature or free spin occurred before the largest real win. Similarly, free spin excitement was also highest when a feature or free spin occurred before the largest real win (mean=3.7).

Table 32. Influence of position of features/free spins near the largest real win experienced by EGM players (N=307-353, October 2013 - April 2014)

Excitement rating post-play (Following play of each individual EGM)	Mean (1=not at all, 5=very exciting/very strong urge to continue)								
	Real win WAS A FEATURE/FREE SPIN	Real win was NOT a feature or free spin	N	Feature or free spin BEFORE real win	Feature or free spin not before real win	N	Feature or free spin AFTER real win	Feature or free spin not after real win	N
Overall excitement	3.1a	2.3b	353	3.2a	2.6a	352	3.0a	2.6a	353
Urge to continue play	2.7a	2.0b	352	2.3a	2.3a	351	2.1a	2.3a	352
Feature excitement	2.8a	1.5b	308	3.1a	2.0b	307	2.3a	2.0a	308
Free spin excitement	3.4a	1.6b	308	3.7a	2.3b	307	2.9a	2.4a	308
Interpretation	Real win involved a feature/free spin			Feature/free spin then real win			Real win then feature/free spin		

Observational data – Real wins were identified and free spins/features coded within three spins before and after a real win

Comparing the predictive power of the three coded events

As the above excitement ratings only show overall results for the three different events, the next step involved examining the extent to which each event uniquely contributed to overall EGM play excitement. This effectively allowed examination of the co-variation between each coded event and overall play excitement. A step-wise regression analysis was used for this purpose with all variables entered in a single step. Partial correlations were then generated to allow examination of the unique predictive power of each variable.

For a more stringent analysis, several other variables were also entered into the regression. Money spent on the EGM was entered, as losing or winning money on an EGM would theoretically be likely to account for some level of play excitement. Money won on free spins and money won on other features (outside free spins) were also entered as both had potential to predict player excitement (i.e., if a player wins more money on free spins or other features that occurred in addition to the free spins/features on the largest real win, they were likely to experience greater play excitement). In addition, the three coded events were entered into the regression. Results are in Table 33.

Findings overall showed that experiencing a real win from a feature or free spin was the only one of the three coded events that contributed uniquely to the prediction of overall play excitement (partial $r = -.211$, $p < .001$). This predictor also had the highest partial correlation and thus explained the most variance in overall play excitement. The second most important unique predictor (based on partial correlations) was the amount of money won on free spins (partial $r = .172$, $p < .01$), followed by the total monetary gain or loss on the EGM (partial $r = .145$, $p < .01$). The next best unique predictor was the money won from other features (excluding the feature that occurred on the largest real win), although this was only tending towards significance (partial $r = .102$, $p = .06$).

Together, results may suggest that experiencing a real win from a feature/free spin adds uniquely to the experience of player excitement with EGM play. This also suggests that this is a far more powerful predictor of overall play excitement than just getting a feature before or after a real win. It is also noteworthy that risk for problem gambling was unrelated to overall play excitement once all variables below were entered into the regression. For this reason, it was not included in the analysis.

Table 33. Regression of play excitement on the location of free spins/features relative to the largest near win

Outcome measure – Overall play excitement	Standardized Coefficients	t	Sig.	Correlations		F=12.0(6), p<.001
	Beta			Zero-order	Partial	
(Constant)	-	3.524	.000	-	-	
Money spent on EGM (\$) (losses as negative, wins coded as positive)	.145	2.679	.008	.242	.145	
Money won on free spins (\$)	.183	3.206	.001	.326	.172	
Other feature money won outside free spins (\$)	.095	1.888	.06	.126	.102	
Free spin or feature occurred after the largest Real Win (1=yes, 2=no)	.005	.100	ns	-.054	.005	
Free spin or feature occurred before the largest Real Win (1=yes, 2=no)	-.012	-.241	ns	-.079	-.013	
Real win was associated with a feature or free spin (1=yes, 2=no)	-.215	-3.962	.000	-.321	-.211	

Dependent variable – Overall play excitement was rated on a five point scale where 1=not at all and 5=very excited

For comparison purposes, the ability of the same variables to predict a player's overall urge to continue EGM play (a quasi measure of play persistence) was also examined. Once again, having a feature or free spin result in a real win was the best unique predictor ($r=-.174$, $p<.01$), suggesting that it also contributed uniquely to the urge to continue playing EGMs. Results are in Table 34.

Table 34. Regression of urge to continue EGM play on the location of free spins/feature relative to the largest near win

Outcome measure – Urge to continue EGM play	Standardized Coefficients	t	Sig.	Correlations		F=7.7(6), p<.001
	Beta			Zero-order	Partial	
(Constant)	(Constant)	1.208	ns	-	-	
Money spent on EGM (\$) (losses as negative, wins coded as positive)	.083	1.480	ns	.146	.081	
Money won on free spins (\$)	.153	2.597	.010	.252	.140	
Other feature money won outside free spins (\$)	.139	2.661	.008	.161	.144	
Free spin or feature occurred after the largest Real Win (1=yes, 2=no)	.058	1.098	ns	.023	.060	
Free spin or feature occurred before the largest Real Win (1=yes, 2=no)	.044	.827	ns	-.004	.045	
Real win was associated with a feature or free spin (1=yes, 2=no)	-.181	-3.231	.001	-.261	-.174	

Dependent variable – Urge to continue was rated on a five point scale where 1=not at all and 5=very strong urge to continue

Effect of win multiplier events during free spins on play excitement and urge to continue

The next part of the study examined the extent to which win multipliers during free spins influenced play excitement and the urge to continue play. This was determined as important to analyse given qualitative comments made by EGM players about how win multipliers influenced play persistence. To this end, the predictive power of win multipliers during free spins was examined in addition to other variables identified to influence play excitement and the urge to continue. Results are in Table 35 and Table 36.

Findings overall showed that win multipliers during free spins were strong unique predictors of play excitement (partial $r = -.146$, $p < .01$) and the urge to continue EGM play ($r = -.141$, $p < .01$). This may also suggest that win multipliers during free spins have potential to influence excitement and the urge to continue play more than even real wins resulting from free spins and features.

Table 35. Regression of play excitement on win multipliers and other variables

Outcome measure – EGM play excitement	Standardized Coefficients	t	Sig.	Correlations		F=16.2(5), p<.001
	Beta			Zero-order	Partial	
(Constant)		14.168	.000			
Money spent on EGM (\$) (losses as negative, wins coded as positive)	.144	2.741	.006	.242	.148	
Money won on free spins (\$)	.152	2.635	.009	.326	.142	
Other feature money on outside free spins (\$)	.107	2.151	.032	.126	.116	
Free spin or feature occurred before the largest Real Win (1=yes, 2=no)	-.113	-1.740	.083	-.321	-.094	
Win multiplier events during free spins (1=yes and had free spins, 2=no and had free spins, 3=no and no free spins)	-.177	-2.716	.007	-.337	-.146	

Dependent variable – Play excitement was rated on a five point scale where 1=not at all and 5=very excited

Table 36. Regression of urge to continue on win multipliers and other variables

Outcome measure – Urge to continue EGM play	Standardized Coefficients	t	Sig.	Correlations		F=10.3(5), p<.001
	Beta			Zero-order	Partial	
(Constant)	-	11.138	.000	-	-	
Money spent on EGM (\$) (losses as negative, wins coded as positive)	.069	1.254	.211	.146	.068	
Money won on free spins (\$)	.118	1.972	.049	.252	.107	
Other feature money on outside free spins (\$)	.145	2.813	.005	.161	.152	
Free spin or feature occurred before the largest Real Win (1=yes, 2=no)	-.075	-1.109	.268	-.261	-.060	
Win multiplier events during free spins (1=yes and had free spins, 2=no and had free spins, 3=no and no free spins)	-.177	-2.617	.009	-.287	-.141	

Dependent variable – Urge to continue was rated on a five point scale where 1=not at all and 5=strong urge to continue

KEY FINDINGS RELATING TO FREE SPINS AND FEATURES

Key points in summary – Free spins and features

Free spins

- Getting a single free spin was relatively unexciting for gamblers overall (mean=2.7) compared to other multiple or 'combination' free spin events. Getting free spins during free spins was most exciting (mean=4.8) followed by getting a feature during free spins (mean=4.7), getting win multipliers during free spins (e.g., 2x, 10x, 15x) (mean=4.7) and getting multiple free spins at once (mean=4.5)
- Problem gamblers found win multipliers during free spins significantly more exciting than non-problem gamblers
- All gamblers have clear expectations of the amount they should spend to obtain free spins (see below) – EGMs which are not designed provide these within desired spending limits may contribute to play persistence:

Free spins (\$16.01 for all gamblers overall)

Non-problem gamblers - \$12.24

Low risk gamblers, \$12.38

Moderate risk gamblers - \$16.94

Problem gamblers - \$23.79

- Around 60% of EGM play session involved spending more than \$16 on average for each free spin event achieved and around 40% got a free spin within this overall limit. This may thus suggest that the fundamental design of at least the EGMs observed during the study may have some potential to lead to play persistence (However, further research would obviously be required to validate this)

Feature events

- All gamblers found getting a feature quite exciting (mean=4.2)
- High excitement was also characteristic of features that had additional components including getting a second feature during a feature (mean=4.6) (this received the highest rating), getting a linked jackpot feature (mean=4.5), getting a feature and multiple free spins during a feature (mean=4.5) and getting free spins during a feature (mean=4.3)
- Getting an opportunity to replay a feature scored lowest overall for all gamblers (mean=3.9), with problem gamblers also rating this the least exciting of all feature events presented (mean=3.8)

Feature characteristics

- Features that simulated another gambling game were least exciting (mean=2.4), while features that provided a chance to win a linked jackpot (mean=3.9) or involved selecting different win and spin options (like '10 spins and win 5x' your bet versus '15 spins and win 3x your bet') were most exciting (each mean=3.9)
- Three feature characteristics were rated as significantly more exciting by problem gamblers compared to non-problem gamblers - Features that involved role playing a certain character (PGs mean=3.4, NPGs mean=2.4), features that gave the impression of a game of skill (PG mean=3.0, NPG mean=2.3) and features with funny characters (PG mean=3.4, NPG mean=2.5) – This may in part be due to higher problem gambler involvement in features and due to cognitive distortions associated with problem gambling (as problem gamblers believe they can influence game outcomes)
- Qualitative research also confirms that features that involve players performing stopping tasks may contribute to the illusion that players can control EGM game outcomes
- Features that are longer to play (rather than shorter), have funny characters, are fun or entertaining or require choices from players (especially those that involve touching EGM screens) engender high levels of involvement in players – Qualitative feedback suggests that greater involvement in play can also increase play persistence (although such characteristics also make play more enjoyable)

- Not experiencing any feature or free spin during a gaming session was also described as leading to play persistence as this is found to be very frustrating for gaming machine players
- Features, free spins or wins with high multiples (e.g., 88x) - as displayed in EGM cabinet advertising - frequently influenced player choice of EGMs (with higher multiples more attractive)
- All gamblers have clear expectations of the amount they should spend to obtain features (see below) – EGMs which are not designed provide these within desired spending limits may contribute to play persistence:

Features

Non-problem gamblers - \$16.38

Low risk gamblers, \$14.05

Moderate risk gamblers - \$17.70

Problem gamblers - \$23.93

Features and free spins in the vicinity of wins

- Getting a feature or free spin immediately after a large win was found to be very exciting by all gamblers (overall means each=4.5)
- Problem gamblers found getting a feature after a big win significantly more exciting (mean=4.7) than non-problem gamblers (mean=4.2) – This may suggest that such events are more stimulating for problem gamblers
- While all gamblers occasionally increased their betting on receiving a feature near a large win (mean=2.5) or a free spin near a large win (mean=2.3), means suggested that this does not happen very frequently for players overall
- Problem gamblers reported increasing betting upon getting a feature near a large win (PG mean=3.0, NPG mean=1.7) or a free spin near a large win significantly more frequently than non-problem gamblers (PG mean=2.9, NPG mean=1.7)
- Problem gamblers have significantly higher cognitive activity involving thoughts that 'free spins and features are coming' during EGM play compared to non-problem gamblers
- Observational data showed that experiencing a real win (higher than the amount bet) during a feature or free spin significantly predicted overall play excitement and uniquely explained most of the variance in overall play excitement (partial $r=-.211$, $p<.001$) – In comparison, getting a feature before or after a real win was not significantly associated with play excitement when real wins occurring on a free spin or feature were accounted for (although individually all events were quite exciting and were related to play excitement)
- The second most important unique predictors of play excitement (based on partial correlations) were the amount of money won on free spins (partial $r=.172$, $p<.01$), followed by the total monetary gain or loss on the EGM (partial $r=.145$, $p<.01$). Money won from other features (excluding the feature that occurred on the largest real win) also contributed somewhat to play excitement (although this was only tending towards significance - partial $r=.102$, $p=.06$)
- Winning during a feature or free spin was additionally the best unique predictor ($r=-.174$, $p<.01$) of a player's urge to continue during EGM play
- Win multipliers during free spins were strong unique predictors of play excitement (partial $r=-.146$, $p<.01$) and the urge to continue EGM play ($r=-.141$, $p<.01$) – Results also suggested that win multiplier events during free spins have greater potential to influence excitement and the urge to continue than even real wins resulting from free spins and features

Losses Disguised as Wins (LDWs) and EGM pay back schedules from an attitudinal and behavioural perspective

Background

Losses Disguised as Wins (LDWs) were defined for the purpose of the study as any win where the amount won was less than the amount bet. EGM players were surveyed about their attitude towards a variety of loss sizes relative to their bet as part of the attitudinal survey. This was to understand the level of excitement associated with LDWs and importantly, to understand how LDWs were seen by players to influence their play excitement and urge to continue play.

In addition to exploring attitudes, all wins and losses of EGM players observed during play were calculated relative to their bet size based on credit meter readings. This was a very complex task, as it involved coding game outcomes in various ways. EGM game outcomes were coded in terms of whether they were LDWs (where wins were less than the bet), Bets Only Won (BOWs – where the amount won was precisely the same as the bet), Losses (where the bet was lost) or Real Wins (RWs – where the amount won was actually higher than the amount bet). Analysis of this data then provided insight into the types of machine events players were exposed to during EGM play and their effects on play excitement, the urge to continue play and the perception of an EGM having a better chance of winning (as all players rated each dimension as a post-play attitude after each EGM played). This also indirectly provided an opportunity to assess the reinforcement schedules players are exposed to during EGM play.

EGM player attitudes towards LDWs

Prior to attitudinal survey questions about LDWs (conducted post-observation), the concept of LDWs was explained to players. This involved telling players that when playing pokies 'you may sometimes win an amount that is bigger than what you bet and other times you win an amount that is smaller than what you bet. At other times, you win nothing at all'. Players were then asked to rate their excitement associated with different EGM game outcomes including wins that were different proportions of a player's bet.

Mean excitement ratings provided by players to different LDW events are in Table 37. While no significant differences were observed by risk segment, some interesting overall trends were apparent. Generally speaking, results showed that winning nothing at all was considered least exciting (mean=1.0), while winning double the bet was considered most exciting (mean=4.0).

Results also suggested that winning a higher proportion of a bet was generally more exciting than winning a lower proportion. For instance, winning $\frac{1}{4}$ of a bet was largely unexciting (mean=1.3), winning $\frac{1}{2}$ of a bet was a little more exciting (mean=1.7), winning $\frac{3}{4}$ of a bet was a little more exciting again (mean=2.2) and winning the same amount as the bet was reasonably exciting (mean=2.9). As winning the same amount as the amount bet is not really a true win, this illustrates that EGM players are somewhat stimulated by winning 'something', even in spite of the fact that the amount won is not really a true win.

Table 37. Attitude toward losses disguised as wins – Results by risk for problem gambling (N=221-222, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all exciting, 5=very exciting)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Win nothing at all during a poker machine spin	1.1a	1.1a	1.0a	1.0a	1.0
N	42	64	73	43	222
Win an amount which is $\frac{1}{4}$ of your bet	1.3a	1.4a	1.3a	1.3a	1.3
N	42	64	73	43	222
Win an amount which is $\frac{1}{2}$	1.6a	1.7a	1.8a	1.6a	1.7

EGM characteristic	Mean (1=not at all exciting, 5=very exciting)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
of your bet					
N	42	64	73	43	222
Win an amount which is $\frac{3}{4}$ of your bet	2.0a	2.2a	2.2a	2.2a	2.2
N	42	63	73	43	221
Win an amount which is the same as your bet	2.6a	3.1b	2.9a,b	2.8a,b	2.9
N	42	64	73	43	222
Win an amount which is double your bet	3.9a,b	4.2a	3.8b	4.0a,b	4.0
N	42	64	73	43	222

Question: On a scale from 1 to 5, where 1=not at all and 5=very exciting, please rate the extent to which the following are exciting. (Base: All gamblers) (Significant differences at a pair wise comparison level denoted by different letters within each row at $p < .05$)

Qualitative research also highlighted that most EGM players reported some level of excitement when they won an amount less than their bet and reported that LDWs generally stimulated continued play. LDWs that were a larger percentage of the amount bet were generally also considered more exciting than LDWs that were a smaller percentage of the amount bet. Many players reflected that exciting music, sounds and lights from EGMs in part contributed to feeling of excitement from LDWs.

Similarly, some machines were reported to display encouraging language to motivate players and feel the sensation of a true win during LDW events. Getting a LDW close to the amount bet was also said to provide the perception of a near win – *I am definitely aware of it and I feel it is still a loss, but it is good to get something back. It happens a lot. It also gives the impression that you are closer to a win.* It was also interesting to observe that players were more stimulated by larger wins generally, even if they had won an amount that was less than they had bet. The rationale was also explained by one EGM player - *If you win 80c and you spend \$1, it is not as satisfying as winning \$100 and spending \$120. But you still see it as a type of win. Funnily enough you feel better with the bigger win, even though it's still a larger loss.*

Player comments highlighting the attitudinal and behavioural impacts of LDWs included:

- *I believe you should not be able win less than what you are betting. I think that's quite dangerous, as it makes you feel like you're winning when you're not*
- *I still think the wins that are really losses have some value - they are still enjoyable*
- *I think when you win, but it's not enough to cover the bet, it's still pretty good. But you do feel better than losing money overall. I think they do play a role in keeping people (play) on. If you don't win at all, that's when I collect. But if you get something, even if it's not enough to cover your losses, you feel motivated to keep going*
- *People feel good as they get nice sounds to encourage them to feel like they've won. They enjoy listening to it*
- *When you win \$2.50 and you spent \$3 for the bet, that's sort of a win. Then I've only lost \$2.50, so you think that's good*
- *When this happens, it may say great win. I can't think of what it says, but it generally does. There's always a little bit of writing that comes up that encourages you to keep going, even if you don't win the amount to cover your bet*

- *If I win 50c and spend 70c, I don't feel great. It's not like you've won really. For me, that's not a win as it's lower than what you bet. So you really find a win as a proper win when you get more than you bet. But it's still some appeal - it's definitely better than a loss. But it's not great*
- *When you win less than your bet, the music is softer. When you win over your bet, it's louder. I think losses that look like wins entice you to keep playing. When you get a big win, the machine makes a bigger noise. But it doesn't do that on your little wins. It's just enough to keep you going*
- *Those don't feel like a win for me at all. Because you've won less than what you've bet. I know a guy who won \$900, but he'd spend \$1500. It felt like a win to him, as it was a lot of money, so people lose track of this at times. That definitely triggers people to keep going overall. Especially when there's lights and music*

Influence of LDWs on perceptions that win is coming

A further aspect of LDWs investigated during the study was the extent LDWs implied that a big win was getting close. This was explored in the attitudinal post-observation survey. Results are presented in Table 38. Overall, findings suggested that this had only a minor effect for EGM players, however, the effect for problem gamblers was more significant. In particular, findings showed that problem gamblers were significantly more likely to think this (mean=3.2) than non-problem gamblers (mean=2.2) [$t=-3.5(83)$, $p<.01$]. This may suggest that LDWs have a larger effect on problem gamblers than non-problem gamblers.

Table 38. Cognitions about LDWs as self-reported by EGM players - Results by risk for problem gambling (N=221, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all, 5=very often)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
As I'm winning just under my bet a big win must be getting close	2.2a	2.5a,b	2.7b,c	3.2c	2.6
N	42	63	73	43	221

Question: On a scale from 1 to 5, where 1 = not at all and 5 = very often, when you are playing pokies, how much do each of the following occupy your mind and thoughts? (Base: All gamblers)

EGM player exposure to LDWs during EGM play and the general pay back schedule of EGMs

Following coding of all EGM game outcomes, analysis allowed calculation of overall EGM player exposure to LDWs during EGM play. As highlighted previously, coding classified the bets as either LDWs (where amounts won were less than the amount bet), Bets Only Won (where the amount won equaled the bet), Losses (where nothing was won at all) and Real Wins (where the amount won was higher than the bet). As would be expected with any complex data collection, some errors in recording naturally occurred. However, as only 358 of the total calculated 48,920 spins across all EGMs played had coding errors (0.73% of all spins observed), these were relatively minor overall.

Table 39 shows player exposure to different spin events during EGM play across all EGMs and all players. Analysis showed that EGM players were exposed to mostly losses (65.6% of total spins), with very few spins resulting in only the bet being won (only 2.1% of total spins). The proportion of spins resulting in LDWs (18% of total spins) was also higher than the total spins resulting in Real Wins (where players win an amount greater than their bet) (only 14.2%).

When the LDWs, BOWs and Real Win percentages are added together, this shows that the total rate of 'reinforcement' is around 34.3% of total spins. This implies that EGM players will generally receive reinforcement on approximately one in three spins. This is of course for all EGMs played across all players generally.

Table 39. EGM player exposure to LDWs and other events – Overall results
(N=48,920 spins, October 2013 - April 2014)

EGM game outcomes (following an EGM button press)	Spins (N)	% Spins
Total spins where bets only won (BOWs)	1,051	2.1
Total spins resulting in losses (nothing won at all)	32,098	65.6
Total spins resulting in Real Wins (where the amount won is actually greater than the amount bet)	6,954	14.2
Total spins where win is less than the bet size (LDWs)	8,817	18.0
Total spins across all EGMs and all EGM players during observations	48,920	100

Observational data (Base: All EGM spins by all gamblers)

LDW and payback characteristics of EGMs chosen by risk segment

The exposure of gamblers of different risk segments to LDWs and other pay back characteristics was also investigated based on the EGMs they were observed to play. While no significant differences were apparent, results are in Table 40. As apparent from this analysis, all risk segments were exposed to a fairly similar percentage of LDWs, Losses, BOWs and Real Wins.

This may suggest that all segments of gamblers play fairly similar machines that produce similar patterns of spin outcomes. However, it is noteworthy that at-risk segments used machines with a slightly higher proportion of Real Wins (14.4% of all spins), compared to non-problem gamblers (only 13.3% of all spins) and all received a slightly higher amount of reinforcement overall, compared to non-problem gamblers (33.5% of spins resulted in reinforcement).

While differences were not statistically significant, it is plausible that at-risk gamblers may be able to detect real win characteristics of machines and choose machines that deliver slightly greater levels of total positive reinforcement (indicative of the total payback schedule of EGMs).

Table 40. EGM player exposure to LDWs and other events – Results by risk for problem gambling (N=221, October 2013 - April 2014)

Spin outcomes	Spin experiences of risk segments (% of total spins across all EGMs played)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All at-risk gamblers
Spins resulting in bets only won	2.5a	1.8a	2.3a	2.3a	2.1
Spins resulting in losses	66.6a	65.1a	65.1a	66.4a	65.4
Spins resulting in real wins	13.3a	14.7a	14.0a	14.6a	14.4
Spins resulting in LDWs	17.7a	18.4a	18.7a	16.7a	18.2
Total exposure to 'reinforcement' (BOWs, Real Wins, LDWs)	33.5%	34.9%	35.0%	33.6%	34.7%

Observational data – Types of spin outcomes were coded following EGM player observation

Association between different types of spin outcomes and EGM play excitement

The next analysis examined bivariate relationships between spin outcomes and net gains associated with spin outcomes and overall play excitement, urge to continue and the belief that an EGM has a better chance of winning. For this purpose, all spins were counted for each EGM played and categorized according to outcome. This included use of observation data where spins were coded as resulting in Bets Only Won (BOWs), Losses, Real Wins and LDWs.

In addition, to assess the extent money gained or lost from spins predicted outcome measures, the overall dollar value associated with all spin types was coded for each EGM played. This implied that a total 'net gain' figure for all spin types was available for each EGM (bearing in mind that some players played more than one machine). For instance, an overall loss from all spins resulting in losses was coded as -\$51.34, all games resulting in LDWs were coded as negative (as the amount gained was less than the bet) and Real Wins were coded in the positive (in dollars again), as money was gained in addition to the amount bet (e.g., \$5.40). Bets Only Won had no net gain, so these were coded as 0 and excluded from the net gain analysis (although counts of BOWs were examined).

Results showing bivariate relationships with outcomes measures are in Table 41. Three outcome measures were examined including how different predictors related to play excitement, the urge to continue play and the perception of a better chance of winning on the EGM (with all ratings made on a five point scale where 5 was the highest value on each measure – e.g., a higher score indicated greater excitement, a greater urge to continue and a stronger perception of a better chance of winning on the EGM).

Results showed a range of interesting findings. In relation to spin counts, all types of spin outcomes were positively associated with the urge to continue play and play excitement. All significant relationships were also in a positive direction. This implied that the greater the spins for each different type of outcome, the greater the urge to continue and the greater the play excitement. It is noteworthy that losses also positively predicted both outcomes. This may be because greater spins associated with losses were also associated with longer sessions of play.

The relationship between spin outcomes expressed as net gains (in dollars) also showed a range of statistically significant trends. This was a more meaningful analysis given that amounts won or lost were expressed in dollar terms. Bets only won were excluded from this analysis, given that all were coded as 0 net gain.

This showed that the lower the amount of money lost from loss spins, the stronger the urge to continue ($r=-.233, p<.001$), the greater the play excitement ($r=-.23, p<.001$) and the stronger the perception that the EGM had a chance of winning ($r=-.104, p<.05$). Conversely, the higher the net gain from Real Wins, the stronger the urge to continue ($r=.294, p<.001$), the greater the play excitement ($r=.341, p<.001$) and the greater the perception that the EGM had a chance of winning ($r=.131, p<.05$).

The net loss from spins associated with LDWs similarly predicted both urge to continue and play excitement. This showed that the lower the net loss from LDWs, the stronger the urge to continue ($r=-.183, p<.001$) and the greater the play excitement ($r=-.191, p<.001$). However, loss from LDWs was not associated with the perception of a better chance of winning.

When LDWs were coded as an average win per LDW (e.g., \$0.40 was won on average across all LDW spins on an EGM), findings also showed that also predicted urge to continue ($r=.152, p<.01$) and the perception of a better chance of winning ($r=.112, p<.05$), yet not play excitement.

Table 41. Bivariate correlations between counts of spins by different outcomes and by net gain by spin type

Variables examined		Urge to continue	Play excitement	Perception of a better chance of winning on EGM
<i>Spin outcomes coded as counts</i>				
Count – Spins resulting in Bets Only Won	Pearson Correlation	.121*	.160**	.079
	Sig. (2-tailed)	.021	.002	.136
	N	362	363	361
Count - Spins resulting in losses	Pearson Correlation	.174**	.216**	.090
	Sig. (2-tailed)	.001	.000	.088
	N	362	363	361
Count - Spins resulting in Real Wins	Pearson Correlation	.185**	.236**	.065
	Sig. (2-tailed)	.000	.000	.219
	N	362	363	361
Count - Spins resulting in LDWs	Pearson Correlation	.186**	.219**	.055
	Sig. (2-tailed)	.000	.000	.300
	N	362	363	361
<i>Spin outcomes coded as net gains (\$)</i>				
Net gain from spins resulting in Losses (\$) (i.e., Amount lost from spins resulting in Losses in \$ - e.g., Losses coded as -\$2.50)	Pearson Correlation	-.233**	-.230**	-.104*
	Sig. (2-tailed)	.000	.000	.049
	N	362	363	361
Net gain from spins resulting in Real Wins (\$) (e.g., Real wins coded as \$1.50)	Pearson Correlation	.294**	.341**	.131*
	Sig. (2-tailed)	.000	.000	.013
	N	362	363	361
Net loss from spins resulting in LDWs (\$)	Pearson Correlation	-.183**	-.191**	-.081
	Sig. (2-tailed)	.000	.000	.127

Variables examined		Urge to continue	Play excitement	Perception of a better chance of winning on EGM
(e.g., coded as -\$4.50)	N	362	363	361
<i>LDW outcomes coded as actual money won (not accounting for bets)</i>				
Mean LDWs as money won per EGM (i.e., not taking account of bet – e.g., winning \$0.40 on average across all LDW spins)	Pearson Correlation	.152**	.059	.112*
	Sig. (2-tailed)	.004	.275	.036
	N	349	350	348

*Observational data – Statistical significance indicated - * denotes $p < .05$ and ** denotes $p < .01$.*

The next step involved examining the relative influence of key 'reinforcement' variables (i.e., Real Wins net gains, LDW losses and BOW counts). All variables were entered into a single step regression analysis to identify the unique relationship between each of the net gain/loss variables per spin and play excitement and the urge to continue (the two key outcome measures). BOWs were examined as count events given that no monetary gain was associated with spins where only the bet was won (as the net gain is effectively zero). Results are shown in Table 42.

Overall results showed that Real Wins were the best predictor of overall play excitement, with the higher the Real Wins, the greater the play excitement ($r = .341$, $p < .001$). LDW losses were also added uniquely to the prediction of excitement ($r = -.191$, $p < .05$), although it was apparent that Real Wins were actually the better predictor overall. The number of times bets only were won, however, did not add to the prediction of play excitement. With urge to continue as the outcome measure, a similar pattern of results emerged. Real wins were again the best overall predictor ($r = .294$, $p < .001$), however, in this instance, LDWs and counts of BOWs did not predict urge to continue.

Table 42. Regression of play excitement and urge to continue on type of spin outcome (in dollars or counts for Bets Only Won)

Outcome measure – Play excitement	Standardized Coefficients	t	Sig.	Correlations	F
	Beta			Zero-order	
(Constant)	-	32.209	.000	-	F=18.7 (3), $p < .001$
Real win net gain in dollars (\$)	.465	6.001	.000	.341	
Losses associated with LDWs in dollars (\$)	.192	2.470	.014	-.191	
Number of times bets were only won	.083	1.610	.108	.160	
Outcome measure – Urge to continue play	Standardized Coefficients	t	Sig.	Correlations	F
	Beta			Zero-order	
(Constant)	-	25.072	.000	-	F=12.3 (3), $p < .001$
Real win net gain in dollars (\$)	.371	4.669	.000	.294	
Losses associated with LDWs in dollars (\$)	.117	1.472	.142	-.183	
Number of times bets were only won	.049	.929	.353	.121	

Observational data – Statistical significance indicated.

Together, results may suggest that the size of Real Wins obtained during play is probably the single most significant factor that triggers play excitement and the urge to continue during EGM play. However, lower losses associated with LDWs (or conversely winning closer to your bet) may also uniquely influence play excitement to some degree (though not the urge to continue), although probably not to the same extent as Real Wins.

Player exposure to LDWs when players play a different percentage of total available lines

In the next analysis, the proportion of LDWs to which players were exposed during play was analysed by the percentage of total lines played on EGMs (coded as 0-50% of available lines versus 51-100% of available lines). This was based on the theory that multiline EGMs may imply that a larger proportion of the player's spins are LDWs. Results are in Table 43.

Results should be interpreted with some caution given that interviewers found that players were often unsure of the lines they played and hence could not always accurately report data. Spins associated with coding errors were also removed from this analysis (implying that total spins were the total spins associated with coded real wins, losses, LDWs and bets only won). All results are based on machines rather than players (as players often played multiple EGMs). As such, results are for exploratory interest and limitations should be noted.

Findings interestingly suggested that players playing a larger percentage of all available lines (51-100%) may experience a significantly greater mean proportion of LDWs (relative to total EGM spins). This result may thus indirectly provide some support for the assertions of authors such as Harrigan et. al (2011) who proposed that the reinforcement rate of multiline machines may be greater than single line machines.

Table 43. Proportion of LDWs experienced by EGM players playing 0-50% versus 51-100% of available lines – All EGMs (N=292, October 2013 – April 2014)

Mean proportion of LDWs across EGMs (as %)	Mean proportion of LDWs across all EGMs (%)	
	Player bet on 0-50% available lines	Player bet on 51-100% available lines
Proportion of LDWs relative to total EGM spins (%)	14.7a	18.6b
N	44	248

Observational data – LDW counts calculated as a proportion of total spins per EGM (coding errors excluded)

It is also noteworthy that this same broad trend appeared to apply to both regular gaming machines and Reel Power/Multiway machines. However, Reel Power/Multiway EGMs generally did not appear to have a greater percentage of LDWs relative to total spins. It should also be noted that individual machine win rates do make it difficult to precisely compare broad categories of machines accurately (like Reel Power/Multiway versus regular line based EGMs), so should only be assumed as a general trend for the machines observed (obviously pay back percentages are not marked on EGMs so this was also not able to be recorded). Results are in Table 44.

Table 44. Proportion of LDWs experienced by EGM players playing 0-50% versus 51-100% of available lines - Reel Power/Multiway versus Regular line based EGMs (N=292, October 2013 – April 2014)

Mean proportion of LDWs across EGMs (%)	Mean proportion of LDWs across all EGMs (%)			
	Reel Power/ Multiway EGMs		Regular line based EGMs	
	Player bet on 0-50% available lines	Player bet on 51-100% available lines	Player bet on 0-50% available lines	Player bet on 51-100% available lines
Proportion of LDWs relative to total EGM spins (%)	10.42a	16.80a	15.67a	18.89a
N	44		248	

Observational data – LDW counts calculated as a proportion of total spins per EGM (coding errors excluded)

KEY FINDINGS RELATING TO LOSSES DISGUISED AS WINS AND EGM PAY BACK SCHEDULES

Key points in summary – Losses Disguised as Wins (LDWs) and EGM pay back schedules

Cognitive aspects of LDWs versus Real wins

- Winning a higher proportion of an EGM bet was generally more exciting than winning a lower proportion (e.g., winning $\frac{1}{4}$ of a bet - mean=1.3, winning $\frac{1}{2}$ of a bet - mean=1.7, winning $\frac{3}{4}$ of a bet mean=2.2 and winning same amount as bet mean=2.9) - As winning the bet only is not a true win, this illustrates that EGM players are somewhat stimulated by winning 'something', even in spite of the fact that the amount won is not a true win
- Getting a LDW close to the amount bet was also described in qualitative research as providing player's with the perception of a 'near win'
- Players believed that EGMs displaying visual effects or sounds during LDWs or Bets only Won (BOWs) may contribute to players believing that each are a type of 'win'
- Overall, gamblers were only somewhat likely to believe that LDWs implied that a big win must be getting close – However, this cognition was significantly higher in problem gamblers (mean=3.2) compared to non-problem gamblers (mean=2.2)

EGM payback schedules

- After 48,920 EGM spin outcomes were coded following player observations as either LOSSES, BETS ONLY WON, REAL WINS (where wins are more than the amount bet) and LDWS (based on bet and credit meter readings), analysis showed that player exposure to each event was as follows:
 - Losses – 65.6% of spins
 - Bet Only Won – 2.1% of spins
 - Real wins – 14.2% of spins
 - LDWs – 18% of spins
- This implies that the total reinforcement rate is around 34% of total spins overall (roughly 1 in 3 spins have positive reinforcement) (based on sum of the percentages of LDWs, RWs and BOWs)
- Compared to non-problem gamblers, all at-risk segments also played EGMs that provided a slightly higher amount of total reinforcement (e.g., total reinforcement based on Real Wins/BOWs/LDWs for all at-risk gamblers was 34.7% versus only 33.5% for non-problem gamblers) (although given that this result was not statistically significant, the result should be interpreted with caution)

Contribution of LDWs to play excitement from observational research

- Based on observational data, analysis showed that all 'win' events (Real wins, BOWs and LDWs) contributed positively to overall EGM play excitement and the urge to continue play (the more of each, the greater the excitement and urge to continue) (when measured as counts)
- While Real Wins were a better predictor of overall play excitement (with higher Real Wins producing greater play excitement - $r=.341$, $p<.001$). LDW losses also added uniquely to the prediction of excitement ($r=-.191$, $p<.05$) – This may suggest that real wins are mostly responsible for play excitement and increased urges to continue, but lower losses associated with LDWs also uniquely influence play excitement
- EGM players playing a larger percentage of all available lines (51-100%) may experience a significantly greater mean proportion of LDWs (relative to total EGM spins) - This may provide some support for assertions of Hanigan et. al (2012) that the reinforcement rate of multiline EGMs may be greater than single (fewer) line machines

Methods of winning on EGMs from an attitudinal and behavioural perspective

Background

EGM players typically experience a win when the required symbols line up from left to right along an EGM payline, although some EGM games require different symbol presentations. Other ways to win include via scatter patterns, where the symbols are not required to be aligned to any payline, but must appear on particular reels and, in both instances, wins can include wild or substitute symbols. It is also possible, of course, to win from correct symbol presentations within free spins and feature. While this increasing complexity appears to add to the appeal of EGM games, little is still known about whether these innovations have differential impacts in terms of creating increased play excitement for different risk segments of gamblers. From this perspective, a part of the current study examined player views about different methods of winning on EGMs.

Excitement associated with different methods of winning

Player excitement towards different methods of winning was measured in the attitudinal survey. Win options presented to players included the number of symbols comprising the win, winning with wild or substitute symbols and winning via scatter versus more typical left to right symbol presentations. Surveyed players also evaluated the excitement associated with winning from features and free spins (i.e., winning from a free spin as distinct from just experiencing a free spin). Results are presented in Table 45.

The highest excitement for all gamblers was associated with getting and winning from a feature (mean=4.7), getting and winning from free spins (mean=4.7) and winning by getting five symbols in a row (mean=4.6). This is perhaps because wins with this format are perceived to be of higher monetary value. In comparison, winning by obtaining four or three symbols in a row were seen as generally less exciting (although still fairly exciting with respective means of 3.7 and 3.0).

As discussed in other sections, features appear to have particular appeal for most EGM players. In this case, problem gamblers saw wins from features as highly exciting (mean=4.7), as did moderate risk (mean=4.6) and low risk gamblers (mean=4.8). The mean overall excitement rating for all at-risk gamblers was 4.7 compared to a mean excitement rating for non-problem gamblers of 4.5. This difference was also tending toward significance [$t=-1.9(53)$, $p=.06$].

Wins achieved via wild or substitute symbols (which can represent other symbols), scatter symbols and left to right symbol presentations were also quite exciting for all gamblers with identical ratings observed (mean=4.1). Compared to non-problem gamblers (mean=3.9), however, it was interesting to note that problem gamblers rated wild and substitute symbols as significantly more exciting (mean=4.4) [$t=-2.6(82)$, $p<.01$].

Table 45. Attitude toward different ways of winning - Results by risk for problem gambling
(N=219-222, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all exciting, 5=very exciting)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
<i>Winning from free spins or features</i>					
Getting a feature and also winning from the feature	4.5a	4.8b	4.6a	4.7a,b	4.7
N	42	64	72	42	220
Getting free spins and also winning from free spins	4.5a	4.9b	4.7a,b	4.7a,b	4.7
<i>Winning with different numbers of symbols</i>					
N	41	64	73	41	219
Winning by getting 5 symbols in a row	4.5a	4.7a	4.5a	4.6a	4.6
N	42	64	73	43	222
Winning by getting 4 symbols in a row	3.8a	3.8a	3.6a	3.7a	3.7
N	42	64	73	43	222
Winning by getting 3 symbols in a row	3.2a	3.1a	3.0a	2.9a	3.0
N	42	64	73	43	222
<i>Winning by the use of special symbols</i>					
Winning through wild or substitute symbols	3.9a	4.3a,b	4.0a	4.4b	4.1
N	41	63	73	43	220
Winning through a scatter – i.e., symbols anywhere on screen	4.2a	4.2a	4.0a	4.3a	4.1
N	42	64	73	43	222
Winning after the symbols lined up left to right in the right order	4.1a	4.1a	4.1a	4.2a	4.1
N	42	64	73	42	221

Question: On a scale from 1 to 5, where 1=not at all and 5=very exciting, please rate the extent to which the following are exciting. (Base: All gamblers)

Despite the high ratings overall for wins that appear to offer a greater chance of a large win, qualitative research revealed more nuanced preferences. Most EGM players said they preferred small, frequent wins as opposed to having to wait for larger, yet very infrequent wins. Consistent with the literature, such comments suggest a preference for frequent win reinforcement from EGMs and there was some evidence that this may reinforce continued play:

- *Small wins more frequently would be the major element. Just being given back a little bit to extend the playing time is my preference*
- *I'd rather a bigger win every now and then, but small wins I like mostly. I re-invest to try to get a big one. It does cause problems though as I'm chasing larger wins. I think smaller wins are better for general people, because most people only play now and then, whereas if you play them more often, you're looking for a better win*
- *I like small wins across lots of people*
- *I like winning small amounts. It keeps you playing. If they paid out a single big amount, it wouldn't be as fun*
- *I really prefer a small amount frequently. Like they are now. I think the small amounts keep me inspired to play. I consider a good win to be anything where you recoup your money. Walking out with exactly what you walked in with is good. A good individual amount for a win would be about \$100-150*

Left to right versus scatter wins

The issue of the excitement associated with winning via left to right versus through scatter symbol presentations was of particular interest to this study as scatter wins have been described as being common, though not exclusive to, many Reel Power games. Players were thus asked how likely they believed they were to win when the win had to be left to right and, similarly, when the win could be through a scatter pattern. Table 46 presents these results.

All gamblers thought they were quite likely to win with a left to right symbol presentation (mean=4.1) and to win via a scatter pattern (mean=4.1). This may reflect a view among gamblers that any win is welcome, regardless of how it comes about. There was little variation between the scores by gambling risk segments for each win type. However, problem gamblers rated their likelihood of winning via a scatter (mean=4.3) slightly higher than non-problem gamblers (mean=4.2). This difference, however, was not statistically significant.

Table 46. Attitude toward winning via left to right and scatter symbol presentations - Results by risk for problem gambling (N=221-222, full sample only October 2013 - April 2014)

EGM characteristic	Mean (1=not at all, 5=very likely)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Left to right wins (wins must be left to right)	4.1a	4.1a	4.1a	4.2a	4.1
N	42	64	73	42	221
Scatter wins (symbols can appear anywhere for a win)	4.2a	4.2a	4.0a	4.3a	4.1
N	42	64	73	43	222

Question: On a scale from 1 to 5, where 1=not at all and 5=very likely how likely do you think you are to win with (win methods prompted)? (Base: All gamblers)

From qualitative research, scatter wins were generally seen by EGM players to be an 'easier' type of win, as they did not require symbols to appear in any particular order (e.g., left to right on the gaming machine). They were also deemed attractive because they seemed to increase the perceived chance of a win and for some players were associated with larger wins. For these reasons, players generally said they preferred machines that offered scatter wins. Comments highlighting the attractiveness of scatter wins included:

- *I love scatters. I hate playing a left to right. I find there is more chance of getting the features if they are scattered. If you miss that first one in that first line, because you know they can come in a different order. My friend plays Indian Dreaming (a Reel Power EGM) and she likes left to right games. I'd rather the scatter. It just increases your percentage of getting wins*
- *I like those scatter symbols as it seems like there is more chance of winning because you don't have to line up in special combination. They can just be anywhere*
- *I reckon scattered wins are better. Because it gives you more chances. You get more wins, more so than the first-second-third reel format. Indian Dreaming is like that. You have to get the feature on the first-second-or third reel. You might get your money for the first or second, but with a scatter feature, you often get more off it. It increases your chances more, as you are not confined to the first three reels*
- *Scatter wins are when you get a whole screen of symbols that result in a win. They can be on different areas of the screen. Compared to just getting diamonds in a row, scatter wins are better. That's because you usually win more money. You get the whole screen and you get good sounds as well*
- *I don't like to have symbols from left to right as it's seems like you have a lesser chance to win. Machines that pay all over make you feel that you have a better chance of winning*

EGM symbol confusion

Evidence from qualitative research suggests that the multitude of EGM games on the market with similar branding, yet different winning symbol combinations was quite confusing to EGM players. It was apparent from discussions with EGM players that this often led many to believe that they were winning when achieving certain symbol combinations that they had previously encountered as winning symbols on another machine. This appeared to set the expectation of a win to the point that players often experienced a feeling similar to a near miss. The reported frequency that players had noticed symbol combinations that were winning on one machine, yet not on another is in Table 47.

Findings overall suggested that this occurred only somewhat frequently for most players (mean=2.8). However, problem gamblers indicated that they encountered this more frequently (mean=2.9), compared to non-problem gamblers (mean=2.2) [t=-2.9(77), p<.01]. At-risk gamblers also interestingly experienced symbol confusion relatively frequently (mean=2.7), compared to non-problem gamblers [t=-2.6(214), p<.05]. This may be explained by differences in the amount of time spent playing EGMs.

Table 47. Attitude toward symbol confusion – Results by risk for problem gambling (N=216, Full sample only, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all, 5=very often)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
How often player sees symbols that are winning symbols on one type of EGM, but are not on another?	2.2a	2.7b	2.6a,b	2.9b	2.6
N	41	61	72	42	216

Question: On a scale from 1 to 5, where 1=not at all and 5=very often. If at all, how often during pokies play do you see symbols that are winning symbols on one type of poker machine, but are not on another type? (Base: All gamblers)

While most EGM players were somewhat aware that winning symbol combinations could change between EGMs with similar artwork and game names, the extent to which this encouraged continued play and potentially player harm, was also investigated. Results are shown in Table 48. While overall trends indicated that this happened only rarely (mean=1.8), problem gamblers were somewhat more encouraged to play as a result of symbol confusion between machines (mean=2.3), compared to non-problem gamblers (mean=1.5) [$t=-4.2(64)$, $p<.001$].

Table 48. Attitude toward symbol confusion frequency –
Results by risk for problem gambling (N=208, Full sample only, October 2013 - April 2014)

EGM characteristic	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
To what extent does this symbol confusion encourage you to continue to play, as it feels like you are winning	1.5a	1.7a	1.8a	2.3b	1.8
N	39	60	69	40	208

Question: On a scale from 1 to 4, where 1=not at all and 4=significantly, to what extent does this [symbol confusion] encourage you to continue to play on, as it feels like you are winning? (Base: All gamblers)

Players participating in qualitative research similarly reported some level of confusion over the different values of symbols (and thus methods of winning) across EGMs. These were reported to be very inconsistent across machines and would often lead players to believe they had won when they had not actually won. Some players also believed EGM manufacturers would design winning patterns to make players think that they can win more easily on certain types of machines. Players also felt confused when a familiar machine brand provided different credit winnings for identical symbols. Some players similarly believed that this was misleading consumers. Misunderstandings caused by symbol confusion were reported by players as leading to perceptions of 'near wins' in some cases and encouraged further play.

Comments reflecting some level of player confusion about symbol differences between EGMs included:

- *Sometimes it's really hard to work out what a win is. You get 5 symbols and you think it's the jackpot on one machine and it doesn't win, but on another machine you win. It may lead some people to get confused. The old machines used to tell you what you had to win, but the new ones don't tell you. They're all electronic and you have to go into the menus to get the information. You can't find the menu sometimes, as it's all computerised. I think you have to press 'menu' or you press another tiny button to show the pay lines or it doesn't show you all the information you need to understand how to win. Especially older people can get confused*
- *I think the win patterns vary a lot between machines. You may get 3 aces and that's 20 credits. And then on another machine, it doesn't give you the line for the same aces. So I think people do sometimes get confused*
- *I think that some manufacturers use symbols that you think should be winners, but they're not. Like I got three gold hats, for example and you think free spins! And then you think left to right is required, so you think bloody hell (I've won). Or you'll get 5 gold hats, so you expect a reasonable pay out and then you get nothing. You bet \$6 and you win \$1 or something obscure. The big golden hats don't pay much at all. So you think bugger. You think when you see the hats, it may be a potential win coming up. You think it's teasing you*
- *I had a tickle last night. I got Kings last night and they gave me 40c. Then I went to another machine and the Kings gave me a better pay out like 60c, so I got confused. So it's all a bit confusing. I think it gives you a false sense of security that you're winning. It makes you think that you're nearly winning. They should have a programming approach across the board, so that it's consistent in the pay outs (ways to win) per game*

- *In Queensland, there's a Rock N Roll machine. In Queensland, you can get three anywhere on the screen. But in NSW, you have to get three on the first three reels. Indian Dreaming is the same. Indian Dreaming here in NSW is different from the casino. It varies how you win. You have to get to three in the first three reels in NSW, whereas in Queensland, you can get it anywhere*
- *Here the Indian Dreaming in NSW are Reel Power. In Queensland, they are line-based machines. So people get confused as they travel 10 minutes down the road. I think they should be all standardised, as it confuses people*
- *In one of the \$1 machines, you normally you get 200 credits. But during a free spin, it's only 100 credits. I think it's misleading*
- *On Choy Sun Doa, if you get a substitute, you get \$40. But in a free spin, you get \$20 for a win. So that's counter-intuitive, so it's seems misleading to me*
- *What annoys me is when the machines don't tell you the payment. Like five of a kind that tells you that you win \$10. But machines don't tell you that always unless you go to the menu. So you have to go into the menu to see the winning combinations and how much they pay or what the feature pays. Manufacturers should be clear about how you win without going into a menu. So you see symbols that should indicate a win, but they're not. You think they have to be on the first three lines, but they don't win like that*
- *There could be five ways to get a feature. So you think what has to come up and whereabouts does it have to be? Some substitute and some are right to left. It's never clear. I think the solution to the issue is just simply make it clear without having to press an information button. It's transparency and it's not there. A vast number of people just look for leisure and the transparency is not there*

KEY FINDINGS RELATING TO METHODS OF WINNING

Key points in summary – Methods of winning

- The highest excitement of all winning methods was associated with getting and winning from a feature (mean=4.7), getting and winning from free spins (mean=4.7) and winning by getting five symbols in a row (mean=4.6) – This may be due to perceptions that such wins are of higher monetary value
- Winning by getting more symbols in a row was generally regarded as more exciting than getting fewer symbols in a row (e.g., Means for winning were as follows - Five symbols in a row – 4.6, four symbols in a row – 3.7, three symbols in a row – 3.0)
- Compared to non-problem gamblers (mean=3.9), problem gamblers rated wild and substitute symbols as significantly more exciting (mean=4.4)
- The multitude of EGM games on the market with similar branding, yet different winning symbol combinations and values (e.g., King is 40 credits on one EGM and 100 credits on another), was quite confusing to EGM players (termed symbol confusion in this report)
- Problem gamblers also reported a greater frequency of being confused after seeing winning symbols on one EGM (mean=2.9) that were not winning symbols on another, compared to non-problem gamblers (mean=2.2)
- Problem gamblers were significantly more encouraged to play on as a result of symbol confusion between machines (mean=2.3), compared to non-problem gamblers (mean=1.5) (as it provided a feeling like the player was winning)
- Some EGM players also believed that win credits and credits for common card symbols should be standardised across EGMs to avoid player symbol confusion and to avoid misleading players

EGM near misses from an attitudinal and behavioural perspective

Background

Many EGM players report that they would frequently see machine events that gave the impression that they had 'nearly' won. Termed 'near misses' for the purpose of the study, such events suggested an overall player pre-disposition towards looking for symbol and reel combinations resembling 'wins' on poker machines. Discussions with players indicated that the machine events that lead to a perception of a 'near miss' were wide and varied and were possibly cultivated through exposure to symbol and reel combinations associated with wins in the past. It was also apparent that near misses could be associated with audio and lighting effects that build a sense of anticipation of a win in players. From this perspective, a further important part of the study involved examining the concept of 'near misses' from an EGM player perspective. Qualitative insights were particularly useful in studying near misses, given the many varied forms of near misses from a player perspective.

Definition of near misses from an EGM player perspective

Qualitative discussions with EGM players highlighted the many different types of machine events that players saw as 'near misses'. All types of near misses were seen to encourage players to continue play and were seen to have great potential to lead players to spending more than they had planned. Some players also reported feeling a strong motivation to place higher bets after a near miss, as there was a related perception that a chance of winning may be close.

Several categories of near misses were identified by EGM players. One distinct category involved players visualizing a near miss when a number of matching symbols appeared on an EGM in the right line, yet without the right number of symbols. For example, this was said to occur when players received three winning symbols, but required four to trigger a win or received two winning symbols, but required three to trigger a win. A further similar scenario involved players obtaining a full screen of winning symbols but lacking one or more symbols to trigger the win. The effect was also stronger when jackpot symbols were missing.

Illustrative examples reported by players included:

- *A near miss to me is getting a 1-2 and then missing the 3rd one*
- *The other scenario is when you get a full screen of the winning symbol in all but one or two instances. You almost got all the tigers, but not all. I got all tigers, but missed a couple*
- *The dude next to me, said you just won \$13,000. But it turned out I was 2 numbers off the jackpot. If you win 5 cars, you spin the reels but with the cars - if you get them - you would expect you won. But it spun it and it lost*
- *The prime example of a near miss is the Four Leaf Clover. It'll give you 4 of everything and you always miss out on the fifth one with the gold clover that gets you a jackpot. It will continually do that to you so you miss the last one. The Reel Powers are good at that too, because you get 4 on 4 reels and you still miss out on the jackpot*
- *I can think of lots of examples of nearly winning. Like getting 5 of a kind and that you have 4 symbols and it may be like a diamond that you're missing. That's like a near miss to me*
- *When you have to get 3 in a row to get a free spin and you only get 2 - you miss out on the free spin*
- *When the mini is up to \$150 and it's ready to go off, but you don't get the feature to win the jackpot and then you have to get 3 Fred Flintstones or Barney Rubbles. I got the Freddy Flintstones which makes you think you're nearly winning, but you don't win!*

- *I see 2 come down and you need 3 for the feature. You think - I should have pushed the button harder!*
- *You always see two and then you see 1 and then you see 2. It keeps you thinking that you're nearly winning. The sounds with the double patterns make you hear a near miss too*
- *If there are 3 symbols and it looks like I'm getting closer to the feature, then I will increase my bet*

The second type of near miss event reported by players involved players receiving the correct number of symbols on an EGM, yet not in the required pay line. This was also reported to be quite common, as pay lines on EGMs were quite complex and large in number. Examples reported by players included:

- *I see a lot of near misses when I'm playing. Like five wild cards strewn across the machine, but not in a paying line. Maddening! Or even 4 of them linking up and a 9 at the end. A lot of machines won't actually pay the 4 wild cards, they will pay the 5 nines. Some machines do, but some of the older ones don't. So at times you get confused*
- *Sometimes you need five symbols and they are there, but not in a line. I just keep going if I get that. I would up my bet*

A further category of near miss related to the perception of the player 'nearly winning' in a feature. This could imply an unlimited number of scenarios where a player achieves most of the feature objectives to trigger a win (which vary considerably between features), yet fails to achieve the final required objective. One example reported included:

- *I had one the other day. I got 6 free spins, 3 words with timber, got dynamite and I had two left and had to shake off one paling of each word. I had to knock one off and I had two chances with two palings and two dynamites and both went off and the screen shook, but the palings didn't fall! I got \$20 for the feature, but nothing for the words. I then played it down after that, because I thought if I could get the feature again, I'm in the running!*

Another category of 'near miss' raised by players involved the use of anticipatory sounds that highlight a likely win, but do not actually result in a win. This included use of sounds that were associated with a win, whilst not actually providing the win. Players generally believed that using sound to create anticipation of a win was a common trend in many EGMs and frequently led players to continue play because they felt the 'near miss' indicated the likelihood of a forthcoming win. One example included:

- *A near miss to me something like when the feature comes up and you need to get three symbols and it makes a loud sound suggesting anticipation, but the third (sound) one never comes. So there is all that anticipation. It's like you might win and you almost win. It gives the anticipation that a win could be coming. It does give off that effect that makes you think: Maybe I should put a few more dollars in!*
- *These are the jackpot features but you need three of each to make the jackpot to come off. But if you get them, there's no guarantee that the jackpot will come off. When you get these 3 Freds, Bameys or Dinos up in the right hand corner, then sometimes if bowling picks up, you pick a character to do the bowling and then they have to get a strike to get a jackpot. So you associate the characteristics with the jackpot and it makes you play on! Yabba Dabbo Doo is what you hear and then you think you've gonna get the jackpot*
- *The Pink Panther is another feature that's quite exciting. If you get the di-dint-da-dint (theme sound from Pink Panther). If you hear that sound, you think the jackpot feature is coming up, but it's not necessarily the case. None are ever guaranteed. Only 88 Fortunes guarantees the mini-jackpot with the feature*
- *The machine will often start making all this noise. It gees you up. When playing Where's the Gold, you have 20 presses and for 16 of those 20, you'll get 2 symbols when you need three. That makes you think it is going to go. I suppose that it causes chasing if anything as you think you're near a win*

Many EGM players also discussed the concept of symbol nudging when discussing near misses. Nudging was described to occur quite frequently on EGMs and involved a symbol falling on the payline then suddenly dropping above or below the payline. This was said to create player expectations of a win and in many cases increased the player's 'hope' that a win would occur. A further variant of nudging involved reel symbols spinning very slowly on the pay line to the extent it created a perception that the symbol was likely to fall on the pay line:

- *For me, where a symbol nudges up when it is first on the pay line, then that's a near miss. You feel frustrated - so close, so you want to press the button faster than before!*
- *Another example is where you have 2 and then the rest spin one by one. You need three. It goes through very slowly as you think you're get the symbol but it doesn't happen. It gives you a false sense of nearly winning. It gives hope*
- *Last night I was betting 50 cents, then I pushed a big bet. Then I saw 2 symbols and then it drops 1/4 of the way down to the pay line. That makes you feel you're nearly winning*
- *When you get the first two and then the third ones go quick and then stop and it's just one below it. That's frustrating. I've also seen ones where it all lines up and then the winning symbol drops below the pay line. That's frustrating and it makes you gamble on*

The cognitive processes of EGM players were clearly oriented towards seeing patterns that resembled wins and this in part led to situations interpreted as near misses. One key example involved players getting two symbols on a spin (that did not result in a win) and then seeing a further symbol appear on the next spin required for the previous win. Some players tended to view this as a near miss based as the symbols were achieved yet only on sequential spins. An illustrative comment highlighting this scenario included:

- *When you get a free spin and you need 2 symbols to get a jackpot or three, then only 2 come up. And then if the other that you need is in the next spin, you feel that's a near miss*

Non-coverage of required pay lines was also seen to contribute to the perception of near misses. This was also why many players were motivated to play all pay lines during EGM play. If required pay lines were not covered, players often felt disappointed when symbol combinations appeared on the pay lines they had not purchased. This was also seen to reinforce the need to cover all pay lines in future sessions of play:

- *Sometimes the patterns come and then you didn't buy that line, so it's a near miss. You miss out. Then you think you'll choose the line in the future to avoid missing out. So it makes you buy more lines*

EGM players believed that use of lighting was a common method used in EGM design to lead players to anticipate a win. Some players also saw that use of lighting created the expectation of a near miss, as it created a sense of anticipation of a likely win. Other players also reported that this would lead to bet increases, as players wanted to make sure they had placed a large bet if a win was forthcoming. One example comment included:

- *You get a free spin and you get \$20 in 1 cent. You press just one and the whole machine lights up, but you didn't get anything. It happens fairly regularly that lights are shown but you don't win. You go - Ah - I got it. But then you realise you didn't. You feel annoyed then. I may then push the bet up if you get fake lights. You start to bet more*

As methods of winning differed considerably across EGMs, many players also reported feeling the perception of a near miss when they obtained the required number of winning symbols that they had experienced on a previous EGM, yet were not the required number of symbols for the EGM they were playing. For instance, one example may involve a player winning five kings on a certain EGM and having a win triggered and then winning the same number of kings on another EGM and not having the win triggered. Examples included:

- *Another example of near misses is when machines pays out differently to others. For some machines, all Queens must be on the top line and others are then on the bottom. So this can confuse players and lead them to think they have got a near win. You think why didn't you get a win. You're triggered to play on*

A further similar scenario involved a change in the number of credits awarded for a win across EGMs. On one machine a full screen of symbols may award a large number of credits, while on another machine, a full screen of symbols may only award a very minor prize. In this situation, the player's previous experience in winning a large number of credits from a full screen set the expectation of a full screen win on another EGM. This was subsequently interpreted by the EGM player as a near miss as it was perceived as nearly winning a large prize:

- *There are some new games out now like Black Widow and they come up all of a kind on the whole screen. On a normal machine, you've hit the big league, but on Black Widow, you don't win much when the symbols stack up. You may only win \$20-30. It feels like a near miss as you feel like you nearly won the jackpot*
- *The first three is the most frustrating - especially when there's a gap between the first two and the others, in some cases you lose and then in other cases you win. This gives the impression of a near win. Red Baron you have to get them in the first or middle three - I can't recall. But it's annoying having to get them in that order. The different rules regarding order across machines mean that people may think a near miss as the rules change. Three queens win on 1 but then not the other. So you think there's a near win and there's not*

Other related examples involved a combination of symbols being obtained that resulted in a win on one machine, yet did not result in a win on another machine:

- *You think you win a feature, but you don't. So it gives you the impression of a win. But you lost as it has to be left to right (but the same symbols won in a scatter on another machine)*
- *You think you win on a certain line - like 5 in a row, but the lines for the pay are different to what you actually would think is a win. I think the manufacturers are trying to keep you hoping for a win by disguising losses as wins*

Some players reported the perception of near misses during free spins. One example related to a free spin that did not result in a large multiplier. The player was looking for a 10x multiplier, but received a 2x multiplier instead:

- *Another miss is the multiplications. When you get a free spin on a free spin. You may get 2x and you want x10. That's a near miss and also frustrating. That would really trigger me overall*

Most players believed that the occurrence of near misses had a substantial effect on play motivation and tended to encourage players to play on or increase bets in anticipation of a win. This effect was also described by one player as follows - *The near misses most definitely keep people going! I think this is a harmful area of gaming. I think the manufacturers are designing in near misses to keep people putting in money. Like in - Where's the Gold - you get 2 bombs and then you feel it's close - especially when it keeps coming - you put more money in.*

Other players also reiterated that the experience of several near misses in a row ever further encouraged EGM play persistence and served to frustrate many EGM players:

- *If you have a pay line and the symbol is above or below that excites you. It's also very frustrating when you have 5 near misses in a row. You feel more determined to play on. If the third winning symbol is anywhere near the pay line, it's a tease*

Excitement associated of near misses during EGM play

While qualitative research provided insight into the types of events defined as near misses by EGM players, a further important part of the study attempted to quantify the influence of near misses through attitudinal questions. This involved asking EGM players to rate their level of excitement associated with different types of near miss events. Findings are shown in Table 49.

Results overall suggested that near misses involving a greater number of symbols had a larger effect on players. For instance, receiving four symbols when five were required for a win was the most exciting type of near miss event (mean=2.6), while winning two symbols when three were required was less exciting (mean=1.8).

Findings also appeared to suggest that missing out on symbols in a pay line was probably more exciting than other types of near miss events. For instance, nudge based near misses were only rated with an overall mean of 1.8, compared to means of 2.2 and 2.6 respectively for missing a fourth or fifth required symbol (for a payline win). Not getting a symbol on a pay line was also considered the least exciting type of near miss effect (mean=1.6).

Table 49. Attitude toward near misses – Results by risk for problem gambling
(N=2221-222, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all exciting, 5=very exciting)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
A winning symbol just nudges above or below the pay line, but misses the payline	2.0a	1.8a	1.7a	2.0a	1.8
N	42	64	72	43	221
You see symbols which you thought should be winning but they didn't produce a win	1.8a	1.5a	1.7a	1.7a	1.7
N	41	64	73	43	221
The screen has a large number of symbols and looks like a win (but don't align to the payline)	1.7a	1.6a	1.6a	1.7a	1.6
N	42	64	73	43	222
You see 2 winning symbols and you just missed the third	1.9a,b	1.6a	1.8a,b	2.1b	1.8
N	42	64	73	42	221
There are 3 winning symbols and you miss the fourth	2.3a	2.0a	2.3a	2.4a	2.2
N	42	64	73	42	221
There are 4 winning symbols and you miss the fifth	3.0a	2.4b	2.5a,b	2.8a,b	2.6
N	42	64	73	43	222

Question: On a scale from 1 to 5, where 1=not at all and 5=very exciting, please rate the extent to which the following are exciting (Base: All gamblers)

Effect of near miss events on EGM play

Players were additionally asked how near miss events impacted their cognitions and play behaviour. Results are shown in Table 50. Findings overall showed that EGM players reported seeing near miss events quite frequently during EGM play (overall mean=3.2). Findings also suggested that problem gamblers (mean=3.7) were significantly more likely to report thinking they had nearly won during EGM play, compared to non-problem gamblers (mean=3.0) [t=-2.4 (82), p<.05]. However, this result was not statistically significant for all at-risk gamblers compared to non-problem gamblers (suggesting that it may be something specific to problem gamblers).

In addition, results suggested that it was fairly common for the perception of near misses to lead to continued EGM play (on the basis that players thought a win was close) (mean=3.1). Moreover, similar to previous trends, problem gamblers were significantly more likely to be triggered to continue play through near miss events (mean=3.7) than non-problem gamblers (mean=2.6) [t=-3.8(80), p<.001]. It was also noteworthy that near misses had a significantly greater effect on all at-risk gamblers (mean=3.2) compared to non-problem gamblers [t=-2.1 (215), p<.05].

Table 50. Cognitions relating to the effect of near misses on EGM play – Results by risk for problem gambling (N=217-220, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all and 5=very often)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
How often do you catch yourself thinking these are near misses and you 'nearly won'	3.0a	3.2a,b	3.1a	3.7b	3.2
N	42	64	72	42	220
How much does seeing near misses lead you to continue pokies play as you feel a win is getting close	2.6a	2.8a,b	3.2b	3.7c	3.1
N	40	63	72	42	217

Question: On a scale from 1 to 5, where 1=not at all and 5=very often, how often during pokies play do you catch yourself thinking these are 'near misses' where you nearly won? How much does this seeing these near misses lead you to continue to pokies play as you feel that a win is getting close? (Base: All gamblers)

KEY FINDINGS RELATING TO NEAR MISSES

Key points in summary – Near misses

- EGM players have many different categories of events that they view as near misses – All event types were seen to lead to play persistence (or increased betting), as they provided a feeling that a win may be close
- Cognitive processes of EGM players are generally oriented towards seeing near misses in many types of machine events
- Categories of near misses identified in the study included:
 - Matching symbols appearing on the pay line without the right number of symbols (e.g., getting 3 with the 4th symbol missing)
 - Getting a screen full of winning symbols but lacking one or more to trigger a win
 - During a feature, achieving all but one of the feature objectives to trigger a win
 - Use of sounds or visual effects that highlight a likely win (also creating anticipation of the win) (e.g., hearing the Pink Panther theme sound, made players think the jackpot feature was close)
 - Symbol nudging reel effects (where a symbol stops then falls just above or below the pay line or starts spinning very slowly on the pay line)
 - Getting two symbols on free spin then the required third on the next free spin
 - Non-coverage of pay lines required to trigger a win (e.g., symbols fall on a pay line not bet on)
 - Machines lighting up or playing sound after a loss or win less than bet size
 - Getting symbols required for a win on one EGM that were not winning symbols on another EGM
 - Getting a free spin with a lower free spin or win multiplier when a higher was desired
 - Getting several near misses (any type) in a row
- Near misses involving a greater number of symbols appeared to have a larger effect on EGM players - For instance, receiving four symbols when five were required for a win was the most exciting type of near miss event (mean=2.6), while winning two symbols when three was required was less exciting (mean=1.8)
- EGM players reported seeing near miss events quite frequently during EGM play (overall mean=3.2). Problem gamblers (mean=3.7) were also significantly more likely to report thinking they had 'nearly won' during EGM play from near misses, compared to non-problem gamblers (mean=3.0)
- Problem gamblers were also more likely to be triggered to continue play through near miss events (mean=3.7) than non-problem gamblers (mean=2.6)

Reel Power and Multiway EGMs from an attitudinal and behavioural perspective

Background

An important part of the current study was to investigate EGM player attitudes and behaviours relating to Reel Power and Multiway EGMs. Reel Power EGMs are manufactured by Aristocrat, a leading manufacturer of gaming machines in Australia and many countries worldwide. Reel Power EGMs are gaming machines that have a slightly different approach to betting. Instead of a player selecting lines and credits, Reel Power machines require players to purchase and bet on gaming machine reels. For instance, a player can purchase 3 reels and typically up to 5 reels (a common configuration of Reel Power machines). This implies that only reels that are purchased have an opportunity to win in any position (in other reels, typically only the centre line can win). Multiway EGMs (a more generic brand for the same approach) operate in a similar manner. Due to the different betting configurations of Reel Power and Multiway EGMs, such machines are promoted to have a large number of pay lines and 'ways to win' with a common configuration being 243 pay lines ('ways' to win hence the term multiway).

Awareness of Reel Power and Multiway EGMs

Several issues relating to Reel Power EGMs were examined in the quantitative research. The first area of interest concerned whether EGM players had been previously exposed to Reel Power or Multiway EGMs and were able to recognise such machines. This involved asking players about whether they had heard the name Reel Power or Multiway on machines and had previously seen the Reel Power logo on a gaming machine (the logo was shown to respondents).

Quantitative results relating to player awareness of Reel Power and Multiway machines are presented in Table 51. Just under half of all EGM players (46.4%) indicated that they had definitely heard the name Reel Power or Multiway on gaming machines. A further 20.5% indicated some level of 'vague' recognition of the names (implying that 66.9% of all players had some level of awareness).

Findings also showed that problem gamblers had significantly higher recognition of Reel Power and Multiway EGMs (74.5% indicated 'definite' or 'vague' recognition), when compared to non-problem gamblers (45.3% indicated 'definite' or 'vague' recognition) [$\chi=7.5(1)$, $p<.01$]. Moreover, the same trend was also apparent when comparing non-problem to all at-risk gamblers [$\chi=10.9(1)$, $p<.01$]. This may in part be explained by their greater exposure to poker machines.

When shown a picture of Reel Power symbols, 75% of players indicated that they had previously seen the symbols on a gaming machine screen. Once again, similar to overall levels of awareness, the proportion of problem gamblers reporting they had seen the symbols was significantly higher (90%), when compared to non-problem gamblers (only 50%) [$\chi=13.4(1)$, $p<.001$]. There was similarly a trend for awareness to be higher for all at-risk gamblers (80.8%), compared to non-problem gamblers (50.0%) [$\chi=16.4(1)$, $p<.001$].

Table 51. EGM player awareness of Reel Power and multiway gaming machines – Results by risk for problem gambling (N=212-220, October 2013 – April 2014)

Awareness of Reel Power EGMs	% Gamblers				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
<i>Whether player had heard the name Reel Power/Multiway or seen 'x3' or '243 ways' in relation to certain gaming machines</i>					
Yes - definitely	31.0a	48.4a,b	45.1ab	60.5b	46.4
Yes - vague recognition	14.3a	21.9a	26.8a	14.0a	20.5
Not at all	54.8a	29.7b	28.2b	25.6b	33.2
N	42	64	71	43	220
<i>Whether player had seen Reel Power symbols on a gaming machine screen (symbols shown)</i>					
Seen symbols	50.0	71.0	84.3	90.0	75.0
N	40	62	70	40	212

Question: Have you heard of the name Reel Power/Multiway or seen 'x3' or '243' ways in relation to certain gaming machines? (Base: All gamblers) (Significant differences noted where letters differ at $p < .05$ based on z-tests)

Qualitative discussions with gamblers generally reflected quantitative trends. Most EGM players had some level of broad recognition of the term Reel Power, although did not always know much about the term. This was particularly the case for less frequent EGM players and even some players who had occasionally played Indian Dreaming (one of the most well-known Reel Power machines) - *Reel Power is a term I knew. But I've never really thought much about it; I played Indian Dreaming, but I didn't recognise it as Reel Power until you mentioned it.* Other players had heard of Reel Power, but were totally unaware of the meaning of the term and were not certain about the defining features of such EGMs - *There's a few Reel Power at the (club in Queensland). I think they are the ones where you are betting max lines and you can win 5 of a kind in a scatter?*

EGM player use of Reel Power and Multiway EGMs

EGM players were asked to indicate whether they had previously played Reel Power or Multiway machines in the past 12 months. The number of sessions of play on such machines was also recorded. Results are in Table 52. Players not playing Reel Power or Multiway EGMs were recorded as zero sessions for the session-based analysis. As such, results indicate mean sessions of play for all players over the past year.

Findings overall revealed that 57.8% of EGM players reported 'definitely' playing Reel Power or Multiway machines and a further 15.1% reported 'maybe' playing such machines. Group comparisons showed significant trends by player risk for problem gambling. Problem gamblers were significantly more likely to report playing Reel Power and Multiway EGMs (88.1% reporting definite or possible play), compared to non-problem gamblers (58.6% reporting definite or possible play) [$\chi^2=9.3(1)$, $p < .01$]. A similar trend applied for non-problem gamblers, compared to all at-risk gamblers, with at-risk gamblers being more likely to play such EGMs (76.3%) [$\chi^2=5.3(1)$, $p < .05$].

Mean sessions of EGM play by risk segment in the past 12 months were also compared. Problem gamblers reported playing a higher mean number of sessions on Reel Power and Multiway EGMs in the past year (mean=43.7 sessions), compared to non-problem gamblers (mean=7.4 sessions) [$t=-3.4(51)$, $p < .05$]. The same trend again held for non-problem (mean=7.4) compared to at-risk gamblers (mean=25.5) [$t=-3.4(108)$, $p < .01$]. This difference may of course be because problem and at-risk gamblers play all machines more frequently than non-problem gamblers.

Table 52. EGM player experience playing Reel Power and multiway gaming machines in the past 12 months – Results by risk for problem gambling (N=218-222, October 2013 – April 2014)

EGM characteristic	% Gamblers and Mean EGM play sessions				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
<i>Players playing Reel Power or multiway EGMs in the past 12 months (%)</i>					
Yes – definitely	36.6	53.1	62.0	78.6	57.8
Yes – maybe	22	14.1	15.5	9.5	15.1
Not played at all	41.5	32.8	22.5	11.9	27.1
N	41	64	71	42	218
<i>Sessions of Reel Power or Multiway EGM play in the past 12 months (Mean)</i>					
Sessions of Reel Power or Multiway EGMs play in past 12 months	7.4	19.5	20.6	43.7	22.2
N	42	64	73	43	222

Question: Have you played a Reel Power or multiway gaming machine in the past 12 months? (Base: All gamblers),
How many times have you played a Reel Power or other multiway machine in the past 12 months? Record sessions of play (Base: All gamblers)

Player understanding of the characteristics of Reel Power and Multiway EGMs

One line of questioning in the study asked EGM players to indicate how they believed Reel Power and Multiway EGMs differed from regular gaming machines. Qualitative responses were coded with results in Table 53. Findings overall suggested that most players were not aware of any particular differences between Reel Power/Multiway machines and regular gaming machines (43.5% of EGM players). The most common difference mentioned related to the perception that Reel Power and Multiway EGMs have more 'ways to win' or pay lines (mentioned by 15% of EGM players). The second most common characteristic mentioned related to the perception of better pay-outs and jackpots (12.1% of EGM players).

Other common overall responses included the view that Reel Power and Multiway machines were not any different to regular gaming machines (7.9% of EGM players) and the availability of scatter pays on Reel Power and Multiway machines (where wins can be 'anywhere' on the machine rather than left to right) (4.2% of EGM players).

Interestingly, only 4.2% of all EGM players mentioned that such machines required players to bet on reels, rather than lines. This highlights very limited unprompted awareness of this fundamental characteristic of Reel Power and Multiway gaming machines (indicating that this is probably not at all salient to most players).

While trends were for mostly descriptive purposes, the proportion of gamblers stating they did not know of any differences was examined for significant trends by risk segment. This revealed that non-problem gamblers were significantly more likely to report *not* being aware of any differences, compared to problem gamblers [$\chi^2=10.2(2)$, $p<.01$]. However, the difference between non-problem and all at-risk gamblers was not statistically significant.

Table 53. How Reel Power and Multiway EGMs differ from regular EGMs – Results by risk for problem gambling (N=214, October 2013 - April, 2014)

How Reel Power and Multiway EGMs differ from regular EGMs	% Gamblers				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Don't know of any differences	61.5	50.8	38.6	23.8	43.5
More pay lines, ways to win and chances to win	5.1	14.3	15.7	23.8	15.0
Better pay outs/Better jackpots	5.1	3.2	17.1	23.8	12.1
No differences - they are the same as regular EGMs	7.7	11.1	1.4	14.3	7.9
Scatter pays	0.0	3.2	5.7	7.1	4.2
Bet on reels rather than lines	2.6	3.2	5.7	4.8	4.2
Other miscellaneous features	2.6	1.6	8.6	2.4	4.2
More exciting and fun	5.1	6.3	0.0	2.4	3.3
More modern/brighter/look nice/nice music	0.0	3.2	1.4	2.4	1.9
Betting is very confusing	5.1	1.6	1.4	0.0	1.9
Features and spins win left to right	0.0	1.6	2.9	0.0	1.4
Spend more money	0.0	3.2	1.4	0.0	1.4
Wins are smaller/less wins	0.0	3.2	0.0	2.4	1.4
Just like them	0.0	0.0	1.4	4.8	1.4
More free spins and features	0.0	0.0	1.4	2.4	0.9
Multiplied wins/win multipliers	0.0	0.0	2.9	0.0	0.9
Bet differently (no further information)	0.0	0.0	2.9	0.0	0.9
Extra Reel Feature	2.6	0.0	0.0	0.0	0.5
Higher denomination machines	0.0	0.0	0.0	2.4	0.5
Less exciting	2.6	0.0	0.0	0.0	0.5
N	39	63	70	42	214

Question: To the best of your knowledge, how do Reel based or Multiway machines differ from regular gaming machines generally?
(Base: All gamblers)

Qualitative comments made by EGM players during focus groups generally reflected limited player understanding of the key characteristics of Reel Power and Multiway gaming machines. In many cases, players had latent awareness of the brand Reel Power, but could not mention any particular characteristics - *I've seen Reel Power, but I can't quite remember what it is. Oh yes, I've seen those (after seeing one). I know this game and have played all the time. But I didn't quite get that it was a different or special machine.* Some comments made by even very regular EGM players also indicated that many were confused over whether such machines were even different to regular EGMs – *I didn't know they were different. How are they actually different?*

Prompted gambler awareness of specific Reel Power EGM characteristics

Gamblers with some level of recognition of Reel Power machines were prompted to indicate whether they were aware of a number of specific characteristics. Results are in Table 54. Findings overall highlighted limited awareness of many key characteristics of Reel Power. The most well-known characteristics were that players can win through scatter wins (where winning symbols can fall on any reel purchased – a common characteristic) (74.8% of EGM players aware) and that win multipliers were commonly available (71.3% of EGM players aware).

However, a much lower proportion were aware of more fundamental characteristics – namely, that there are many 'ways to win' like 243 or more (only 54.5% of EGM players aware) and that players purchase reels for betting instead of lines (only 50.3% of EGM players aware). This highlights that such features are clearly less salient to many EGM players. Findings interestingly showed that problem gamblers were significantly more aware that reels were purchased instead of lines (62.5%) than non-problem gamblers (31.6%) [$\chi=4.6(1)$, $p<.05$]. Although no other significant differences were apparent. The difference between non-problem and at-risk gamblers was also not statistically significant.

Table 54. EGM player awareness of key characteristics of Reel Power EGMs – Results by risk for problem gambling (N=143-147, October 2013 – April 2014)

Awareness	% Gamblers				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
You purchase Reels instead of lines as part of play	31.6	37.8	60.8	62.5	50.3
N	19	45	51	32	147
You can win through scatters on such machines	70.6	64.4	81.6	81.3	74.8
N	17	45	49	32	143
You have many ways to win like 243 or more	52.9	46.7	55.1	65.6	54.5
N	17	45	49	32	143
You can get win multipliers on such machines	58.8	60	79.6	81.3	71.3
N	17	45	49	32	143

Question: Were you aware of the following with regards to Reel Power machines? (Aware/Not aware)
(Base: All gamblers who had heard of Reel Power EGMs – definitely or vaguely)

How gamblers compared Reel Power versus regular lines based EGMs

All gamblers with some level of awareness of Reel Power machines were asked to indicate how Reel Power compared to regular EGMs on a number of characteristics. Results are in Table 55. While no significant differences were obtained by risk segment (or when comparing non-problem to all at-risk gamblers), some interesting overall trends emerged for all EGM players.

The top characteristics of Reel Power EGMs were seen to include better win multipliers (43% of EGM players), larger wins (33.3% of EGM players) and greater play excitement (33.1% of EGM players). The attributes that were thought to be least characteristic of Reel Power EGMs were being able to understand the cost per spin (only 7.7% saw this as a characteristic), offering the best chance of winning (only 9.3% saw this as a characteristic) and having pay lines that were easy to understand (only 14.1% saw this as a characteristic). Accordingly, this may suggest that EGM players experience some difficulties understanding the cost per spin and pay lines for Reel Power machines.

While differences by risk segment were not statistically significant, it was interesting to note that problem gamblers saw top characteristics of Reel Power EGMs as better win multipliers (56.3%), greater play excitement (43.8%) and machines that lead you to spend more money than you had planned (37.5%). Larger wins also followed closely as the fourth top characteristic (34.4%). The result pertaining to spending more money than planned may indicate that Reel Power machines are viewed by problem gamblers as somewhat different in this respect. In comparison, this was not in the top recognised characteristics for non-problem gamblers (only 18.8% of non-problem gamblers believed that Reel Power EGMs showed this characteristic).

Table 55. EGM player views about the key characteristics of Reel Power and Multiway EGMs – Results by risk for problem gambling (N=138-142, October 2013 – April 2014)

EGM characteristic	Type of EGM	% Gamblers				
		Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Offers a better chance of winning	Reel Power or Multiway	29.4	20.5	38.8	18.8	27.5
	Regular machine	11.8	22.7	16.3	15.6	17.6
	All same	58.8	56.8	44.9	65.6	54.9
	N	17	44	49	32	142
Offers larger wins	Reel Power or Multiway	41.2	22.7	39.6	34.4	33.3
	Regular machine	5.9	15.9	20.8	15.6	16.3
	All same	52.9	61.4	39.6	50	50.4
	N	17	44	48	32	141
Are more exciting to play	Reel Power or Multiway	23.5	25	36.7	43.8	33.1
	Regular machine	11.8	15.9	18.4	12.5	15.5
	All same	64.7	59.1	44.9	43.8	51.4
	N	17	44	49	32	142
Leads you to spend more money than you had planned	Reel Power or Multiway	18.8	20.9	32.7	37.5	28.6
	Regular machine	6.3	4.7	14.3	9.4	9.3
	All same	75	74.4	53.1	53.1	62.1
	N	16	43	49	32	140
Have pay lines which are easy to understand	Reel Power or Multiway	17.6	11.4	18.4	9.4	14.1
	Regular machine	23.5	34.1	42.9	31.3	35.2
	All same	58.8	54.5	38.8	59.4	50.7
	N	17	44	49	32	142
The cost per spin is easy to understand	Reel Power or Multiway	17.6	9.1	2.0	9.4	7.7
	Regular machine	17.6	27.3	32.7	21.9	26.8
	All same	64.7	63.6	65.3	68.8	65.5
	N	17	44	49	32	142
On which do you tend to place higher bets	Reel Power or Multiway	23.5	18.2	22.4	25.0	21.8
	Regular machine	11.8	18.2	34.7	15.6	22.5
	All same	64.7	63.6	42.9	59.4	55.6
	N	17	44	49	32	142
Offers better win multipliers	Reel Power or Multiway	35.3	36.4	42.9	56.3	43.0
	Regular machine	5.9	13.6	12.2	0.0	9.2
	All same	58.8	50.0	44.9	43.8	47.9

EGM characteristic	Type of EGM	% Gamblers				
		Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
	N	17	44	49	32	142
Offers better features	Reel Power or Multiway	23.5	29.5	24.5	28.1	26.8
	Regular machine	11.8	29.5	28.6	15.6	23.9
	All same	64.7	40.9	46.9	56.3	49.3
	N	17	44	49	32	142
Offers more free spins	Reel Power or Multiway	11.8	14.3	20.8	29.0	19.6
	Regular machine	5.9	19	20.8	12.9	16.7
	All same	82.4	66.7	58.3	58.1	63.8
	N	17	42	48	31	138
On which do you get more 'near misses'	Reel Power or Multiway	12.5	13.6	31.3	28.1	22.9
	Regular machine	6.3	13.6	35.4	15.6	20.7
	All same	81.3	72.7	33.3	56.3	56.4
	N	16	44	48	32	140
Offer the best chance of winning	Reel Power or Multiway	0.0	9.3	10.4	12.5	9.3
	Regular machine	52.9	34.9	68.8	34.4	48.6
	All same	47.1	55.8	20.8	53.1	42.1
	N	17	43	48	32	140

Question: If you were comparing a Reel Power or Multiway machine to a regular poker machine, which type of machine do you think (characteristics prompted) (Base: All gamblers who had heard of Reel Power EGMs – definitely or vaguely)

Reels typically bet when playing Reel Power or Multiway EGMs

EGM players were asked to indicate the reels they typically bet on when playing a Reel Power or Multiway machine. This was intended as a self-report question relating to previous play behaviour. This question served to provide information on how players placed bets and was also a further indication of player awareness that bets were played on reels rather than lines. Results are in Table 56. Findings indicated that 41.4% of EGM players playing Reel Power or Multiway machines had limited awareness about how they were placing bets on such machines.

Around 50.9% of EGM players also indicated that they bet on maximum reels when playing such machines. While no statistically significant differences emerged, findings showed that approximately 59.5% of problem gamblers bet on the maximum reels available, while the same was true for only 50.0% of non-problem gamblers.

Table 56. Number of reels gamblers bet on when playing Reel Power or Multiway EGMs – Results by risk for problem gambling (N=159, October 2013 – April 2014)

Reels bet on when playing Reel Power or Multiway EGMs	% Gamblers				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Less than maximum reels (e.g., 1-4 reels)	8.4	11.6	7.2	2.7	7.5
Maximum reels available	50.0	44.2	50.9	59.5	50.9
Didn't understand concept of reels so couldn't answer (or answered 15 or more reels, indicating concept not understood)	41.7	44.2	41.8	37.8	41.4
N	24	43	55	37	159

Question: How many reels do you typically bet on when playing a Reel Power or Multiway machine? (Base: All EGM players who indicated that they definitely or maybe played a Reel Power or Multiway EGM in the past 12 months)

Qualitative research highlighted that many EGM players were surprised upon hearing that bets are placed on reels for Reel Power EGMs. This further confirms that this key characteristic was typically not well-understood. Illustrative comments indicating the confusion included: *I didn't realise you're betting on Reels with Reel Power. Is that right? I just saw it was lines like regular machines. It's probably because I bet on everything. So I didn't notice this overall. To be honest, I never actually classify a machine like this. You just think Indian Dreaming, Where's the Gold and the machine name. You don't see Reel Power as anything special.*

Credits typically bet when playing Reel Power or Multiway EGMs

EGM players additionally reported the total credits per spin they bet when playing Reel Power and Multiway EGMs. As some player responses had clearly confused reels and credits bet, the total credits bet for some players was calculated based on information provided by the interviewer (based on reels bet and/or credit information). Results are in Table 57. Around half of all gamblers bet 25 credits or less per spin and around half bet more than 25 credits per spin (respectively, 50.9% and 49.1% of all EGM players).

Findings interestingly showed a significant difference between the reported credits bet per spin on Reel Power and Multiway EGMs between non-problem and problem gamblers. A significantly higher proportion of problem gamblers bet more than 25 credits per spin (65.4%) on Reel Power and Multiway machines than non-problem gamblers (only 26.7%) [$\chi=5.7(1)$, $p<.05$]. A similar trend emerged for at-risk compared to non-problem gamblers, with 53.8% of at-risk gamblers betting more than 25 credits per spin, compared to only 26.7% of non-problem gamblers [$\chi=3.8(1)$, $p=.05$].

Table 57. Number of credits bet on when playing Reel Power or Multiway EGMs – Results by risk for problem gambling (N=108, October 2013 – April 2014)

Credits bet on when playing Reel Power or Multiway EGMs	% Gamblers				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
25 or less per spin	73.3	69.0	36.8	34.6	50.9
More than 25 credits per spin	26.7	31.0	63.2	65.4	49.1
N	15	29	38	26	108
% EGM players not understanding credits bet due to confusion over Reel Power betting	37.5	32.6	30.9	29.7	32.1

Question: How many credits do you typically bet when playing a Reel Power or multiway machine? (Base: All gamblers who had played a Reel Power or Multiway EGM in the past 12 months – definitely or maybe)

Unlocking of extra reels on Reel Power and Multiway EGMs

EGM players playing Reel Power and Multiway EGMs in the past 12 months were asked to indicate whether they had ever unlocked an additional reel on a Reel Power or Multiway machine. This is essentially a common feature of many multiway EGMs. Results are in Table 58.

Results showed that 17.1% of all EGM players playing such machines in the past 12 months reported previously unlocking an extra reel. This also applied to 22.9% of problem gamblers. While limitations should be noted for small sample analyses, findings showed that problem gamblers were significantly more likely to have unlocked extra reels, compared to non-problem gamblers [$\chi=5.1(1)$, $p<.05$].

The same trend also emerged for all at-risk gamblers versus non-problem gamblers [$\chi=4.5(1)$, $p<.05$], with 19.7% of at-risk gamblers reporting having unlocked an extra reel. Means similarly indicated higher excitement from problem gamblers, though results were not statistically different (given the small proportion of EGM players who had previously unlocked an extra reel).

Table 58. Unlocking extra reels on Reel Power or Multiway EGMs – Results by risk for problem gambling (N=25-146, October 2013 – April 2014)

Unlocking of extra reels	% Gamblers or mean excitement (1=not at all, 5=very exciting)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Has unlocked extra reels (Yes) (as opposed to No) (%)	0	12.5	23.1	22.9	17.1
N	19	40	52	35	146
Excitement associated with unlocking of extra reels (Mean)	N/A	3.5	4.1	4.6	4.2
N	N/A	5	12	8	25

Question: Have you ever unlocked an additional reel on a Reel Power or multiway machine? (Base: All gamblers who had played a Reel Power or Multiway EGM in the past 12 months – definitely or maybe) If 1 is not at all exciting and 5 is very exciting, how exciting was this? (Base: All gamblers reporting unlocking an additional reel on a Reel Power or Multiway EGM)

Very few EGM players participating in focus groups or interviews had unlocked extra reels on Reel Power EGMs. However, it was clear from comments that the overall experience was quite exciting and the extra reels gave the impression that players 'can win more' - *I have seen the feature where you get free spins and you get an extra couple of reels. Oh, is that a Reel Power? The feeling of opening up the reels is good as you feel like you can win more.*

Other Reel Power EGM characteristics discussed during qualitative research

Qualitative interviews and focus groups highlighted a range of characteristics of Reel Power EGMs that were considered important or defining characteristics by EGM players. One of the most common characteristics discussed related to the use of win multipliers on many Reel Power gaming machines. Some players had experienced very large win multipliers in the past such as x15 or higher. Win multipliers effectively allowed players to double, triple or multiply their wins by a certain amount appearing at random.

Players reported that their play experience was far more exciting with high multipliers during wins. From a player perspective, win multipliers were seen to maximise the overall chance of winning a 'decent prize' on an EGM. Many players also admitted to feeling such excitement from win multipliers that they sometimes spent more than they had planned. This also appeared to apply equally to free spin multipliers that were also seen as very exciting. In many machines, players were required to make trade-off decisions between free spin multipliers and win multipliers (e.g., a player is forced to choose between 10 free spins and a win is multiplied by 2x or 5 free spins and a win is multiplied by 10x).

Comments highlighting the high excitement from multipliers included:

- The thing I like about Reel Power is that there are all these multipliers in the corner of the screen. You get to decide which one to take during the feature, but the more it is, the less spins you get. I love them!*
- There is one machine called Lucky 88 where it can times a win to anything up to 88. I think it is another way to try to entice you to try to play that machine. 88x sounds so great! It is another chance to entice you to play more money. I used to play Lucky 88, even though you didn't often win (Not Reel Power gaming machine, but the player held this perception due to multiplier availability on this multiway machine)*
- With Reel Power, you get lots of multipliers. The Reel Power machines are where you get five of a kind and you can get a multiplier of 15x, so you can win a lot of money. One man played with \$3 and won a big amount. Multipliers do it for me. You get tempted to spend more than you should*

- *I think the multipliers of three and above are great. I hate x1 - that's just the same thing. You don't win any more. The biggest one I've played is 10 overall. That's a great one - The best one! If you have a lucky day and then get times 10, you can walk out with a massive amount*
- *Indian Dreaming is very popular as you get 2x or 3x spins when you get the Indian Hut. The multipliers really get you big money. Massive they are. That's what really gets most people*
- *I think Reel Power are the ones where you get the multiples. I won once very big on one of those machines*
- *I like the multipliers in Reel Power. The multipliers often times it by 15. So x5 x9 or x15 may be your multiplier. Free spins take it up to 15x your winning. So if you're betting big, you'll win big*
- *I have seen them before. They are not more attractive for me. The way they work is you can choose to play five free games and it will multiply by 30. If you play less games, you multiply by more. This tends to give you more of a chance of getting the pay*
- *My friend thinks with Reel Power she wins more. I think it's due to the multipliers. If I get to choose a multiplier, I never go for the highest one. I choose 10 or 15, because then it is multiplied by 10 or 15, so it is not going to give you nothing, but it is not going to give you an extravagant amount*

Reel Power and Multiway machine pay lines were also discussed in-depth during qualitative research. Many EGM players held the perception that wins were more frequent on multiway machines. This was based on a perception that more pay lines implied a greater overall chance of winning on a machine. This was also seen as frequently leading players to spend more on Reel Power EGMs than other types of regular gaming machines.

Comments included:

- *There are these ghastly diamond shaped ones that are supposed to pay 240 different ways, but don't seem to pay at all. I think it maybe raises people's expectations when they say 240 ways. If you have something where you can be 8 or more times than normal, 240 or 250 lines, it must really raise people's expectations*
- *You have more chances of winning the extra feature on those machines – especially if you play all lines. I probably would chase more (with Reel Power), as it seems like there are more chances of getting the jackpot on them, compared to other machines*
- *You have a bit more chance to win on Reel Power. Maybe a 50-60% more chance. They give you a little more back overall. I think it's the way they are made with more lines. I think they trigger games more because they have 240 lines or more in some cases*
- *My thought about Reel Power is that they pay WELL! The newer Reel Power ones are now more exciting. They have heaps of lines and multipliers so you win heaps*
- *I find the Reel Power ones pay more as you play more lines. Usually they have about 25 lines overall. But the newer ones are 50 from what I've played*

EGM players also frequently associated the potential for scatter wins as a key characteristic of Reel Power EGMs. From the perspective of some players, scatter wins were 'easier' for players to win as wins could be 'anywhere' on any reels. In comparison, having to achieve a left to right win was seen as far more 'difficult'. Comments reflecting the perception that Reel Power machines are easier to win on due to available scatter wins included:

- *With Reel Power getting five anywhere is quite good, as it seems easier when it's scattered. Others are left to right and must be like that (left to right), so they are harder*
- *The Reel Power machines make you think you're going to win - much more than the 20 line machines. It's easier to get a win with the Reel Power machines. So you feel you're more likely to get a win on Reel Power. It seems you can play them really fast too*
- *With Reel Power, you make sure you bet all the lines, so that you get the Reel Power. It means that you try to get 999 anywhere - it doesn't have to be sequential - it can be anywhere like a 9 on the first reel and a 9 at the top*
- *With Reel Power like Indian Dreaming, on the free spin feature, you have tepees that are substitutes - they are on the second and fourth reel and if you get them in a winning combination, you get multipliers. You have a good chance as it doesn't matter where the symbols fall*
- *Reel Power machines are where you get scatter wins. They can be anywhere on any reel unlike the regular machines. You don't have to have one at the beginning all lining up - they don't have to be next to one another. I think you have a better chance of winning on Reel Power machines. I think it's because of the scatter wins basically. I think this is the main difference. The wins don't have to be in a line. I look for those machines. Mainly because you do have a better chance of winning*
- *I know the Reel Power gives a scattered effect. I play Reel Power machines. You can go any combination of symbols like Kings can be scattered across the screen to win. That's how Reel Power works*
- *Reel Power gives you scatter wins. One can have wins on Reel 1, 2 and 5 and you'll get free spins. But other Reel Powers pay left to right for free spins and others any symbol on any line. It's definitely confusing as the machines are very similar. Especially when you have schooners under the belt. You see your symbols come up thinking it's a scatter and it's not. They put pays left to right in small print. They do that as people feel that scatter wins are more likely. You're more inclined to play machines that offer scatters than the ones that pay left to right. You feel like you'll win more*
- *I think you'd spend more on a Reel Power as you feel the chances of you hitting your numbers is higher because you can get any combination (of symbols) anywhere*
- *Scatters giving the impression of an easier win generally. But they probably don't. So it would be great to tell people that*

One player who had experience playing a Reel Power machine offering left to right wins (some machines) reported that this machine was less attractive, as it would be less likely for players to win on the machine. In this respect, Reel Power or other EGMs allowing scatter wins were seen to have greater win potential for players - *I don't think the game play is any different. I know to get a feature you have to go from left from right. It sucks, as if you get one on the left and two on the far right, you don't win. That gives you the impression you nearly won. For this reason, I prefer other machines over Reel Power. I prefer ones with scatter wins.*

One concerning aspect of Reel Power EGMs raised by EGM players related to a reported player tendency to play the 'extra credits' button to qualify for certain free spins and features. This often implied that players had to press an 'extra bet' button over the 'all reels' (25 credit) button to qualify for free spins or features. Players also reported spending more when they had to buy all reels to get a certain symbol that could only appear on the fifth reel (and the symbol was required to trigger a feature). As players did not typically want to miss out on the opportunity to qualify for any features or free spins, many felt compelled to use extra credit buttons during play.

Illustrative comments included:

- *I always play maximum lines for Reel Power plus the maximum bet. I play maximum credits per Reel - whereas the other machines I just bet max lines and 1 credit. You want to get those features so you tend to spend a bit more on them*
- *You can go with one reel but if you buy more reels, you have more chances overall. The more reels you buy, the more you spend*
- *I've seen those ones where you bet on reels. If it pays left to right, you only need to buy the first three reels and the last two reels aren't needed. But if you buy the 5 reels, the multiplier for that win is higher. So you're effectively spending more as you want the big multiplier*
- *With Xtra Reel Power, on a feature you get another reel and that gives you more chances by getting another reel. So I find myself spending more to get that*
- *I've seen 5-10 reels on some Reel Power machines. You trigger the feature to get the (extra) Reel. If you play maximum reels, you can get more free spins as well*
- *Betting on Reel Power machines is a bit different. Normal machines have three lines. But on Reel Power you have more chances of winning. It gives you more pay lines, so you have a better chance of winning. So you spend more overall. You also spend more as you want to bet all reels to get certain features*
- *Reel Power involves going to an extra level (extra credit bet) to get a chance, but it costs you more*
- *I can easily work out how much per spin fairly easily on Reel Power. I think the only area of possible harm is that you may have to pay more to get a feature by buying another reel to use the reel to get the feature*
- *Some Reel Power machines encourage you to buy more reels to get the bigger free spin multipliers. Some regular machines do this too. I like big 50 free spin machines which you can win no matter how much you bet*

In addition to feeling compelled to place higher credit bets on Reel Power EGMs, some players also believed that Reel Power machines led to greater spending simply because they tended to use higher denominations - *Not many Reel Power machines are 1 cent. Not that I can think of anyway. That's probably why people spend more on them. They cost more to play and are higher denomination.*

When players interacted with a certain brand of EGM, it was often apparent that this set some expectation about how players win on such machines. For this reason, some players also felt confused by the different methods of winning across Reel Power EGMs.

As the Reel Power brand set expectations for machine operation, players reported confusion when symbol functionality changed across Reel Power machines - *Within the Reel Power machines, even the wins are different. Some machines will substitute a character and others won't. Some come up as a tent and hold the reel while others spin, but others are completely different. Some are left to right and others are scattered. It's all a bit confusing; Gold coins have to be left to right and on a certain line with some Reel Power machines. Other machines will pay centre and in other machines again, it's not there. All of a sudden, it hits you and you feel confused. So unless you have this information, you feel cheated.*

LDWs for Reel Power, Multiway versus regular line based EGMs

During observation of EGM play, the outcome of spins was recorded for all EGM games across all machines and all players. To examine player exposure to LDWs (where wins are less than the bet size), the total spins were counted for all sessions of play (across a total of 48,920 spins). All EGMs played were then coded as Reel Power, Multiway or Regular line based EGMs to allow spin outcomes to be examined by each type of EGM. Results are in Table 59.

Results of analysis show the proportion of different types of spin outcomes for different types of EGMs. All machine types had very few spins resulting in bets only being won (where the win is equal to the amount bet) (between 1.8-2.2% of EGMs). Interestingly, spins resulting in real wins were slightly lower on Reel Power EGMs (12.3% of spins) and Multiway EGMs (12.9% of spins), compared to regular line based EGMs (14.7% of spins).

Similarly, spins resulting in losses were higher on Reel Power EGMs (69.1% of spins) and Multiway EGMs (71.2% of spins), compared to regular line based EGMs (64.6% of spins). Findings also showed that Multiway EGMs had the lowest proportion of spins resulting in LDWs (only 13.8% of spins), Reel Power EGMs the second lowest (16.7% of spins) and regular line based EGMs had the highest (18.5% of spins). Such data also provide some evidence that Reel Power and Multiway EGMs may be unlikely to have a higher proportion of LDWs compared to regular line based EGMs (in fact, results may suggest the opposite or very similar proportions to regular line based EGMs).

Table 59. Spin outcomes for Reel Power, Multiway and Regular line based EGMs (N=48,920 spins)

Spin outcome (counts)	Reel Power EGMs		Multiway EGMs		Regular line EGMs	
	Total spins	% Total spins	Total spins	% Total spins	Total spins	% Total spins
Spins resulting in bets only won	146	1.8	47	2.1	858	2.2
Spins resulting in real wins	977	12.3	286	12.9	5,691	14.7
Spins resulting in losses	5,493	69.1	1,572	71.2	25,033	64.6
Spins resulting in Losses Disguised as Wins	1,331	16.7	304	13.8	7,182	18.5
Total of all valid spins (N)	7,947	100.0	2,209	100.0	38,764	100.0

Observational data – Spin outcomes were coded for all EGMs and all EGM games across all EGM players (Base: All EGM spins)

The next analysis examined the mean percentage of each spin outcome individual EGM players were exposed to based on each individual EGM played (bearing in mind some players played more than a single EGM). Results are in Table 60. This showed that for each EGM play session, players were exposed to an average of 18.1% LDWs on Reel Power EGMs, to an average of 14.4% LDWs on Multiway EGMs and to an average of 18.1% LDWs on Regular line based EGMs. Differences in LDWs by machine type, however, were not statistically significant. There was a significant difference based on the mean percent of spins resulting in Real Wins. Players playing Reel Power EGMs experienced a lower average percentage of Real Wins on Reel Power EGMs (only 12.0%), compared to an average percentage of 13.9% on regular line EGMs [$t=-2.5(360)$, $p<.05$].

Table 60. Mean percentage of each spin type for Reel Power, Multiway and Regular line based EGMs per EGM session (N=48,920 spins, October 2013 - April 2014)

Spin outcome (counts)	Reel Power EGMs		Multiway EGMs		Regular line EGMs	
	Total spins	Mean %	Total spins	Mean %	Total spins	Mean %
Spins resulting in bets only won	146	1.8a	47	2.4a	858	2.2a
Spins resulting in real wins	977	12.0a	286	13.3a,b	5,691	13.9b
Spins resulting in losses	5,493	68.2a	1,572	69.9a	25,033	65.8a
Spins resulting in Losses Disguised as Wins	1,331	18.1a	304	14.4a	7,182	18.1a
Total of all valid spins (N)	7,947	100	2,209	100.0	38,764	100.0

Observational data – Spin outcomes were coded for all EGMs and all EGM games across all EGM players (Base: All EGM sessions)

Excitement and cognitions associated with Reel Power, Multiway versus regular EGMs

The next analysis examined the overall level of player excitement and play cognitions for different types of EGMs. This involved players rating each EGM they played following play on each machine (with ratings recorded by observers). Results are in Table 61.

Findings overall showed that most ratings were similar across all types of EGMs played. Most notably, overall play excitement ratings were quite similar (mean=2.6 for Reel Power EGMs, mean=2.9 for Multiway EGMs and mean=2.6 for regular line based EGMs). Free spin and feature excitement ratings were also similar and the urge to continue play was additionally similar. It is also interesting that the measure used to examine the perception of near misses – players seeing symbol combinations that gave the impression of nearly winning – was also similar across different types of EGMs.

Only one significant difference was noted by machine type. EGM players playing regular line based EGMs rated that they had a significantly higher chance of winning (mean=2.7) compared to players playing Reel Power and Multiway EGMs combined (mean=2.4) [$t=-2.1(373)$, $p<.05$]. Accordingly, this provides some evidence that, compared to line based EGMs, Reel Power and Multiway machines are probably not associated with an increased player perception that they have a better chance of winning (in fact, the opposite may be true overall, if anything).

Table 61. Excitement and cognitions associated with Reel Power, Multiway versus regular EGMs
(N=377 EGMs, October 2013 – April 2014)

EGM player ratings for each EGM played (after observation of play)	Mean ratings for each EGM played				
	All EGMs by type			Reel Power/Multiway versus regular line based EGM	
	Reel Power EGMs	Multiway EGMs	Regular line based EGMs	Reel Power and Multiway EGMs	Regular line based EGMs
<i>Play excitement and experience ratings (1=not at all, 5=very exciting)</i>					
Overall play excitement	2.6a	2.9a	2.6a	2.6a	2.6a
N	70	14	293	84	293
Free spin excitement	2.0a	2.7a	2.4a	2.1a	2.4a
N	54	13	262	67	262
Feature excitement	2.1a	1.7a	2.0a	2.0a	2.0a
N	58	14	256	72	256
Urge to continue playing EGM	2.1a	2.5a	2.3a	2.2a	2.3a
N	70	14	293	84	293
Seeing symbols that gave you the impression you were nearly winning	2.4a	2.6a	2.6a	2.4a	2.6a
N	69	14	287	83	287
<i>Ratings associated with play cognitions (1=not at all, 5=very often)</i>					
I will bet high to ensure that when I do win I win lots of money	2.4a	2.6a	2.2a	2.5a	2.2a
N	70	14	291	84	291
I've got a better overall chance of winning on this machine	2.4a	2.4a	2.7a	2.4b	2.7a
N	70	14	287	84	287
I must buy all the pay lines on this machine to avoid missing a win	4.0a	3.5a	3.8a	3.9a	3.8a

Question: Using a scale where 1=not at all and 5=very exciting, please rate the extent to which the following are exciting? Using a scale where 1=not at all and 5=very often, when you are playing pokies on this machine today, how much did each of the following occupy your mind and thoughts? (Base: All EGM play sessions as players rated each EGM they played)

Money and time spent on Reel Power and Multiway EGMs versus regular line based EGMs

A further analysis examined whether there were differences in the amount of money or time spent on Reel Power and Multiway EGMs versus regular line based EGMs. As time was too difficult for observers to record per EGM given the high cognitive load of recording credit meter changes and bets, total spins (EGM games per machine) was used as a proxy for time. Results are in Table 62.

As apparent from results, there were no significant differences in the time or money EGM players spent per EGM played for Reel Power/Multiway machines versus regular line based machines. In addition, there were no statistically significant differences between the average money spent or spins for Reel Power and Multiway EGMs (combined) versus regular EGMs (per EGM played) between non-problem and problem gamblers.

Accordingly, this suggests that there is unlikely to be any particular characteristic of Reel Power or Multiway EGMs that lead problem gamblers to spend more money or play more games on such machines, compared to non-problem gamblers. Individual differences may thus be due to other factors such as individual machine brandings and play dynamics (That is, some individual machines are simply more enjoyable than others to play).

Table 62. Mean percentage of each spin type for Reel Power, Multiway and Regular line based EGMs per EGM session (N=375-377 EGMs, October 2013 - April 2014)

Money and time (total spins/games) spent on EGMs	Reel Power and Multiway EGMs	Regular line based EGMs
Money spent on all EGMs – mean \$	-5.6a	-6.7a
Money spent on all EGMs – median \$	-5.0	-9.3
Total of all valid spins (N)	83	292
Total spins on all EGMs - mean	123.4a	132.8a
Total spins on all EGMs - median	80.0	87.5
Total of all valid spins (N)	83	294

Observational data – Money spent on all EGMs was recorded by observers based on money out minus money in (per EGM). Total spins were also counted from credit meter changes per EGM played (Base: All EGMs played)

Feature/free spins experienced during play of Reel Power/Multiway EGMs versus regular line based EGMs

The feature and free spin characteristics observed for each EGM played were also recorded by observers. This permitted an analysis of feature and free spin events across Reel Power Multiway EGMs and regular line based EGMs. Results are presented in Table 63.

Findings revealed that there were not statistically significant differences between Reel Power/Multiway machines and Regular line based EGMs in terms of the money won during free spins or features (outside free spins), the largest real win, the number of free spin events, the sum of all free spin multipliers (where players receive multiples of free spins) and the sum of win multipliers (where players receive multipliers for wins).

However, when results for individual machines were examined, it was noteworthy that total win multipliers applied during free spins were somewhat higher for Reel Power EGMs (mean=3.5), compared to Multiway (mean=1.7) and regular line based EGMs (mean=2.5). Although this difference was not statistically significant, it is interesting as this was a frequent observation of many EGM players during qualitative research (that there were higher win multipliers in Reel Power EGM games more generally). Accordingly, while this may not be a statistically significant difference, this difference is possibly something that has been noted by EGM players.

Table 63. Feature/free spins experienced during play of Reel Power/Multiway EGMs versus regular line based EGMs (N=277-293 EGMs, October 2013 – April 2014)

Free spin and feature characteristics	Means		Means		
	Reel Power and Multiway EGMs	Regular line based EGMs	Reel Power EGMs	Multiway EGMs	Regular line based EGMs
Money won during free spins (\$)	15.2a	16.5a	11.3a	33.4b	16.5a,b
EGMs played	79	277	65	14	277
Features outside free spins (money won) (\$)	0.5a	1.4a	0.6a	0.0a	1.4a
EGMs played	83	291	69	14	291
Largest real win (money won) (\$)	12.6a	16.2a	9.9a	25.3a	16.2a
EGMs played	81	286	67	14	286
The number of free spin events	1.2a	1.0a	1.2a	1.1a	1.0a
EGMs played	83	293	69	14	293
Sum of multipliers for free spins (total) (e.g., 2x, 2x = 2 multipliers in total)	12.5a	11.7a	12.6a	11.9a	11.7a
EGMs played	83	293	69	14	293
Win multiplier events during free spins (total times win multipliers occurred)	2.3a	2.4a	2.3a	2.2a	2.4a
EGMs played	83	293	69	14	293
Win multiplier sum during free spins (e.g., 3x, 2x = 5 win multipliers in total)	3.2a	2.5a	3.5a	1.7a	2.5a
EGMs played	83	293	69	14	293

Observational data: Free spin, feature and win multipliers were recorded during observation of EGM play for each EGM played (Base: All EGM play sessions across all EGM players)

Jackpot characteristics of Reel Power/Multiway EGMs versus regular line based EGMs

The jackpot prize characteristics across different types of machines were also analysed. This was possible as individual jackpot prizes associated with all machines played were recorded by observers (including any progressive jackpot prizes, top jackpot prizes and second and third highest prizes). Findings are in Table 64.

Findings overall showed that Reel Power machines had significantly higher top jackpot prizes (mean=\$6,846) compared to regular lines based EGMs (mean=\$4,059) [$t=2.1(228)$, $p<.05$]. The difference in jackpot prizes between Reel Power and Multiway EGMs combined (mean=\$6,291) versus regular line based EGMs (mean=\$4,059) was also tending towards significance [$t=2.0(241)$, $p=.05$], with the same trend for higher prizes observed. While not statistically different, it was also noteworthy that around 33% of Reel Power EGMs had linked jackpots, as did 31% of Multiway EGMs and 26% of regular line based EGMs.

Table 64. Jackpot characteristics of Reel Power/Multiway EGMs versus regular line based EGMs (N=3-195, October 2013 – April 2014)

Value of jackpots	Mean (\$) or % EGMs				
	Reel Power/Multiway versus regular lines based EGMs		Reel Power, Multiway versus regular lines based EGMs		
	Reel Power and Multiway EGMs	Regular lines based EGMs	Reel Power EGMs	Multiway EGMs	Regular lines based EGMs
Top jackpot prize (\$)	6290.8a	4059.1a	6845.6a	4797.4a,b	4059.1b
N	48	195	35	13	195
Second highest jackpot prize (\$)	741.9a	641.2a	767.2a	672.5a	641.2a
N	45	194	33	12	194
Third highest jackpot prize (\$)	79.2a	81.3a	88.9a	51.1a	81.3a
N	43	109	32	11	109
Linked jackpot (% of EGMs)	32.5%a	26.2%a	32.9%a	30.8%a	26.2%a
N	56	214	47	9	214
Progressive jackpot value (\$)	8748.9a	8010.7a	8822.4a	8136.9a	8010.7a
N	28	60	25	3	60

Observational data – Observed notes the prizes on each EGM played and linked jackpot characteristics (Base: EGMs played)

Percentage of Reel Power/Multiway EGMs versus regular line based EGMs played by gambling risk segments

A further analysis investigated the percentage of EGMs played that were Reel Power or Multiway by gambling risk segment. Such results may provide an indication of whether certain risk segments are more attracted to Reel Power and Multiway EGMs. Results are shown in Table 65.

Findings showed that 25% of EGMs played by non-problem gamblers were Reel Power EGMs, while the same figure was 18.2% for problem gamblers. Additionally, around 1.5% of EGMs played by non-problem gamblers and 6.1% of EGMs played by problem gamblers were Multiway EGMs. No statistically significant differences were observed by risk segment. Accordingly, results do not suggest that there is a significant level of attraction of higher risk gamblers to Reel Power and Multiway EGMs in the observational component (although as highlighted previously, in terms of general play history problem gamblers generally had greater exposure and experience to Reel Power and Multiway EGMs).

Table 65. Type of EGMs played – Results by risk for problem gambling (N=376 EGMs, October 2013 – April 2014)

Risk for problem gambling	Reel Power EGMs		Multiway EGMs		Regular lines based EGMs	
	% EGMs played	EGMs played	% EGMs played	EGMs played	% EGMs played	EGMs played
Non-problem gamblers	25.0	17	1.5	1	73.5	50
Low risk gamblers	16.4	20	3.3	4	80.3	98
Moderate risk gamblers	16.7	20	4.2	5	79.2	95
Problem gamblers	18.2	12	6.1	4	75.8	50
N	-	69	-	14	-	293

Observational data – The type of EGM played was recorded by observers (Base: EGMs played)

Bet size used when playing Reel Power/Multiway EGMs versus regular line based EGMs

The mean bet size used for Reel Power, Multiway and regular line based EGMs was also investigated in the study. Results are in Table 66. Findings showed that the mean bet size for Reel Power and Multiway EGMs per spin was approximately 40 cents. In comparison, the mean bet size for regular line based EGMs was 50 cents. Moreover, there were also no significant differences between the mean bet sizes between non-problem and problem gamblers for Reel Power and Multiway EGMs. This may simply be because no particular risk segment was strongly attracted to such EGMs during the observational component.

Table 66. Bet size used when playing different types of EGMs (N=376, October 2013 to April 2014)

Mean bet size for EGMs	Reel Power EGMs		Multiway EGMs		Regular line based EGMs	
	Mean	N	Mean	N	Mean	N
Mean bet size	\$0.40 per bet	54	\$0.40 per bet	10	\$0.50 per bet	312

Observational data – Bet sizes used by players for each EGM game were recorded by observers (Base: All EGMs and games)

KEY FINDINGS RELATING TO REEL POWER AND MULTIWAY EGMS

Key points in summary – Reel Power and Multiway EGMS

- Around 46.4% of EGM players had definitely heard the name Reel Power or Multiway on gaming machines. A further 20.5% indicated some level of 'vague' recognition (implying that 66.8% of all players had some level of awareness)
- Problem gamblers had significantly higher recognition of Reel Power and Multiway EGMS (74.5% indicated 'definite' or 'vague' recognition), when compared to non-problem gamblers (45.3% indicated 'definite' or 'vague' recognition) – the same trend applied to all at-risk gamblers
- Problem gamblers were significantly more likely to report playing Reel Power and Multiway EGMS (88.1% reporting definite or possible play), compared to non-problem gamblers (58.6% reporting definite or possible play) – the same trend applied to all at-risk gamblers
- Problem gamblers reported playing a higher mean number of sessions on Reel Power and Multiway EGMS in the past year (mean=43.7 sessions), compared to non-problem gamblers (mean=7.4 sessions) – the same trend applied to all at-risk gamblers
- Most EGM players do not see Reel Power and Multiway EGMS to have any distinct characteristics that differ from regular gaming machines – The many 'ways' to win/lines and the purchasing of reels rather than lines are not salient to many players (44% of players could not think of any differences)
- Based on unprompted recall of Reel Power and Multiway characteristics, only 4.2% of all EGM players mentioned that such machines required players to bet on reels, rather than lines – This suggests that this characteristic is not well-understood
- Following prompting, the characteristics of Reel Power EGMS most salient to EGM players were that players can win through scatters (74.8% of EGM players aware) and that win multipliers were commonly available (71.3% of EGM players aware)
- However, a much lower proportion were aware of more fundamental characteristics – namely, that there are many 'ways to win' like 243 or more (only 54.5% of EGM players aware) and that players purchase reels for betting instead of lines (only 50.3% of EGM players aware) - Problem gamblers were significantly more aware that reels were purchased instead of lines (62.5%) than non-problem gamblers (31.6%)
- The top characteristics of Reel Power and Multiway EGMS were seen to include better win multipliers (43% of EGM players), larger wins (33.3% of EGM players) and greater play excitement (33.1% of EGM players)
- Attributes seen to be least characteristic of Reel Power EGMS were being able to understand the cost per spin (only 7.7% saw this as a characteristic), offering the best chance of winning (only 9.3% saw this as a characteristic) and having pay lines that were easy to understand (only 14.1% saw this as a characteristic) - This may suggest that EGM players experience some difficulties understanding the cost per spin and pay lines for Reel Power machines
- When asked about prior gambling on Reel Power and Multiway EGMS, 41.4% of EGM players playing such machines had limited awareness about how they were placing bets on such machines
- Based on history self-reported gambling behaviour, a significantly higher proportion of problem gamblers bet more than 25 credits per spin (65.4%) on Reel Power and Multiway machines than non-problem gamblers (only 26.7%) - A similar trend emerged for at-risk compared to non-problem gamblers
- Around 17.1% of EGM players playing Reel Power or Multiway machines in the past 12 months reported previously unlocking an extra reel. This also applied to 22.9% of problem gamblers (who were significantly more likely to have unlocked a reel compared to non-problem gamblers)
- Win multipliers are seen to be one of the highly desirable characteristics of Reel Power EGMS
- Advertising of increased 'ways of winning' on Reel Power or Multiway EGMS leads many EGM players to believe they have a better chance of winning on such machines – the availability of scatter wins is also seen to contribute to this perception

- One concerning aspect of Reel Power EGMs raised by EGM players related to a reported player tendency to use the 'extra credits' button to qualify for certain free spins and features

- When pay back characteristics of Reel Power/Multiway EGMs were compared to regular line based EGMs played during observations, analysis showed the following overall pay back characteristics:

Reel Power EGMs (7,947 spins):

- Bets only won - 1.8% of total spins
- Real wins - 12.3% of total spins
- Losses – 69.1% of total spins
- LDWs – 16.7% of total spins

Multiway EGMs (2,209 spins)

- Bets only won – 2.1% of total spins
- Real wins - 12.9% of total spins
- Losses – 71.2% of total spins
- LDWs – 13.8% of total spins

Regular lines based EGMs (38,764)

- Bets only won – 2.2% of total spins
- Real wins - 14.7% of total spins
- Losses – 64.6% of total spins
- LDWs – 18.5% of total spins

This shows that:

- Spins resulting in real wins were slightly lower on Reel Power EGMs (12.3% of spins) and Multiway EGMs (12.9% of spins), compared to regular line based EGMs (14.7% of spins). Spins resulting in losses were higher on Reel Power EGMs (69.1% of spins) and Multiway EGMs (71.2% of spins), compared to regular line based EGMs (64.6% of spins)

- Multiway EGMs had the lowest proportion of spins resulting in LDWs (only 13.8% of spins), Reel Power EGMs the second lowest (16.7% of spins) and regular line based EGMs had the highest (18.5% of spins) – This may suggest that Reel Power and Multiway EGMs are unlikely to have a higher proportion of LDWs compared to regular line based EGMs

- When the mean percentage of each spin outcome individual EGM players were exposed to (relative to total spins) per EGM session was analysed, analysis showed that players were exposed to an average of (relative to total spins):

- 18.1% LDWs on Reel Power EGMs
- 14.4% LDWs for Multiway EGMs
- 18.1% LDWs for regular line based EGMs

- 12% Real wins on Reel Power EGMs
- 13.3% Real wins for Multiway EGMs
- 13.9% Real wins for regular line based EGMs

This analysis also showed that the mean exposure of players (per EGM session) to real wins was significantly lower on Reel Power EGMs, compared to Regular line based EGMs

- EGM players playing regular line based EGMs rated that they had a significantly higher chance of winning (mean=2.7) compared to players playing Reel Power and Multiway EGMs combined (mean=2.4)
- During EGM play observations, there were no significant differences in the time or money EGM players spent on individual Reel Power/Multiway machines versus regular line based machines
- When individual feature characteristics were profiled for Reel Power/Multiway EGMs compared to regular lines based EGMs, analysis showed that:
 - There were no significant differences between Reel Power/Multiway machines and Regular line based EGMs in terms of the money won during free spins or features (outside free spins), the largest real win (based on real win sizes), the number of free spin events, the sum of all free spin multipliers and the sum of win multipliers

- Total win multipliers applied during free spins were somewhat higher for Reel Power EGMs (mean=3.5), compared to Multiway (mean=1.7) and regular line based EGMs (mean=2.5) (as noted during qualitative research – although the above result was not statistically significant)

- Reel Power machines had significantly higher top jackpot prizes (mean=\$6,846) compared to regular lines based EGMs (mean=\$4,059) - The difference in jackpot prizes between Reel Power and Multiway EGMs combined (mean=\$6,291) versus regular line based EGMs (mean=\$4,059) was also tending towards significance
- Based on EGM play observations, 25% of EGMs played by non-problem gamblers were Reel Power EGMs, while the same figure was 18.2% for problem gamblers. Additionally, around 1.5% of EGMs played by non-problem gamblers and 6.1% of EGMs played by problem gamblers were Multiway EGMs. Results do not suggest a significant level of attraction of higher risk gamblers to Reel Power and Multiway EGMs (Based on play observation data)
- The mean bet size for Reel Power and Multiway EGMs per spin played during EGM observations was approximately 40 cents (per spin) and the mean bet size for regular line based EGMs was 50 cents (per spin) – No significant differences were noted between bet sizes used by non-problem and problem gamblers

Gamble buttons for risking EGM winnings from an attitudinal and behavioural perspective

Background

Double up or gamble buttons are a very common feature of most poker machines. Such buttons effectively allow EGM players to bet their win for the chance to typically double or quadruple their prize. In some cases, players can also use a half gamble feature to gamble half their winnings. For this purpose, card games are a common feature of gamble games. Once a player wins, they are required to choose one of two cards for the chance to double their winnings or one in four cards for the chance to quadruple their winnings. From this perspective, a part of the current study involved examining player attitudes and behaviours relating to gamble buttons in EGMs. This also explored player preferences for gamble games involving doubling or quadrupling their winnings and the overall player inclination to gamble winnings, as observed through live EGM play (as player use of the gamble button was recorded).

EGM player views about gamble buttons

Gamble buttons were reported during qualitative research to not be of great interest to most EGM players. Players also reported a reluctance to use such buttons for anything other than very small wins. This was primarily because players wanted to avoid regret in risking money they had won. For other players, there was also a fear of having to shorten their time at the machine as a result of losing in a gamble game.

In this respect, the feeling of losing a win was seen as something to avoid and decreased player satisfaction with the play experience. Some players also believed that using gamble buttons was akin to being a risk-taker and that the button may be used recklessly by some people in vulnerable situations. Key examples were when players were consuming alcohol during play or when players were feeling down or depressed.

Comments reflecting overall player views about 'gamble' buttons included:

- I think people have a low inclination to gamble their winnings out of concern that they will be lost in a single spin. I never do the gamble feature. I figure if I've won something, I've won something, even if it's small. I know I am going to risk it again, even if I press the play button. But I don't want to throw it away (doubling up), even if it is a 50/50 chance*
- I can't gamble, because that would be four more spins! My friend gambles the one in four option. I don't do halves. I always forget it is there, but that would be better. My friend who gambles [doubles up] all the time, she can get it up to \$60. I just don't like doing it. It's too risky*
- I don't use it. I'd rather just keep playing on, it is more fun than just pressing red or black. I'd rather save the money to try to get a feature than risk it*
- Players are more likely to use double up for small compared to large wins. If I am betting like \$1.50 and I win 75c I'll have a go at gambling. Anything that is bigger than I'm betting, I'll keep. It is all the small stuff I'll gamble*
- You never double up big amounts. No way!*
- My brother loved to double up. He would double up \$300. I do double-up when there are little wins. But not big ones. I'd never double up more than \$1*
- I don't double up. If you win 20c, I may double up - so only for small amounts*
- I don't play it as it's not that interesting compared to features*
- I think the double up is a dangerous thing. I think you could win a jackpot and double up. With people and their gambling, they can't control it. They are looking for an ultimate rush. So it's dangerous. They should limit double for big prizes. Over \$100, they shouldn't allow double-up*

- *Young people seem to double up a lot. It's a risk-taking thing. Particularly when people get loaded on alcohol*
- *If I've had a few free spins and have won \$4, then I will just go, bang, red, and double it! The main aim is to get a feature and get a big win, rather than make all those small little wins something big. There are people who will go red black red black up to \$100. Sometimes it gets to that stage where you get up to say \$64 and people will stop as they don't want to lose \$64*
- *I'm more just aiming for features, but I will gamble small amounts. It takes up more time though. If you are trying to win money and you are not worried about the time, there is that issue of how much time do you want to spend on the machine. If you are in no hurry, you might try to double-up and make \$5 or \$10 and that will keep you there for longer. If you do that a number of times, then you are actually making a decent amount of money*

Self-reported general use of double up

Gamblers were asked to indicate how often they doubled up during the attitudinal component of the survey. Results are presented in Table 67. Overall findings suggested that most players did not use double up frequently with an overall mean of only 1.6 (based on a five point scale where 1 is not at all and 5 is very often). While problem gamblers reported using double up slightly more frequently than non-problem gamblers, the difference was not statistically significant.

Table 67. Reported general use of double up – Results by risk for problem gambling (N=219, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all, 5=very often)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Frequency of double up	1.6a,b	1.3a	1.7b,c	2.0a	1.6
N	40	63	73	43	219

Question: On a scale from 1 to 5, where 1=not at all and 5=very often. How often do you double-up during play? (Base: All gamblers) (Significant differences at a pair wise comparison level denoted by different letters within each row at p<.05)

Player preferences for different types of gamble games

EGM player preferences for different types of gamble games were similarly examined in the study. This included comparing player preferences for games that involved picking one of two cards (e.g., such as the red or black card) to double winnings versus picking one in four (such as card suits) to quadruple winnings. This presents an interesting indication of the risk orientation of EGM players as different games have different odds of winning. In particular, games involving picking one of two cards have a 50% chance of winning (for the chance to double winnings) and games involved picking one of four cards have a 25% chance of winning (for the chance to quadruple winnings).

Results showing player preferences for different gamble games are in Table 68. Overall, there was a strong preference for doubling-up one of two cards (71.6% of all EGM players). Respondents participating in qualitative research suggested double up games were more attractive as the odds of winning were higher (as there was a 50% chance of winning). In comparison, only 15.8% of all EGM players preferred the one in four card gamble games. A further 12.6% of players also reported never doubling up at all. Findings also showed that these same trends applied to all risk segments of gamblers with no significant differences apparent between risk segments.

Table 68. Attitude toward use of double-up – Results by risk for problem gambling (N=222, October 2013 - April 2014)

EGM characteristic	% EGM players				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
1 of 2 card double-up games	69.0a	68.8a	75.3a	72.1a	71.6
1 of 4 card double-up games	16.7a	17.2a	13.7a	16.3a	15.8
Don't ever double-up	14.3a	14.1a	11.0a	11.6a	12.6
N	42	64	73	43	222

Question: If you had to double-up, are you more likely to double-up when there are 1 of 2 cards or 1 of 4 cards? (Base: All gamblers) (Significant differences at a pair wise comparison level denoted by different letters within each row at $p < .05$)

Qualitative comments highlighting reasons for player preferences for different games included:

- *I go 50-50 as you have a better chance of winning. The other gives you a one in four chance. It's way too hard*
- *I always go suits. Because you get more off it. I think it is four times from the suit and then you double your money for just the right colour. So it's suits for me*
- *I like the 50-50 v the 25% chance. If it was a 25%, I wouldn't play it*

The maximum winnings EGM players would gamble

The maximum amount of money that EGM players would gamble was also investigated. This involved asking players to indicate the highest amount they would consider risking in a gamble game. Results are shown in Table 69. The average maximum win all EGM players reported being prepared to double up was \$12.18. While mean values were not statistically different by risk segment, findings appeared to suggest that problem gamblers were probably likely to be prepared to double up a higher amount (\$32.32) than non-problem gamblers (\$9.23).

Table 69. Attitude toward maximum double-up value – Results by risk for problem gambling (N=209, October 2013 - April 2014)

EGM characteristic	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Maximum \$ double-up (Mean)	9.23a	5.47a	7.77a	32.32a	12.18
Maximum \$ double-up (Median)	1.00	1.00	2.00	4.00	1.00
N	39	60	69	41	209

Question: What is the maximum amount you would consider doubling-up during a pokies game? (Base: All gamblers) (Significant differences at a pair wise comparison level denoted by different letters within each row at $p < .05$)

Excitement associated with gambling winnings

In spite of the apparent reluctance of all gamblers to use the gamble feature, the overall excitement associated with use of gamble generally was still of interest to the study. To this end, players were asked to rate their overall level of excitement associated with use of double up during EGM play. Results are in Table 70. This includes the overall excitement associated with double up generally, the excitement associated with the one in two card games, one in four card games and also use of the half gamble button (where players gamble half their winnings).

Findings overall suggested that using double up was only somewhat exciting (mean=2.3). It was also noteworthy that players considered the one in four card games as slightly more exciting (mean=2.3) than the one in two card games (mean=2.2). Using the half gamble button, however, was not viewed as very exciting at all, attracting the lowest overall mean (mean=1.7). While a few minor significant differences were apparent between risk segments, differences between non-problem gamblers and problem gamblers were not statistically significant.

Table 70. Attitude toward the use of different double-up options – Results by risk for problem gambling (N=199-209, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all exciting, 5=very exciting)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Doubling up during play	2.2a,b	1.9a	2.4b	2.6b,c	2.3
N	39	60	69	41	209
Double-up games which ask you to pick 1 of 2 cards so you win double the amount	2.2a,b	1.9a	2.3a,b	2.7b	2.2
N	39	57	65	39	200
Double-up games which ask you to pick 1 of 4 cards so you win 4x the amount	2.2a	2.1a	2.3a	2.6a	2.3
N	39	57	65	39	200
Using the half gamble button – where you gamble at least half your winnings	1.7a,b	1.3a	1.9b	1.7a,b	1.7
N	39	56	62	42	199

Question: On a scale from 1 to 5, where 1 = not at all and 5 = very exciting, please rate the extent to which the following are exciting. (Base: All gamblers) (Significant differences at a pair wise comparison level denoted by different letters within each row at $p < .05$)

Accidental use of double up by EGM players

Qualitative research highlighted that several EGM players reported occasional accidental use of the double up button. This was reported to occur given that gamble buttons were either in close proximity to other buttons or alternatively, were dual function buttons. In some circumstances, this resulted in positive outcomes and other times negative (losing money you had not meant to double-up) - *My brother was playing and he got to \$75 and accidentally hit the wrong colour button and got \$150! He went to do the max reels or lines or whatever [the button next to red] and accidentally pressed gamble instead. How often it happens depends on how much you concentrate when playing. The small buttons you play with are the same buttons you gamble with. So you have to be careful.* There was also an overall view that improved button layouts had potential to prevent accidental use of double up.

The frequency of accidental use of double up was also explored in the attitudinal survey. Results are shown in Table 71. Findings overall suggested low accidental use of double up by EGM players overall (mean=1.6). While differences were not statistically significant between non-problem and problem gamblers, problem gamblers appeared to accidentally use double up slightly more often as the difference was tending towards significance [t=1.9(66), p=.06].

Table 71. Attitude toward accidental use of double up – Results by risk for problem gambling (N=219, October 2013 -April 2014)

EGM characteristic	Mean (1=not at all, 5=very often)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Frequency of accidental double up	1.6a,b	1.3a	1.7b,c	2.0a	1.6
N	40	63	73	43	219

Question: On a scale from 1 to 5, where 1=not at all and 5=very often. How often have you hit double up when it has been part of another button? (Base: All gamblers)

Gambling winnings to recoup losses

Gambling winnings to recoup losses was reported as a further theme in qualitative research. Using the gamble button in this situation was considered a form of reckless behaviour that resulted out of some level of desperation. Where gamble buttons were used, players would also often report feeling reckless. This was especially the case when gamble buttons were used multiple times sequentially. This behaviour was similarly described to occur out of frustration when players were continually losing and desired a bigger win. Other players reported using double up when they had won free spins and felt able to 'splurge' their winnings. Accordingly, there were many 'strategies' reported that governed the use of double up by EGM players.

Comments highlighting the use of double up to recoup losses included:

- *When you are on a downward loss, you tend to double up more out of desperation. People also up their bets to win back their money. It's just what you do when you're down*
- *I use double up quite a bit. If I lost my money and you recoup your losses, you use it to get your money back. I like it because it's 50-50. It's like - you're broke or you're going to Sizzler. I usually take the red or black option*
- *When people are on a downward loss, you tend to double up more out of desperation. People also up their bets to win back their money. It's the same principle. You get desperate to get your money back. You want to win bad*

Screen information showing previous results of gamble games

A further characteristic of EGMs identified during the study was that some machines presented the results of gamble games. For this reason, qualitative research explored the extent to which presentation of this information influenced EGM players. Feedback from players generally suggested that such information provided players with a feeling that they could predict the outcome of double up. This appeared to be based on the premise that, if a previous game had not won, the next game could be potentially successful (i.e., players interpreted the odds of winning as higher if a previous game had not been won, as one in two games would win).

While many players were aware that this was not necessarily the case, reading the information made them compelled to use the presented information to predict their likely game outcome. As such information was felt to be misleading, several players also felt that this information could be potentially harmful to players (as it encouraged players to believe they may be able to reliably predict the outcome of gamble game features) – *Some machines show you the results of double ups. You can double up based on the pattern you see. This makes you think about your choice of card. It does make you feel that you may be able to control the result if you pick carefully. I don't think they should show people that as it can be quite misleading.*

Actual use of double up during EGM play observations

As part of the study, actual player use of the gamble button was examined during EGM play. Observers recorded both the use of gamble and also the type of gamble game played (i.e., whether players opted to pick one in two cards, one in four cards etc.). Use of the ½ gamble button was also recorded. Findings are shown in Table 72.

Results overall showed that use of the gamble button was very limited with gamble being used around 0.8 times on average for each EGM play session. Findings also showed that the most popular form of gamble – double up - was used at least once in 8.2% of all EGM play sessions. Use of the one in four card gamble game was also very low with the button only being used in 1.8% of all EGM play sessions.

This further illustrates that double up is not very popular amongst EGM players and is generally used only very rarely. While differences were not statistically significant between non-problem gamblers and problem gamblers (for means or percentage use), it is noteworthy that problem gamblers appeared to have slightly higher use of the gamble button overall.

Table 72. Mean times gamble was used in EGM play sessions – Results by risk for problem gambling (N=391, October 2013 – April 2014)

Type of gamble games	Mean times gamble was used during observation of EGM play based on percentage of EGMs played (%)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
<i>Types of gamble games</i>					
½ winnings were doubled up – Mean times used	0.5a,b	0.2a,b	0.1a	0.7a	0.3
½ winnings were doubled up – % using at least once	4.2%	4.0%	4.8%	10.1%	5.4%
Gambled using 2 card game – Mean times used	0.6a,b	0.2a	0.4a,b	1.0b	0.5
Gambled using 2 card game - % using at least once	5.6%	4.8%	9.7%	14.5%	8.2%
Gambled using 4 card game – Mean	0.0a	0.0a	0.0a	0.1a	0.0
Gambled using 4 card game – % using at least once	1.4%	0.8%	1.6%	4.3%	1.8%
Total 'gambles' – Number of 1/2, 2 card game gambles and 4 card game gambles in total - Mean	1.1a,b	0.4a	0.5a	1.8b	0.8
Total 'gambles' – % using at least once	5.6%	5.6%	10.5%	14.5%	8.7%
<i>Multiple sequential use of double up</i>					
Times gamble was used more than once in a row	0.0a,b	0.0a	0.0a	0.1b	0.0
N (EGM play sessions)	72	126	124	69	391

Observational data – The number of times EGM players gambled their winnings was recorded for each EGM play session (Base: All EGM play sessions)

KEY FINDINGS RELATING TO EGM GAMBLE BUTTONS

Key points in summary – EGM gamble buttons

- Gamble buttons are not reported to be used frequently by gamblers and are reported to be only used for very small wins (as players did not want to risk losing winnings or shorten time at EGMs)
- Players were seen to be more vulnerable to the effects of gamble buttons when they were intoxicated or depressed and reported that such situations lead to lower inhibitions and greater risk taking
- There was a strong preference for doubling-up one of two cards (71.6% of all EGM players) as opposed to playing the 1 in 4 card gamble games (only preferred by 15.8% of all EGM players). A further 12.6% of players also reported never doubling up at all
- Qualitative research suggests that 1 in 2 card games are played, as players like that they have a better chance of winning (as it was 50-50). This appears to be more important than 1 in 4 games that only have a 25% chance of winning, yet allow players to quadruple winnings
- EGM players are often not aware they can change gamble games from 1 in 2 (typically the default) to 1 in 4 or half gambles on many EGMs
- The average maximum win all EGM players reported being prepared to double up was \$12.18 – While problem gamblers appeared to be prepared to double up a little more money (mean=\$32.32) compared to non-problem gamblers (\$9.24), the difference was not statistically significant (so differences should naturally be interpreted with due caution)
- 1 in 4 gamble games were considered a little more exciting (mean=2.3) than 1 in 2 games (mean=2.2), but using the half gamble button was not very exciting (mean=1.7)
- Having dual function buttons with gamble on EGMs was reported to be associated with greater accidental use of gamble buttons (where doubling up winnings was not intended) – although accidental use was not very frequent overall (mean=1.6 – where 1=not at all, 5=very often)
- EGM players reported sometimes using the gamble button out of frustration when many losses had occurred in previous EGM games (with a desire to recoup losses)
- Presentation of prior gamble game outcomes on EGM screens (a feature of some EGMs) leads to players believing they can predict the outcome of gamble games – This may be contributing to false cognitions that players can control game outcomes
- EGM play observations showed that overall use of the gamble button was very limited with gamble only used 0.8 times on average for each EGM play session

Results also highlighted that:

- The most popular form of gamble – double up - was used at least once in 8.2% of all EGM sessions
- Use of the one in four card gamble game was very low and used in 1.8% of all EGM sessions

This suggests that gamble games are not very popular and are used rarely.

EGM jackpots from an attitudinal and behavioural perspective

Background

The effect of jackpots on play behaviour was also investigated in the study. The jackpot characteristics of EGMs selected by EGM players were examined, along with the perceived influence of jackpots on EGM play behaviour. Qualitative research also permitted investigation of the overall perceived value of jackpots from a player perspective. However, given that previous detailed research has already been undertaken by GRA on jackpots, this was a minor focus of the current study, rather than a major focus.

Perceived value of jackpots when selecting EGMs

Qualitative research confirmed that jackpot size was typically the key structural characteristic that most influenced player selection of an EGM. Most players saw less value in selecting machines that did not have jackpots, as this would imply that any wins would only be small in nature. Linked jackpots – where machines were linked in a wide area network – were also considered the most attractive type of jackpot as such EGMs would typically have larger jackpot prizes. Some players – especially problem gamblers – also felt that jackpots would trigger play persistence.

Comments highlighting the overall influence of jackpots on EGM player choice of machines included:

- *I go for the Money Train and machines that have features and also minor and the major prizes. Minor might be \$20 and top one might be \$10,000. I think if I am going to play the machines and some have this extra chance, then you might win the \$5,000*
- *I might be prepared to lose a bit more on a machine where I know I can win big. So I look for good jackpots*
- *Prizes are the major influence for me*
- *The jackpot is the biggest influence for me*
- *I like machines that show jackpots. The ones without jackpots I don't like to play*
- *Chasing the progressive jackpots makes me spend more than I can afford. I look out for these machines*
- *Number one is the jackpots for me. It's just the excitement of winning that pulls you in*
- *The size of the prize is most enticing. It puts the image in your mind and it's something to be aiming towards*
- *Jackpots, especially when they are high, lead me to spend money*
- *Most of the time I would go towards a machine with a jackpot attached to it*
- *Jackpot linked features are more attractive and I look out for them*
- *Some features will double your jackpot. Like linked jackpot features. I like those!*

EGM players interestingly also held a general view that EGMs in banks would offer better jackpots, as there was a perception that jackpots associated with such EGMs would be larger (or linked), given that they were situated in a bank. This may highlight that many players will look for EGM bank configurations as a visual indicator of an available jackpot in venues. Comments included:

- *I like the bank ones. There are a few around now. Like Mr Cashman but it is too old now. They offer better wins being in a row together*
- *If it was a new machine, I'd choose a big bank based on the machine paying more. Banks I think give you better wins as more money goes in*
- *I think it's easier to lose track of your spending on a bank, as there's heaps of different games. This is because machines are often linked and people spend more money on bank machines than single machines*
- *I like the banks of machines more. I just think people put more money into them as they're all linked together, so more money is available for wins*

Perceived influence of jackpots

The attitudinal component of the quantitative research explored the excitement associated with jackpots. Results are shown in Table 73. Findings overall showed that the size of jackpots generally was found to be exciting for all EGM players (mean=3.6). In addition, progressive jackpots perceived as being close to going off were also found to be quite exciting overall (mean=3.3). As no significant differences were found between non-problem and problem gamblers, overall results suggested that jackpot availability more generally had a similar level of effect on play excitement for all risk segments (This may also be because specific sizes of jackpots were not mentioned in the question).

Table 73. Excitement associated with EGM jackpots – Results by risk for problem gambling (N=219-220, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all exciting, 5=very exciting)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
The size of the jackpots or maximum prize on the machines	3.4a	3.7a	3.8a	3.5a	3.6
N	42	63	72	43	220
Progressive jackpots which you think are close to going off	3.2a	3.3a	3.4a	3.4a	3.3
N	42	62	72	43	219

Question: On a scale from 1 to 5, where 1 = not at all and 5 = very exciting, please rate the extent to which the following are exciting (Base: All gamblers)

Actual size of jackpots selected for EGM play

While previous results showed that jackpots were exciting for all EGM players, observational data provided an opportunity to validate how EGM players selected EGMs based on available jackpots and jackpot sizes. For this purpose, each EGM played was recorded as either having or not having a linked jackpot. In addition, the mean prizes associated with the first, second and third jackpot prizes were recorded, along with any progressive jackpot prizes (although in some cases, not every machine had prizes shown and in some cases, there were fewer than three top prizes, so only available prizes were recorded). Key findings are shown in Table 74.

Findings overall showed that 38.1% of all EGMs played had a linked jackpot. Findings similarly showed that problem gamblers played a significantly higher percentage of EGMs with a linked jackpot (43.7% of all EGMs played), compared to non-problem gamblers (only 17.9% of all EGMs played) [$\chi^2=10.7(1)$, $p<.01$].

When the mean prizes were compared across EGMs, findings also revealed that problem gamblers were attracted to play machines with significantly higher top prizes, compared to non-problem gamblers. The top mean prize of EGMs selected by problem gamblers was a very high \$7,393, while the mean top prize for non-problem gamblers was only \$3,005.70 [$t=-2.7(48)$, $p<.05$]. Problem gamblers also selected EGMs with significantly higher prizes for progressive jackpots [$t=-2.1(27)$, $p<.05$].

Table 74. Percentage of EGMs played with a linked jackpot – Results by risk for problem gambling (N=88-373 EGMs, October 2013 - April 2014)

EGM characteristic	% EGMs played that had a linked jackpot				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
<i>Percent of EGMs played with a linked jackpot (% EGMs)</i>					
Percent of total EGMs played with linked jackpots	17.9a	26.9a	24.1a	43.7b	38.1
N	67	119	116	71	373
<i>Mean size of jackpots on EGMs played (\$)</i>					
Progressive jackpot values	4,631.90a	7,489.50a	8,994.80a	10,204.0b	\$8,501.38
N	11	32	20	25	88
Top prize on EGMs (including progressives)	3,005.70a	4,484.20a	3,551.40a	7,393.0b	\$5,384.33
N	38	84	76	45	243
Second prize on EGMs	407.50a	568.20a	509.0a	1287.2a	\$890.27
N	37	82	75	45	239
Third prize on EGMs	62.70a	58.40a	78.70a,b	134.7a	\$105.36
N	22	56	42	32	152

Observational data – Jackpot characteristics of all EGMs played was recorded during observations (Base: All observed EGM players with usable jackpot data) (Significant differences at a pair wise comparison level denoted by different letters within each row at $p<.05$)

KEY FINDINGS RELATING TO EGM JACKPOTS

Key points in summary – EGM jackpots

- Many players and particularly problem gamblers believed that jackpots encouraged play persistence
- EGMs located in banks were often a visual cue used by EGM players to identify jackpots – many players assumed that machine in banks would have better jackpots (as they are linked together)
- Around 38.1% of EGMs played during observations had a linked jackpot
- Problem gamblers played a significantly higher percentage of EGMs with a linked jackpot (43.7% of all EGMs played), compared to non-problem gamblers (only 17.9% of all EGMs played)
- The top mean jackpot prize of EGMs selected by problem gamblers for play was significantly higher (\$7,393) than the mean top prize of EGMs selected by non-problem gamblers (\$3,005.70) - Problem gamblers also selected EGMs with significantly higher prizes for progressive jackpots

Other miscellaneous EGM structural characteristics from an attitudinal and behavioural perspective

Other miscellaneous EGM characteristics considered in the study are described and presented in this section. These relate to mostly external characteristics of EGMs and include EGM reserve buttons, machine denomination branding (and how easy the branding is for players to see), sound, lights and music, as well as those features thought to have a role in player decision making such as pre-commitment systems, on-screen messages and game rules and information.

Use of reserve buttons on EGMs

There is limited evidence regarding player use of the reserve button on EGMs. Anecdotally, it appears that the button has some utility for smokers, who are able to reserve an EGM while taking a smoking break. Other uses of the reserve button are for toilet or short drink and food breaks. Quantitative results in Table 75 show how often players used the reserve button and the extent to which they felt associated breaks may assist players to regain control over their play.

Based on historical self-report data, the mean number of times players used the reserve button was approximately 1.5 times per gambling session. Non-problem gamblers used the button reserve fewer times per session (mean=1.0) than problem gamblers (mean=2.0). The difference between these groups was also statistically significant [$t=-2.5(65)$, $p<.05$]. Low risk gamblers (mean=1.6) and moderate risk gamblers (mean=1.4) also used the reserve button at least once during a session. The difference between mean use for all at-risk groups (low risk, moderate risk and problem gamblers), compared to non-problem gamblers was also statistically significant [$t=-2.6(217)$, $p<.05$].

The extent use of the EGM reserve button helped players regain control over their gambling is shown in Table 75. This was reported on a scale where 1 was not at all and 4 was significantly. A mean score of 1.5 was obtained for all gamblers, suggesting that overall breaks helped a little. The utility of breaks also varied by risk segment. Problem gamblers found breaks (mean=1.6) of significantly greater utility than non-problem gamblers (mean=1.2) [$t=-2.5(64.8)$, $p<.05$]. Findings also showed that all at-risk gamblers also found the break as more useful than non-problem gamblers [$t=-3.3(119.2)$, $p=.001$]. Such results may also support the value of technological solutions to assist players to have access to breaks in play such as those linked to use of player cards via pre-commitment schemes.

Table 75. Attitude toward use of the reserve button – Results by risk for problem gambling (N=205-219, October 2013 - April 2014)

EGM characteristic	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Number of times players use reserve buttons during session	1.0a	1.6b,c	1.4a,b	2.0c	1.5
N	42	63	72	42	219
Extent to which reserved breaks help you regain control of play	1.2a	1.5a,b	1.6b	1.6b,c	1.5
	41	58	65	41	205

Questions: How many times do you use the reserve button during an average session? (Number of times per session of play recorded) On a scale from 1 to 4, where 1=not at all and 4=helped significantly. To what extent do the breaks you have when you use the reserve button help you regain control of your poker machine play (help that you feel in control so that you don't spend beyond your limits)? (Base: All gamblers)

Player comments regarding the use of the reserve button largely related to confusion that could result when the button had a dual function (e.g. a Reserve button also had a Collect button function). This issue is discussed in the section 'Difficulties locating Collect buttons'.

Player confusion over EGM denominations

EGM players were asked how often they had been confused by the EGM denomination when selecting a machine to play. This was raised as an issue during qualitative research, as some EGM players reported mistakenly playing \$1 denomination EGMs thinking they were only 1 cent denomination (as the denomination was hard to see).

Results are shown in Table 76. Results showed that confusion occurred fairly infrequently for gamblers overall (mean=1.8). Non-problem gamblers reported selecting an EGM of the wrong denomination the least frequently of all groups (mean=1.5), while problem gamblers (mean=1.9) and moderate risk gamblers (mean=1.9) reported doing this occasionally in the previous 12 months. All at-risk gamblers (mean=1.9) also reported being confused about denominations significantly more often than non-problem gamblers (mean=1.5) [t=-2.1(219), p<.05].

Table 76. Started using an EGM that thought was a different denomination – Results by risk for problem gambling (N=221, October 2013 - April 2014)

EGM characteristic	Mean (1=not at all, 5=very often)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Accidentally selected EGM with incorrect denomination	1.5a	1.8a	1.9a	1.9a	1.8
N	42	64	72	43	221

Question: On a scale from 1 to 5, where 1 = not at all and 5 = very often. How often over the last 12 months have you accidentally started to use a poker machine which you thought was a different denomination than it actually was – like using a \$1 machine instead of a 1 cent machine (Base: All gamblers)

During focus groups players mentioned becoming confused over EGM denominations due to the difficulty visualizing the branding between a \$1 machine and a 1 cent EGM (as the display of the denomination was often very inconspicuous and located in small font in the right hand corner of the EGM screen). This was thought to be quite problematic for EGM players with poor eye sight, such as older players.

Comments highlighting this confusion were frequent in focus groups and included:

- I think the 1c badge works best. I've seen a 5 center with a 5 and a little c and it doesn't stand out much. It blends into the background. So people who are looking at those types, may not find out what they are playing. So you can be tricked by those and spend more than you thought you were*
- When some \$1 machines, people think it's 1c, but it's actually \$1. I've done that a few times. You go whoops. But since I know them, I'm OK. The higher denomination ones have fewer buttons. It's just a dollar per bet fixed and it's the number of lines*

Qualitative feedback from EGM players suggested that clearer labeling of machine denominations would be useful including labelling on EGM banks. Comments included:

- I like to see machines like 1c labelled on a bank. But in most venues, they are all over the place. So you don't know what you're playing at times. Then the betting amount is very small so it's very hard to read. I think better labelling is also important for older people, so people have a clear choice of what you're using and which machine. Like a sticker so people can see what they're spending overall. Group the 1c, 5c and don't mix them but group them together*
- All the \$1 machines are spread around the club. I think it's easier to have them around so you don't use them by mistake. Especially if you use them instead of the 1 cent machines. This happens on occasions. It's difficult to know which is a \$1 machine and which is a 1 center*

- *These \$1 machines sometimes go up to \$20 a hit. My mum didn't realise what she was doing one time and lost that amount in a single bet. She thought it was a 1 center. I think they should label those machines more clearly*
- *I don't think they have 1c machine branded clearly in all venues. It's more difficult to ascertain whether a machine is a 5c or 10c etc. Or \$1. It's less conspicuous. I think they do that on purpose. If 20 people make a \$1 mistake, it's \$20. That could be improved - I like a clear 1c stamp. I think having a constant colour for 1c versus others would help. The colours would help distinguish the machine. So people know what they are spending*
- *The 1c is 1 and a little c. The \$1 is written very similar. Plenty of older people are putting in money thinking it's a 1c and it's actually \$1. Signage needs to be improved in most venues*
- *Many machines have 1 so you think it's 1c, but it's actually \$1. So they need to label those better – I see heaps of people making mistakes. You know for most of the others – but 1c and \$1 are the worst offenders overall*

Players also reported getting confused about machine denominations where certain machine brands offered multiple denomination variations. Like one single machine could be perhaps a 1c, 2c or 10c machine. Due to poor labelling, some players would accidentally play the wrong denomination variation of their preferred machine on occasions – *People sit down at a 2c machine and they press 3 credits per bet and you realise you're betting \$1.50 instead of 0.75c. This is because the same machine at a different club is a 1 center. This should really be clearer to avoid this sort of thing happening.*

Player interaction with game information buttons

EGM player knowledge, use and perceived utility associated with the player information or game menu button available on EGMs was additionally explored this study. These typically bought up scrollable screens of information that provided players with an opportunity to review 'how to win information' and in some cases, odds information on an EGM. The provision of this information is broadly consistent with the principles of informed decision making.

EGM players were asked at the end of their observed session of EGM play to report their use and knowledge of the game and player information button on one of the EGMs played. They were asked if they had previously read the information prior to that day and what would typically prompt them to read the information more generally. Results are presented in Table 77.

Overall, 49% of all gamblers indicated they had previously read the information. A greater proportion of all at risk gambling segments reported reading the information (between 50-60%) than non-problem gamblers (30%). Differences, however, were not statistically significant.

All players were then also asked to read the information on each of the information screens presented. Given the low levels of prior use of the button, interviewer often had to show players how to move between screens. In some cases, information was also read out to the player in order to increase engagement. Players were then asked to rate how easy it was to understand their chance of winning on the EGM based on the presented information. All EGM players rated the information as moderately easy to understand (mean=3.9), and there was little difference in ratings between risk segments.

Table 77. Whether EGM players had previously read the game information screen – Results by risk for problem gambling (N=210-222, October 2013 – April 2014)

Has previously read the game information screen	% Gamblers / Mean (1=not at all, 5=very easy)				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
Has previously read the game information screen (% EGM players)	30.0a	59.7a	48.5a	50.0a	48.6
N	40	62	68	40	210
Ease of understanding your overall chance of winning from reading this information	3.9a	4.0a	3.7a	4.0a	3.9
N	42	64	73	43	222

Question: Have you ever read the information menu on the EGM screen? (Base: All gamblers); How easy is it to understand you overall chance of winning from reading this information? (Base: All gamblers)

The relatively high ratings recorded for understanding, however, were frequently at odds with the experience of interviewers. Interviewers frequently reported low levels of player engagement with the information and a consequent low level of understanding. Comments reflecting this related mostly to formatting and presentation issues (e.g. small font sizes, too much information and crowded text). This appeared to discourage further interaction with the information. Several players also noted that the rules relating to symbol substitution, eligibility for bonus prizes and winning lines were quite unclear.

Illustrative comments made about information screens included:

- *The lines you win on is confusing*
- *There is too much information and too small print to read the information*
- *They are very vague on the actual return – it is not easy to understand with the wording*
- *There's too much information, it's confusing - it's all over the place*
- *There's too much information and colour, it's too crowded. Prizes should be in front of you*
- *There is too much writing*
- *The substitution rules are unclear – There are too many to remember*
- *The rules are not set out very well. They're confusing and there is too much information*
- *This is quite small writing*
- *The line configuration section contains too much information to understand*
- *I don't really understand all these numbers and stuff*
- *Easy to understand but some big wording so could be clearer*

What prompts EGM players to read the information

As described in Table 77, just over half of all EGM players reported very limited interaction and use of game information screens. As winning symbols are typically presented on gaming machine cabinets – despite an apparent trend toward multi-game EGMs that do not present this information externally – it appeared that many players considered this information supplementary. Players were consequently asked what would prompt them to read such information. Qualitative responses to this question were free coded according to the reason discussed, as presented in Table 78. Figures reported do not add to 100 per cent as multiple responses were provided.

Consistent with previous findings, the majority of gamblers surveyed (28.8%) said they did not ever read the on screen player information so were unable to comment on specific prompts. Interestingly, very few players also said they read the information to check game rules (1.9%), odds of winning (1.4%) or to understand the pay lines (0.9%). This is intriguing given that the primary purpose of these screens is typically to provide such information. The most common use of the screen, however, related to using the information to check prizes/jackpots/pay outs (24.2%) and to familiarise with a new machine (14.4%).

Table 78. Factors prompting gamblers to read the player information – Results by risk for problem gambling (N=215, October 2013 - April 2014)

Reason for use	% of responses				
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers
To check prizes/jackpots/pay outs	23.8a	25.4a	29.0a	14.6a	24.2a
When playing a new machine	9.5a	14.3a	14.5a	19.5a	14.4a
To understand the game/game play generally	11.9a	12.7a	10.1a	7.3a	10.7a
To read about features and free spins/multiplier features	9.5a	14.3a	7.2a	4.9a	9.3a
If doubt over prize/thinking symbol should win but didn't	2.4a	4.8a	8.7a	7.3a	6.0a
To look for credits associated with special symbols (e.g., scatters, substitutes)	2.4a	6.3a	2.9a	7.3a	4.7a
To read game rules	0.0	4.8a	1.4a	0.0	1.9a
If EGM malfunctioned	0.0	0.0	5.8a	0.0	1.9a
Looking for another button (e.g., collect button, reserve button)	0.0	0.0	2.9a	2.4a	1.4a
To work out the odds of winning	0.0	1.6a	0.0	4.9a	1.4a
To understand pay lines	0.0	3.2a	0.0	0.0	.9a
Would read it before placing large bet or to work out how much to bet	2.4a	0.0	0.0	2.4a	.9a
Couldn't mention any prompts (just said didn't read information)	40.5a	28.6a,b	20.3b	31.7a,b	28.8a

Question: What would typically prompt you to read the game information? (Base: All gamblers)

Qualitative discussions with EGM players showed a clear player preference for learning about game play during play and having all information clearly presented on the gaming machine cabinet:

- *My friends never do this. They learn the rules by trial and error. Even when they get a free spin, you don't necessarily know why you get a free spin. But you learn over time how they are triggered*
- *You don't go to a new machine and read the rules. I go on auto-pilot and learn as you go. You're in a pub to relax, not learn rules*
- *Even if I don't know the machine, I'll just play press the buttons and that's it. I won't look at the info button*
- *If I don't understand a feature, I'll look at the cabinet to see how you get the feature. There's an information button too. But I don't read any of it*
- *I sometimes look at the information screen. I look at what is worth what money. Usually after losing, I look at the information on the screen. Hardly anybody I know uses the information button*

Some players reported, however, occasionally accessing the information screen when they were not winning – *When I don't win, I start looking for how to win. You may sometimes press the button and have a look at the information.* Similarly, a few players held a belief that pressing the information button may help confuse the machine or indicate that the player is a beginner - *I press 'Help' and look at it trying to confuse the machine, so that they think you're a beginner. If you're a new player, you're going to get in as only beginners would press the button.* This player summarised the multitude of issues that appeared to deter access to the player information screen more generally:

- *My biggest problem with machines is that they don't have a clear score board. You have to go into the pay table to have a look at what people are going to give you, which is why people have their pet machines. They don't have to work out how much they will pay. In the haste to make everything as attractive as possible, they've hidden away the most important information – like what you get for a certain set of symbols. There is nothing worse than not knowing what you are getting. Every now and then you have to press the information button. Though it is off-putting having to go there. It is so much easier if they can actually tell you clearly what the machine will pay on the cabinet. The screens don't help as they are far too confusing and all seem to provide different information*

Other players (outside Victoria where Player Information Screens exist) believed that EGM play information screens in the future should contain information on how much money and time the player has spent on the poker machine. This was seen as potentially offering players some harm minimisation benefits. Similarly, there was also a view that odds information should be regularly displayed to players to help people make informed decisions about their spending:

- *I think that every now and then – Like at \$40 or whatever, you should be told you've spent \$40 and asked - Do you want to continue? Just something you notice so it gets people thinking about how much they've spent. So people get reminded - they get caught up in the flow. It would be a great reminder for people and would make machines safer*
- *Perhaps if as soon as you put your money in it gave you an introductory type screen that gave you some information and a warning with no option to skip it, that would be good. If it said the odds of getting the feature, that would be useful. So you could have people sitting there thinking, so my odds of getting the feature are as such and then they could decide whether to play on or not*
- *If warnings came up during the game, it might just make you pause and think. It would probably be annoying but that might be a good thing. Or if it told you how much you'd cycled (spent). That would be a good thing. I think saying things about your family, mentioning family or life in general would be effective. It would make you think*
- *Put on warnings like on the smoking packets. If they put warnings on machines that said 'you have spent this much' and maybe compare it to something. Then people would think harder about the money they're putting in*

Game information content that may confuse or mislead gamblers

While the limited perceived utility and unclear nature of the content presented via the game information button might explain current low levels of use, it was also apparent that some on-screen information could be very confusing for players and did not always present information in a consistent way. As the information was quite confusing, this also led many players to avoid such screens.

Example comments highlighting areas of confusion included:

- The odds of winning should be always on those screens. But they are all inconsistent. I think they should state the odds of how often a free game or feature comes up. That's important, so you don't waste too much money keeping on going playing*
- I look at the information button. Some are easy to understand what's going on and others are really hard to understand. The information is daunting - it's so confusing that people don't want to read the information. You don't want to focus on the information - they make it hard for people to get the information in people's head about how to win or lose money. So people glance at it and see it as too confusing and leave it*
- Those menu screens are confusing. I think to fix this issue that people should be given more odds information on how to win the big one. Then you can scroll for minor information. So you want to know the big wins and the odds of winning. They should just give you the chance of winning the jackpot straight up. Then people can make better decisions about how to spend the money across machines. You'd then be more inclined to play a certain brand of machines versus the other*
- Information screens need to be clearer. I think they should also do this for the minor jackpot too. They should tell you the odds. I think they should tell you how much money the machine has taken and how much money it's paid out. There's pros and cons, but this could help people make a decision about how to play*
- It's better to present the odds information first and foremost. Make people read the information by default so people see it before they play. We see a lot of information but our minds don't register. So maybe people should be made to see the basic odds every deposit of money into the machine. So before you start gambling the \$200 of credit, you should get the information to encourage people to think about the odds of winning*
- I'd like to see the odds of features and free spins, along with jackpots on these screens. It's information players want, but hardly any have this type of information. It's all pretty hard to understand*
- In some machines, when you bet 25c, the 5 jacks will pay you \$1. If I bet up to \$2, the 4 jacks pay \$1.5. So you get a better multiplier for the same wins. The screen should tell you as you're changing the bet from 25c to \$2.50, it should tell you how the odds of winning change. So people get the information they need to work out how to bet*
- There's a button with 'information' that tells you the return to player. It also tells you how much you have to spend on average to get something. The "" often says 1 in 20 to get a free spin or feature. I find it's pretty confusing though, as each machine will give the information in different ways*
- If I'm playing 20c for \$2 turnover, I'd like to know what percentage the machine is paying back. I read in a magazine years ago that machines can give you 83% back. So I'm constantly thinking about it and would like to know this information*

In several instances, players also read content on information screens that suggested a need to bet larger amounts to be eligible for particular prizes - *Where's the Gold is hooked up to one of the trains. In the right hand corner on the information screen, it says things like 'the higher you bet the more chance you have of getting the jackpot'. So if someone goes on there and has a \$5 hit, that sort of tells me that they are guaranteed to get the money train if they bet that way. I think that's misleading*

In addition to some statements being potentially misleading, some players felt encouraged to bet higher when reading such information. At least 16 EGMs were also identified in the quantitative study as having information on game information menus that suggested the need to bet larger amounts to win or qualify for certain prizes (This is also a characteristic of some EGMs).

Specific content encouraging higher betting included:

- You must play 243 lines to win (certain prizes)
- You need to bet more credits to get (certain symbols)
- Increasing the bet on each game increases your chance of winning
- You must play maximum lines plus extra choice to be eligible for the feature
- Increasing the total number of credits increases the chances of winning
- The chance of a certain symbol appearing is proportional to the total credit bet
- Increasing your bet on each game increases your chance of winning

Effects of EGM sound, music and light

While a separate series of experimental studies would be needed to fully understand the effects of music, light and sound on EGM play, it was clear that such characteristics play a significant role in the overall player attraction to EGMs and in the enjoyment of EGM play. Players universally considered sounds to be a very stimulating part of play and there was particular support for sounds that occurred in the context of wins.

Players also commented that many sounds were played upon a player losing and this was seen to 'soften' the experience of a loss. Some players held a view that the loudness of music played should be better standardised across machines. For instance, some machines played loud music on a win less than the bet placed, while others played a louder sound. It was also thought that players should not be enticed to 'play on' with music when they experienced a loss and that music generally should be adapted to the amount won to avoid misleading players.

Comments included:

- *Without sound, it'd be very boring. It is not fun without the sound*
- *I think that noise when the money comes out is the most enticing as you associate that with money. You know that comes when you've won a good amount. You don't get it for a minor win*
- *There is one machine at the RSL that sings to you when you get to within 3 feet of it. It leads people in. It must have a sensor. It sings 'rock around the clock'. Some sound effects are quite attractive though*
- *It's so uplifting to hear the music. On the free games and features, it's louder. It attracts other people around the machine to look. I think that's an enjoyable thing as you like to know who has what and you look around and enjoy the feature*
- *You hear background music. It makes you want to win*
- *The buzzer sounds I associate with a feature generally. The jackpots are generally quiet sounds from what I remember. They just come up on the screen as jackpot. Gold coins come up when you win. If you win the Maxi jackpot, I get the impression they are keeping the win fairly quiet. But winning a mini on the Clowns or Cars, the feature is quite loud*
- *In Vegas, I've played games with speakers in the seats. You're seat will vibrate and noises come out. That's pretty cool. It stimulates you to play*

- *Music across machines differs when you win. Sometimes you win 50 credits and you don't get much music and then you get heaps on another. I don't understand that. It's confusing for people I think*
- *I think some of the older ones make less fuss. The new ones make much more of a fuss with their music and their visual effects are more as well*
- *The machines give a short jingle when you don't win more than your bet. Whereas if you win \$20 off your \$2, the music counts to the 2,000 credits. The music generally adjusts when you make smaller bets. I think the music is less exciting overall. It's a little hard to pick though*
- *I think that there needs to be more visual effects rather than music when you win. You don't want to get rolled when you leave. It's more private. I like to turn down the sound. Some machines are ridiculously loud and others quieter*
- *I love lights. I love the music. I've left a machine when I've found it dull. I love bright machines. They always excite me. I like clear colours that are bright and contrasting well with the dark room. They are also easier to see in a dark room. Dark colours don't work*

Many EGM players also thought EGM manufacturers should regulate the type of music played during Losses Disguised as Wins (LDWs) to avoid confusing players or providing a perception that players have won when they really haven't won. Comments included:

- *I think reducing music in these cases should be done, as it's not technically a win. I don't think manufacturers should be able to do this. Also saying words like - Good Work - that should only be when your winnings are above your bet*
- *I think when you win less than you bet, they do give you music that suggests a win. They shouldn't have music at all when you lose*
- *Certain machines give you the triumphant sound when you win something. Machines say this is your lucky day and you've bet 80c and you've won 5c. They shouldn't tell you that. They should only give you motivational sounds and words when you win more than you bet!! The music should be fairly neutral. You should have only music played in a way that is relative to the bet. Like if the return is 60% of the bet, the music should be a certain level*
- *I don't think there should be music at all. I don't like it. When you win, the machine draws attention to you. It goes berserk and people look at you. Or you've won the minor. I think that the whole thing needs to be toned down overall. A win over \$10 on one machine was so loud, it was ridiculous. Some have sound where you can turn down, but not all have this. I think that all machines should have this control. I asked the girls can I turn it down, but they said no, it's set like that. Most have 3 levels of noises, I would also like no noise at all. So there's a choice for no noise*

Server-based gaming and multi-game EGMs

Players generally had little experience with server based (downloadable) games and multi-game EGMs. It also appeared that such machines were generally not preferred by most players. Comments made during qualitative research suggested that some server-based and multi-game machines could be confusing for players, as electronic screen controls had to be touched to change games. Some EGM players also believed that denominations should not be changed on such games, as this could confuse players who otherwise expected to see a machine of a certain denomination.

Comments included:

- I don't really like those, I prefer just a single game. I don't like the buttons on the screen on some of those games*
- I think it's good you can change the game but overall I think they are a bit dodgy. I think people wouldn't take as many breaks overall as they keep changing games and they can be a little confusing for people working out how to change the games*
- With server, it's the same priced machine, but just the pictures change. I don't think they should change the game amount. Changing the games is fine, but not the amount of the game (the denomination). People would go there and get confused and play the wrong amount. I think this would be harmful. It would mess with your head*
- I think that people get confused about when the amount of each games change. So you do get confused often. I don't think they should change the type (denomination) of each game in these as it would confuse people*

Pre-commitment systems

Most players thought that pre-commitment would be a useful future characteristic of gaming machines. Most players similarly supported voluntary use of pre-commitment to ensure that players are given the option of having improved control over their gaming. Comments included:

- I have a voluntary pre-commitment limit, where I will put \$20 in and get up and walk away. I think the whole notion of pre-commitment on machines is good. I don't like the beating of chests around mandatory pre-commitment, as that drifts over into an individual's rights. An individual has the right to blow all their money, if they want to. But it makes sense to offer it to everyone playing machines. If pre-commitment existed, I'd use it*
- That sounds good. It would make me aware of how much I've spent, how long I've been there and what is going on. It would be especially good when you've had a few drinks, as it can be very hard to keep track at times*

Having to gamble less when less than \$1 in credit

A few EGM players reflected on the appropriateness of EGMs that prompted players to 'gamble' their winnings when they had less than \$1 on the credit meter, as is the case of many EGMs in Queensland. Such players believed that this was not appropriate as it could encourage players to continue to play when they would otherwise have preferred not to play on.

Comments included:

- Being encouraged to gamble if less than \$1 on the credit meter is not appropriate. It comes up, saying you can gamble that 2c or it goes somewhere else. I can see why they do it, but they shouldn't encourage people to gamble away their last 2c. It could start them off again*

- *If you have under 10 credits left, you can't bet under 10 credits. So they prompt you to gamble or just leave the credits in. You feel too embarrassed to ask for 10c so you don't bother. This is where cashless gaming is good. But I don't like the cards as you feel they can track you*
- *When you get to 8c on these new machines and you can't bet this amount, you have to put more in. It's a disgrace that. Then it says do you want to gamble it. That's not good. It encourages people to put more money in*
- *They should enable people to place smaller bets or the machine should be set to allow people to play out or take out the whole amount. It doesn't even come out on the ticket (reference to Ticket-in-Ticket-Out)*
- *I don't think that they should prompt you to gamble up to a \$1 to even out the amount. It's wrong*
- *Gambling on small cents shouldn't be allowed as it entices people to keep going, when they should be leaving. I think this is a risky way of getting rid of small amounts of money as the risk is that players may play on*
- *If you collect under a \$1 and it's got cents, it'll ask you - Do you want to double-up or take your loss. But if a higher amount with cents like \$60.52, I don't think it'll prompt you. I'm not sure if this is a good idea though as people may be tempted to play on, no matter how small the amount*

The ability to transfer small cents back to a card was also described by one player as a key advantage of cashless gaming – *If you go to some clubs, some machines issue a ticket or card and others issue a coin. I like the card because you can take all the money easily whereas you can't take the last cents with regular gaming.*

Difficulty locating 'Collect' buttons

Several EGM players reported difficulty locating the 'Collect' button on EGMs. This is the button players need to press to cash-out their money from an EGM. Collect buttons were often reported to be difficult for players to find as they were on the EGM screen and many players were not aware of this. In addition, some Collect buttons were part of other buttons and were thus more difficult to find. Standardisation of such buttons across machines was described as a useful strategy to avoid confusion in players.

Comments reflecting player experiences in finding the collect button on EGMs included:

- *Collect buttons are hard to find these days. Now they seem smaller in size. So sometimes I have had to try to physically find the collect button as I couldn't see it*
- *Collect buttons do need to be a standard button and a colour which stands out - maybe with a dollar sign - so people can find it. Little old ladies won't be able to find it. I always get people asking me to find them for them*
- *They are pretty hard to find. Having it separate is safest. I think having it separate from Take Win would be best, so people can leave with money when they want to*
- *I think it's hard to find the collect button. It's also hard to find the reserve button on occasions too. They don't seem to want you to pull your money. I think most people look for a button, but it's often on the screen. Most older people may not find it because it's on the screen*
- *On some machines the collect buttons can be really hard to find*
- *Sometimes Collect buttons are on the side of the screen or on the left hand side above the actual game. They are often a button up on the side of the machine. So it can be that these are hard to find*
- *I can never find the Collect button. Plenty of older people ask me where it is. It's hard to see*

There was similarly feedback from EGM players that double-function buttons generally could be confusing. This included having Gamble and Half Gamble on the same button and having Reserve and Take Win on a dual function button. Such buttons needed to be pressed twice to activate the correct function. Having ticket-in-ticket-out systems associated with EGMs was also reported as creating some difficulties in one venue.

Example difficulties associated with dual buttons on EGMs included:

- *Take Win is a problem in the machines they put out now. On the new machines if you Take Win, you can't take the money out. You Take Win and press Collect and it won't do anything. It's due to the Ticket out function. So if you hit Collect, you need to then hit Reserve to get the green button to get your money. This confuses people*
- *The Reserve button is often hard to find. They are all different between machines. Some are with other buttons so it's confusing*
- *Some are Take Win and Collect with two different functions for one button. This can be pretty confusing at times*
- *I can't find the Reserve button at times. Sometimes it's on the screen. Other times it's a button. It confuses you*
- *On Collect, you press the Collect button and you press Collect and nothing happens. You have to press it on the TITO box, rather than the screen. So people get confused*
- *Older people think they are hitting the Reserve button. And actually they are hitting the Gamble button, so they lose their money. This happens quite a lot. A lot of people make these mistakes due to eye sight*
- *Sometimes there is a Reserve and Gamble on the same button. That's a bit confusing at times. You don't want to press it cause you may gamble your money*
- *Some of the older machines have Full Gamble and Half Gamble. You press it on the screen. If someone has not cancelled this by touching it, it'll automatically Half Gamble or Gamble your win. Then when you don't realise it's on. You press your usual lines and you realise you've gambled your money away. So the Full Gamble and Half Gamble is on. That's so confusing. Before you've realised it's on, you've lost your money*

On screen motivational messages

On-screen motivational messages, as presented to EGM players during a win, are a further standard characteristic of many Australian poker machines. When players were asked about the effect of such messages, it was clear that most players were aware that these messages occurred. However, feedback suggested that most players did not find the messages very stimulating or contributing to extended play.

Comments included:

- *I don't really pay any attention to those messages. Some of them say 'Outstanding'. If you were playing higher bets you could get more, but it still says the same thing. So you tend to ignore messages as they don't seem that realistic*
- *Those words like Well Done come up a bit. It seems the older ones mostly have those words. Less so the newer machines from what I've noticed. The new ones have more noises. I don't think those words have much effect for me. Words like Good Job or Well Done don't make much of a difference. It gets quite annoying to see the words repeated all the time*

- *You feel good for 1/2 a second but that's it. They really don't have much an effect*
- *I think it does lead some people to feel that they're controlling the machines, but it's a minor effect overall. I don't think removing the words would make a big difference overall*
- *You see those words all the time. It says good luck all the time. Fantastic seems to be used a lot. But you're more watching the money than the words. So they're not much of an effect overall*
- *I don't tend to notice those words. It usually says 'Good Luck'. I also remember that occurs more on the older machines than on the newer ones. The old ones say 'Wow' and things like that – 'Good work' or 'Sensational'. But less so the new ones. I don't notice the words so much*
- *One of my friends got influenced by the words. She got real bad and started to play her rent money. I think the words encourage people to play on in some cases*

EGM service buttons

Service buttons were mentioned by one EGM player as harmful as they encouraged consumption of alcohol at EGMs and did not encourage players to take a break in play - *I think the machine with 'service' buttons are harmful as it encourages people to stay put and not take breaks.* However, other players generally found service buttons as convenient and particularly when they felt they were 'on a roll' and did not want to leave an EGM.

KEY FINDINGS RELATING TO OTHER MISCELLANEOUS EGM CHARACTERISTICS

Key points in summary – Other miscellaneous EGM characteristics

Reserve buttons

- Based on historical self-report data, the mean number of times players used the reserve button was approximately 1.5 times per gambling session and mostly for smoking, drink and food breaks
- Non-problem gamblers used the button reserve fewer times per session (mean=1.0) than problem gamblers (mean=2.0)
- Problem gamblers found breaks (mean=1.6) associated with use of the reserve button of significantly greater utility in helping regain control of play than non-problem gamblers (mean=1.2) (note 1=not at all, 4=significantly)

Confusion over EGM denominations

- Players reported selecting a wrong denomination EGM due to poor denomination labelling from time to time – However, all at-risk gamblers reported doing this significantly more often (mean=1.9) than non-problem gamblers (mean=1.5)
- Confusion is typically due to small fonts and involve \$1 EGMs being read as 1 cent EGMs
- Labelling of EGM banks was seen as a strategy to increase player understanding of denominations and to promote higher levels of informed consent about EGM denominations being played
- Having EGMs of identical brands with different denominations was seen as somewhat confusing where games would change denominations across gambling venues (implying a need for clearer labelling)

Game information buttons/menus on EGMs

- Overall, 49% of all gamblers indicated they had previously read information in EGM menu systems
- Based on unprompted reasons for reading such information, very few EGM players read the information to check game rules (1.9%), odds of winning (1.4%) or to understand pay lines (0.9%) (which is typically the main content of such screens)
- The most common use of the screen related to using the information to check prizes/jackpots/pay outs (24.2%) and to familiarise with a new machine (14.4%)
- EGM players found odds and game information in screens confusing and highlighted the need for improved and more consistent formatting of screens
- Clearer information on how to win and odds associated with the following was seen as critical:
 - Major jackpots
 - Features
 - Free spins
- Providing game information before EGM play as a default was also suggested by some EGM players
- Menu information suggesting the need to bet larger amounts to qualify for certain prizes was viewed as a harmful characteristic of some EGMs (e.g., you must bet all lines and extra choice to win features, you must play 243 lines to win certain prizes, increasing your bet increases your chance of winning)

EGM sound, music and light

- Hearing sounds or seeing visual effects on EGM spins resulting in losses (including LDWs) was seen by EGM players to 'soften' the experience of a loss
- However, sounds and visual effects are also integral to player enjoyment of EGM games
- Some EGM players believed that sound and visual effects for losses/LDWs/Bets only won should be standardised across EGMs and to different loss events, so that players are not urged to continue play upon hearing or seeing sounds/visual effects after a loss
- While written motivational messages are used on some EGMs following wins, player feedback suggests that these have fairly minimal motivational effects on players

Server based and multigame EGMs

- Server-based and multi-game machines are often confusing to EGM players, as electronic screen controls have to be touched to change games
- Some players believed that denominations should not be changed on such games, as this would confuse players who otherwise expect to see a machine of a certain denomination

Pre-commitment systems

- Most EGM players supported the availability of pre-commitment as a useful characteristic of future EGMs (with only voluntary pre-commitment supported)

Having to gamble credits under \$1

- EGMs that encouraged players to gamble credits under \$1 were seen as a potentially harmful characteristic of EGMs, as players felt that this may encourage continued play

Collect buttons

- Several EGM players reported difficulty locating the Collect button on EGMs (to cash out) – Standardisation and improved layout of such buttons was suggested to allow players to cash out when they want to
- Single EGM buttons with dual functionalities were also seen as confusing and difficult to use

Comparison of the effects of major EGM characteristics examined in the study

Table 79 compares the excitement ratings of all EGM characteristics examined in the attitudinal survey. All measures have already been discussed in other sections of this report. Items that recorded a significant difference in mean scores for non-problem versus problem gamblers are highlighted in yellow. Data in this table are also ranked from most to least exciting for problem and non-problem gamblers.

As shown, features and free spins are associated with the highest levels of excitement for all segments of gamblers. Getting a feature with a set of free spins and free spins within free spins are ranked as the top two items for both problem and non-problem gambling segment. Many of the least exciting items related to near miss events and Losses Disguised as Wins.

Table 79. Ranked summary of excitement ratings for all EGM characteristics – Results by risk for problem gambling (N=222 - approximate, October 2013 - April 2014) (Refer to individual results for specific N)

EGM Characteristic	Mean (1=not at all, 5=very exciting)					Rank Order	
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers	PGs	NPGs
Getting free spins during free spins	4.6a	4.8a	4.8a	4.8a	4.8	1	2
Getting win multipliers during free spins - (e.g. 2x, 10x, or 15x)	4.4a	4.8b	4.6a,b	4.8b	4.7	1	4
Getting a feature during a free spin	4.7a	4.7a	4.6a	4.7a	4.7	2	1
Getting a feature and also winning from the feature	4.5a	4.8b	4.6a	4.7a,b	4.7	2	3
Getting free spins and also winning from free spins	4.5a	4.9b	4.7a,b	4.7a,b	4.7	2	3
Getting a feature right after you have just won a big amount	4.2a	4.7b	4.5b	4.7b	4.5	2	6
Winning by getting 5 symbols in a row	4.5a	4.7a	4.5a	4.6a	4.6	3	3
Getting a free spin right after you have just won a big amount	4.3a	4.7b	4.5a,b	4.6a,b	4.5	3	5
Getting multiple free spins - that is many free spins at once (like 10 free spins)	4.4a	4.8b	4.4a	4.5a,b	4.5	4	4
Getting a linked jackpot feature during play	4.4a	4.4a	4.6a	4.5a	4.5	4	4
Getting a second feature during a feature	4.3a	4.7b	4.6a,b	4.5a,b	4.6	4	5
Getting a feature and multiple free spins (like 10x at once)	4.3a	4.7b	4.5a,b	4.5a,b	4.5	4	5
Betting all lines on a poker machine	3.9a	4.5b	4.3a,b	4.5b	4.3	4	9
Winning when the machine allows you to use a wild or substitute symbols	3.9a	4.3a,b	4.0a	4.4b	4.1	5	9
Winning through a scatter	4.2a	4.2a	4.0a	4.3a	4.1	6	6
Getting a free spin during a feature	4.1a	4.4a	4.2a	4.3a	4.3	6	7
Getting a feature during pokies play	4.2a	4.4a	4.2a	4.2a	4.2	7	6

EGM Characteristic	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers	PGs	NPGs
Winning after the symbols lined up from left to right in the right order	4.1a	4.1a	4.1a	4.2a	4.1	7	7
Features that give you the chance to win a linked jackpot	3.7a	3.9a	3.9a	4.2a	3.9	7	11
Playing a pokies game where wins are multiplied - like 2x, 4x or 10x etc.	3.9a	4.2a	3.9a	4.1a	4	8	9
Win an amount which is double your bet	3.9a,b	4.2a	3.8b	4.0a,b	4	9	9
Features where you to pick different options (e.g. 10 spins x 5 or 15 spins x 3)	3.7a	3.9a	4.0a	4.0a	3.9	9	11
Getting an opportunity to replay a feature	4.0a	3.9a	3.8a	3.8a	3.9	10	8
Features which play for a long period of time	3.4a	3.6a	3.6a	3.8a	3.6	10	12
Winning by getting 4 symbols in a row	3.8a	3.8a	3.6a	3.7a	3.7	11	10
Playing on a machine with 50 lines	2.7a	3.1a	3.0a	3.7b	3.1	11	18
Playing on a machine with 20 lines	3.3a	3.8a	3.5a	3.6a	3.6	12	13
Betting five credits per line or more	2.8a	2.8a	3.1a,b	3.6b	3	12	17
The size of the jackpots or maximum prize on the machines	3.4a	3.7a	3.8a	3.5a	3.6	13	12
Features where you just watch and you don't have to do anything	2.9a	3.5b	3.2a,b	3.4a,b	3.3	14	16
Features with funny characters that make you laugh	2.5a	2.7a	2.8a	3.4b	2.8	14	20
Features that involve you role playing a certain character	2.4a	2.9a,b	3.0b	3.4b,c	2.9	14	21
Playing on a machine with 243 lines	2.2a	2.7a,b	2.7a,b	3.2b	2.7	15	23
Features which give you the feeling of playing a game of skill or can control the game outcome	2.3a	2.5a	2.9b	3.0b	2.7	16	22
Winning by getting 3 symbols in a row	3.2a	3.1a	3.0a	2.9a	3	17	14
Features which play for a short period of time	2.9a	2.7a	2.7a	2.9a	2.8	17	16
There are 4 winning symbols and you miss the fifth	3.0a	2.4b	2.5a,b	2.8a,b	2.6	18	15
Win an amount which is the same as your bet	2.6a	3.1b	2.9a,b	2.8a,b	2.9	18	19
Features where you play another game that looks like another form of gambling	2.4a	2.3a	2.4a	2.8a	2.4	18	21
Betting two credits per line	2.1a	2.8b	2.9b	2.8b	2.7	18	24
Getting a single free spin	2.7a	2.7a	2.5a	2.7a	2.7	19	18
Playing double up games which ask you to pick 1 of 2 cards, so if you win, you double the amount (player to assume it is used)	2.2a,b	1.9a	2.3a,b	2.7b	2.2	19	23
MaxBet button - that is, maximum bet buttons that you can press without having to press the highest credit button	2.0a	1.9a	2.1a	2.7b	2.1	19	25

EGM Characteristic	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers	PGs	NPGs
Doubling up during pokies play (player to assume it is used)	2.2a,b	1.9a	2.4b	2.6b,c	2.3	20	23
Playing double up games which ask you to pick 1 of 4 cards, so you win 4x the amount if you win (player to assume it is used)	2.2a	2.1a	2.3a	2.6a	2.3	20	23
There are 3 winning symbols and you miss the fourth	2.3a	2.0a	2.3a	2.4a	2.2	21	22
Betting one credit only per line	2.6a	2.8a	2.4a	2.2a	2.5	22	19
Win an amount which is 3/4 of your bet	2.0a	2.2a	2.2a	2.2a	2.2	23	25
You see 2 winning symbols and you just missed the third	1.9a,b	1.6a	1.8a,b	2.1b	1.8	24	26
A winning symbol just nudges above or below the pay line, but misses the pay line	2.0a	1.8a	1.7a	2.0a	1.8	25	25
You see symbols which you thought should be winning symbols but they didn't produce a win	1.8a	1.5a	1.7a	1.7a	1.7	26	27
Using the half-gamble button - where you gamble half your winnings	1.7a,b	1.3a	1.9b	1.7a,b	1.7	26	28
The whole pokies screen has a large number of symbols and looks like a win (but it didn't align to the payline so wasn't a win)	1.7a	1.6a	1.6a	1.7a	1.6	26	28
Win an amount which is 1/2 your bet	1.6a	1.7a	1.8a	1.6a	1.7	27	29
Betting one line on a poker machine	1.3a	1.2a	1.3a	1.3a	1.3	28	30
Win an amount which is 1/4 of your bet	1.3a	1.4a	1.3a	1.3a	1.3	28	30
Win nothing at all during a poker machine spin	1.1a	1.1a	1.0a	1.0a	1	29	31

Question: Using a scale where 1=not at all and 5=very exciting, please rate the extent to which the following are exciting (Base: All gamblers)

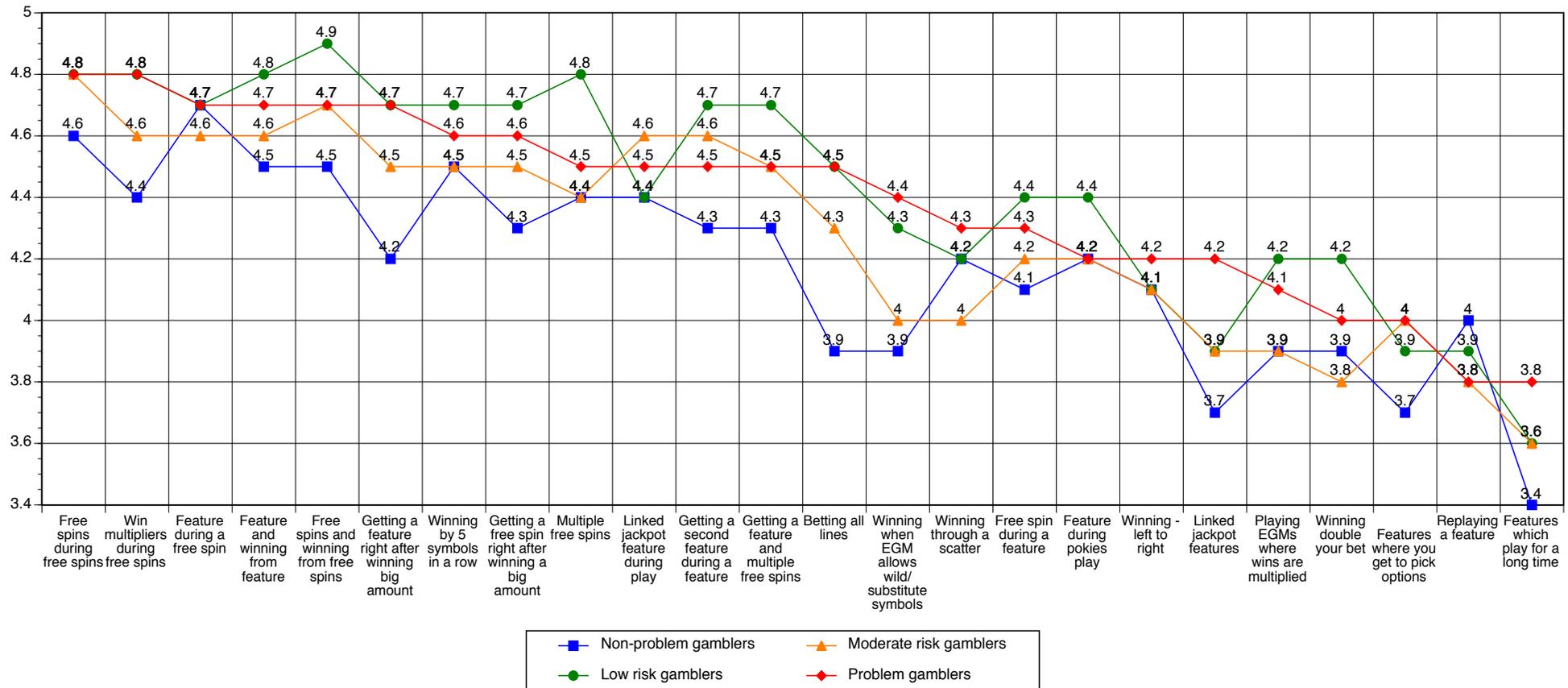


Figure 3. Excitement of various structural characteristics of EGMs – Characteristics receiving the highest overall excitement ratings (1=not at all exciting, 5=very exciting) (Top 24)

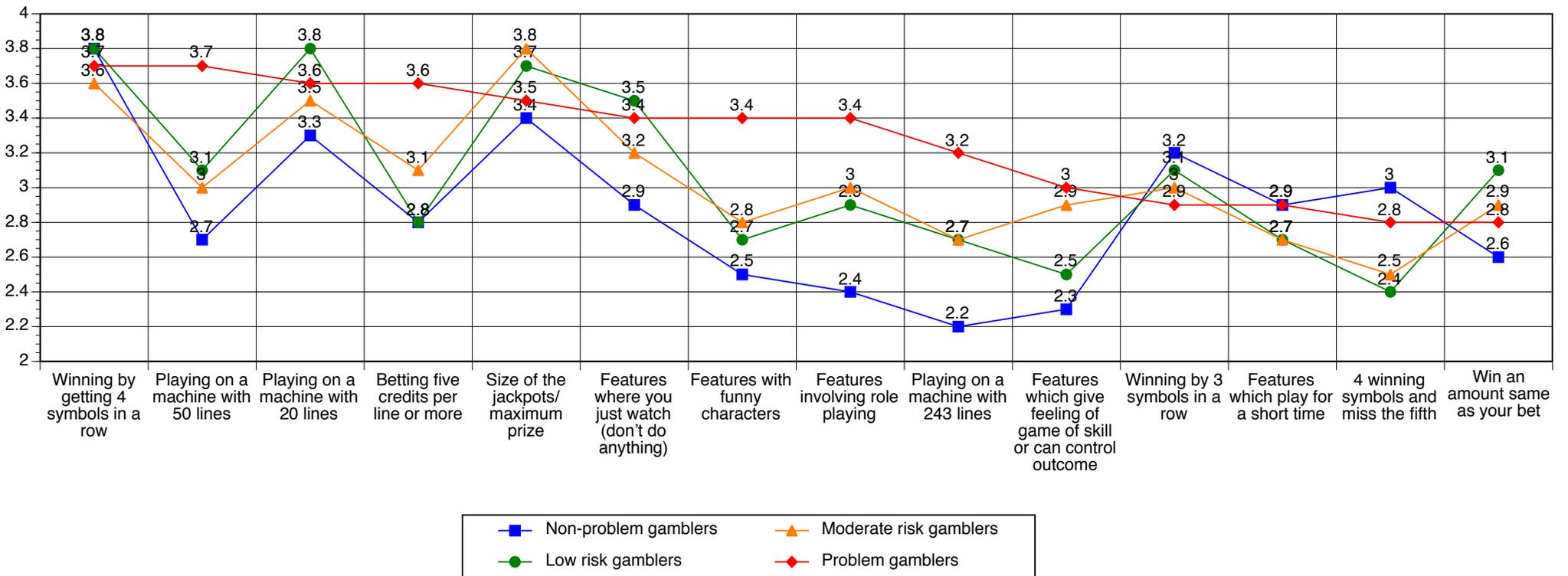


Figure 4. Excitement of various structural characteristics of EGMs (1=not at all exciting, 5=very exciting) - 14 next most exciting EGM structural characteristics

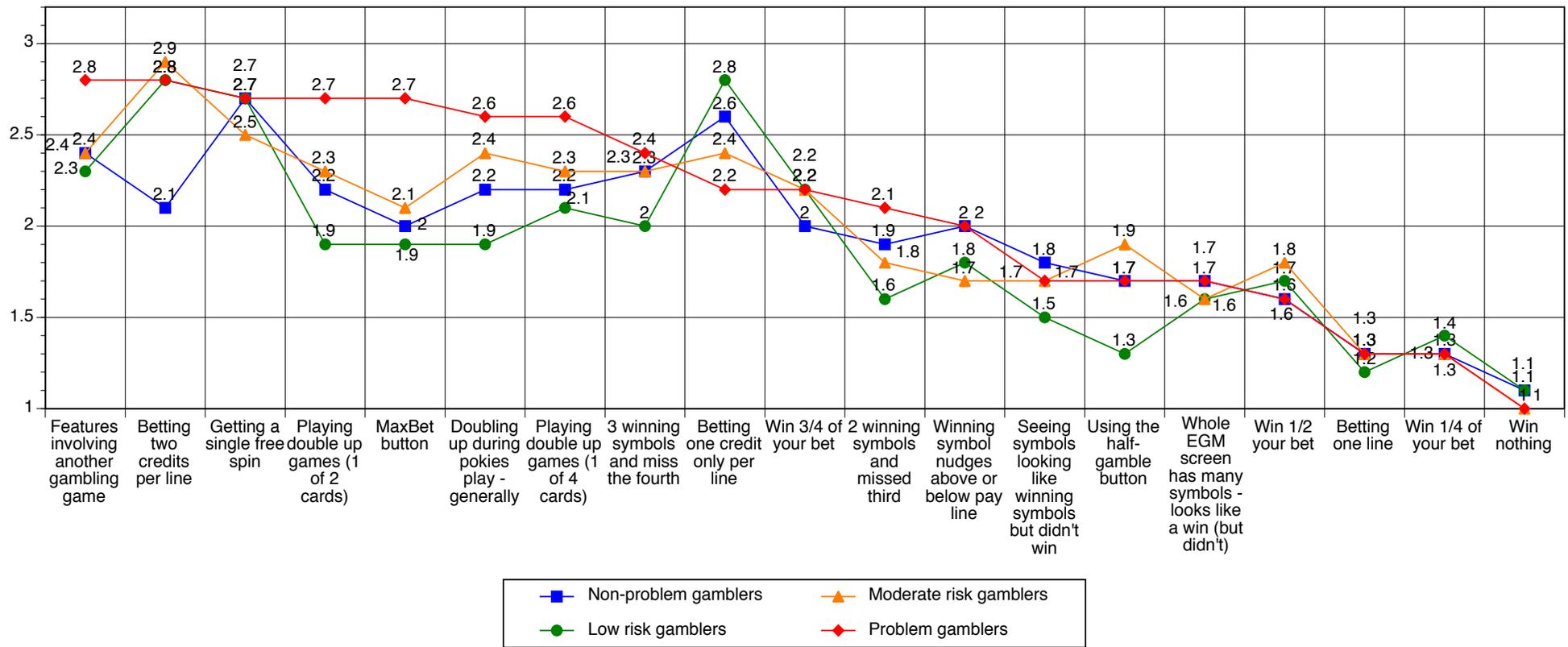


Figure 5. Excitement of various structural characteristics of EGMs (1=not at all exciting, 5=very exciting) - 18 least exciting EGM structural characteristics

Comparison of the frequency of different EGM player cognitions experienced during EGM play

Table 80 summarises gambler's responses to questions about how frequently they think about various EGM events during general play. These are presented for each risk status group and ranked, in descending order, for problem and non-problem gamblers. Measures that recorded a significant difference ($p < .05$) in mean scores for non-problem versus problem gamblers are shaded.

As per the rankings both problem gamblers and non-problem gamblers think most often about the need to play all lines to avoid missing a win, and that a free spin must be coming soon. Despite these thoughts occurring most frequently for all gamblers, there was a significant difference between the mean scores for problem gamblers as compared to non-problem gamblers on each of these measures ($p < .05$). This was the case, however, for all thoughts presented to gamblers in this study except for thoughts about progressive jackpots.

Items closely associated with persistence also ranked more highly on frequency of thought for problem versus non-problem gamblers - E.g., if I sit here a bit longer I will win my money back (PG=4, NPG=10), near misses lead you to continue pokies play as you feel a win must be getting close (PG=3, NPG=6). As each item tends to relate to the likelihood of a win event, sometimes accompanied by a specific action such as increasing bets or playing all lines, it can be said that problem gamblers are more likely to think that a win is near and, as a consequence, engage in more persistent play. This may suggest that cognitions of problem gamblers are one of the most significant factors that contribute to such gamblers experiencing problems with EGMs.

Table 80. Ranked summary of frequency of thought ratings – Results by risk for problem gambling (N=222 - approximate, October 2013 - April 2014) (Refer to individual results for specific N)

Frequency of thoughts during EGM play	Mean (1=not at all, 5=very often)					Rank Order	
	Non-problem gamblers	Low risk gamblers	Moderate risk gamblers	Problem gamblers	All gamblers	PGs	NPGs
I have to play all lines to avoid missing out on wins	3.7a	4.2a,b	3.9a,b	4.3b	4.0	1	1
The free spin must be coming soon	3.3a	3.2a	3.5a	4.1b	3.5	2	2
The feature must be coming soon	3.1a	3.2a	3.4a	4.1b	3.4	2	4
How much does seeing these near misses lead you to continue pokies play as you feel that a win is getting close	2.6a	2.8a,b	3.2b	3.7c	3.1	3	6
I keep seeing all the win symbols coming up, but they are in the wrong location - so a win must be getting close	2.1a	2.6a,b	2.9b	3.7c	2.8	3	9
You nearly won when winning symbols nudge just above or below the payline	3.0a	3.2a,b	3.1a	3.7b	3.2	3	5
If I just sit here a bit longer, I'll win my money back	1.9a	2.3a	2.9b	3.6c	2.7	4	10
Progressive jackpots which you think are close to going off	3.2a	3.3a	3.4a	3.4a	3.3	5	3
A jackpot must be about to go off at any point	2.5a	2.5a	2.9a,b	3.3b	2.8	6	7
I have to bet big to win large amounts when I win	2.2a,b	2.0a	2.5b	3.2c	2.5	7	8
As I'm winning just under my bet, a big win must be getting close	2.2a	2.5a,b	2.7b,c	3.2c	2.6	7	8
I will confuse the machine by betting in different patterns	1.6a	2.2b	2.6c	2.8c	2.3	8	11

Using a scale where 1=not at all and 5=very often, when you are playing pokies, how much do each of the following occupy your mind and thoughts? (Base: All gamblers)

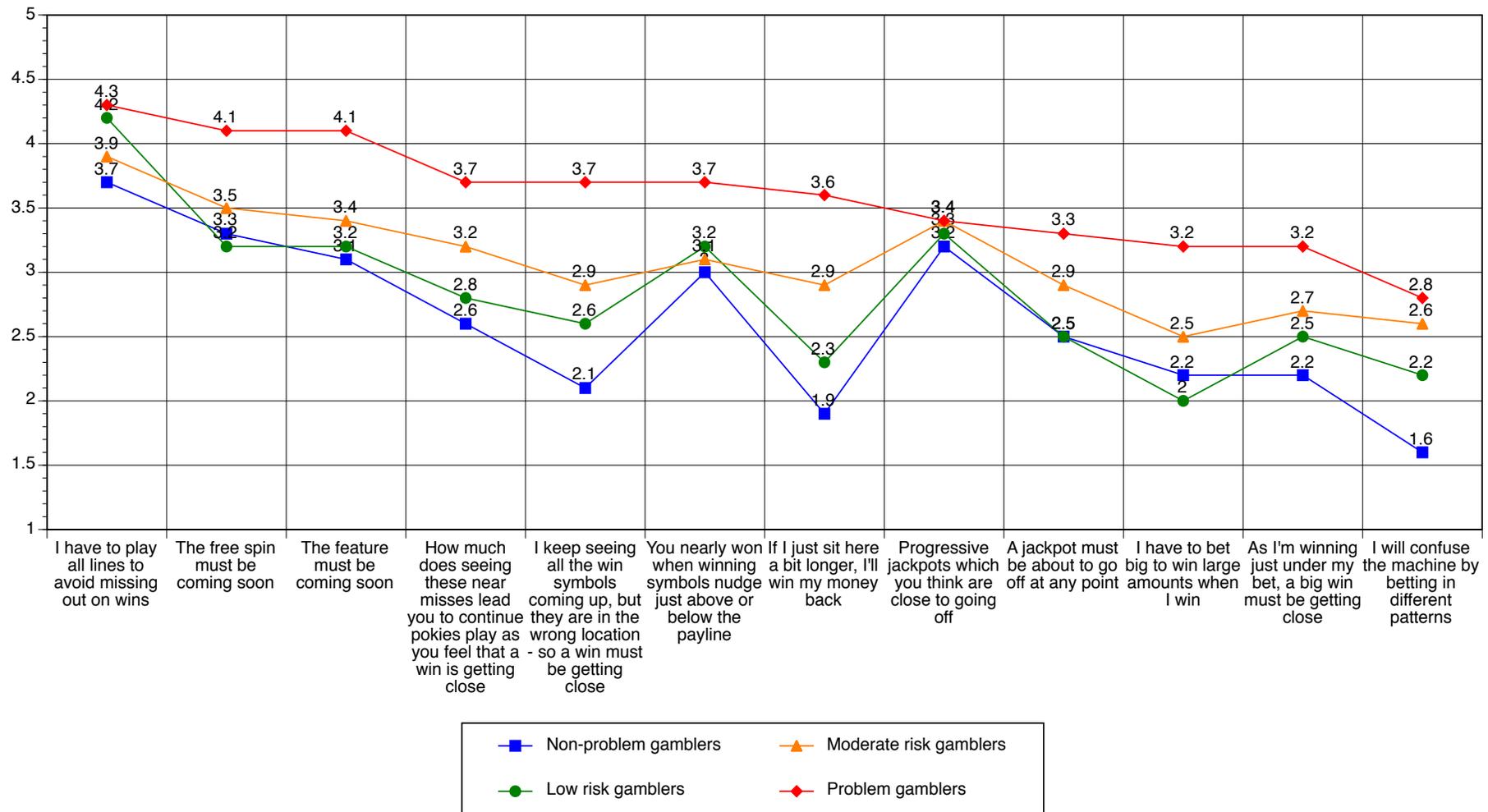


Figure 6. EGM player cognitions – The frequency with which cognitions occur during EGM play (1=not at all often, 5=very often)

Appendices

This appendix contains the following appendices:

- Appendix A – Focus group discussion guide
- Appendix B – Quantitative survey instrument
- Appendix C - References

Appendix A – Focus group discussion guide

The following protocol was developed to guide qualitative research with both pokies players through individual interviews (N=10 each in NSW and QLD) and focus groups (2 each in NSW/QLD). It aims to explore the qualitative effects of EGM characteristics to determine how they may affect play behaviour. A range of stimulus materials showing live EGM play and pictures was also used to stimulate qualitative discussion of EGM characteristics.

Types of EGM characteristics

- What are the different types of poker machine ‘games’ you see in venues?
- What things do you consider in choosing a machine in a venue? Why?
- What characteristics of poker machines most affect the money and time you spend on play? (explore)
- What effects do the following machine characteristics have on the money and time you spend on play? (use stimulus materials to stimulate discussions)

Characteristics of EGMs	Questions	Stimulus materials (Cannot be shown for intellectually property reasons)
Pokies cabinets and screens	<ul style="list-style-type: none"> • How does the design of the poker machine cabinet affect your choice of machine in a venue? • How do you compare playing in a bank of machines versus on a single poker machine? • What is it like to be able to touch a screen as part of poker machine play? 	<ul style="list-style-type: none"> • Slide 1 (shows older and new style and example of machines in a row or bank)
Lighting/colours	<ul style="list-style-type: none"> • How does machine lighting affect your choice of machine? (explore lighting colour and brightness) • How does machine lighting affect the time and money you spend on play? 	<ul style="list-style-type: none"> • N/A
Branding	<ul style="list-style-type: none"> • How does the poker machine game ‘theme’ influence what machine you choose to play? • How does the ‘theme’ affect the money and time you spend on play? • Can you think of any other effects that a machine’s theme may have on you or how you play? 	<ul style="list-style-type: none"> • Slide 2a (shows different brands/themes) • Slide 2b (shows a ‘fancy’ bank)
Prizes	<ul style="list-style-type: none"> • How do prizes influence your choice of machine? (e.g., minor and major prizes, jackpots) • What do you think of machines with different methods of showing prizes? (See Slide 3 for example) • How clear are the prizes on machines? • If a game requires you to use max bets to win a jackpot, how does this influence your betting? 	<ul style="list-style-type: none"> • Slide 3 (shows jackpot presentation methods)
Pokies buttons	<ul style="list-style-type: none"> • How do different button styles affect your play? • What are your preferences for buttons? 	<ul style="list-style-type: none"> • Slide 4 (shows pokies button layout and button examples)
Specific buttons - Line buttons	<ul style="list-style-type: none"> • Lines are usually presented in combinations – e.g. 1 line, 5 lines, 15 lines, 25 lines. Which combination do you prefer and why? • How many lines do you typically play? Why? • How does the number of available lines affect the amount of money and time you spend on play? 	
Credit buttons	<ul style="list-style-type: none"> • What are your preferences for credit buttons? Why? • How does the availability of different credit buttons affect the money and time you spend on play? • How often do you change credits when you play? Why? • Do you ever use max credit buttons? Why? 	
Tracking line and credit bets	<ul style="list-style-type: none"> • How do you work out what you are going to bet when playing pokies? • How easy is it to work out the cost of each spin? 	<ul style="list-style-type: none"> • Slide 5 (shows ‘credit’, ‘bet’, ‘win’ screen)

Characteristics of EGMs	Questions	Stimulus materials (Cannot be shown for intellectually property reasons)
Credits/Bet/Win information	<ul style="list-style-type: none"> Are there any machines where it is easier or harder to track the cost of play per spin? (explore Reel Power machines v regular EGMs) How useful is the information on the poker machine screen to help you keep track of spending? (see slide showing 'credit', 'bet' and 'win') How would you compare machines that show information like this? \$1 = 1000 credits v 10 credits = 1 cent 	
Game information	<ul style="list-style-type: none"> How often do you read game play information? How often do you use the game information button? How clear is the information? How does game play information influence the money and time you spend on pokies play? Can you think of any machines where it is difficult to understand game play? Why? 	<ul style="list-style-type: none"> Slide 6 (how to play information)
Collect (for taking money out)/ Take Win buttons (for taking wins)	<ul style="list-style-type: none"> How do Collect and Take Win buttons work? How often do you use these buttons? How often do you cash out when playing? When do you do this? Why? 	N/A
Reserve machine button	<ul style="list-style-type: none"> How often and when do you reserve machines? Why do you do this instead of cashing out and going back later? How does this affect the time/money you spend playing? Is the length of time (3min) appropriate? Why? 	N/A
Note acceptor	<ul style="list-style-type: none"> How does having a note acceptor affect your play? How would you feel if there were only coin acceptors? How much money do you typically load onto the credit meter before starting play? What denomination notes do you use and why? 	N/A
Gamble or double-up button	<ul style="list-style-type: none"> How does the 'gamble' button work? (double-up button) How often and when do you use double-up? How likely would you use double-up for the following wins? \$5, \$20, \$50, \$150, \$1200 How does your use of double-up differ for a big versus small win? How many times do you like to 'double-up'? Why? When would you double-up more or less frequently? (explore effects of alcohol, being with friends) How do different types of double-up games affect your use of double-up? Should there be restrictions on how many times 'double-up' can be used? Why? How does a tie in double-up affect your play? Who has the edge on double-up – the player or the venue? Why? (Answer – 50-50) (not read out) Have you seen variations of the double-up button – like multiple presses offering a half gamble option? Do you use these buttons? What is the probability of winning when you pick the correct card suit in a double-up game? (Answer – 25%) (not read out) When is prompting a player to see if they want to double-up most acceptable? What effect does being able to 'touch' a card on a screen as part of a double-up game? Have you doubled up on Reel Power machines? How 	<ul style="list-style-type: none"> Slide 7 (shows double-up video)

Characteristics of EGMs	Questions	Stimulus materials (Cannot be shown for intellectually property reasons)
	<p>does this work and how does it affect the time and money you spend on play?</p> <p>(They have a second set of reels with multipliers listed on each reel and lose symbols. You can choose to gamble a win by X2, X3, X5, X10 and X100. Once you pick a multiplier, the reels spin and if the multiplier lands on the centre line you win that multiple)</p> <p>Should all combinations such as X100 be allowed for Reel Power machine double-up game play? Why?</p> <ul style="list-style-type: none"> • How should double-up be designed to ensure that it doesn't mislead or harm players? • Should there be limits on the total times you can double-up? What should be the limit? • Have you ever seen or used an auto-gamble button? What effect does this have on the money and time you spend on play? 	
Music for wins and losses	<ul style="list-style-type: none"> • Can you think of how music or sounds played by a poker machine has influenced you at some point during a game? What happened? • What range of music/sound effects have you noticed? • What effect does the sound of the 'clicks' and 'jackpot' sounds have on your play? 	N/A
Reel power machines	<ul style="list-style-type: none"> • Have you seen machines where you bet on reels instead of lines? (Reel Power machines) • How would you describe the differences in playing these machines versus regular machines? • What thoughts go through your mind when using a Reel Power machine versus a regular machine? • To what degree do you search for Reel Power machines versus other machines? • How does betting on different numbers of reels affect the money and time you spend on play? • How many reels do you usually play? Why? • How do Reel Power machines differ from regular machines in terms of: <ul style="list-style-type: none"> ○ The chance of winning ○ Ease of understand the game play ○ Being able to work out pay lines ○ Other factors (?) • What effect does unlocking a reel have on you as a player? • Are there any aspects of Reel Power machines that you think are harmful to players? 	<ul style="list-style-type: none"> • Slide 8 (showing reel player machines)
Reel effects	<ul style="list-style-type: none"> • What types of reel effects have you seen on poker machines? How do these affect your play? • How do the following types of reel effects influence your play? <ul style="list-style-type: none"> ○ The reel is held and other reels are spun ○ Being able to hold a reel and spin the others • To what degree does this make you feel like you have control over the machine? 	<ul style="list-style-type: none"> • N/A

Characteristics of EGMs	Questions	Stimulus materials (Cannot be shown for intellectually property reasons)
Free spins and features	<ul style="list-style-type: none"> • How does winning free spins and features affect the time and money you spend on pokies? • What has the largest effect on your play? (Free spins v features) • Which encourages you to play further – a large number of free spins or a smaller number with a feature? • How do mechanical v electronic features affect play? • How would this 'alarm' sound make you feel if you heard it during play? (play audio/video) • Which has the most effect on the time and money you spend on pokies – short features or long features? • How do the following influence your play? <ul style="list-style-type: none"> ○ Bonus multipliers during a regular win ○ Bonus multipliers won during a free spin ○ Being able to re-trigger a free spin bonus feature ○ Different play symbols triggering a free spin ○ Free spins where all lines become 'pay lines' (rather than just a limited set) ○ Mirror reels during free spins ○ Being able to choose different free game and win scenarios (e.g., choice between 15 free spins and a diamond multiplies the win x2 or 5 free spins and a red ruby multiplies the win x 10) • How does getting a free spin near a large win versus a small win make you feel? • What types of features lead you to feel satisfied or dissatisfied with your gaming? • Are there any types of features which may be harmful for players? Why? • Have a look at these different features. How would these affect your play? (show slide examples) • What do you understand as a progressive feature? How do you feel when you get one? 	<ul style="list-style-type: none"> • Slide 9 (show features/free spins)
Motivational words on wins	<ul style="list-style-type: none"> • How do words like 'Fantastic' popping up when you win affect your play? (other examples - good luck, well done) • What other motivational words have you seen and how do they affect play? • Are any motivational words not appropriate? Why? 	<ul style="list-style-type: none"> • N/A
Metamorphic games	<ul style="list-style-type: none"> • (NSW) Have you played games where you collect tokens for a special win? How does this affect your thoughts and actions while playing? • How do the following affect your play? <ul style="list-style-type: none"> - Games which involve collecting tokens - Games where you have to bet a certain amount to unlock special features - Games unlocking after reaching a certain expenditure • How easy is it to understand the rules of these games? 	<ul style="list-style-type: none"> • N/A
Pay lines	<ul style="list-style-type: none"> • How do machines with different pay lines affect your play? Why? • Which is best – a machine with greater or fewer pay lines? Why? • How would you compare a machine that offers 243 ways to win versus 20? • How easy is it to see or identify a pay line win? How do you know how to identify the pay line (e.g., lights) 	<ul style="list-style-type: none"> • Slide 10 (shows pay line video)

Characteristics of EGMs	Questions	Stimulus materials (Cannot be shown for intellectually property reasons)
	<ul style="list-style-type: none"> • Do any wins ever appear as losses? What happens and how does this affect your play? • Are you aware of any machines where it is difficult to understand pay lines? 	
Scatter wins	<ul style="list-style-type: none"> • What do you think of scattered wins? Why? • What effect do they have on your play? • What effect do the following have on your play? <ul style="list-style-type: none"> ○ Scatters triggering different numbers of free games ○ Scatters across all reels triggering free games 	<ul style="list-style-type: none"> • N/A
Nudge features	<ul style="list-style-type: none"> • Have you see nudge features on machines? • What effect do they have on play? Why? 	<ul style="list-style-type: none"> • N/A
Return to player	<ul style="list-style-type: none"> • Gaming machines each have a certain 'return to player' – Describe what this means and how it works? • If you have a machine with 88% RTP, what results will you get if you play 100 games and spend \$1,000? (assess misunderstanding of theoretical and actual RTP) • How do you know what the RTP of a machine is? • How does RTP influence your choice of games and how much time/money you spend? • Do you ever keep RTP information in your head while playing? (like do you catch yourself thinking things such as, I need to spend \$100 to get \$13 back) 	<ul style="list-style-type: none"> • N/A
Max bet buttons	<ul style="list-style-type: none"> • How does the availability of Max Bet buttons influence your pokes play? Why? • How do you compare the level of thinking you put into your bets when using a Max Bet button versus regular credit buttons? • What possible harms could occur from the availability of max bet buttons? • Does using max bet buttons increase your chance of winning? 	<ul style="list-style-type: none"> • N/A

Near miss events

- How often do you experience a 'near miss' when playing pokies? (i.e., that you almost win)
- What happens when you get a 'near miss'?
- Have you seen a 'near miss' where symbols align on a pay line but they are not-winning symbols – What effect does this have on your play?
- How often do these occur and on what machines do they occur most often?
- How common are near misses on Reel Power machines versus other machine types?
- Also refer this for near miss example – Slide 11 - <http://www.youtube.com/watch?v=6GXtbglcbzM>
Why was this a near miss?

Losses Disguised as Wins

- How often do you see losses that look like wins at the first glance?
- What happens – can you provide some examples?
- What effect if anything does this have on your play?

Frequency of wins

- How does the frequency of wins affect your play?
- Which would you prefer – small wins more frequently or infrequent but larger wins?
- How should wins be structured to prevent people spending too much on gambling?

Characteristics that may influence problem gambling

- What poker machine characteristics (including game play features) have potential to lead people to spend more money than they can afford on gambling?
- Could any characteristics cause problem gambling or appeal more to problem gamblers? (explore)

Why top Australia poker machines are attractive?

- Why are the following pokies popular? How does each type influence the time/money spent on play?
 - Queen of the Nile
 - Indian Dreaming
 - (IDENTIFY TOP EGMS FROM REGULATORS)
- Are there any features of these popular machines which may lead players to spend more money or time than they wanted to? (explore)
- How could the features of gaming machines be improved to ensure that they aren't harmful?

Server based gaming

- Server based gaming is used in some jurisdictions across the world. This is where a poker machine cabinet runs different games on the same machine.

How would these features of served-based machines affect the money and time you spend on pokies play?

- Once a day at 5pm, a one-cent machine turns into a two-cent machine
 - Different games are presented on a machine on different days of the week
 - Being able to choose a game you want to play from several games?
 - Player preferences can be tracked (and like Amazon.com or other web sites, your preferences can be remembered and other games you may like can be prompted)
 - Loyalty based bonuses can be given to players under server based loyalty schemes
- What are the potential risks of server based gaming?
 - What protections should be in place for players using such machines? Why?

Player warnings

- When is it appropriate to add warnings to gaming machines to protect players? (Before or after what types of game play events and why?)
- How do we avoid players seeing 'near misses'? (What characteristics of game play shouldn't be allowed)
- What types of messages would be most effective and why?
 - Messages about play events (e.g., features, free spins etc.)
 - Messages about the player's behaviour (e.g., you've doubled-up 3x – be careful)
 - Messages about loss chasing
 - Messages about the house edge and the difference between theoretical and actual RTP
 - Messages about gambling impacts
 - Messages about total money lost and time spent (explore each individually)

Pre-commitment

- Voluntary pre-commitment for poker machines is being introduced across a number of jurisdictions. Would you try and use pre-commitment? Why or why not?
- What effect would using pre-commitment have on the time and money you spend on play?

Summary

- What are the characteristics of gaming machines with most potential harm to players?
- What characteristics could be improved to make sure players understand how games work, the costs of play and the chances of winning?

Conclude focus group/interview, thank participants and administer incentive.

Appendix B – Quantitative survey instrument

Following is the survey instrument used for the observational and attitudinal research with EGM players.

EGM CHARACTERISTICS STUDY **OBSERVATIONAL/SURVEY TOOL**

PART A: DEMOGRAPHICS & CONSENT

Player's first name:

Player's mobile/phone number:

**Player has consented to contact
on the number above:**

Yes / No

Player's address:
(to send Coles-Myer voucher)

Player's gender:

Male / Female

Player's age:

1. 18-24yrs
2. 25-34yrs
3. 35-49yrs
4. 50-64yrs
5. 65yrs+

Frequency of pokies play per week: _____ **times per week**

Can you recommend any other regular players for this survey?

Interviewer's name:

Venue:

Player consent sheet for the observational study

I understand that I will be observed as part of a study in the field of responsible gambling and will be asked survey style questions about my gambling as part of the survey interview. I agree to answer all questions honestly and in a way which represents my actual feelings.

I understand that my participation is completely voluntary and I have agreed to be observed as part of my regular playing pokies session. I am already a current pokies player and have given the interviewer an honest assessment of the frequency I play pokies generally.

I understand that I am under no obligation to play and will be offered a \$70 Coles Myer voucher for participating in all parts of this research study.

I have considered the possible impacts of me playing pokies as part of the study and I believe that there are no potential or actual harms to me or my family by me participating in this research study.

I understand that all findings are strictly confidential, will not identify myself and will be used as part of a general research study on how to make poker machines safer as undertaken by Schottler Consulting Pty Ltd for Gambling Research Australia.

Note - If interested, please ask the interviewer for contact details for further enquiries about the study.

Please also be aware that free confidential counselling 24/7 is available through Gambling Help/Gambler's Help is available on 1800 858 858 or via internet chat on the web site: gamblinghelponline.org.au

Signed _____ Date _____

Great let's start!

Interviewer - now complete Part B: Observations Sheet for each EGM played during session

PART B: OBSERVATION SHEET

Machine Characteristics – per machine played (Interviewer to complete – do not ask player)

Player/Venue _____

Machine (circle) 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th

EGM number (at venue) _____

EGM name (exact) _____

Linked J/pot (Y/N, name) _____ If **YES** At time of play – Progressive J/pot value \$ _____

Jackpot prizes on EGM Top prize/jackpot: _____ Second prize/jackpot: _____ Third prize/jackpot: _____

EXAMINE BUTTONS – Is this a reel based machine (e.g., See buttons and look for wording such as reels 1-2, reels 1-3 etc.)?

Yes/No

EXAMINE SCREEN – Does the machine have the wording ReelPower **OR** x 3 **OR** 'multiway' on it to suggest its reel-based machine (rather than lines)?

Yes/No

INTERVIEWER TO COMPLETE

- How many lines are available on this machine in total _____ lines (Refer maximum line button)
- Write the numbers for each credit button on this machine? (e.g, 1, 2, 5, 10, 20) _____
- Denomination of EGM (e.g., 1c, 20c, \$1) _____

Post-Observation Questions – AFTER each EGM played

Machine (circle) 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th

How exciting was play overall on this machine? _____
(1=not at all, 5=very exciting)

How exciting were the following during play on this machine? (1=not at all, 5=very exciting)

(i) Free spins _____

(ii) Features _____

How would you rate your overall urge to continue while playing this machine?
(1=very low, 5=very high) _____

If at all, how often during play did you see symbol combinations on the machine which gave you the impression you were nearly winning? (1=Not at all, 5=Very often) _____

Do you know the combinations of symbols required on this machine for the top 3 prizes?

1. Yes – Know exactly the winning combinations
2. No – I just let the machine work it out the winning combinations

Using a scale where 1=not at all and 5=very often, when you are playing pokies on this machine today, how much did each of the following occupy your mind and thoughts?

EGM thoughts	Not at all	A little	Some what	Quite a bit	Very often
<i>Ask all players</i>					
I will bet high to ensure that when I do win I win lots of money	1	2	3	4	5
I've got a better overall chance of winning on this machine	1	2	3	4	5
I must buy all the paylines on this machine to avoid missing a win	1	2	3	4	5

When playing on this machine, how many reels/lines on average did you play PER SPIN? _____

When playing on this machine, how many credits on average did you bet PER SPIN? _____ credit

Note to interviewer: Use additional Part B for each EGM game played

PART C: AFTER OBSERVATIONS COMPLETE

Randomly select one of the EGMs played

Machine (circle) 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th

Name of machine _____

PRESS GAME INFORMATION BUTTON

Do you have to put money into the machine to see the information or menu content?

Yes / No

Have you ever read this information prior to today? Y/N

What would typically prompt you to read the game information button?

Now please read the information (give player a minute to read)

How easy is it to understand your overall chance of winning from reading this information?

_____ (1=not at all, 5=very easy)

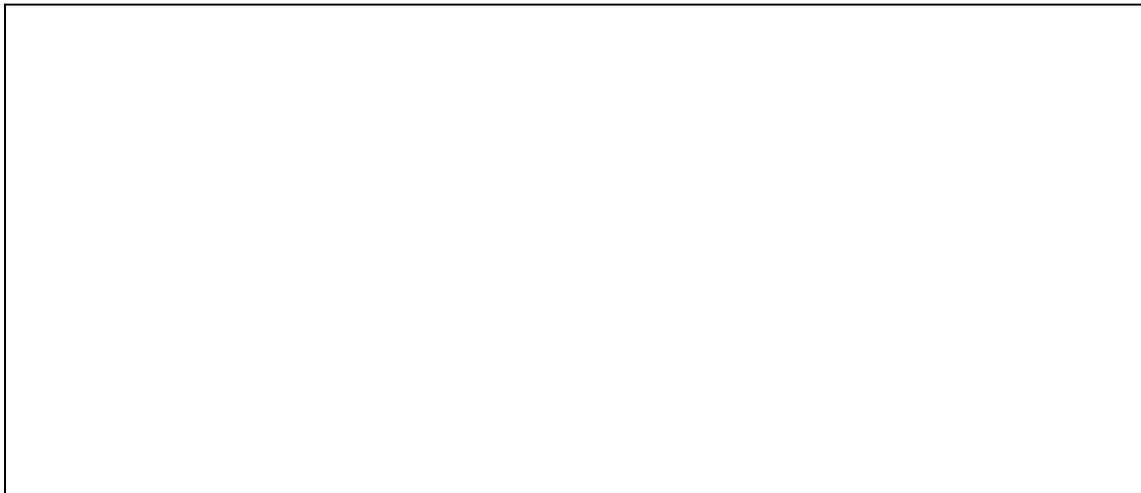
Is there any information on this screen which you believe is not clear or may mislead or confuse players? (itemize)

What is unclear or may mislead/confuse players (write verbatim where relevant)	Why? (Reason)

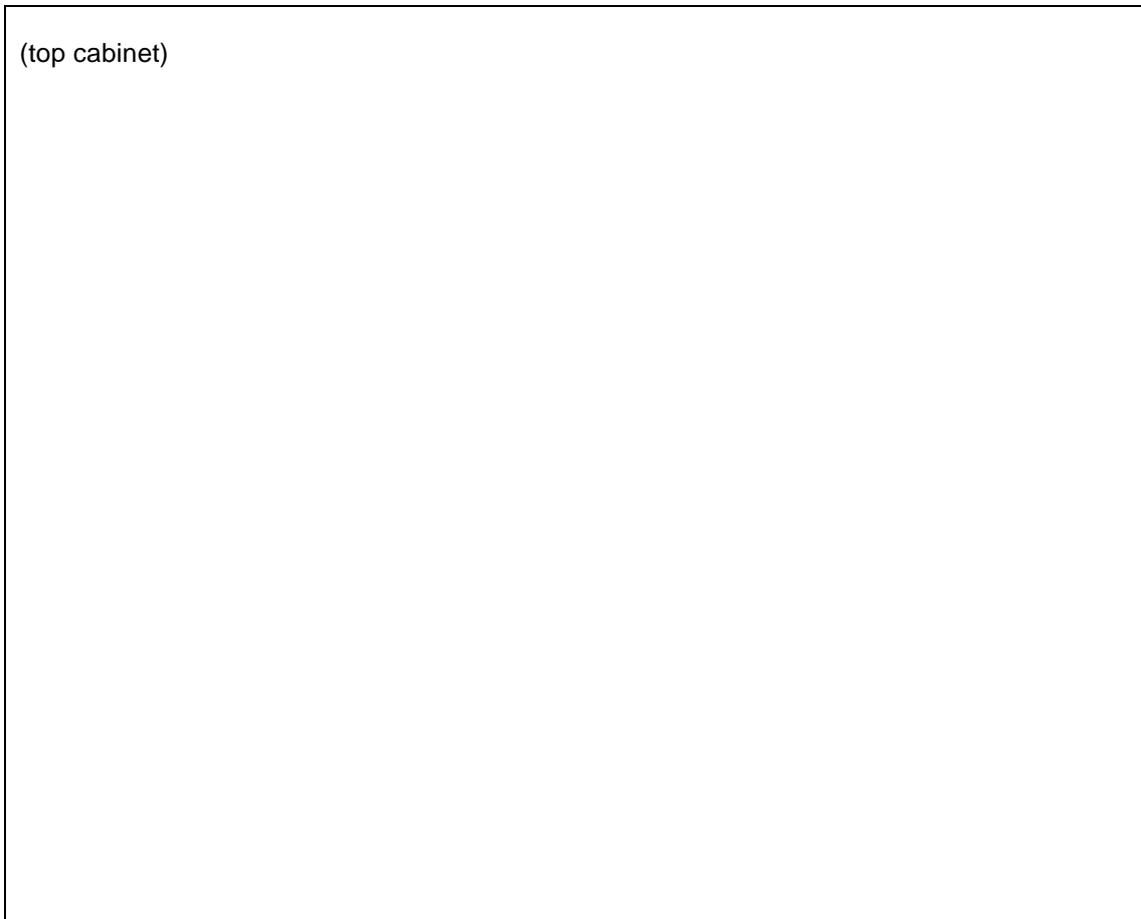
Did any information on the 'info' menu communicate the need to bet larger amounts to win or have similar wording which could be harmful to players?

Yes / No

Button panel layout and words on buttons (draw – include all buttons/words)



(top cabinet)



(bottom cabinet)

PART D: GENERAL POST-PLAY QUESTIONS – PLAY BEHAVIOUR (ALL PLAYERS)

People often get excited by different play events while playing pokies. Using a scale where 1=not at all and 5=very exciting, please rate the extent to which the following are exciting.

Aspects of play	How exciting (1=not at all, 5=very exciting)	
Jackpots		
1. The size of the jackpots or maximum prize on the machines		
2. Progressive jackpots which you think are close to going off		
Lines/credits		
1. Betting one line on a poker machine		
2. Betting all lines on a poker machine		
3. Betting one credit only per line		
4. Betting 2 credits per line		
5. Betting 5 credits per line or more		
Paylines		
1. Playing on a machine with 20 lines		
2. Playing on a machine with 50 lines		
3. Playing on a machine with 243 lines		
Free spins		
1. Getting a single free spin		
2. Getting multiple free spins – that is many free spins at once (like 10 free spins)		
3. Getting win multipliers during free spins – so that any amount you win during a spin is multiplied by that amount (like 2x, 10x or 15x)		
4. Getting free spins during free spins		
5. Getting a feature during a free spin		
Features		
1. Getting a feature during pokies play		
2. Getting a linked jackpot feature during play		
3. Getting a free spin during a feature		
4. Getting an opportunity to replay a feature		
5. Getting a feature and multiple free spins (like 10x at once)		

Aspects of play	How exciting (1=not at all, 5=very exciting)	
6. Getting a second feature during a feature		
Methods of winning		
1. Winning by getting 3 symbols in a row		
2. Winning by getting 4 symbols in a row		
3. Winning by getting 5 symbols in a row		
4. Winning when the machine allows you to use a wild or substitute symbol as part of the win (which can represent other symbols)		
5. Winning through a scatter – that is, when the symbols don't need to line up from left to right and they can be anywhere on screen		
6. Winning after the symbols lined up from left to right in the right order they need to be		
7. Getting a feature and also winning from the feature		
8. Getting free spins and also winning from free spins		
<p>9. If at all, how often during pokies play do you see symbols that are winning symbols on one type of poker machine, but are not winning symbols on another type of machine? (e.g., 3 kings wins on one machine type, yet they are not winning symbols on another in the same combination) (1=not at all, 5=very often)_____</p> <p>10. To what extent does this encourage you to continue to play on, as it feels like you are winning?</p> <ol style="list-style-type: none"> 1. Not at all 2. Somewhat 3. Quite a lot 4. Significantly 		
Now I'd like you to think about features in detail, how exciting are...		
1. Features which allow you to pick different options like: 10 free spins and win 5x your bet versus 15 free spins and win 3x your bet and you choose		
2. Features that involve you role playing a certain character		
3. Features with funny characters that make you laugh		
4. Features which give you the feeling that you are playing a game of skill or can control the game outcome – e.g. a clown mouth funneling balls into a winning slot		
5. Features that give you the chance to win a linked jackpot		
6. Features where you just watch and you don't do anything		
7. Features which play for a long period of time		
8. Features which play for a short period of time		
9. Features where you play another game that looks like another form of gambling (e.g. picking a card or playing		

Aspects of play	How exciting (1=not at all, 5=very exciting)	
reels on another poker machine)		
Now how exciting is...		
1. Getting a feature right after you have just won a big amount		
2. Getting a free spin right after you have just won a big amount		
<p>3. How much money should the average player have to spend to get at least one free spin? \$_____</p> <p>4. How much money should the average player have to spend to get at least one feature? \$_____</p>		
<p>5. If you are presented with different win options to choose during a feature, how often do you choose the option which offers the largest number of free spins? (1=not at all, 5=very often) _____</p> <p>6. If you are presented with different win multipliers to choose during a feature, how often do you choose the option which offers the highest multiplier if you win from free spins (like x15)? (1=not at all, 5=very often) _____</p> <p>7. How often do you increase your betting when you get a feature near a large win? (1=not at all, 5=very often) _____</p> <p>8. How often do you increase your betting when you get a free spin near a large win (1=not at all, 5=very often) _____</p>		
Now how exciting is...		
1. Playing a pokies game where wins are multiplied – like 2x, 4x or 10x etc.		
2. Doubling up during pokies play (player to assume it is used)		
<p>3. If you had to double up, are you more likely to double up when there are:</p> <p>1. Double up games where you pick 1 of 2 cards</p> <p>2. Double up games where you pick 1 of 4 cards</p>		
4. Playing double up games which ask you to pick 1 of 2 cards, so if you win, you double the amount (player to assume it is used)		
5. Playing double up games which ask you to pick 1 of 4 cards, so you win 4x the amount if you win (player to assume it is used)		
6. Using the half gamble button – where you gamble half your winnings		
<p>7. How often do you use double-up during pokies play generally? (1=not at all, 5=very often) _____</p> <p>8. What is the maximum win amount you would consider doubling-up during a pokies game? \$_____</p>		

Aspects of play	How exciting (1=not at all, 5=very exciting)	
9. How often have you hit double-up by accident when it has been part of another button? (1=not at all, 5=very often) _____ 666. Never experienced		
Now how exciting is...		
1. MaxBet button – that is, maximum bet buttons that you can press without having to press the highest credit button		
2. If available, how often during pokies play do you use the Max Bet button instead of the maximum credit amount button? (1=not at all, 5=very often) _____ 666. Never seen a Max Bet button		
3. If 1=not at all and 5=very likely, how likely do you believe you are to win on a poker machine where: (i) Wins must be left to right on the first few reels _____ (ii) Wins can be through scatter patterns (anywhere on the machine) _____		
Losses Disguised as Wins		
When you play pokies, sometimes you may win an amount that is bigger than what you bet and other times you win an amount that is smaller than what you bet. At other times, you win nothing at all. So how exciting is it to:		
1. Win nothing at all during a poker machine spin		
2. Win an amount which is ¼ of your bet		
3. Win an amount which is ½ of your bet		
4. Win an amount which is ¾ of your bet		
5. Win an amount which is the same as your bet		
6. Win an amount which is double your bet		
Near misses – How exciting is it when...		
1. A winning symbol just nudges above or below the pay line, but misses the pay line		
2. You see symbols which you thought should be winning symbols but they didn't produce a win		
3. The whole pokies screen has a large number of symbols and looks like a win (but it didn't align to the payline so wasn't a win)		
4. You see 2 winning symbols and you just missed the third		
5. There are 3 winning symbols and you miss the fourth		
6. There are 4 winning symbols and you miss the fifth		
7. Now let's call these 'near misses' – like where winning symbols are just above or below the payline as an example – How often during pokies play do you catch yourself thinking these are 'near misses' where you nearly won? (1=not at all, 5=very often) _____		
8. How much does seeing these near misses lead you to continue pokies play as you feel that a win is getting close? (1=not at all, 5=very often) _____		

Denominations of EGMs

1. How often over the past 12mths have you accidentally started to use a poker machine which you thought was a different denomination than it actually was – like using a \$1 machine instead of a 1c machine? (1=not at all, 5=very often) _____

Reserve button

1. How many times do you use the reserve button during an average poker machine session?

2. To what extent do the breaks you have when you use the reserve button help you to regain control of your poker machine play (help you feel in control so that you don't spend beyond your limits)?
 1. Not at all
 2. They help a little
 3. They help a moderate amount
 4. They help significantly

Lines

1. When playing pokies generally, how many lines on average do you play?
 1. All lines (100%)
 2. 75-99% lines
 3. 50-74% lines
 4. 25-49% lines
 5. 24% or less lines
2. If (1 above) - Why do you play all lines?
 1. You don't want to miss out on winning/better chance of winning
 2. Other _____

THOUGHTS. Using a scale where 1=not at all and 5=very often, when you are playing pokies, how much do each of the following occupy your mind and thoughts?

EGM thoughts	Not at all	A little	Some what	Quite a bit	Very often
1. A jackpot must be about to go off at any point	1	2	3	4	5
2. I will confuse the machine by betting in different patterns	1	2	3	4	5
3. I have to play all lines to avoid missing out on wins	1	2	3	4	5
4. I have to bet big to win large amounts when I win	1	2	3	4	5
5. The free spin must be coming soon	1	2	3	4	5
6. The feature must be coming soon	1	2	3	4	5
7. If I just sit here a bit longer, I'll win my money back	1	2	3	4	5
8. I keep seeing all the win symbols coming up, but they are in the wrong location – so a win must be getting close	1	2	3	4	5
9. As I'm winning just under my bet, a big win must be getting close	1	2	3	4	5

Reel Based or Multiway Machine Questions – ALL PLAYERS

Have you heard of the name REEL POWER/Multiway or seen 'x3' or '243 ways' in relation to certain gaming machines?

1. Yes – definitively
2. Yes – vague recognition
3. Not at all

Have you ever seen any of these symbols on a gaming machine screen? (circle)

1. Yes
2. No

> THREE PICTURES OF REEL POWER IMAGES DISPLAYED

Reel Power machine examples include:

Choy Sun Doa, Indian Dreaming, Five Dragons, White Wizard etc.

Have you played a REEL POWER or multiway gaming machine in the past 12mths?

1. Yes – definitively
2. Yes – maybe
3. No

(if played in past 12mths) How many times have you played a REEL POWER or other multiway machine in the past 12mths? _____ sessions of play

(if heard of Reel Power/multiway – definitely or vaguely)

To the best of your knowledge, how do REEL based or multiway machines differ from regular gaming machines **generally**? UNPROMPTED

(if heard of Reel based pokies or multiway machines – definitely or vaguely)

Were you aware of the following with regards to Reel Power or multiway machines?

- | | |
|---|-------------------|
| 1. You purchase Reels instead of lines as part of play | Aware / Not aware |
| 2. You can win through scatters on such machines | Aware / Not aware |
| 3. You have many ways to win like 243 or more | Aware / Not aware |
| 4. You can get win multipliers on such machines
<i>(like if you win, your win gets multiplied by 10)</i> | Aware / Not aware |

(if heard of Reel Power or multiway machines – definitely or vaguely)

If you were comparing a REEL POWER or multiway machine to a regular poker machine, which type of machine do you think:

- | | |
|--|---|
| Offers a better chance of winning | Reel Power or multiway / Regular machine / All same |
| Offers larger wins | Reel Power or multiway / Regular machine / All same |
| Are more exciting to play | Reel Power or multiway / Regular machine / All same |
| Leads you to spend more money than you had planned | Reel Power or multiway / Regular machine / All same |
| Have pay lines which are easy to understand | Reel Power or multiway / Regular machine / All same |
| The cost per spin is easy to understand | Reel Power or multiway / Regular machine / All same |
| On which do you tend to place higher bets | Reel Power or multiway / Regular machine / All same |
| Which offers better win multipliers | Reel Power or multiway / Regular machine / All same |

Which offers better features

Reel Power or multiway / Regular machine / All same

Which offers **more** free spins

Reel Power or multiway / Regular machine / All same

On which do you get more 'near misses'

(like where you get 2 out of 3, or 3 out of 4 correct symbols, but miss out on one)

Reel Power or multiway / Regular machine / All same

(if heard of Reel or multiway based pokies – definitely or vaguely)

Which type of REEL based or multiway machines do you believe offer the best chance of winning?

1. Reel Power or multiway machines which pay wins which must be left to right
2. Reel Power or multiway machines which pay on scatter wins (wins in any position)
3. Both the same

(If player has played a Reel Power/multiway machine today during the observation)

Were you aware that the machine/s you played was/were a REEL POWER or multiway machine?

1. Aware
2. Not aware
99. Not applicable

(If played in the past 12mths)

How many REELS do you typically bet on when playing a REEL POWER or multiway machine?

**Circle 99 – Player didn't seem to understand/don't know*

How many CREDITS do you typically bet when playing a REEL POWER or multiway machine?

**Circle 99 – Player didn't seem to understand/don't know*

(If played in the past 12mths)

Have you ever unlocked an additional reel on REEL based or multiway machine?

1. Yes
2. No

(If yes)

If 1=not at all exciting, 5=very exciting – How exciting was this? _____

PGSI (ALL PLAYERS)

CPGI_1_13

Thinking about the past 12 months, how often have you bet more than you could really afford to lose? (PROMPT): WOULD YOU SAY

- 0. Never
- 1. Rarely
- 1. Sometimes
- 2. Often
- 3. Always

CPGI_2_13

Thinking about the past 12 months, how often have you needed to gamble with larger amounts of money to get the same feeling of excitement? (PROMPT): WOULD YOU SAY

- 0. Never
- 1. Rarely
- 1. Sometimes
- 2. Often
- 3. Always

CPGI_3_13

Thinking about the past 12 months, WHEN YOU GAMBLED, how often have you gone back another day to try to win back the money you lost? (PROMPT): WOULD YOU SAY

- 0. Never
- 1. Rarely
- 1. Sometimes
- 2. Often
- 3. Always

CPGI_4_13

Thinking about the past 12 months, how often have you borrowed money or sold anything to get money to gamble? (PROMPT): WOULD YOU SAY

- 0. Never
- 1. Rarely
- 1. Sometimes
- 2. Often
- 3. Always

CPGI_5_13

Thinking about the past 12 months, how often have you felt that you might have a problem with gambling? (PROMPT) WOULD YOU SAY

- 0. Never
- 1. Rarely
- 1. Sometimes
- 2. Often
- 3. Always

CPGI_6_13

Thinking about the past 12 months, how often have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true? (PROMPT) WOULD YOU SAY

- 0. Never
- 1. Rarely
- 1. Sometimes
- 2. Often
- 3. Always

CPGI_7_13

Thinking about the past 12 months, how often have you felt guilty about the way you gamble, or what happens when you gamble? (PROMPT) WOULD YOU SAY

- 0. Never
- 1. Rarely
- 1. Sometimes
- 2. Often
- 3. Always

CPGI_8_13

Thinking about the past 12 months, how often has your gambling caused you any health problems, including stress or anxiety? (PROMPT) WOULD YOU SAY

- 0. Never
- 1. Rarely
- 1. Sometimes
- 2. Often
- 3. Always

CPGI_9_13

Thinking about the past 12 months, how often has your gambling caused any financial problems for you or your household? (PROMPT) WOULD YOU SAY

- 0. Never
- 1. Rarely
- 1. Sometimes
- 2. Often
- 3. Always

Thank you for that.

Appendix C - References

- AIPC (Australian Institute for Primary Care) (2006). The Changing EGM Industry and Technology. Department of Justice, Melbourne. Available at Libraries Aust ID 42332066
- Billieux, J., Chanal, J., Khazaal, Y., Rochat, L., Gay, P., Zullino, D. & Van der Linden, M. (2011). Psychological predictors of problematic involvement in massively multiplayer online role-playing games: illustration in a sample of male cybercafé players. *Psychopathology*, 44 (3), 165-171.
- Blaszczynski, A., Sharpe, L., & Walker, M. (2001). The assessment of the impact of the reconfiguration on electronic gaming machines as harm minimisation strategies for problem gambling. Sydney: University of Sydney Gambling Research Unit. Available at http://www.psych.usyd.edu.au/gambling/GIO_report.pdf
- Blaszczynski, A., Sharpe, L., Walker, M., Shannon, K. & Coughlan, M. J. (2005). Structural Characteristics of Electronic Gaming Machines and Satisfaction of Play Among Recreational and Problem Gamblers. *International Gambling Studies*, 5 (2), 187-198.
- Bramley, S., (2012). The influence of music on gambling: The role of arousal. *Academia.edu* Available at http://www.academia.edu/2046329/The_influence_of_music_on_gambling_The_role_of_arousal
- Brockner, J. & Rubin, J. Z. (1985). *Entrapment in escalating conflicts*. New York: Springer-Verlag.
- Brodie, M., Honeyfield, N., & Whitehead, G. (2003). Change in bank note acceptors on electronic gaming machines in Queensland: Outcome evaluation. Conducted by Research and Community Engagement Division Queensland Office of Gaming Regulation, in conjunction with The Office of Economic and Statistical Research. Available at <http://www.olgr.qld.gov.au/resources/responsibleGamblingDocuments/changeInBankNoteAcceptorsOnElectronicGamingMachinesInQld.pdf>
- Carr-Gregg, J. (2013). Ticket-in Ticket-out and Problem Gambling. In: Coman, Greg (Ed.). *Proceedings of the 15th National Association for Gambling Studies Conference*. Alice Springs, N.T. National Association for Gambling Studies, 2005: pp 62-70. Available at <http://search.informit.com.au/documentSummary;dn=393156675162040;res=IELHSS>
- Central Queensland University (2013). *The Impact of Electronic Gambling Machine Jackpots on Gambling Behaviour*. Melbourne: Department of Justice.
- Chase, H. W. & Clark, L. (2010). Gambling Severity Predicts Midbrain Response to Near-Miss Outcomes. *The Journal of Neuroscience*, 30 (18), 6180 – 6187.
- Clark, L., Lawrence, A. J., Astley-Jones, F. & Gray, N. (2009). Gambling near-misses enhance motivation to gamble and recruit win-related brain circuitry. *Neuron*, 61 (3), 481–490.
- Coates, E. & Blaszczynski, A. (2013). Predictors of Return Rate Discrimination in Slot Machine Play. *Journal of Gambling Studies*. Epub Mar 20 ahead of print 2013.
- Cornish, D. B. (1978). *Gambling: A review of the literature and its implications for policy and research*. Home Office Research Studies 42. London HMSO.
- Cote, D., Caron, A., Aubert, J. & Ladouceur, R. (2003). Near wins prolong gambling on a video lottery terminal. *Journal of Gambling Studies*, 19, 380-407.
- Crowne, D. P. & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting & Clinical Psychology*, 24 (4), 349-354.
- Delfabbro, P. H., & Winefield, A. H. (1999). Poker machine gambling. An analysis of within session characteristics. *British Journal of Psychology*, 90, 425–439.
- Delfabbro, P. & LeCouteur, A. (2003). A decade of gambling research in Australia and New Zealand (1992- 2002): Implications for policy, regulation and harm minimization. A report prepared for the Independent Gambling Authority of South Australia. University of Adelaide, Australia.
- Delfabbro, P., Falzon, K. & Ingram, T. (2005). 'The effects of parameter variations in electronic gambling simulations: Results of a laboratory-based pilot investigation'. *Gambling Research* 17 (1), 7-25.
- Delfabbro, P., Lahn, J. & Grabosky, P. (2005). Further evidence concerning the prevalence of adolescent gambling and problem gambling in Australia: A study of the ACT. *International Gambling Studies*, 5 (2), 209-228.

- Dickerson, M. G., Hinchy, J., England, S. L., Fabre, J., & Cunningham, R. (1992). On the determinants of persistent gambling I. High frequency poker machine players. *British Journal of Psychology*, 83, 237–248.
- Dickerson, M., & Baron, E. (2000). Contemporary issues and future directions for research into pathological gambling. *Addiction*, 95 (8), 1145–1159.
- Dixon, M. R. & Schreiber, J. (2004). Near-miss effects on response latencies and win estimations of slot machine players. *The Psychological Record*, 54, 335–348.
- Dixon, M. J., Harrigan, K. A., Sandhu, R., Collins, K. & Fugelsang, J. A. (2010). Losses disguised as wins in modern multi-line video slot machines. *Addiction*, 105 (10), 1819–1824.
- Dixon, M., Harrigan, K. A., Jarick, M., MacLaren, V., Fugelsang, J. A. & Sheepy, E. (2011). Psychophysiological arousal signatures of near misses in slot machine play. *International Gambling Studies*, 11 (3), 393–407.
- Dixon, M. J., MacLaren, V., Jarick, M., Fugelsang, J. A. & Harrigan, K. A. (2013). The Frustrating Effects of Just Missing the Jackpot: Slot Machine Near-Misses Trigger Large Skin Conductance Responses, But No Post-reinforcement Pauses. *Journal of Gambling Studies*, 29 (4), 661–674.
- Edworthy, J., Loxley, S. & Dennis, I. (1991). Improving Auditory Warning Design: Relationship Between Warning Sound Parameters And Perceived Urgency. *Human Factors: The Journal Of The Human Factors And Ergonomics Society*, 33 (2), 205–231.
- Edworthy, J. & Waring, H. (2006). The Effects Of Music Tempo And Loudness Level On Treadmill Exercise. *Ergonomics*, 49 (15), 1597–1610.
- Falkiner, T. & Horbay, R. (2006). Unbalanced Reel Gaming Machines. Paper presented at the 2006 International Pokies Impact Conference, Melbourne, Australia.
- Ferris, J., & Wynne, H. (2001). The Canadian problem gambling Index: Final report. Ottawa, ON: Canadian Centre on Substance Abuse.
- Ferster, C. B. & Skinner, B. F (1957). *Schedules of Reinforcement*. Englewood Cliffs, NJ: Prentice-Hall.
- Freeman, L. & Mitchell, D. (2010). A 20 game survey of gaming machine volatility in NSW. Sydney. Office of Liquor, Gaming and Racing.
- Fox, P. G. (1959). Primer for Chumps. *Saturday Evening Post* 21 Nov 1959
- Griffiths, M. D. (1990). The acquisition, development, and maintenance of fruit machine gambling in adolescents. *Journal of Gambling Studies*, 6, 193–204.
- Griffiths, M. D. (1991), "The observational study of adolescent gambling in UK amusement arcades," *Journal of Community and Applied Social Psychology*, 1 (4), 309–320.
- Griffiths, M. D. & Swift, G. (1992). The use of light and colour in gambling arcades: A pilot study. *Society for the Study of Gambling Newsletter*, 21, 16–22.
- Griffiths, M. D. (1993). Fruit machine gambling: The importance of structural characteristics. *Journal of Gambling Studies*, 9 (2), 101–120. Part available at <http://link.springer.com/journal/10899/9/2/page/1#page-1>
- Griffiths, M.D. & Dunbar, D. (1997). The role of familiarity in fruit machine gambling. *Society for the Study of Gambling Newsletter*, 29, 15–20. Available at http://www.academia.edu/1034037/Griffiths_M.D._and_Dunbar_D._1997._The_role_of_familiarity_in_fruit_machine_gambling_Society_for_the_Study_of_Gambling_Newsletter_29_15-20
- Griffiths, M. D. & Parke, J. (2003). The environmental psychology of gambling. In G. Reith (Ed.), *Gambling: Who wins? Who Loses?* pp. 277–292. New York: Prometheus Books.
- Griffiths, M. D. & Parke, J. (2005). The psychology of music in gambling environments: an observational research note. *Journal of Gambling Issues*, 13. Available at <http://jgi.camh.net/doi/full/10.4309/jgi.2005.13.8>
- Hamilton, L. E., Malcom, K., Gallagher, T. M. & Nicki, R. M. (2013). Problem and Non-problem Gamblers' Attraction to Different VLT Games. *Journal of Research for Consumers*, 23, 1–31. Available at http://jrconsumers.com/Academic_Articles/issue_23/Issue%2023%20-%2020Academic%20-%20Hamilton%20et%20al%20-%20Final.pdf
- Hansen, M. & Rossow, I. (2010). Limited cash flow on slot machines: Effects of prohibition of note acceptors on adolescent gambling behaviour. *International Journal of Mental Health Addiction*, 8, 70–81.

- Hare, S. (2009). A study of gambling in Victoria - Problem gambling from a public health perspective. Department of Justice, Victoria.
- Harrigan, K. A. (2007). Slot Machine Structural Characteristics: Distorted Player Views of Payback Percentages. *Journal of Gambling Issues*, 20, 215-234.
- Harrigan, K. A. (2008). Slot Machine Structural Characteristics: Creating Near Misses Using High Symbol Award Ratios. *International Journal of Mental Health and Addiction*, 6 (3), 353-368.
- Harrigan, K. A. (2009). Slot Machines: Pursuing Responsible Gaming Practices for Virtual Reels and Near Misses. *International Journal of Mental Health and Addiction*, 7 (1), 68-83.
- Harrigan, K. A. & Dixon, M. (2009). PAR Sheets, Probabilities, and Slot Machine Play: Implications for Problem and Non-Problem Gambling. *Journal of Gambling Issues*, 23, 81-110.
- Harrigan, K. A. (2010). *Gaming Technology: Understanding Pokies*. University of Waterloo, Ontario, Canada.
- Harrigan, K. A., Dixon, M. J., MacLaren, V. V., Collins, K., & Fugelsang, J. (2012). The maximum rewards at the minimum price: Reinforcement rates and payback percentages in multi-line slot machines. *Journal of Gambling Issues*, 26, 11-29.
- Haw, J. (2000) An operant analysis of gaming machine play. Unpublished Ph.D. thesis. Macarthur: University of Western Sydney.
- Hing, N. & Haw, J. (2010). Influence of venue characteristics on a player's decision to attend a gambling venue. *Gambling Research Australia*, Melbourne.
- Hing, N., & Nisbet, S.L. (2010). A qualitative perspective on physical, social and cognitive accessibility to gambling. *Journal of Gambling Issues* (24), 101-120. doi: 10.4309/jgi.2010.24.7
- Jensen, C., Dixon, M. J., Harrigan, K. A., Sheepy, E., Fugelsang, J. A., & Jarick, M. (2013). Misinterpreting "winning" in multiline slot machine games. *International Gambling Studies*, 13, 112-126.
- Kahneman, D. & Tversky, A. (1982). The psychology of preferences. *Scientific American*, 246 (1), 160-173.
- Kahneman, D. & Tversky, A. (1984). Choices, values, and frames. *American Psychologist* 39, 341-350.
- Kallinen, K. (2002). Reading news from a pocket computer in a distracting environment: effects of the tempo of background music. *Computers in Human Behaviour*, 18 (5), 537-551.
- Kampfe, J., Sedlmeier, P. & Renkewitz, F. (2011). The impact of background music on adult listeners: A meta-analysis. *Psychology of Music*, 39 (4), 424-448.
- Ladouceur, R. & Sevigny, S. (2005). Structural characteristics of video lotteries: Effects of a stopping device on illusion of control and gambling persistence. *Journal of Gambling Studies*, 21 (2), 117-131.
- Ladouceur, R. & Sevigny, S. (2006). The impact of video lottery game speed on gamblers. *Journal of Gambling Issues*, 17. Available at <http://www.camh.net/egambling/issue17/ladouceur.html>
- Lesieur, H. R. & Blume, S. B. (1987). The South Oaks Gambling Screen (SOGS): A new instrument for the identification of pathological gamblers. *American Journal of Psychiatry*, 144, 1184-1188.
- Livingstone, C., Woolley, R., Zazryn, T., Bakacs, L., & Shami, R. (2008). The Relevance and Role of Gaming Machine Games and Game Features on the Play of Problem Gamblers. Prepared for: Independent Gambling Authority South Australia, Adelaide. Available at http://www.pc.gov.au/__data/assets/pdf_file/0007/87514/sub134-attachment4.pdf
- Maxgaming. (2010). *Gaming Machine Site Operator Manual*. Retrieved from www.maxgaming.com.au
- McElrea, H. & Standing, L. (1992). Fast music causes fast drinking. *Perceptual and Motor Skills*, 75, (2), 362-362.
- McMillen, J., Marshall, D., Ahmed, E. & Wenzel, M. (2003). *Gambling Research Panel Report No 6: 2003 Victorian Longitudinal Community Attitudes Survey*. Prepared for the Gambling Research Panel by The Centre for Gambling Research, Australian National University. Available at https://digitalcollections.anu.edu.au/bitstream/1885/45189/3/VicLongCommAS_FinalComplete_03.pdf
- Milliman, R. E. (1982). Using Background Music to Affect the Behaviour of Supermarket Shoppers. *Journal of Marketing*, 46 (3), 86-91.

- Millhouse, H., & Delfabbro, P., (2008). Investigating preferences for gaming machine features in problem and non-problem gamblers using a consumer choice methodology. *Gambling Research* Volume 20, No 1, 37-49 May 2008 edition.
- Moodie, C. & Finnigan, F. (2005). A Comparison of the autonomic arousal of frequent, infrequent and non-gamblers while playing fruit machines. *Addiction*, 100(1), 51-59.
- Morasco, B., Weinstock, J., Ledgerwood, D. & Petry, N. (2007). Psychological Factors that Promote and Inhibit Pathological Gambling. *Cognitive and Behavioral Practice*, 14, 208-217.
- Nisbet, S. (2005). Alternative Gaming Machine Payment Methods in Australia: Current Knowledge and Future Implications. *International Gambling Studies*, 5 (2), 229-252.
- Ontario Electronic Gaming Equipment Minimum Technical Standards (2007): Version 1. Alcohol and Gaming Commission of Ontario. Available at http://www.agco.on.ca/pdfs/en/EGM_standards_dec07_v100.pdf
- Parke, J. & Griffiths, M. D. (2006). The psychology of the fruit machine: the role of structural characteristics (revisited). *International Journal of Mental Health and Addiction* 4, 151–179.
- Parke, J., Rigbye, J. & Parke, A. (2008). Cashless and card-based technologies in gambling: A review of the literature. Commissioned by the Gambling Commission, Great Britain.
- Productivity Commission. (2010). *Gambling Report*. Canberra: AGPS.
- Queensland Office of Gaming, Liquor & Racing (2005). Pre-commitment trial report (unpublished document).
- Raylu, N. & Oei, T. (2001). Pathological gambling: a comprehensive review. *JAMA*, 286, 141–144.
- Raylu, N., & Oei, T. P. S. (2004b). The Gambling Related Cognitions Scale (GRCS): Development, confirmatory factor validation and psychometric properties. *Addiction*, 99 (6), 757-769.
- Reid, R. L. (1986). The psychology of the near miss. *Journal of Gambling Behavior*, 2, 32-39.
- Roballey, T. C., McGreevy, C., Rongo, R. R., Schwantes, M. L., Steger, P. J, Wininger, M. A., & Gardner, E. B. (1985). The effect of music on eating behavior. *Bulletin of the Psychonomic Society*, 23 (3), 221-222.
- Schellinck & Schrans (2001). Or is it Schellink, T. & Schrans, T. (2002) Atlantic Lottery Corporation Video Lottery Responsible Gaming Feature Research: Final Report. Halifax, Nova Scotia. Focal Research Consultants.
- Schellinck, T. & Schrans, T. (2007). Assessment of the Behaviour Impact of Responsible Gaming Device Features: Analysis of Nova Scotia Player-Card Data, Windsor Trial. Final Report. Focal Research. Halifax: Nova Scotia Gaming Corporation Responsible Gaming Research Device Project, February.
- Schottler Consulting Pty Ltd (2009). Major findings of a trial of card-based gaming product at the Redcliffe RSL: Card-based trial evaluation August 2008 to February 2009. Available at <http://www.olgr.qld.gov.au/resources/responsibleGamblingDocuments/SchottlerConsultingReportintoCBGtrialRedcliffeRSLExemptMaterialRemoved.pdf>
- Schottler Consulting Pty Ltd (2010). Factors that influence gambler adherence to pre-commitment decisions. Prepared for Gambling Research Australia. Available at [http://www.gamblingresearch.org.au/resources/577a0ed8-5e6b-46aa-9948-99225336d41b/gr+pre-commitment+final+report+\(phase+2\).pdf](http://www.gamblingresearch.org.au/resources/577a0ed8-5e6b-46aa-9948-99225336d41b/gr+pre-commitment+final+report+(phase+2).pdf)
- Sharpe, L., Blaszczynski, A. & Walker, M. (2004). The Identification of Near Misses in Electronic Gaming Machines and its Effect on Gambling Behaviour. A report: Trade & Investment, Office of Liquor, Gaming & Racing pp. 74. NSW Government.
- Sharpe, L., Walker, M., Coughlan, M. J., Enersen, K. & Blaszczynski, A. (2005). 'Structural Changes to Electronic Gaming Machines as Effective Harm Minimization Strategies for Non-Problem and Problem Gamblers'. *Journal of Gambling Studies*, 21 (4), 503-520.
- Skinner, B. F. (1938). *The behavior of organisms: An experimental analysis*. New York: London, D. Appleton Century Company.
- Spennyn, J., Barrett, D. J. K. & Griffiths, M. D. (2010). The Role of Light and Music in Gambling Behaviour: An Empirical Pilot Study. *International Journal of Mental Health Addiction*, 8, 107-118.
- Stark, G. M., Saunders, D. M. & Wookey, P. E. (1982). Differential effects of red and blue coloured lighting on gambling behaviour. *Current Psychological Research*, 2 (1-3), 95-99.

- Strickland, L. H. & Grote F. W. (1967). Temporal presentation of winning symbols and slot-machine playing. *Journal of Experimental Psychology*, 74, 10-13.
- Sundali, J. A., Safford, A. H. & Croson, R. (2012). The impact of near-miss events on betting behavior: An examination of casino rapid roulette play. *Judgement and Decision Making*, 7 (6), 768-778.
- Taylor Fry Analytics & Actuarial Consultants. Available at <http://www.taylorfry.com.au/contact-us/>
- The Australian Gaming Machines Player Information Booklet. Available at <http://www.gamingta.com/pdf/playerinfo.pdf>
- The Australian Productivity Commission (Nov 1999). Final Report No 10. Australia's Gambling Industries. Commonwealth of Australia. Available at <http://www.pc.gov.au/projects/inquiry/gambling/docs/report>
- The Australian Productivity Commission (2010). Available at <http://www.pc.gov.au/projects/inquiry/gambling-2009/report>
- The Gambling-Related Cognitions Scale (GRCS): development, confirmatory factor validation and psychometric properties. Raylu, N. & Oei, T P. (2004b). *Addiction*, 99 (6), 757-769.
- The Responsible Gambling Council of Ontario (2006). Available at <http://www.responsiblegambling.org/docs/research-reports/gambling-and-problem-gambling-in-ontario-2005.pdf?sfvrsn=12>
- Tournois, J., Mesnil, F. & Kop, J. L. (2000). Self-deception and other-deception: A social desirability questionnaire. *European Review of Applied Psychology*, 50, 219-233.
- Walker, M. B. (2003). "The seductiveness of poker machines". Keynote address at the 13th Annual Conference of the National Association for Gambling Studies. Canberra, ACT.
- Waterhouse, J., Hudson, P. & Edwards, B. (2010). Effects of music tempo upon submaximal cycling performance. *Scandinavian Journal of Medicine and Science in Sports*, 20, 662-669.
- Wilkes, B., Gonsalvez, C. J. & Blaszczynski, A. (2009). Psychophysiological responses to win and loss events during electronic gaming machine (EGM) play: A pilot investigation. *Gambling Research*, 21 (2), 22-34.
- Wilkes, B. L., Gonsalvez, C. J. & Blaszczynski, A. (2010). Capturing SCL and HR changes to win and loss events during gambling on electronic machines. *International Journal of Psychophysiology*, 78 (3), 265-272.
- Williamson, A. & Walker, M. (2001). "Strategies for solving the insoluble: Playing to win Queen of the Nile". In G. Coman (Ed.) *Lessons of the Past: Proceedings of the 10th Annual Conference of the National Association for Gambling Studies* (pp. 444-452). Mildura, Victoria.
- Wynne, H., J. (2003). *Introducing the Canadian Problem Gambling Index*. Wynne Resources. Edmonton, Alberta Canada. January 2003.