My-Play System Evaluation: Final Report

August 2016

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1 BACKGROUND

The *RGC Centre for the Advancement of Best Practices* has undertaken an evaluation of the My-Play System (MPS or the system) (formerly known as the Informed Player Choice System or IPCS) in Nova Scotia. The MPS is a card-based system that was integrated into video lottery terminals (VLTs) in Nova Scotia to enable players to use tools to obtain information about their play activity, as well as set limits on their play.

The roll-out of the MPS began in October 2009 after a four-month field test in Sydney. In July 2010, the system went province-wide offering all VL players the option to enroll with the MPS, although enrollment was not required to play a VLT. After the voluntary enrollment period (from July 2010 to March 2012), the MPS was transitioned to *mandatory* enrollment whereby players were required to enroll with the MPS to play a VLT. Irrespective of the type of enrollment, the use of the specific MPS tools to obtain information on play or set limits was voluntary. During the mandatory phase, two enrollment types were available to video lottery (VL) players:

- ***Light Enrollment*** – A player receives a player card with a unique identifier number, but no personal information is used or stored to generate the account.
- ***Full Enrollment*** – To create an account, a player swipes or scans a government issued ID at an enrollment terminal. The ID data is then scrambled to make a unique, confidential account identifier in the system. This unique identifier allows players to access their play activity as well as use the player information tools.

The overall goal of the evaluation was to assess the impact of the MPS on VL player behaviour in the province over time. The evaluation took place over a five-year period and resulted in three separate reports. The baseline report, completed in 2011, provided baseline measurements of VL play activity and related attitudes prior to MPS availability in Nova Scotia. The interim report, completed in 2012, assessed the impact of the MPS during its voluntary enrollment period. This third and final report examines the impact of the MPS overall, including the mandatory phase, and outlines the final results and recommendations from the analysis of the MPS.

Because this evaluation is a longitudinal study , it can better speak to the causal relationships between the use of MPS features and gambling behaviours. A longitudinal finding does not prove a causal relationship, but can be a good indicator of a possible causality. Further, this study involves practical, on-the-ground research. Though it is not conducted under ideal conditions like some academic studies, the study was conducted in a real world setting and influenced by various

environmental factors such as stakeholders[1]. In general, however, the Responsible Gambling Council (RGC) has taken a conservative approach to the conclusions and recommendations outlined in this report. Caution has been taken to identify evidence that may not be robust or that is in conflict between different data sources.

The results the study are divided into four key results sections of this report based on the objectives of the overall study design: MPS and Player Knowledge, MPS and Player Attitudes, Use of the MPS Features, and MPS and Gambling Behaviours.

See Appendix A for a timeline overview of the MPS and data collection points.

1.1 MY-PLAY SYSTEM

In 2005, the Government of Nova Scotia introduced *A Better Balance: Nova Scotia's First Gaming Strategy*. It was a five-year plan that focused on addressing problem gambling treatment and prevention. Among the 23 initiatives outlined in the *Gaming Strategy*, those that pertained to VL called for the reduction of VL hours, terminals, and speed of games, the removal of the stop button feature, and the pilot of a VL "play management tool" that would provide players with their play information.

In line with this strategy, the Nova Scotia Gaming Corporation (NSGC), now the Nova Scotia Provincial Lotteries and Casino Corporation (NSPLCC), conducted an 18- month research study on the responsible gaming tools of Techlink Entertainment's *Responsible Gaming Device* (RGD). The RGD was a device that was attached to existing VLTs to track and store player data. The purpose of the study was to assess the impact of various responsible gaming tools on players' attitudes and behaviours. The tools gave players information on their play history and the ability to set money or time limits. The study sought to determine if the tools:

- Had a positive effect on informing players;
- Provided players with an opportunity to exercise more control of their play; and,
- Facilitated responsible gambling behaviour.

The RGD study was pilot tested in Windsor and Mt. Uniacke, Nova Scotia in 2005-06. All VL players in these two areas were required to use a 'responsible gaming card' to begin play on a VLT during the study period. After entering their personal PIN, players had the option of using or ignoring the player information tools available with the use of the card during play. The study

[1] Bernhard, B.J., Lucas, A.F, & Jang, D. (2006). *Responsible Gaming Device Research Report*. Las Vegas: University of Nevada, Las Vegas.

found that the majority of players benefited from having the ability to check their play history by helping them to stay within budget.

Independent evaluations of the RGD study were conducted by three research groups: Omnifacts Bristol Research, Focal Research Consultants Ltd. and Dr. Bo Bernhard of the University of Nevada, Las Vegas. All three evaluations recommended the implementation of the RGD with voluntary or mandatory player enrollment and voluntary access to all the information tools.

1.2 MY-PLAY SYSTEM FEATURES

With the positive findings from three independent evaluations of the RGD, the NSGC committed to a province-wide launch of the MPS for its VLTs. The MPS had five information tools that were intended to help players make more informed decisions about their gambling:

- ***My Live Action:*** Shows players information for the current session on the VLT currently in play. It begins when the player logs into the system by inserting a card and ends when the card is removed.
- ***My Account:*** Displays the total amount of money spent and time played for the current day, week, month, or year. The tool gives the player two options: to view money spent or time played.
- ***My Money Limit:*** Allows players to choose the maximum amount they wish to spend for a day, week, month or year. Once a spending limit is set, it can be modified to further reduce available spend, but it cannot be undone.
- ***My Play Limit:*** Allows players to restrict play on either given days of the week, weeks of the month, and/or months of the year ("Calendar Stop" option), or to stop play immediately for a day, week, or month ("Self-Exclusion" option). Once a time limit is set, it can be modified to further restrict available time, but it cannot be undone.
- ***Quick Stop:*** Immediately stops players from playing for 24, 48 or 72 hours. Once the stop is set, it cannot be modified or undone until the chosen time is met.

The *My Live Action* and *My Account* tools are classified as "monitoring" functions throughout this report, as they provide players with information on the amount they have spent in terms of time and money over a specified period of time. *My Money Limit*, *My Play Limit*, and *Quick Stop* are classified as "control" functions as they allow players to set limits on the amount of time and money spent gambling.

1.3 MY-PLAY PROMOTION

As part of the system introduction, alternative options for program branding were evaluated. The two options considered included the My-Play brand, and the original product name, Informed Player Choice System. Player focus groups were conducted to better understand what brand

identity best resonated with players. The original Informed Player Choice System brand was perceived negatively, with descriptions such as cold, impersonal, government, and big brother-ish. In contrast, the My-Play brand was perceived as friendlier and much less invasive.

Significant effort was directed at increasing knowledge, alleviating privacy concerns and promoting the benefits of the MPS among retailers and VL players.

At the time of system implementation, all retail sites were well supplied with player education and awareness materials such as posters and brochures. Prior to distribution, all communication materials were tested in qualitative research environments with players to anticipate their response to the information.

Phase I of the Player Education and Awareness initiatives took place prior to mandatory enrollment, from January 2012 to March 2012. During this time, street teams visited medium and high-volume sites across the Nova Scotia to promote the MPS, educate players, and address questions from players and retailers. To encourage engagement, these promotional teams rewarded players who were using the system, or who had enrolled, with low-value gift cards (e.g., $5 not redeemable for cash) to local retailers such as Tim Hortons. *Phase II* took place from April 2012 to June 2012, following mandatory enrollment. During this time, players who chose full enrollment or to upgrade to full enrollment were rewarded by the retailer with low-value gift cards to local retailers.

As part of the Retailer Education and Awareness component, retailers were provided with a detailed user guide and retailer training from Atlantic Lottery. Retailer incentive programs were also implemented to encourage players to fully enroll; sites received $5 for each full enrollment they received from January 2012 to June 2012.

Ongoing research was conducted between 2012 and 2014 to understand the root cause of low tool usage, lack of perceived value, and privacy concerns, and to address them with effective messaging. The topics for the focus groups centred on: creative material, program enrollment/registration, privacy, and value of the tools.

In 2013, a second retailer support program was implemented to encourage retailer participation in player engagement. The program included an ‘annual flat fee’ initiative under which retailers, including First Nations retailers, were separated by performance level and were paid an annual flat fee for the administrative work and staff time required for supporting the MPS. In addition to the flat fee, retailers were also compensated with $10 for every full enrollment that took place at their site for the duration of the program. This was implemented to ensure the ongoing support of the MPS at the site level, with a focus on increasing the number of full enrolments.

During April 2013 to July 2013, player research informed the development of a stand-alone website in order to provide players with a research point outside of the gaming environment. The

website focused on player myths, the purpose of MPS, explanations of the tools and their benefits, addressing privacy concerns, etc. It also featured a system promotion video and an interactive demo that allowed players to engage with the system and tools. Player point-of-sale materials were also refreshed, and 400 posters and 3,000 brochures were printed and distributed to all retail sites to drive players to the website.

With no improvement to full enrollment and tool usage, an in-depth Options Evaluation was undertaken to identify ways to modify the system to better meet the needs of players. It was ultimately decided that the system was not meeting its objectives and would transition to voluntary as of August 22, 2014 and be de-commissioned starting September 8, 2014. The process was complete in early December 2014.

2 METHODOLOGY

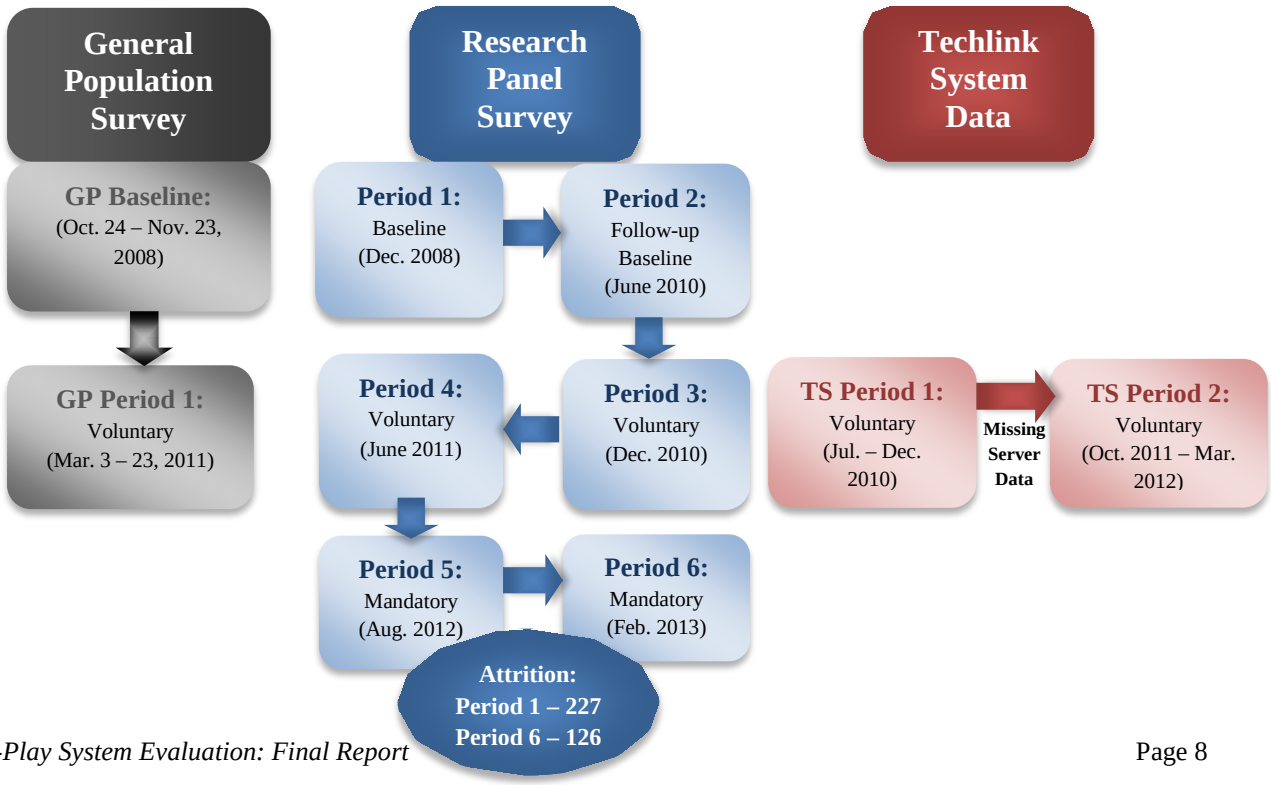
2.1 OVERVIEW

The evaluation of the MPS included a longitudinal study design where VL activity and related perceptions, attitudes and behaviours were monitored over time to determine any changes from before the MPS system was available to after the system was available. Central to all of the study components of the evaluation are two features:

- A *baseline* measurement whereby data on VL activity and related attitudes and behaviours are collected prior to MPS implementation.
- An *impact assessment* whereby data on VL activity and attitudes is collected for a time period during MPS availability and compared to the baseline measurements to determine any changes in VL activity and attitudes.

Over the course of the evaluation, a number of different methods were used to collect information including general population surveys, a research panel survey of regular VL gamblers and tracking data which is stored within the VL central computer system database (see Figure 1). In addition, a total of four separate focus groups were conducted, as well as an environmental scan and a review of the revenue impact. A number of challenges were encountered throughout the evaluation, requiring adjustments to the original planned methodology. These are outlined in the limitations section below. See Appendix B for samples of the collection tools used throughout the study.

Figure 1. Overview of Quantitative Data Sources Used in this Report



2.2 LIMITATIONS

There are several limitations to the present evaluation that should be acknowledged. First, there were delays in implementing the voluntary and then mandatory phases of the MPS. Originally it was projected that it would take approximately 18 months to roll-out the system across the province of Nova Scotia. Roll-out was to begin in winter 2009 with a voluntary player registration model and transition to a mandatory player registration model in April 2010. However, the testing of the system presented several challenges that significantly delayed implementation and the proposed research process. A fully implemented voluntary player registration model of the system province wide was activated at the end of July 2010. Similarly, the transition to a mandatory player registration model was delayed until April 2012 instead of the forecasted August 2011.

The roll-out delay had implications for the retention of participants, as the loss of panel and general population participants over time impacted the generalizability of results. The delay also impacted the originally proposed research data collection approach and timelines. For research panel participants, there was a desire to obtain a baseline closer to the introduction of the MPS. Therefore, a second baseline survey was conducted with this group prior to MPS roll-out. The first baseline survey of the research panelists was conducted approximately 20 months prior to the introduction of the MPS; the second was conducted approximately 1 month prior to the introduction of the MPS. Consequently, there is a year and a half time lag between the first and second baseline surveys of the research panel group; both conducted before the MPS was available (see Figure 1). The timing of the administration of the research panel survey has direct bearings on the Problem Gambling Severity Index (PGSI) data. The PGSI enquires about gambling behavior within a 12 month period. Therefore, the different intervals of the panel survey administration may have affected the interpretation of PGSI scores in a manner not intended.

The second issue occurred during the mandatory phase. In May 2012, the NSPLCC conducted focus groups with VL players to get an understanding of how they were responding to the MPS. The results showed that player perceptions surrounding the MPS were quite negative. Players expressed similar concerns to those observed in the focus groups conducted during the voluntary phase. These included privacy concerns, general distrust, the belief that the MPS information may be used against them, inconvenience, confusing to use, lack of knowledge and that the system decreased the entertainment value. It was clear that players were overwhelmingly choosing the option of light enrollment, which was introduced as part of policy direction released in Nova Scotia's 2011 Responsible Gambling Strategy. Players were sharing cards, as well as carrying multiple cards and disposing of them in a public way (i.e., garbage cans, littering the floors, or leaving them at the machines). Furthermore, despite compliance testing efforts, some establishments left pre-enrolled cards at the terminal for all players to use, which was against operating policies. With the large majority of players using the light enrollment option and multiple cards, it was increasingly difficult to interpret the systems data. It was also impossible to evaluate the benefits of a voluntary vs. mandatory MPS, as the mandatory light enrollment option

was essentially the same as having the voluntary option. Ultimately a decision was made to discontinue data collection in the mandatory phase earlier than originally planned. Additionally, given that player cards may not necessarily have been used by a single player, and that a single player may not have used only one card, the system data that was obtained can only be attributed to *player accounts* rather than players themselves.

Third, there was the loss by the system provider of 9 months of data from the system tracking data from the voluntary evaluation period. This made it impossible to compare the play activity as measured by the MPS card with the Research Panel survey data collected during times 3 and 4 – which were administered during the time when the tracking data was lost. The loss of data also limited the ability to describe MPS usage during the voluntary registration period. In addition to the lost data, there was attrition in the sample. Due to the long period of time in this study, many player cards that appear in the first period no longer appear in the second period, and it is unclear why the attrition may have occurred. There were also other issues that caused some concern over data reliability. For example, many of the control features that were originally described by the system provider to be frequency of use values (i.e., the count of control feature uses by the player), were later noted to simply be view feature (i.e., the player simply looked at the control feature screen but did not use the feature). This occurred with the money limit control, the self-exclusion control, and the quick stop control, but not the time limit control. Although these issues appear to be resolved, the results provided rely on the validity of the data figures provided to RGC.

A fourth limitation to the current study is the definition of a regular VL player as someone who plays at least once a month. This definition does not consider existing differences between the once a month player and for example, someone who plays multiple times daily. The analysis and conclusions are therefore affected by capturing both types of players in the one category.

Lastly, in limiting the recruitment of participants for the research panel to only those who play VLTs at least once a month, the data does not capture those who were non-VLT gamblers at the time of recruitment but later became VLT gamblers throughout the duration of the study. Thus, these results should be interpreted with this in mind.

2.3 DATA SOURCES

The following section describes data sources included in this final report. The environmental scan may be reviewed as part of the baseline report and the revenue impact is detailed in the interim report.

2.3.1 General Population Surveys

Survey Objectives

The general population survey was designed to assess the broad impact of the MPS on VL players in Nova Scotia. The study employed a longitudinal design whereby a baseline survey

(General Population Baseline or GP Baseline) was administered to a randomly selected sample of adult Nova Scotians prior to the MPS implementation, with two subsequent surveys planned to be administered after MPS implementation. Each subsequent survey was planned to assess a specific approach to MPS enrolment – the first follow-up survey (i.e., GP Period 1) was planned to occur after voluntary enrolment in the system and the second (i.e., GP Period 2), after mandatory enrolment was implemented. This planned methodology was revised and the GP Period 2 survey was dropped. The general population survey was therefore administered twice, once at baseline prior to MPS implementation and once after voluntary system implementation.

Survey Design

Both surveys were designed by RGC in consultation with NSGC. Areas of enquiry remained consistent and were related to:

- General gambling behaviours;
- VL gambling behaviours and specific attitudes;
- MPS involvement and attitudes;
- General attitudes towards VL and VL provision;
- Gambling-related problems and;
- Socio-demographic characteristics.

To assess gambling-related problems, both surveys included the PGSI from the Canadian Problem Gambling Index (CPGI). The PGSI measures the severity of gambling-associated problems that survey respondents experienced in the past 12 months[2]. It has nine question items, which include chasing losses, escalating to maintain excitement, borrowing/selling to get gambling money, betting more than one can afford, feeling guilty, being criticized by others, harm to health, financial difficulties, and feeling one might have a problem with gambling. Scoring is based on the frequency in which respondents experienced these items within the past 12 months and the scores can range from 0 to 27.

Respondents were divided into four main classifications based on their PGSI score. Table 1 gives each classification and their respective PGSI scores. Due to the low counts found in each group, some analyses combined those at medium risk and those with problem gambling into one group to enable more statistically reliable and useful PGSI analyses.

[2] Ferris, J. & Wynne, H. (2001, February). The Canadian Problem Gambling Index: Final report. Ottawa, ON: Canadian Centre on Substance Abuse.

Table 1. PGSI Classification Used For General Population Survey Study

PGSI classification	PGSI score
Non-gambling	PGSI not administered
Non-problem gambling	0
Low-risk gambling	1-2
Medium-risk gambling	3-7
Problem gambling	8+

The CPGI has received extensive psychometric testing[3]. Reliability of the measure has been shown to be good, with a co-efficient alpha of .84. Test-retest analysis produced an acceptable correlation of .78.

Sampling Strategy

Sampling Modeling Research Technologies Inc. (SMRT) provided the survey samples in co-ordination with Thinkwell Research Inc. Using SMRT's "Instant Sampler", telephone samples were drawn from a compiled database of all listed numbers along with injected Random Digit Dialing numbers that were cleaned against listed and injected numbers to represent the proportion of unlisted numbers in each geographic region. The original plan for the general population survey was to follow the same baseline survey participants over time. However, due to low recruitment numbers from the baseline group (of the 2001 baseline participants, 22% also completed the GP Period 1 survey), a second random sample of the general adult population was recruited to augment the GP Period 1 survey respondent numbers.

The GP Baseline and GP Period 1 samples were weighted by relevant variables (gender, age and geographic region) to ensure representation of the Nova Scotia population on these variables.

Survey Administration

Under the supervision of *Thinkwell Research, Vision Research Inc.*, a call centre facility in Charlottetown, PEI, conducted all telephone interviews. Initial GP Baseline interviews were conducted between October 24 and November 23, 2008 and GP Period 1 interviews during March 3-23, 2011. All interviewing was conducted by fully-trained and supervised interviewers.

Once someone answered the phone, the interviewer first introduced themselves as a representative from *Thinkwell Research* who was conducting a research survey on behalf of the *Responsible Gambling Council*, an independent non-profit organization committed to problem

[3] Ferris, J. & Wynne, H. (2001, February). The Canadian Problem Gambling Index: Final report. Ottawa, ON: Canadian Centre on Substance Abuse.

gambling prevention. For calls to the GP Baseline participants contacted for follow-up, the interviewer asked to speak to the specific individual by name, while for calls to new recruits (both at GP Baseline and GP Period 1), the interviewer asked for the person in the household with the most recent birthday and who was over 19 years of age. The interviewers told the previous GP Baseline recruits that they were following up on a survey study in which the recruit had previously participated in November 2008. They reminded the recruit that at the completion of that survey, the recruit indicated that they were interested in participating in a follow-up survey.

Both the GP Baseline and GP Period 1 recruits were told the current survey was about gambling among Nova Scotia adults and would like to include a variety of people with different perspectives. Participation would be completely voluntary and anonymous. For their participation, the study offered participants the chance to win a $1,000 gift certificate by entering their names into a draw.

The surveys took about 10 to 12 minutes to complete. Upon completion, the interviewer asked respondents if they would be interested in being contacted for a follow-up survey in approximately 16 months (GP Baseline participants) or 1 year (GP Period 1 participants). The total number of people who completed the GP Baseline survey was 2001 and 2,064 at GP Period 1 (Table 2).

Table 2. General Population Survey

Time of Study	General Population Survey Completion (N)	VL Players (N)	All Gamblers (N)
GP Baseline	2,001	223	778
Voluntary (GP Period 1)	2,064 (445 follow-up from baseline, 1,619 general public supplement)	197	996

At both timeframes, a minimum of 5% of calls were validated randomly through telephone and visual monitoring of at least 75% of the interviews. In these cases, the supervisor listens in to the call and watches the interviewer's computer screen (remotely) at the same time to ensure that the interviewer is coding the responses correctly on screen.

Response Rates

The response rates for survey administration at GP Baseline and GP Period 1 were calculated in accordance with the Marketing Intelligence and Research Association's Empirical Method of Response Rate Calculation Formula for telephone survey data. Response rate is calculated by

dividing the number of cooperative contacts by the number of total eligible numbers attempted.[4] At GP Baseline the rate of response was 11.25%. At GP Period 1, the rate of response for GP Baseline follow-up participants was 69%, and 10% for new recruits. The final disposition of all telephone numbers called is shown in Appendix C.

2.3.2 Research Panel Survey

Recruitment

Over the course of the evaluation, a research panel of 227 regular VL players (i.e., played at least once a month in the past year) were asked questions about their VL play behaviour and attitudes, MPS attitudes and usage, and gambling and problem gambling behaviour. The research panel allowed for a more direct assessment of the direct impact of the MPS on regular VL players. Panel participants were recruited through the following three sources: the general population survey respondents (n=37), VL retailer sites in Halifax and Sydney (n=15), and advertisements placed in the *Chronicle Herald* and *Metro* newspapers (n=175). Participants would be compensated with a $25 gift card to a local retailer for each completed survey for a maximum amount of $150.

Administration

Research panel participants were invited to complete the survey either online or by telephone. Completed surveys from both survey methods were collected on a weekly basis and the project co-ordinator mailed out participant selected gift cards within two weeks of survey completion. In addition, the co-ordinator included a reminder of approximately when the participant could expect to be contacted with details of the next survey period.

Panel participants were surveyed six times over a four-year period that covered baseline before the MPS was available, voluntary enrollment, and mandatory enrollment periods. Surveying started in December 2008 (period 1), to establish baseline values of attitudes and behaviours prior to system implementation. Due to delays in the system roll-out, a second baseline study of the panel was conducted in June 2010 (period 2). Surveys during the voluntary period of enrollment were conducted in December 2010 (period 3) and June 2011 (period 4), and surveys during the mandatory enrollment periods were conducted in August 2012 (period 5) and February 2013 (period 6). Of the total 227 participants that were part of the period 1 survey, 126 participated in the final survey. Participants were given an opportunity to complete all surveys, even if they had missed prior surveys. Therefore, for example, not all participants in period 6 participated in all six

[4] Marketing Intelligence and Research Association is a national association for public opinion research professionals. Their methods have been accepted by Statistics Canada and private industry.

surveys, with a total of 85 respondents participating in all six surveys.

2.3.3 Player Tracking Data Study

Overview of Data

Whereas the *General Population Survey* and *Research Panel Survey* rely on self-reported data, player tracking data consists of actual MPS usage data of VL players, which is held within the VL central computer system database. The data used in the player tracking study was provided by Techlink, which queried aggregate results directly from the MPS database. Extracted data included, but is not limited to:

- Number of sessions where the card was inserted into a device
- Time on device
- Cash inserted into the device
- Cash withdrawn from the device
- Number of games played
- Amount of money won
- Responsible gaming feature used

Data Time Periods

Specific data on VL play activity (e.g., cash-in, cash-out) and player information tool usage (e.g., viewing play history, setting limits) was analyzed during the voluntary phase, from July 2010 to March 2012, for both research panel participants as well as all VL players in general who enrolled for the MPS card. The collected Techlink System (TS) data is divided into two six month periods; TS Period 1 - July 2010 to December 2010 and TS Period 2 - October 2011 to March 2012. At that time, a total of 1,551 VL players had enrolled in the MPS. This number includes those who used and did not use the MPS tools during the voluntary phase. The data collection is divided in two periods due to the loss of data. This occurred when the Techlink system was updated in early 2011. The period of lost data is from January 2011 to September 2011, equaling 9 months of lost system player account data.

2.3.4 Focus Groups

Four focus groups with VL players and retailers were conducted to obtain qualitative information on perceptions of the MPS. Focus groups were conducted in November 2008 with one group of VL players and one group of retailers to aid in the development of promotional materials. Two focus groups were conducted with research panel VL players who had not enrolled with the MPS in February 2011 to obtain player impressions of the system and its features during the voluntary enrollment period.

Recruitment

For the development of promotional materials, VL players were recruited through newspaper advertisements in the *Metro, Chronicle Herald,* and *Cape Breton Post*. The study was advertised as one on "new responsible gambling technology" and individuals who played VLTs at least once per month were invited to participate. In exchange for their time, participants were offered a $100 gift card to a local retailer (i.e., Best Buy or Wal-mart). VLT retailers were recruited through phone calls made by RGC staff with a list given to them by NSGC. The retailers were told that the study was on the MPS (IPCS at the time of contact) and in exchange for their time, they would be offered a $100 gift card to a local retailer (i.e., Best Buy or Wal-mart). Recruitment for VL players who had not enrolled with the MPS was within the pool of research panel participants.

A total of 15 VL players and 4 retailers participated in the two focus groups aimed at development of promotional materials, while 16 VL players participated in the focus groups on VL players who had not enrolled with the MPS.

Procedure

Before each focus group began, participants signed a consent form and then filled out a questionnaire. Those in the VL player focus groups were asked about demographics, gambling behaviour, and items from the PGSI. Those in the VL retailer focus group were asked about the type of VLT venue they operated (e.g., bar/pub, legion, native reserve), how many VLTs were at their site, and what their revenues were.

Each focus group discussion began with an introduction of the study's purpose, what the data would be used for, and the steps that would be taken to protect participant anonymity. Participants were then given a five-minute demonstration of the IPCS, and were led into a discussion about the system and its responsible gambling tools.

Two RGC staff members were present at each focus group: one who moderated and one who took notes. A representative from NSGC was also present, mainly to listen and answer questions specifically directed at him. In Halifax, the representative was in an adjacent room to the participants, watching the discussions through a one-way mirror. In Sydney, the representative was in the same room as the participants.

Throughout the focus group discussions, moderators tried to follow the question guides as closely as possible in order to ensure that all topics were covered and responses were given to every question. All focus groups were tape recorded.

2.4 DATA ANALYSES

To interpret the quantitative data, summary statistics of key metrics (i.e., averages/frequencies

and their changes over time) are used as well as econometric modeling that attempts to attribute stronger causal arguments compared to simple correlational based methods.

The primary modeling technique used in this study is Panel Data Analysis using fixed-effect regression. Panel Data Analysis fixed-effect models are commonly used in panel (longitudinal) data sets when there is one or more immeasurable unobserved characteristic among individuals. In this case, it is statistically challenging to show meaningful effects when regressing across the population since intrinsic factors of individuals affect multiple variables. Doing so would create biased measurement issues if a less robust model was used. In particular, if an ordinary least squares (OLS) regression model was used that failed to account for those unobserved terms, an inaccurate estimate would be made. For example, problem gamblers may gamble more but they will also self-exclude more, a typical correlational based effect may therefore show a positive relationship between self-exclusion and problem gambling severity.

A Panel Data Analysis using fixed effects model allows the researchers to determine how changes in one variable over time, is related to changes in a second variable. In addition, this type of modeling can examine lag effects where changes at one time are associated with changes during a previous time period. Fixed-effect modeling focuses on the same individuals over time, externally controlling for any factors that do not change over time. Hard-to-measure items like 'childhood experiences' are therefore controlled since they are static for individuals. While fixed-effect models are useful for controlling for hard to measure items, the same process makes impacts more difficult to detect. However, statistically significant impacts can be generally considered to have stronger validity once detected.

To illustrate the intuition behind the fixed-effect model, consider the following (simplified) example. In the chart below on the left, variation occurs only between provinces. In the chart on the right, temporal variation is shown within each province. If an OLS regression is conducted on the left data, or if it was conducted on pooled data from the right table, the estimate would show higher numbers of casinos leading to lower employment, since it would fail to account for market differences among provinces (such as provincial casino size restrictions). However, by looking across time, within each province, we could reveal the true and unbiased estimate: a higher volume of casinos leads to higher employment.[5] As is the case with most empirical estimations, there are many other factors that also need to be controlled for, but this simple example illustrates how unobserved variables could lead to incorrect policy decisions if careful consideration is not given to model design.

[5] Even in the case where both regressions provided the correct direction of impact, the estimate of how large that relationship may be would be biased without fixed-effect regression in the presence of unobserved provincial variables.

Location	Year	In-Province Casinos	Employment	Location	Year	In-Province Casinos	Employment
Province A	2003	10	44,000	Province A	2003	10	38,000
Province B	2003	15	26,000	Province A	2004	12	44,000
Province C	2003	20	10,000	Province B	2003	15	22,000
				Province B	2004	18	26,000
				Province C	2003	20	8,000
				Province C	2004	24	10,000

In order to further ensure that the results presented in this study are meaningful and robust, all of the key models were examined using dozens of "regression-adjusted" models. This includes adding and removing other control variables, adding and removing lagged variables (variables from previous time periods), and changing the functional form of the variables to view how stable the results are to these changes in assumptions. While the sections below report the generalized model results, the data was examined in many different ways to validate the findings. Empirical tests of the standard regression assumptions were also carried out.

Finally, we note that differences in results among data sources may reflect differences in sample characteristics (Table 3). For example, compared to the general population survey of Nova Scotia, the research panel sample had slightly more females, was older, and had a lower household income.

Table 3. Socio-Demographic Groups by Survey Type

Demographic Group	General Population Survey Percentage (n) N=2,001	Research Panel Sample Percentage (n) - Period 1 N=227
Gender		
Female	53.3 (1,067)	57.3 (130)
Male	46.7 (934)	42.7 (97)
Age		
19-24	7.6 (152)	2.6 (6)
25-34	14.6 (292)	16.7 (38)
35-44	18.5 (370)	19.8 (45)
45-54	22.6 (452)	24.2 (55)
55 +	35.7 (714)	36.6 (83)
Refused	0.8 (16)	N/A
Marital Status		
Single	22.9 (458)	25.6 (58)
Married	52.7 (1,055)	38.8 (88)
Common law	8.4 (168)	16.3 (37)
Separated/divorced	7.6 (152)	14.6 (33)
Widowed	6.8 (136)	4.8 (11)
Refused	1.5 (30)	N/A
Household Income		
No Income	1.6 (32)	2.6 (6)
< $20,000	9.8 (196)	13.7 (31)
$20,000 -$40,000	19.2 (384)	34.4 (78)
$40,001 – $60,000	16.6 (332)	21.6 (49)
$60,001 – $80,000	11.2 (224)	13.2 (30)
$80,001 – $100,000	7.7 (154)	8.4 (19)
> $100,000	11.3 (226)	6.2 (14)
Refused	22.7 (454)	N/A

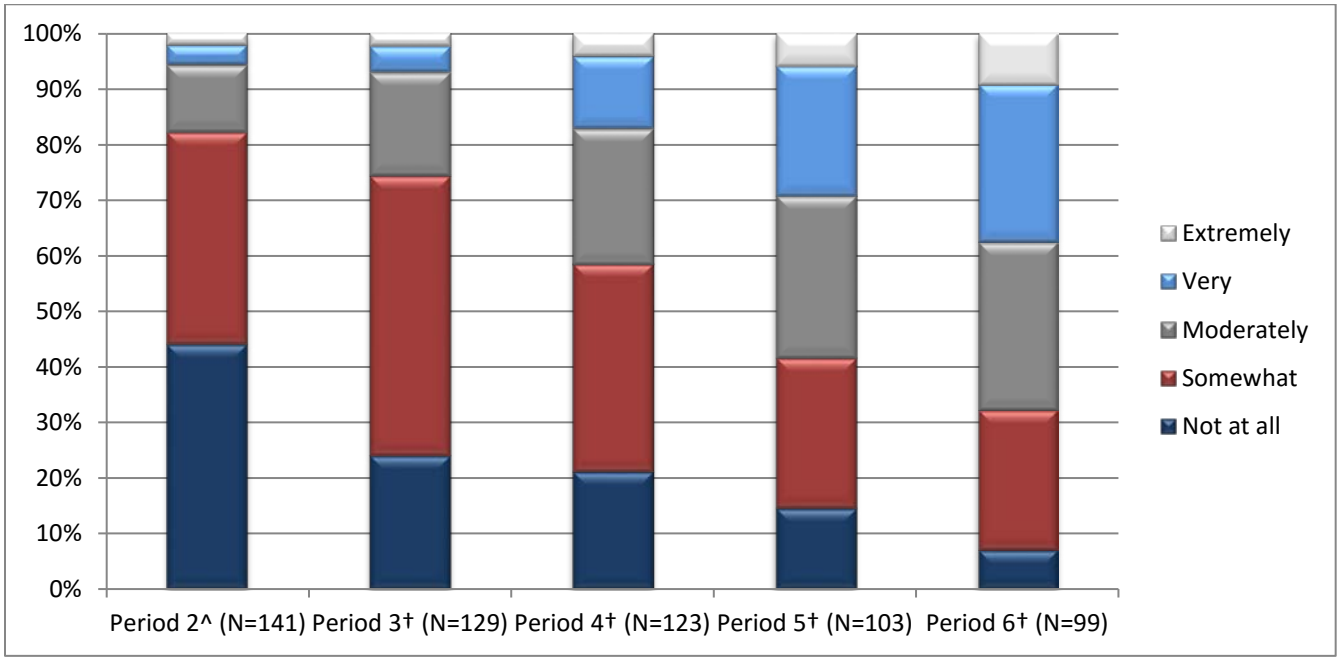
3 | MY-PLAY SYSTEM AND PLAYER KNOWLEDGE

The first step in the implementation of a useful responsible gambling tool is to make the target population aware of the system and its features. This section describes evidence of player knowledge regarding the MPS using data from the research panel, the Techlink system data, and the general population survey. Since the research panel had been contacted several times about the MPS, the knowledge-based measures should be considered an upper-bound estimate of knowledge in the general pool of VLT players, who generally had not been made aware of the system through multiple survey contacts.

3.1 EVIDENCE FROM THE RESEARCH PANEL

Throughout the research study, the research panel's knowledge of the MPS improved (Figure 2). In period 2, only 18% of the panel reported being "moderately", "very", or "extremely" knowledgeable about the MPS and this grew in each survey period, reaching 68% in period 6. However, given that this is a group that would be expected to be knowledgeable of the MPS, the 32% of respondents that responded being only "somewhat" (25%) or "not at all" (7%) knowledgeable of the MPS in period 6 remains high.

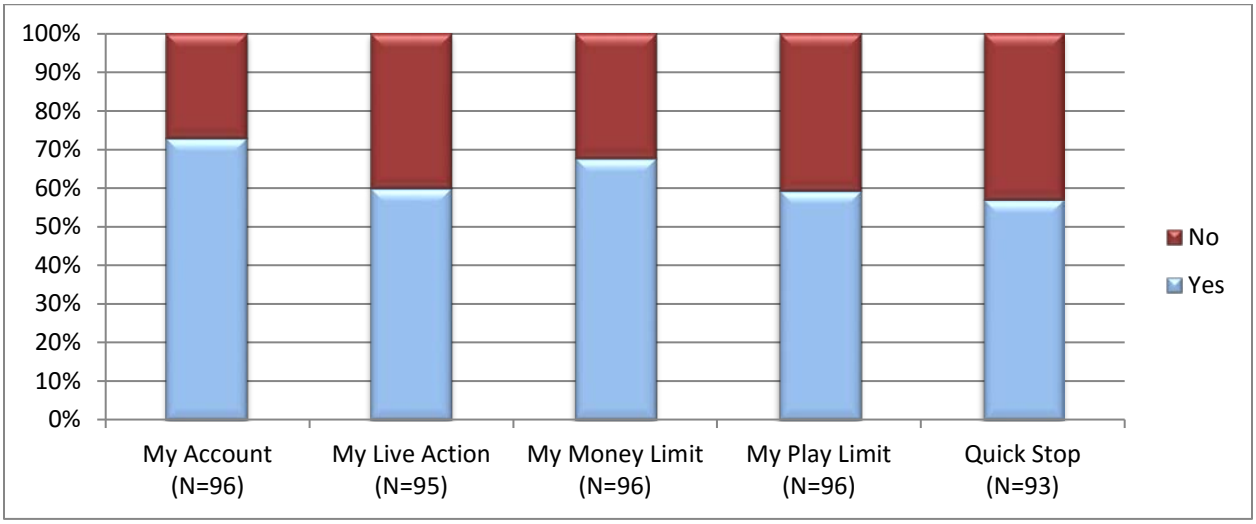
Figure 2: My-Play Knowledge: "How knowledgeable are you about My-Play?"



*Knowledge of MPS not tested at Period 1; ^ Pre MPS introduction; †Post MPS introduction

Figure 3 shows awareness of MPS features in period 6 among the research panel. The individual feature awareness results are all above 50%, with the most known feature being *My Account* with 73% stated awareness, and the least known feature *Quick Stop* with 57% stated awareness.

Figure 3: Period 6 "Are you aware of the following tool?"



3.2 EVIDENCE FROM THE GENERAL POPULATION SURVEY

The large majority of all past-year gamblers (80%) and VL players specifically (72%) in the voluntary period survey felt they were "not at all" knowledgeable about MPS (Table 4). Less than 5% of all gamblers reported being "very" or "extremely" knowledgeable about the system.

Table 4: Knowledge of MPS among all Past-Year Gamblers and VL Players

How knowledgeable would you say you are about the MP system?	% (n) of All Gamblers N=996	% (n) of VL Players N=197
Not at all	80.0 (797)	72.2 (142)
Somewhat	13.2 (131)	15.4 (30)
Moderately	4.3 (43)	7.3 (14)
Very	2.0 (20)	4.1 (8)
Extremely	.5 (5)	1.0 (2)

The survey asked VL players about their awareness of specific MPS features. The most commonly known features were the money and time limit functions with about 1 in 5 players being aware of *My Money Limit* (23%) and *My Play Limit* (21%) (Table 5). Awareness of the MPS features was not related to VL playing frequency, p>.05.

Table 5: VL Players' Awareness of MPS Features by Play Frequency

Aware of …	% of Occasional VL Players	% of Regular VL Players	% of All VL Players	N
My Money Limit	21.3	28.0	23.1	186
My Play Limit	19.3	24.0	20.5	185
My Account	13.3	26.0	16.8	185
My Live Action	13.2	24.0	16.1	186
Quick Stop	13.3	14.0	13.5	185

Analyses were conducted to determine whether knowledge of the MPS was related to people's perceptions of the government's efforts to address VLT-related problem gambling. Survey respondents were asked how much they agreed or disagreed with the statement, "In the past year, Nova Scotia has made a reasonable effort to address VLT-related problem gambling" using a 7-point scale with 1 being "completely disagree" and 7 being "completely agree." There was no significant correlation ($r=-.001$, $p > .78$)[6], indicating that people's knowledge of the MPS was not related to their views about whether Nova Scotia has made a reasonable effort to address VLT-related problem gambling. We caution that these findings are based on the relatively small sub-sample of VL players taken from the General Population survey (n=197).

3.3 EVIDENCE FROM THE SYSTEM DATA

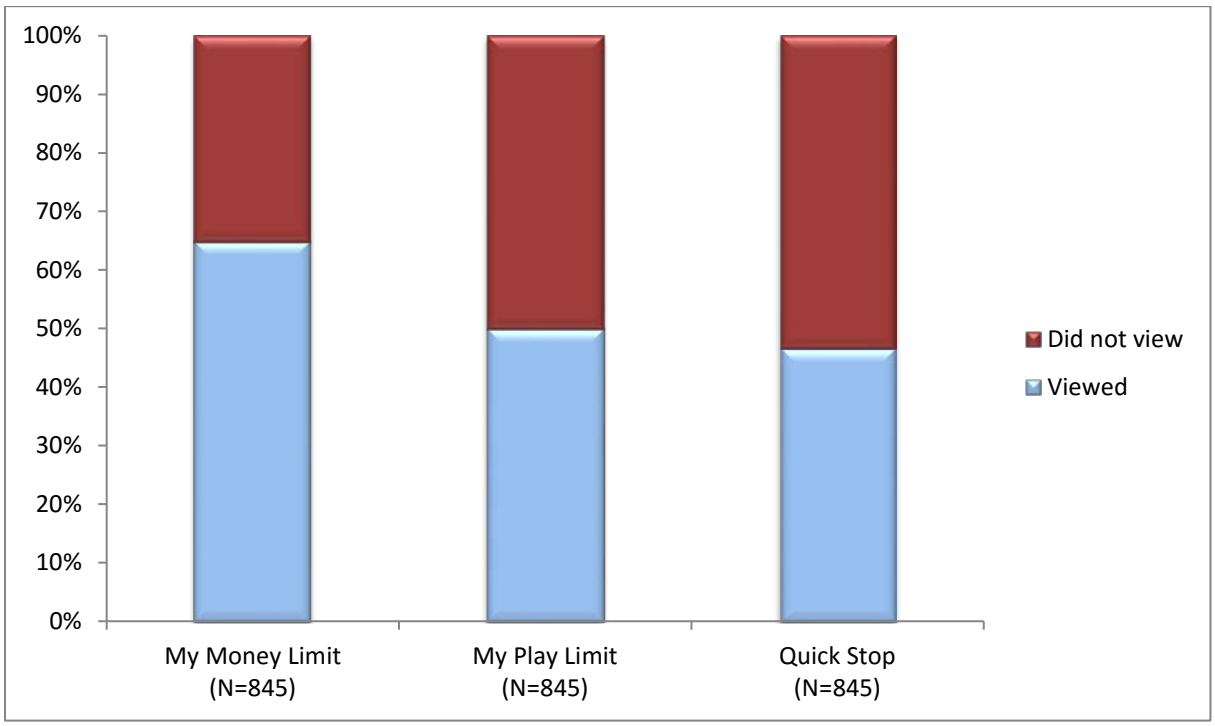
The Techlink system data provides some additional evidence on feature awareness that is less biased by the use of a repeatedly surveyed group. The tracking data within the system allows the number of feature screen views to be recorded, even if no activation of a particular MPS feature is made. Accordingly, as in Figure 4, the Techlink data showed that the *My Money Limit* feature was the most viewed feature, with 65% of accounts having viewed the screen at some point during the first data collection period (prior to the server data loss). Of course, given that the same player may

[6] The response option "neither agree nor disagree" was coded as 4 and therefore in the middle of the extreme ends of "agree" or "disagree" continuum. Since some might interpret this response as meaning that the person does not know and therefore, should not be placed on the continuum at all, we ran the correlation analysis excluding these options but still found no significant correlation (r=-.01, p=.780, N=744).

have used several different player cards, the true value of an individual's use may be higher or lower than this figure, but these values are similar in magnitude to the research panel survey results.

Roughly 65% had viewed the *My Money Limit* tool, 50% had viewed the *My Play Limit* tool, and 47% had viewed the *Quick Stop* tool. Based on these results, it seems that during the voluntary period, there were still a large number of MPS players that remained either unaware or uninterested in how these tools could be used.

Figure 4: Techlink Data on Feature Views



3.4 OVERALL RESULTS

The results from the research panel showed a steady increase in awareness of the MPS over time. Part of this increase may be related to the variety of efforts undertaken to raise awareness and utilization of the system. During both voluntary and mandatory periods, promotional materials such as brochures, posters, and the website provided players with descriptions on each of the tools. Additionally, during the voluntary period staff visited retail locations and spoke to players to facilitate the introduction of the MPS. However, while knowledge of the MPS improved over time, there were still a meaningful proportion of those in well exposed populations (the research panel and the Techlink system users) and a less-well exposed population (the general population of gamblers) who were unaware of the MPS.

In terms of the actual MPS features, *Quick Stop* was the least known feature among the research panel, general population and user data as identified in the system data.

4 | MY-PLAY SYSTEM AND PLAYER ATTITUDES

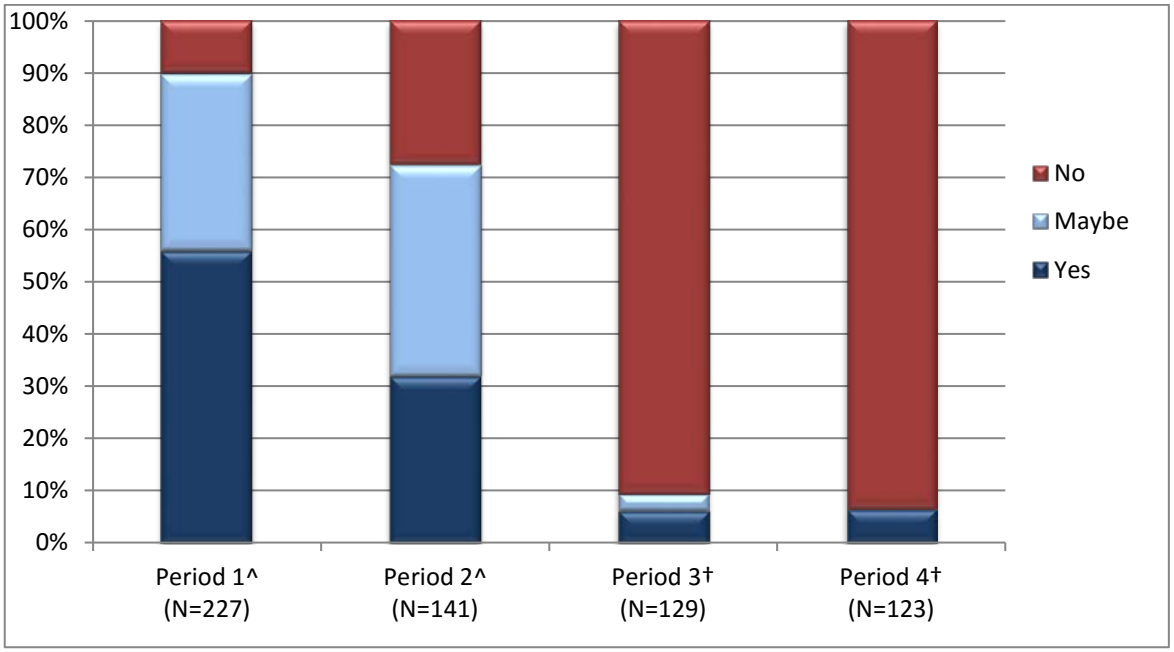
Once players are aware and knowledgeable about the MPS, the next most important task is to recognize player attitudes towards the usefulness and value of the system. If players have a dubious attitude towards the utility of the system, participation of even the most effective systems will be low. This section describes evidence of player attitudes towards the MPS using data from the research panel, the general population survey and focus groups conducted during the voluntary enrollment period.

4.1 EVIDENCE FROM THE RESEARCH PANEL

The research panel provides an informative perspective on player attitudes towards the MPS. First, it included two baseline surveys taken prior to the implementation of the MPS to evaluate player attitudes towards an unknown system that had yet to be employed. It then included surveys taken after the MPS had been implemented in the voluntary phase and mandatory phase to evaluate the reaction following the actual implementation of the MPS.

As shown in Figure 5, the early response towards the use of a MPS in period 1 was favourable, with only 10% of panel respondents suggesting that they would not enroll. However, once the system was implemented in the voluntary enrollment period (periods 3 and 4), only about 8% of respondents stated that they had or maybe would enroll in the MPS. There was clearly a substantial difference between the players' expectations and their perceptions of the MPS. For obvious reasons, this question was not posed during the mandatory stage when all players had to enroll in order to gamble on VLTs.

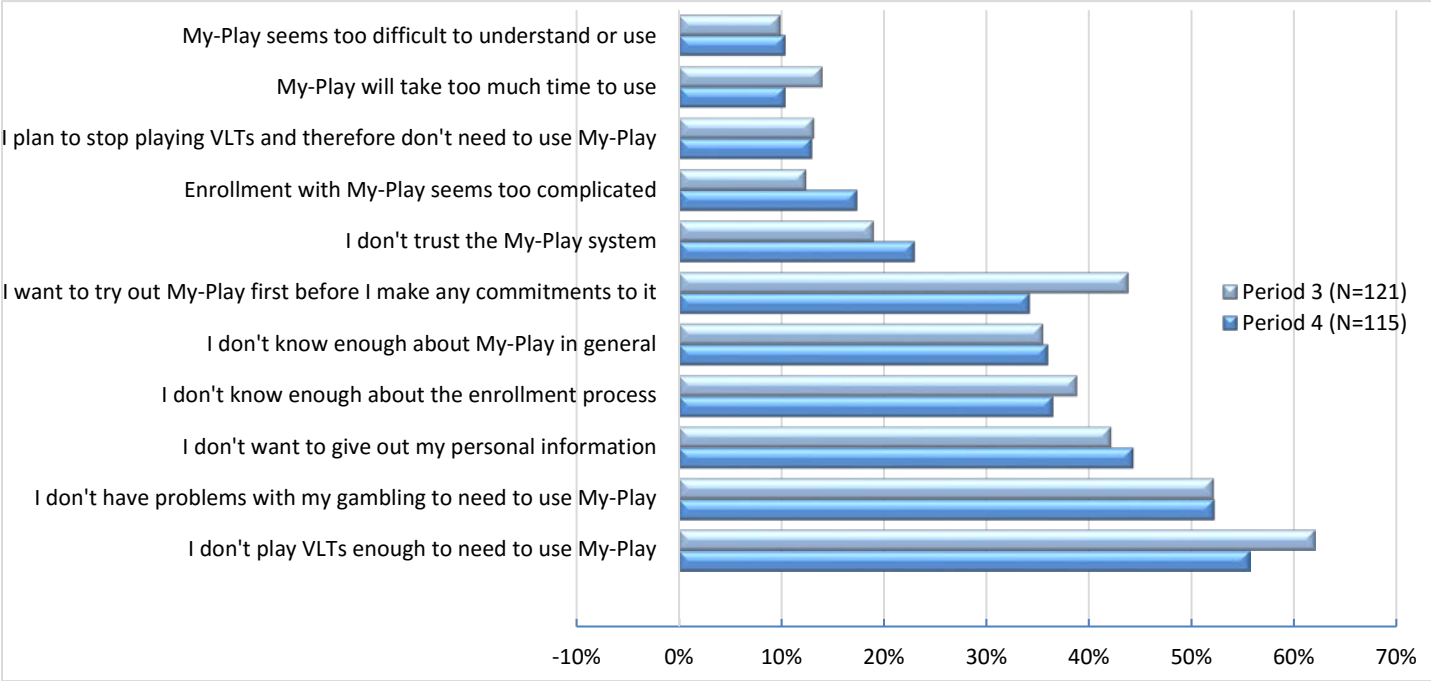
Figure 5: Have you or will you enroll in the MPS?



^ Pre MPS introduction; †Post MPS introduction

In order to understand the reasons that players were not using the system during the voluntary enrollment period, players who had not yet enrolled in the MPS were asked why they had not or will not enroll. The two largest response categories were "I don't play VLTs enough to need to use My-Play" and "I don't have problems with my gambling to need to use My-Play." Another important reason related to privacy concerns. Roughly 23% of players stated that they had not enrolled because they do not trust the system, and almost double that amount noted that they do not want to give out their personal information (Figure 6).

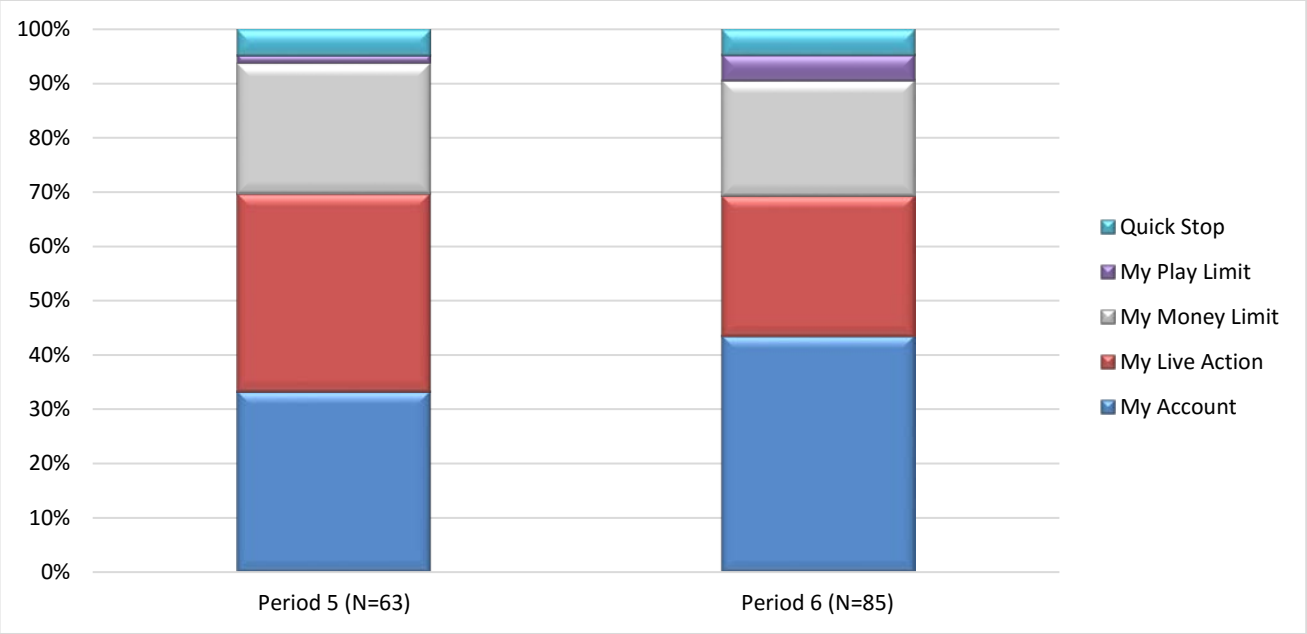
Figure 6: Response to "Why have you NOT or why would you NOT enroll with My-Play?"



To further understand players' attitudes towards the MPS, research panel respondents were asked in the mandatory period (periods 5 and 6) what they believed were the most useful and least useful tools of the system (Figure 7 and Figure 8). In general, the monitoring features were found to be more useful than the control features (which can be bypassed by obtaining another card). The *My Account* feature was the most popular (38%) with *My Live Action* (30%) the second most popular. Some of the comments related to the monitoring features included:

- "It ensures you receive the correct info, there is no convincing yourself of anything, it's fact and harder to ignore when you see it in black and white."
- "Deters exceeding your gambling limit."
- "Tells me information on current session."

Figure 7: Most Useful Tool

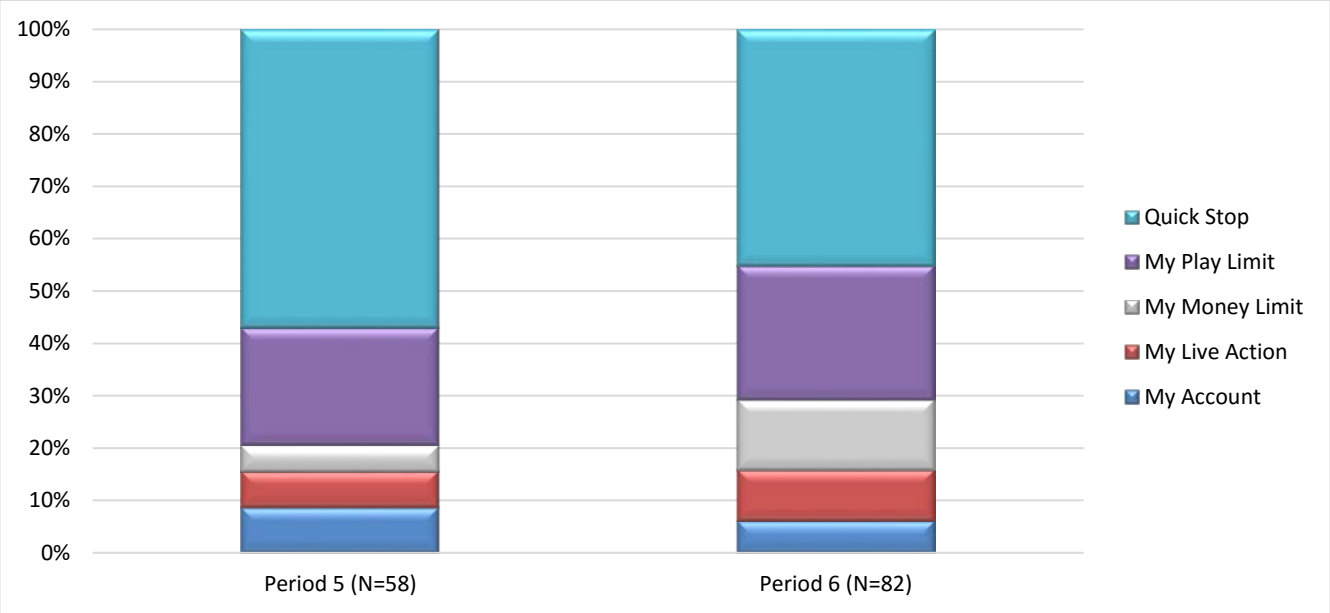


*Data from surveys in periods 5 & 6, post MPS introduction.

Consistent with the earlier findings on knowledge levels, the least popular tool was the *Quick Stop* feature (48%). Some of the reasons for listing it as the least popular were related to lack of awareness and the ability to obtain another card for play. For example, respondents noted:

- "Can just go and register another card."
- "I'm not very familiar with this one...haven't used it so that's why I said it's least useful!"

Figure 8: Least Useful Tool



*Data from surveys in periods 5 & 6, post MPS introduction.

4.2 EVIDENCE FROM THE GENERAL POPULATION SURVEY

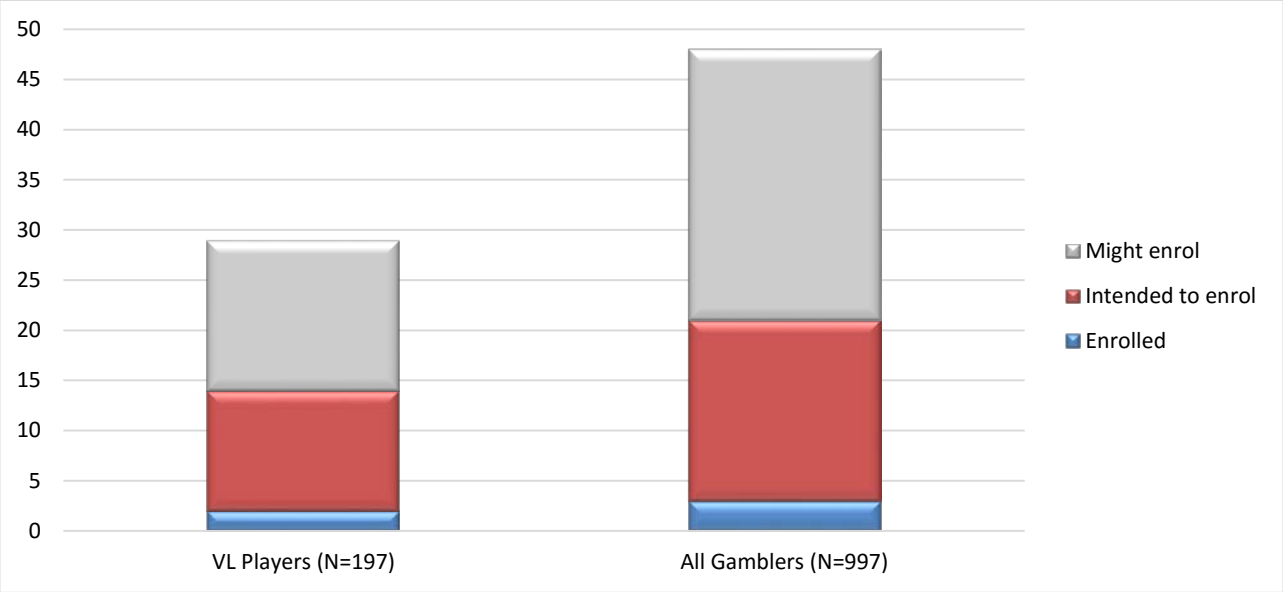
The general population survey provides further insight into gamblers' intentions to enroll into the MPS during the voluntary stage.

4.2.1 My-Play Enrollment during Voluntary Enrollment Period

As shown in Figure 9, only three people in the general population survey were actually enrolled in the MPS at the time of the survey.[7] About 7% of all past year VL players enrolled or intended to enroll in the MPS. Another 7% indicated that they might enroll. In total, about 14% of past year VL players expressed some interest in voluntarily enrolling with MPS, rates that are comparable to the research panel data from Periods 3 and 4. Thus, at this time, roughly 86% of participants did not indicate interest in enrolling in MPS.

[7] Their reasons for enrolling were curiosity (n=1), tracking winnings and losses (n=1), and birthday (n=1). Two of the three enrollers used the My-Play tools (i.e., My Account, My Live Action, My Money Limit) and they rated their satisfaction with the system as *not at all* and *very* satisfied.

Figure 9: Intention to Enroll during Voluntary MPS Enrollment



VL players who did not enroll with MPS were asked to select from a list of reasons why they did not enroll. Similar to the research panel, the most common reasons were that they did not play enough (90%) or did not have any gambling problems (75%). Occasional players (i.e., less than once a month) were more likely than regular gamblers (i.e., at least once a month) to state that they do not play enough (95% vs. 76%) [8] and do not have problems (83% vs. 54%).[9]

A significant portion of VL players also cited reasons suggesting that a lack of knowledge or accurate understanding of the MPS dissuaded them from enrolling. About half of the VL players reported that they did not enroll because they did not know enough about MPS or its enrollment process (55%) or did not trust the MPS (e.g., privacy issues; 42%). Almost 1 in 5 players felt MPS use or enrollment was too complicated (20%) or it would take too much time (16%). The endorsement of these reasons did not vary significantly by VL play frequency (Table 6).

[8] X^2=13.86; df=1, p<.001
[9] X^2 = 16.15; df=1, p<.001

Table 6: Reasons Why VL Players Would Not Enroll during the Voluntary MPS Enrollment Period

Reasons for not enrolling in MPS	% of Occasional VL Players	% of Regular VL Players	% of All VL Players	N
I don't play VL enough to need to use MP and its informational tools* **	**94.8**	**76.0**	89.7	184
I don't have problems with my gambling and don't need to use MP and its informational tools* **	**82.8**	**54.0**	75.0	184
I don't know enough about MP or its enrollment process	56.3	52.0	55.1	185
Don't trust MP (e.g., privacy issues)	39.6	46.9	41.5	183
I want to try out MP first before I make any commitments to it	23.1	22.4	23.0	183
MP use or enrollment seems too complicated	20.9	16.0	19.6	184
I plan to stop playing VL and therefore don't need to use MP and its informational tools	18.7	20.4	19.1	183
MP will take too much time to use	17.9	10.0	15.8	184
Other (e.g., no interest or need, not available)	5.2	22.4	9.8	184

* <.05, ** <.01, *** < .001

4.2.2 Intention to Enroll during My-Play Mandatory Enrollment

A series of questions was posed to VL players about their intentions if they were required to enroll with MPS in order to play VLTs. About 1 in 10 (8%) said they would enroll and continue playing and a further 35% said they would try it for a bit and then decide what to do. The most common response was to stop playing VLTs, with 43% of the players selecting this intention (Table 7). Reactions to the mandatory enrollment did not vary by VL play frequency, p >.05.

Table 7: VL Players' Intentions for MP during VL Mandatory Enrollment by Play Frequency

When the card becomes mandatory, player will …	% of Occasional VL Players	% of Regular VL Players	% of All VL Players	N
Enroll for card and continue playing	6.4	10.0	7.5	160
Stop playing VLTs	43.6	41.2	42.9	161
Will try for a bit and decide	33.6	39.2	35.4	161
Don't know	18.0	9.8	15.4	161
Other	0.0	2.0	.6	160

4.3 EVIDENCE FROM THE FOCUS GROUPS

Focus group participants were recruited through the research panel (N=16). Players who played regularly (at least once a month) and had not enrolled with the MPS were selected to participate. Privacy of information was a key theme in the focus group discussions. All participants during the focus group sessions felt that it would be better if the anonymity of the individual was ensured and no associating personal information could be encrypted onto the MPS card. Many participants said that "if it was just a number, I wouldn't have a problem with it."

While participants generally felt that the enrollment process was easy, there were a few areas of the enrollment process that they did not like. One of them was scanning their government issued ID and that there is no guarantee that the information is deleted. Participants said that this results in trust issues, since "I won't even give out my credit card or anything in some of these places" and "all this scanning is too intimidating for people." Another area of concern was that there is no information at the VLT sites that fully and clearly explains how the enrollment process works. As one participant said "the bartenders don't know anything about this, the My-Play card" and "you are not told what exactly happens when you enroll."

Many participants disliked that the enrollment process takes place at the bar, stating:

- "It's almost humiliating, with all these people sitting at the bar while you are waiting to get a card, it's not anonymous at all, it's intrusive."
- "You don't want to enroll in this thing with 10 bar flies sitting there watching you."
- "As a gambler you are embarrassed and the last thing you want to do is advertise it at a bar."
- "It's seen as if you have an addiction problem if you go and enroll."

Rather than enrolling at the bar, some participants thought it would be better to have, at minimum, a designated area away from the bar where a patron could obtain a card. Other participants thought that enrolling could be more private, away from the VLT site and through varying methods such as by phone, mail, email, or having a kiosk at the mall.

Participants were informed that the MPS may become mandatory in the future, meaning that to

play a VLT all players will need to enroll and insert a card, but the use of the MPS information tools will be voluntary. Some participants were happy to hear that the MPS was going to be mandatory. They felt that this made more sense than giving the choice to enroll and then play without a card. As one participant said "it would really help me, I wish these cards were mandatory now." Other players thought that this would result in losing VLT players to other forms of gambling. As one participant said "some players will be lost to the casino, but they'll come back once they get ticked off at the casino."

When asked, "Would a mandatory card have any effect on your VLT play?" most participants said that mandatory registration would not have any effect on their gambling. A few participants said they would cut back on their spending, and others said they would not play anymore – "I'll find some other way to gamble, such as poker or online."

4.4 Overall Results

Based on the results from the research panel, the general population survey, and the focus groups, there was a slow uptake in the MPS system as currently designed. While a large majority of VL gamblers expressed interest in using the MPS during the baseline period, few people signed up during the voluntary enrollment period. This suggests that players in this study were originally interested in some sort of system, but when it became available, either the MPS system was not viewed as useful, or there were too many other barriers (such as privacy concerns, embarrassment) associated with its use.

"I don't have problems with my gambling to need to use My-Play" was a common reason for not using the MPS. As described earlier, the MPS basically consists of two types of tools. There are those that can help monitor play (*My Account* and *My Live Action*) and those that can help control play (*My Money Limit*, *My Play Limit*, and *Quick Stop*). Perhaps it is those tools that help control play that are seen as more appropriate for gamblers with problems, and that promotion and focus of the MPS as a monitoring tool would increase general usage. It is also possible that those who are occasional gamblers simply don't see the need for any sort of tools because they gamble so infrequently.

While the enrollment process has generally been noted to be relatively easy, a consistent theme in the absence of use of the MPS has been concerns over privacy. VL players are concerned about the security and use of their personal and play data within the system, and they are also concerned about having to publically register for the system in front of other people at the VLT site. The privacy concerns may push occasional players away from signing up for the system (or playing at all in a mandatory environment). Since occasional players typically do not have gambling problems, the system may be disproportionally curbing the enrollment of recreational non-problem gamblers.

5 USE OF THE MY-PLAY SYSTEM FEATURES

This section examines the actual use of the MPS features once enrolled in the MPS. Evidence from the research panel, Techlink system data, and the general population survey (during the voluntary enrollment period) were planned to be used to assess this uptake. However, due to the low number of people from the general population survey who actually enrolled in the MPS, data from that survey is not included in this section

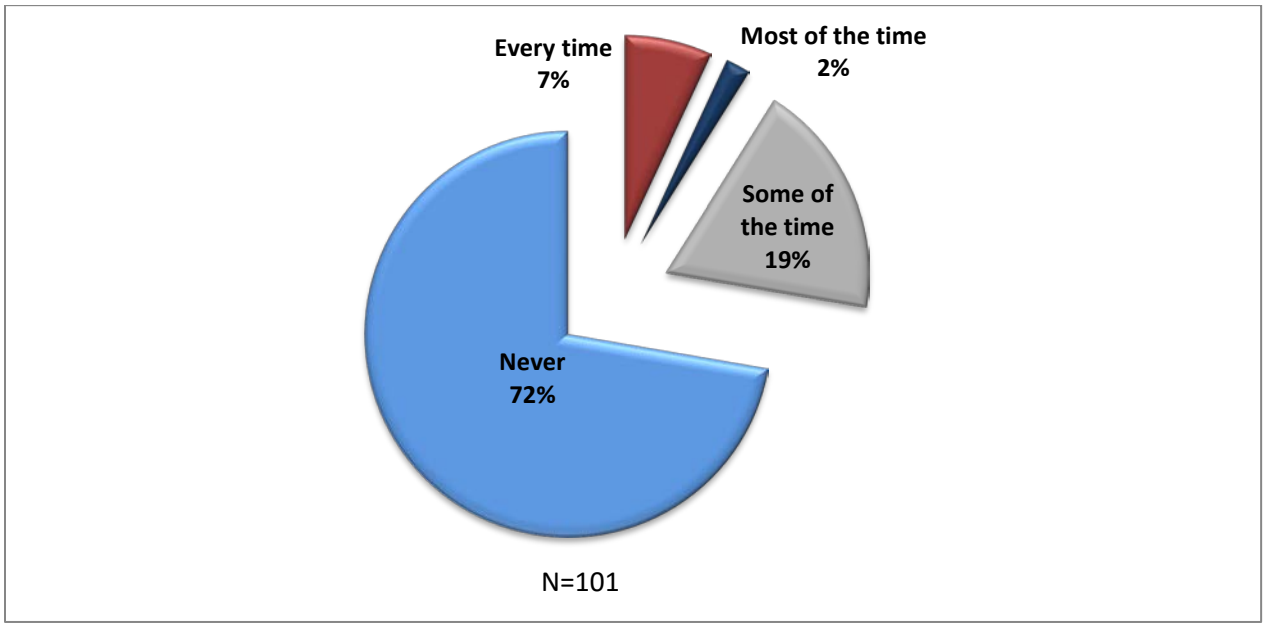
5.1 EVIDENCE FROM THE RESEARCH PANEL

A player's repeated MPS card use provides useful information. Without an attachment to an individual account, not only will the monitoring features be meaningless, but the *My Play Limit* and *My Money Limit* restrictions placed on the account will be ineffective. That is, an individual who obtains a new card each time he/she gambles will not be able to monitor time and money spent and can easily bypass any time or money restrictions they may make.

During the mandatory phase, players could opt for full enrollment or light enrollment. Full enrollment requires a player to create an MPS account using a government issued ID, while light enrollment allows players to receive a card but no personal information is used to create their MPS account. Among the research panel, only 15% of VL players opted for full enrollment in period 6. Of this small percentage, the majority report using their same card every time they play. Roughly one third (32%) of players obtain a new card each time they go to play VLTs.

Panel respondents were also asked about their card sharing behaviour. As shown in Figure 10, the prevalence of card sharing appears to be relatively high with just over one quarter (28%) of respondents admitting to using another person's card.

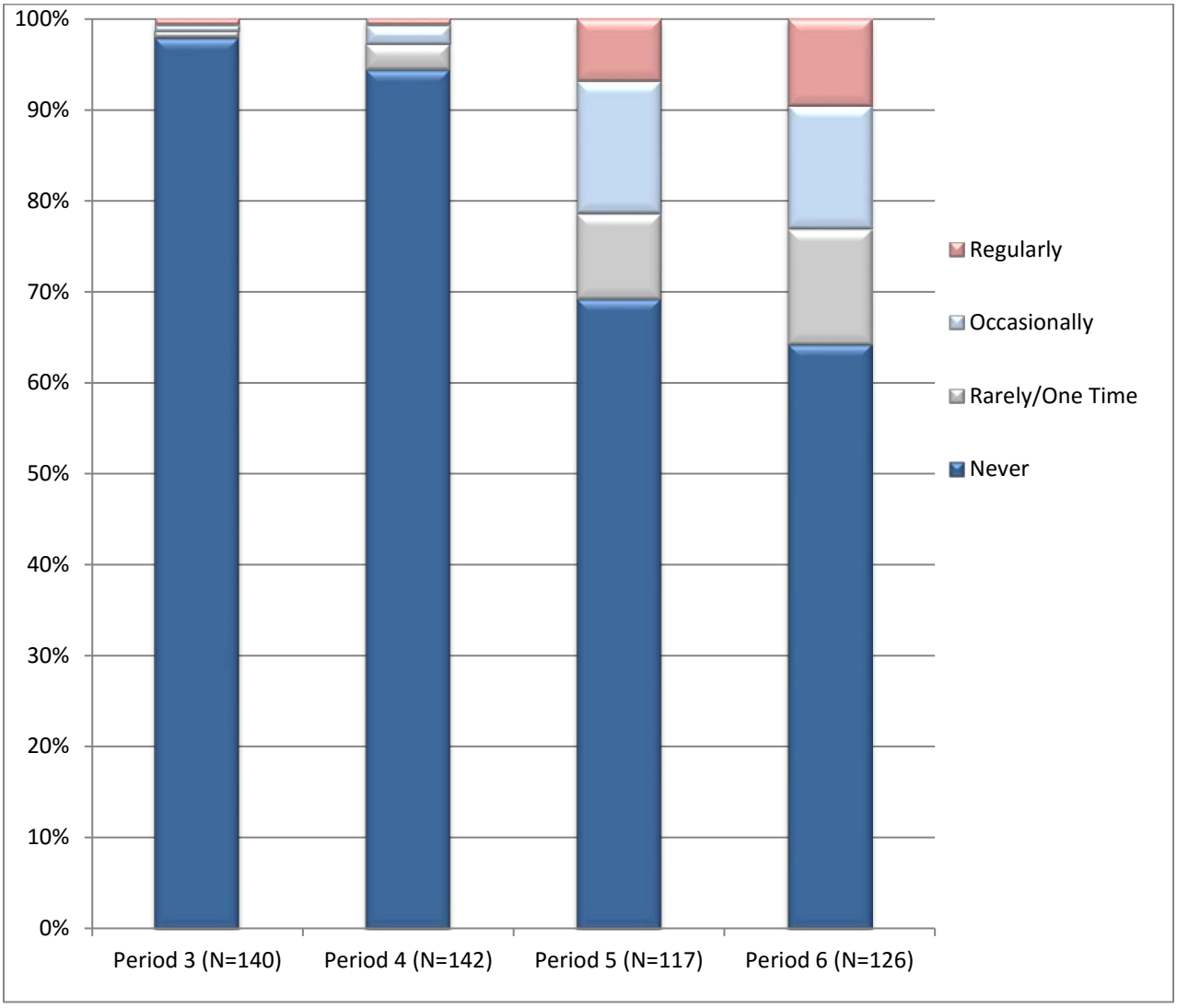
Figure 10: Do you borrow a card to play? (Period 6)



Figures 11 to 15 show the use of the MPS features. The *My Account* feature was the most used MPS tool among these. Since the pre-launch baseline surveys, usage of *My Account* has increased with each survey. Roughly 35% of panel members reported using the feature at least once in period 6, and nearly 10% of respondents reported using the feature regularly (Figure 11). Usage rates of the *My Live Action* feature show similar growth patterns as the *My Account* feature, albeit with somewhat lower levels of usage. Roughly 28% of respondents reported using the feature at least once in period 6 and 7% of respondents used the feature regularly (Figure 12).

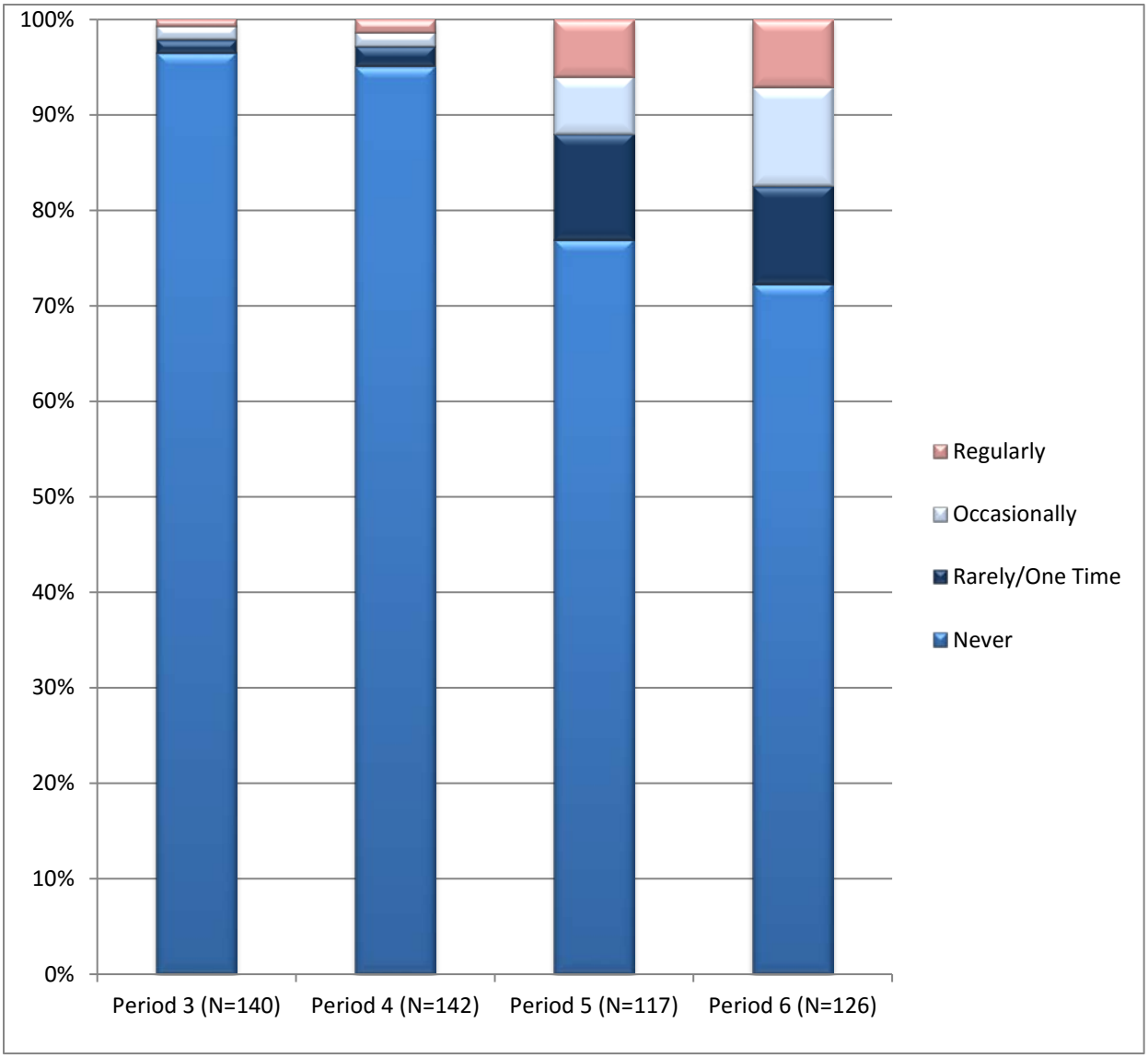
It is noteworthy that usage rates of both features were quite low during the voluntary enrollment periods. Only 3% of respondents reported using either feature occasionally or regularly in period 4, which is well below the share of respondents that regularly used the feature in the mandatory phase.

Figure 11: Since you enrolled, how often have you used My Account?



*Period 1 & Period 2 were prior to MPS introduction

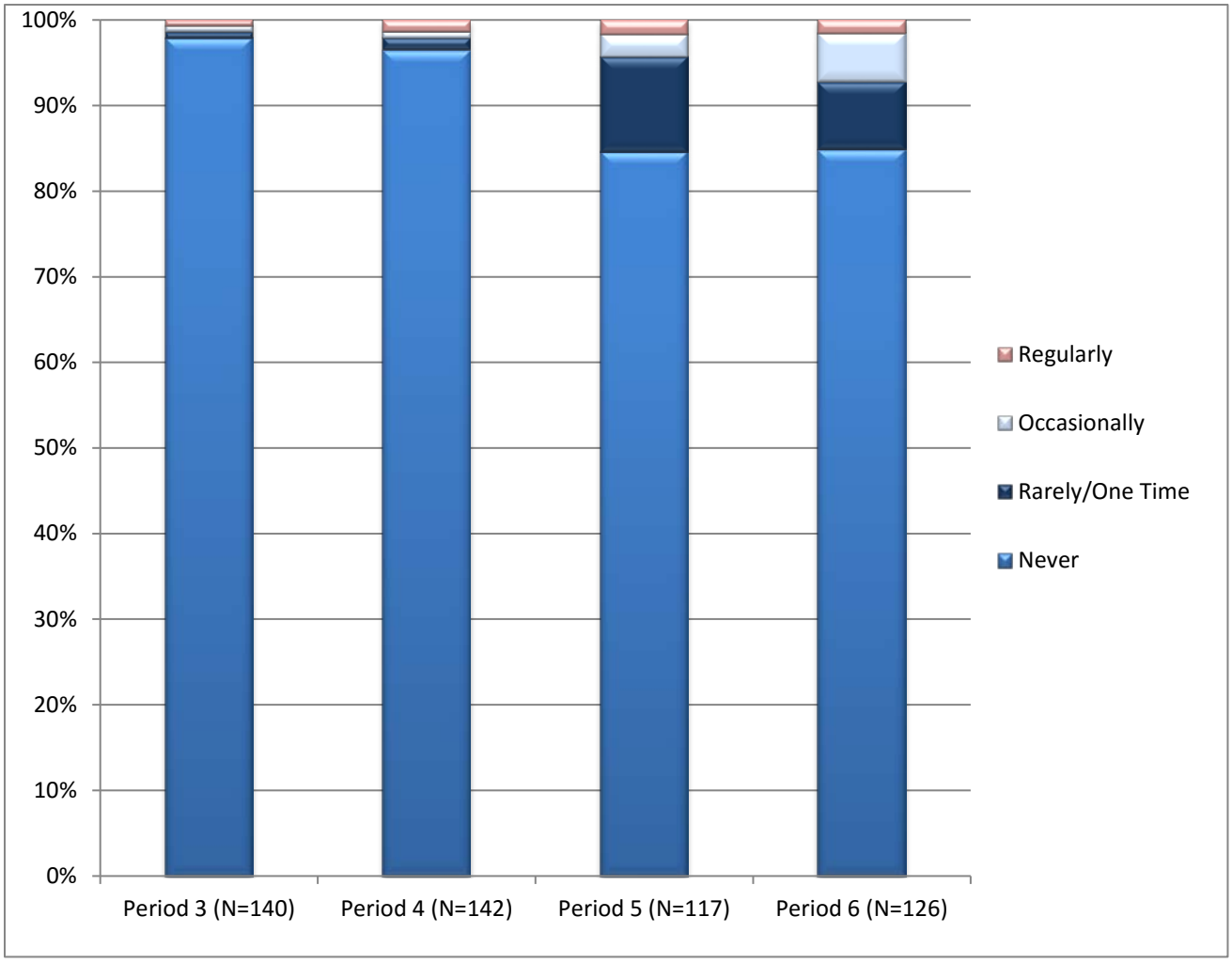
Figure 12: Since you enrolled, how often have you used My Live Action?



*Period 1 & Period 2 were prior to MPS introduction

Of the control type features, *My Money Limit* was the most used MPS feature. While fewer than 4% of the sample had used the feature during either voluntary enrollment period, adoption did increase to 15% after the introduction of mandatory enrollment, with 7% of gamblers using the feature occasionally or regularly (Figure 13). Overall usage prevalence did not increase from period 5 to period 6, as was the case with the monitoring features; however, the frequency of usage did increase for those players reporting some use.

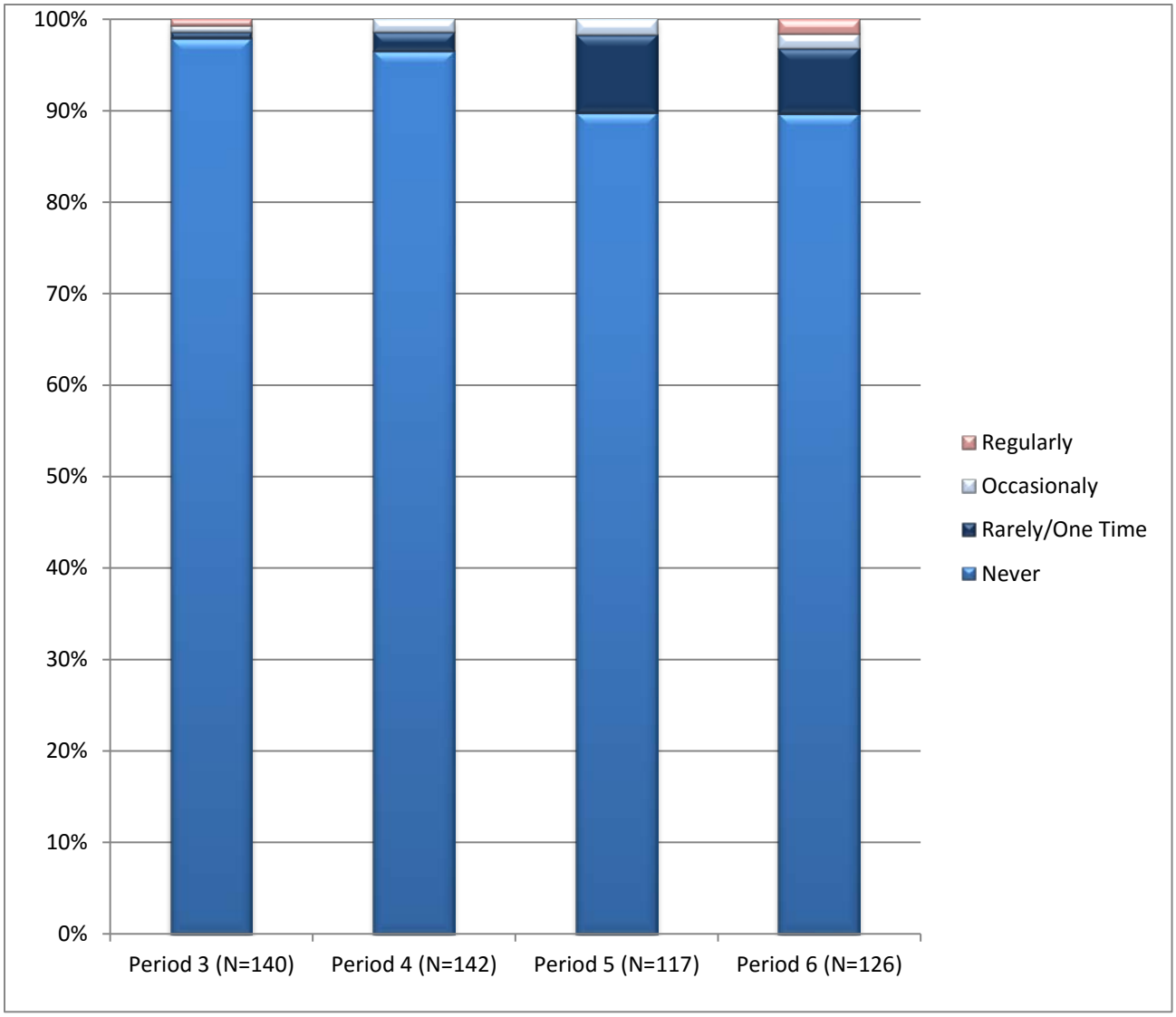
Figure 13: Since you enrolled, how often have you used My Money Limit?



*Period 1 & Period 2 were prior to MPS introduction

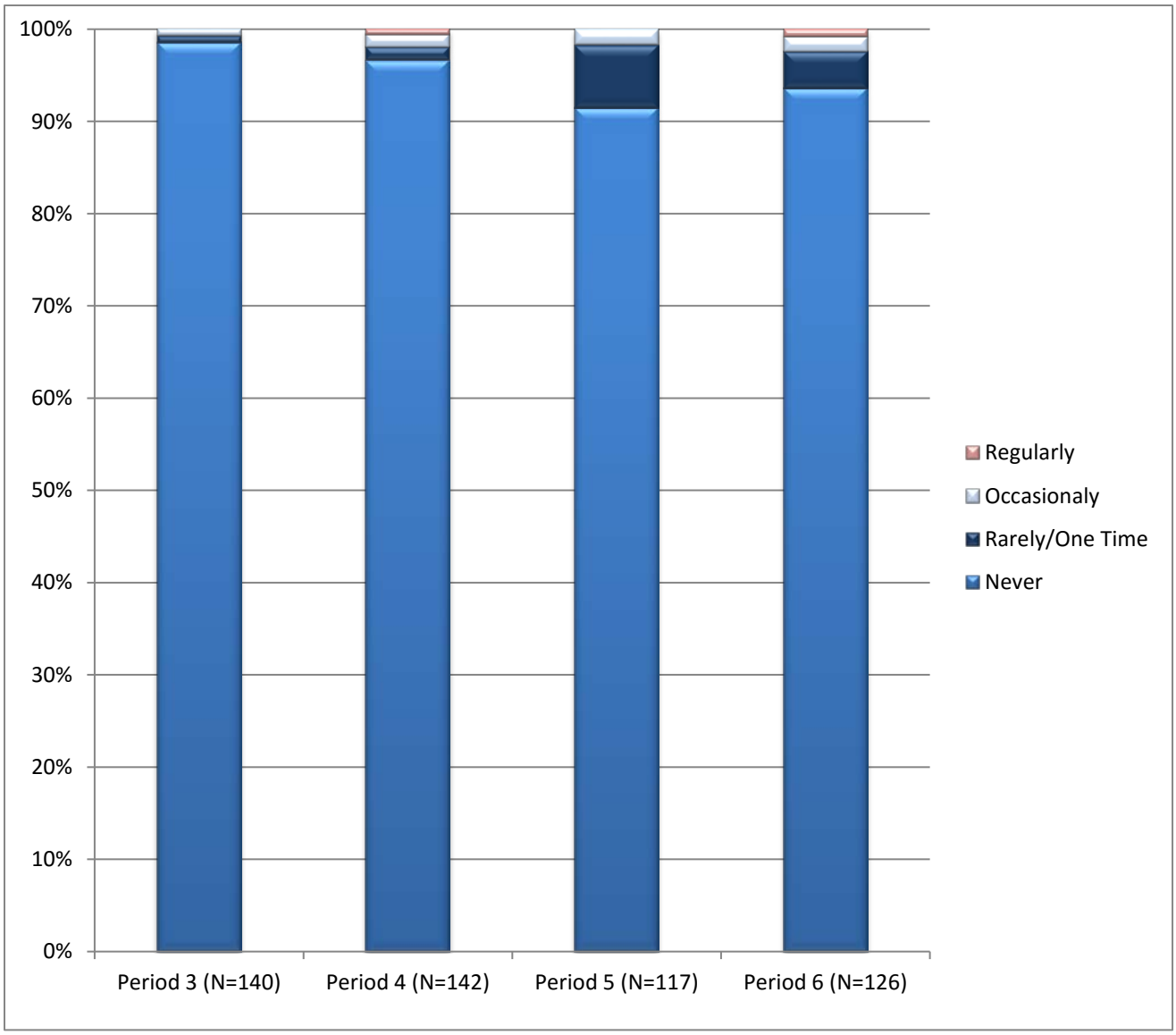
Usage of *My Play Limit* also showed an increase after the change from voluntary enrollment to mandatory enrollment (Figure 14), but overall usage was lower as compared to *My Money Limit* usage. About 10% of respondents reported using the feature rarely/one time or more. This figure did not grow from period 5 to period 6. *Quick Stop* was the least used feature, with only 6% of the research panel sample reporting adoption of this feature – this value was a slight decrease from the period 5 rate of 8.5% (Figure 15).

Figure 14: Since you enrolled, how often have you used My Play Limit?



*Period 1 & Period 2 were prior to MPS introduction

Figure 15: Since you enrolled, how often have you used Quick Stop?



*Period 1 & Period 2 were prior to MPS introduction

A series of correlations were conducted to determine whether there were relationships between MPS feature use and general money management behaviours, assumption being that those who follow a budget and track their spending may be more inclined to use some of the MPS tools. As shown in Table 8, all the relationships were weak. That is, the use of MPS features was not related to an individual's general budgeting practices.

Table 8: Feature Use and Money Management Correlation

Please tell us how much you disagree or agree	How Often: My Account	How Often: My Live Action	How Often: My Money Limit	How Often: My Play Limit	How Often: Quick Stop
I put money aside on a regular basis for the future	-0.01	0.03	0.04	0.02	0.02
It is better to spend money today because you never know what will happen tomorrow	-0.03	0.00	-0.03	-0.04	-0.05
I follow a careful financial budget	0.07	0.06	0.07	0.09	0.08
I keep track of my money	0.06	0.07	0.03	0.02	0.03
I think money should be enjoyed	0.02	0.04	0.00	-0.00	0.01
I do financial planning for the future	0.01	0.05	0.04	0.04	0.04

In addition, correlations between PGSI categories and MPS feature usage were separately computed for the mandatory periods (5 and 6). These analyses showed that the use of features is positively correlated with PGSI class. The findings from these tests showed that the features are used somewhat more by at-risk/problem gamblers. The control feature with the largest correlation was the *My Play Limit*, with a correlation of 0.15. *My Money Limit* and *Quick Stop* had correlations of 0.08 and 0.09 respectively. An examination of whether these features have an effect on behaviour and outcomes is provided in section 6.

5.2 EVIDENCE FROM THE SYSTEM DATA

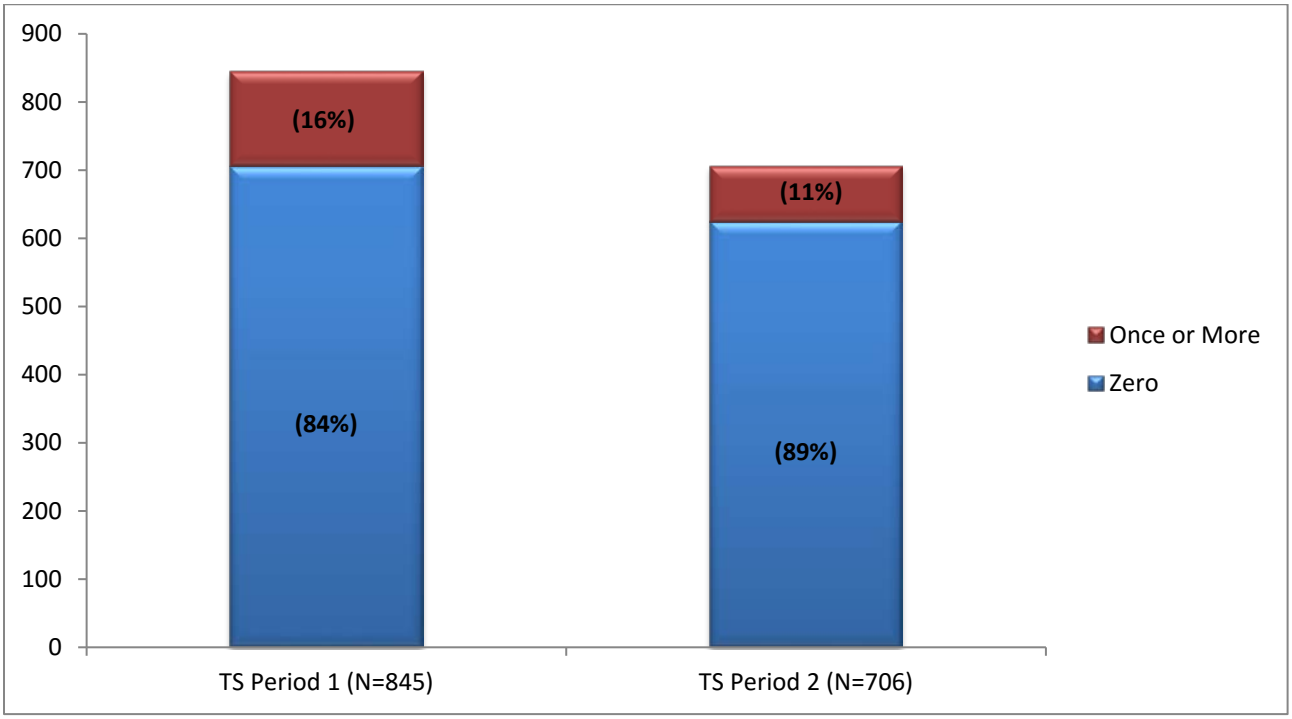
This section consists of analysis from the voluntary enrollment period (from July 2010 to March 2012). This data is divided into two six-month periods: TS Period 1 – July 2010 to December 2010 and TS Period 2 – October 2011 to March 2012. As previously noted, Techlink's system update in early 2011 to transfer databases resulted in the loss of 9 months of data (January 2011 to September 2011).

5.2.1 MPS Control Features

The control features available in the MPS are used by a minority of users in the Techlink system database. The most popular control feature found in this data is the money limit feature. As shown in Figure 16, in the first period that system data was made available, 139 player accounts in

the system (16%) were found to have used the money limit feature (*My Money Limit*). In TS Period 2, the feature was still relatively popular, with 81 player accounts (11%) setting a money limit. While this level is higher than was observed in the research panel survey, it is important to note that it may reflect the same players setting restrictions on multiple cards.

Figure 16: Total number of player accounts that used My Money Limit



The *My Play Limit* control option was much less popular than the *My Money Limit* option. As noted earlier, the *My Play Limit* function includes two types of tools. The "Calendar Stop" option allows players to restrict play on a given day of the week, or week of the month, or month of the year. The "Self-Exclusion" function stops play immediately for a day, week, month or year. Roughly 1% of MPS player accounts used the calendar stop option in TS Period 1 (Figure 17), and the rate of use of the calendar stop option was unchanged from TS Period 1 to TS Period 2. Close to 3% of TS Period 1 player accounts used the self-exclusion option to restrict play, and 1% of TS Period 2 player accounts did likewise (Figure 18).

Figure 17: Total number of player accounts that used My Play Limit (calendar stop option)

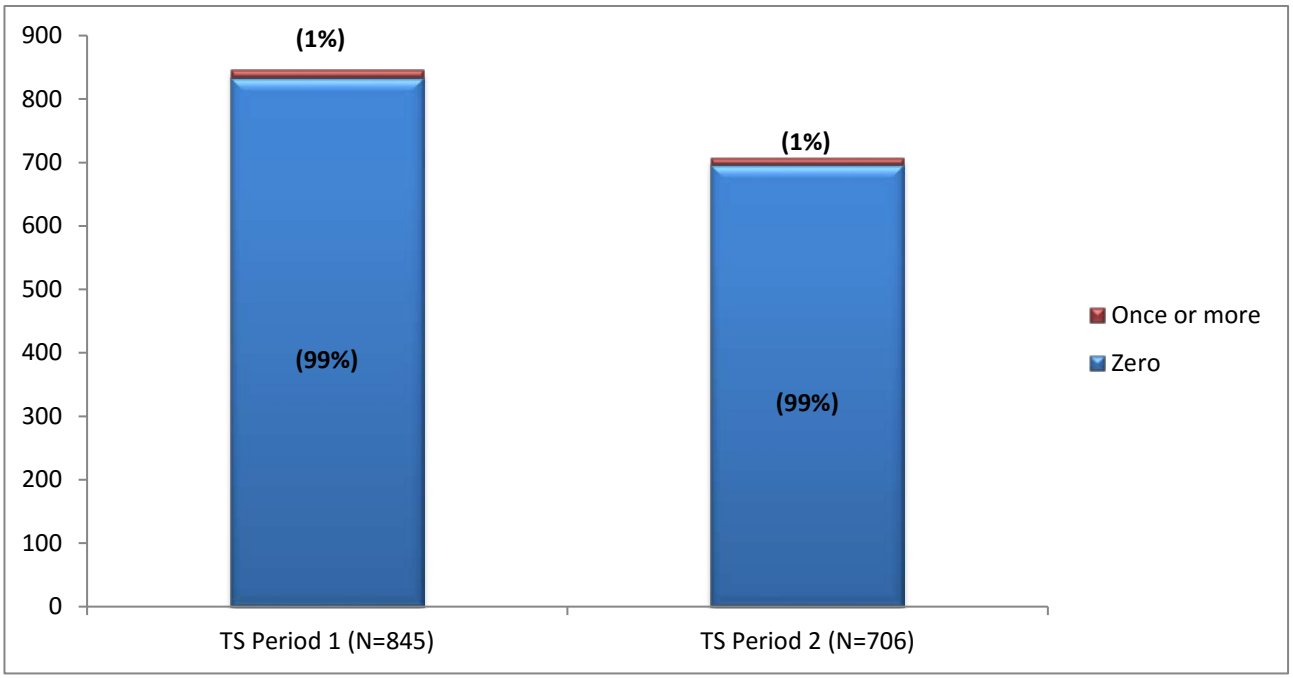
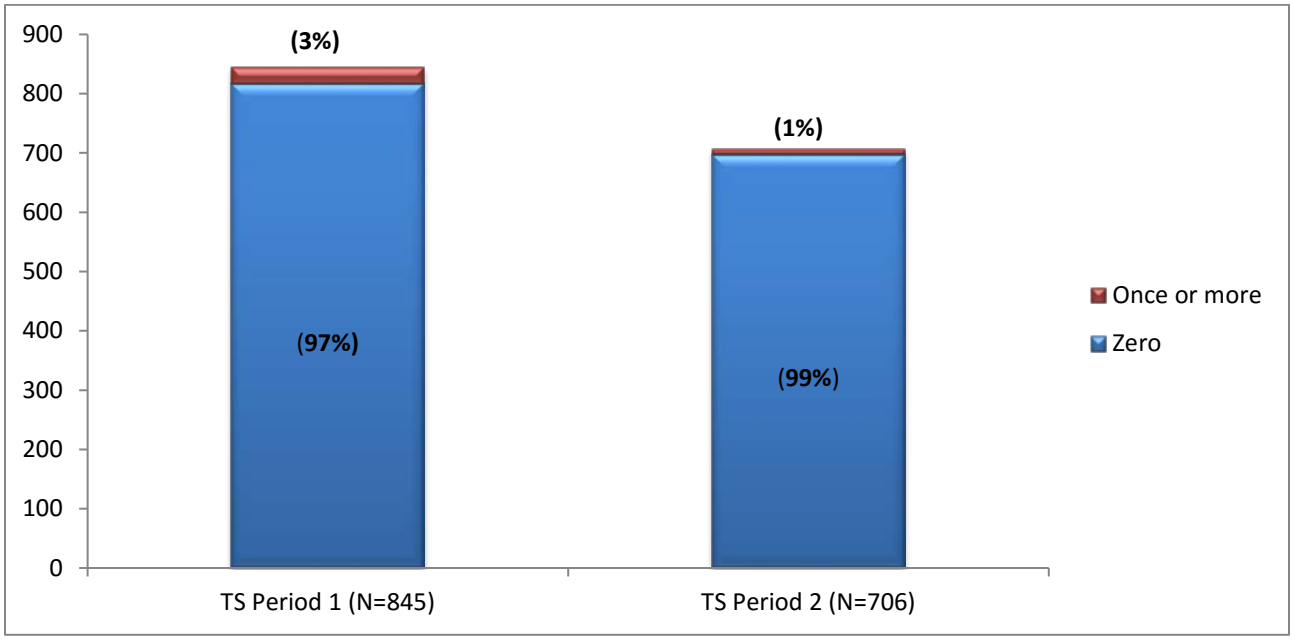
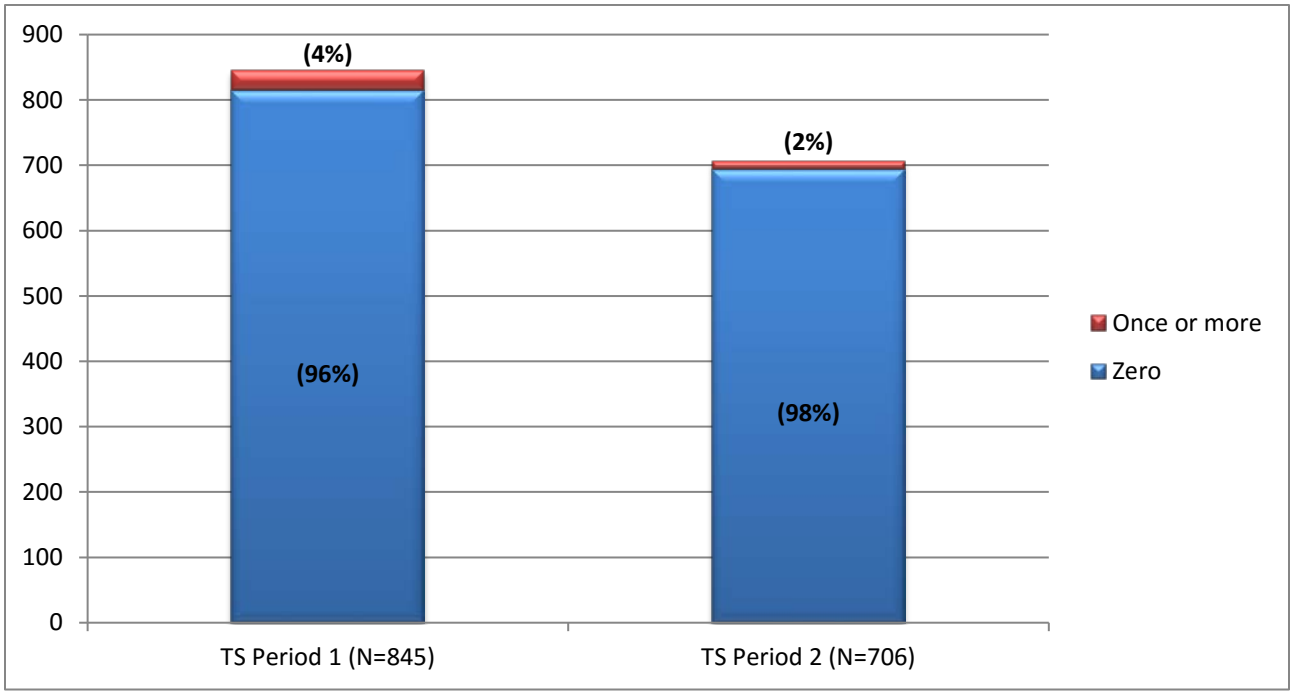


Figure 18: Total number of player accounts that used My Play Limit (self-exclusion option)



Though slightly more popular than the longer term play restriction options, the *Quick Stop* option was still used by few player accounts during either six-month period (Figure 19). During TS Period 1, 30 player accounts (4%) used the *Quick Stop* option to end play for 24 to 72 hours. During TS Period 2, 12 player accounts (2%) used the same option.

Figure 19: Total number of player accounts that used Quick Stop

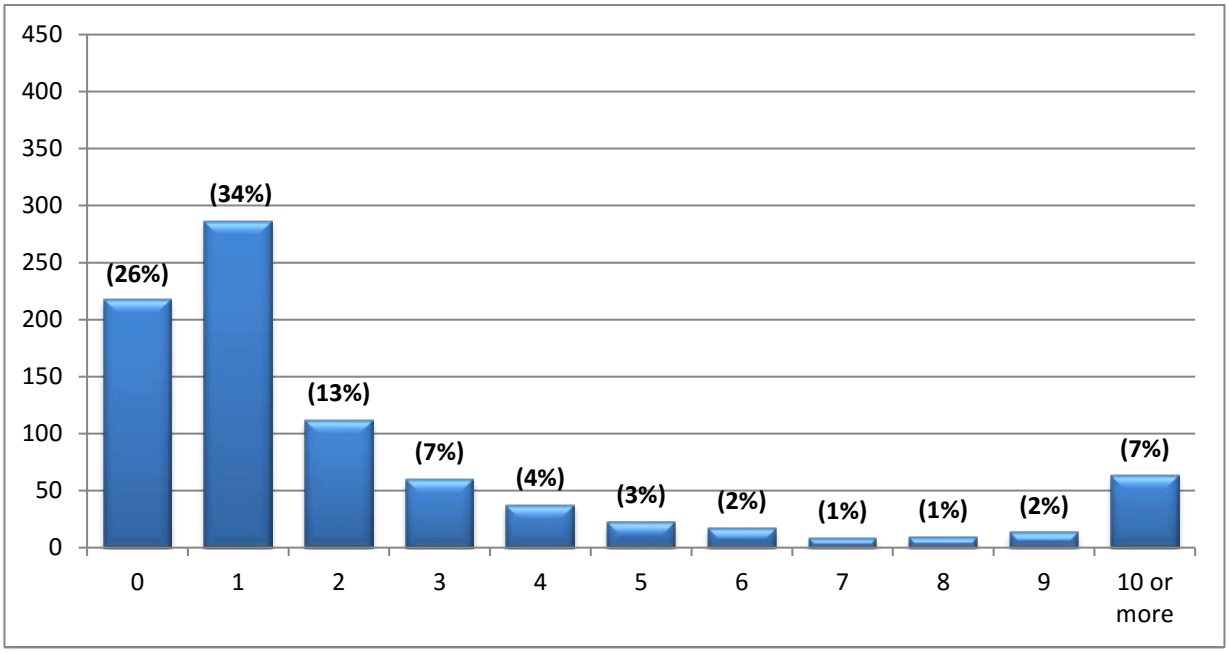


5.2.2 MPS Monitoring Features

Usage of the monitoring features was much higher than the control features, suggesting an interest in the ability to track current and past game play.

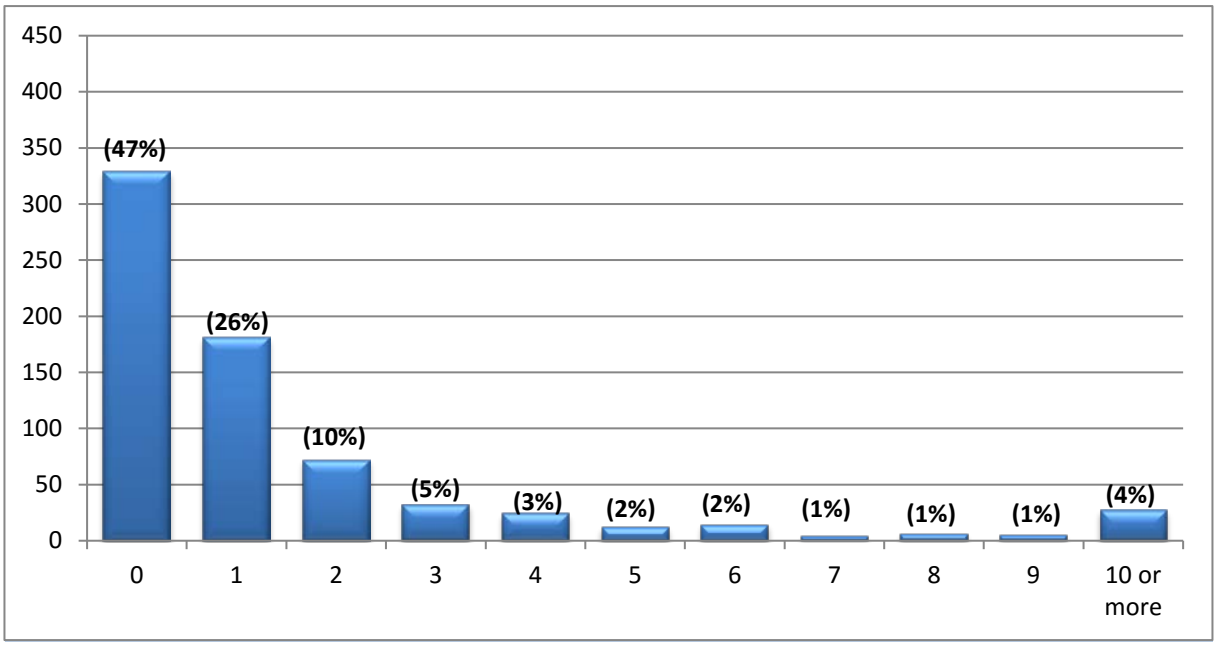
During TS Period 1, the *My Live Action* feature was popular, with 74% of user accounts having used the monitoring feature at some point during the first six months of system availability. A small group of player accounts used the feature extensively, with 7% having used the feature 10 or more times (Figure 20).

Figure 20: Frequency of Use of My Live Action - TS Period 1



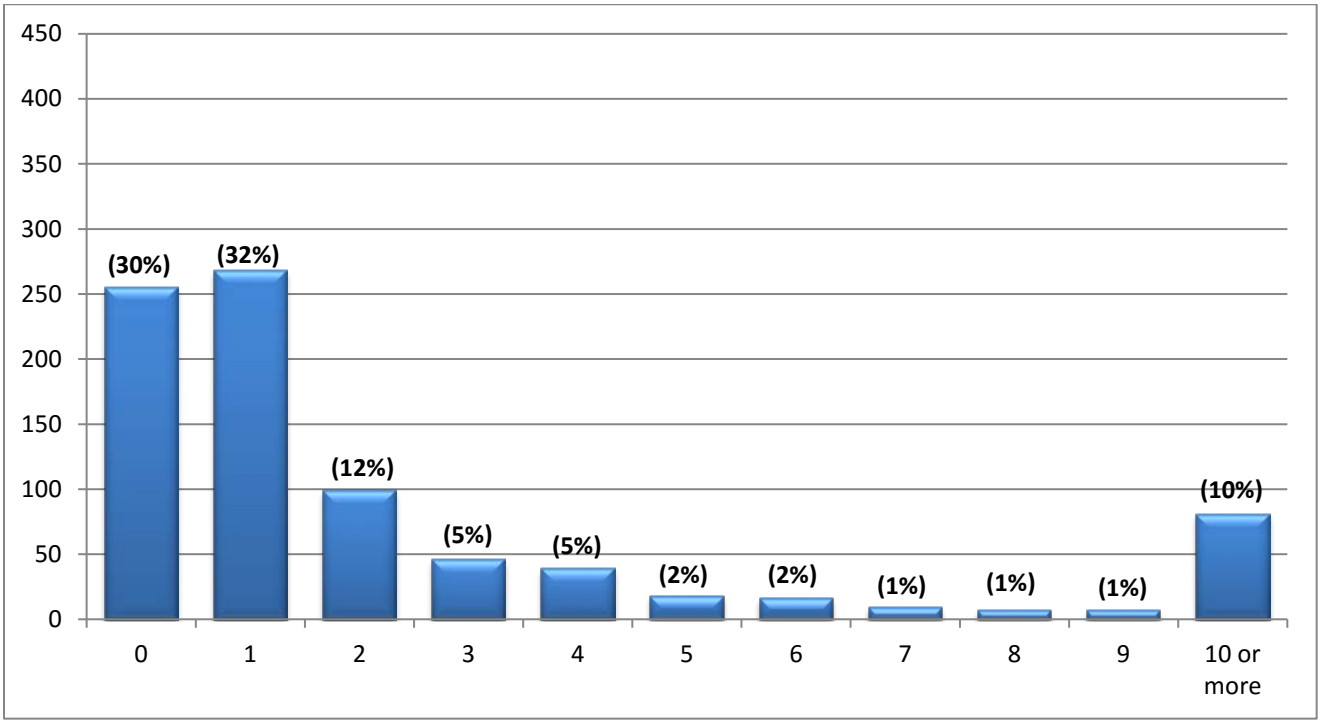
During TS Period 2, just over half (53%) of MPS player accounts used the *My Live Action* feature at some point during the last six months of system availability. A small group of player accounts used the feature extensively, with 4% having used the feature 10 or more times (Figure 21).

Figure 21: Frequency of Use of My Live Action - TS Period 2



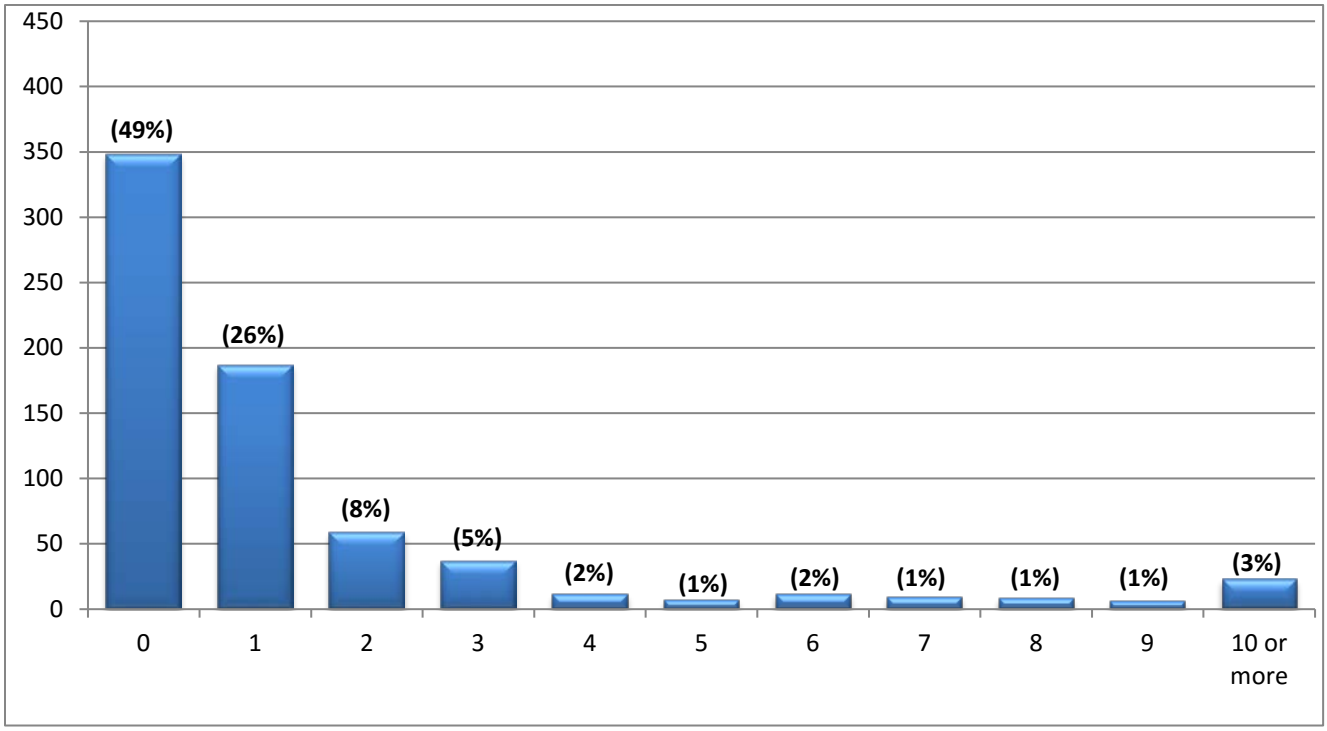
Based on views of the *My Account* feature, there was more interest in past money spent (70%) rather than past time spent (50%). There was also a large contingent of player accounts that heavily monitored their past money spent; 10% viewed their past money spent 10 or more times in the first six-month period, including one player account that viewed the figure 955 times (Figure 22).

Figure 22: Frequency of Views of My Account (past money spent) - TS Period 1



During TS Period 2, there was a decrease in player accounts viewing the *My Account* feature with 51% interested in past money spent and 31% interested in viewing past time spent. There was a similar decrease among those accounts that frequently viewed past money spent; with 3% of players accounts that viewed past money spent 10 or more times in the last six-month period (Figure 23).

Figure 23: Frequency of Views of My Account (past money spent) - TS Period 2



5.3 OVERALL RESULTS

The findings from this section suggest that usage of the control features (*My Play Limit, My Money Limit*, and *Quick Stop*) is relatively low. While transition to a mandatory enrollment environment did increase overall usage levels, the majority of these users appear to be rare/one time users. These may be users 'trying out' the system due to a novelty factor, but without plans to use the features to help control play. As well, use of these features does not seem to be increasing over time, with usage remaining unchanged from one mandatory period to another (period 5 to period 6) in the research panel.

Use of the monitoring features (*My Account* and *My Live Action*) is much higher than the control features. In period 6 of the research panel survey, roughly 35% of players had reported using *My Account* and 28% had reported using *My Live Action*. It is interesting that *My Account* (which allows for monitoring over a longer period of time) received more usage than *My Live Action* (which is session specific), since this would only provide more value if the same card is used repeatedly by the player. Overall usage of both monitoring features increased from period 5 to period 6, and the share of 'regular' users also increased. This trend validates the earlier finding where research panel members stated the most useful tools were the *My Account* and *My Live Action* monitoring features.

6 MY-PLAY SYSTEM AND GAMBLING BEHAVIOURS

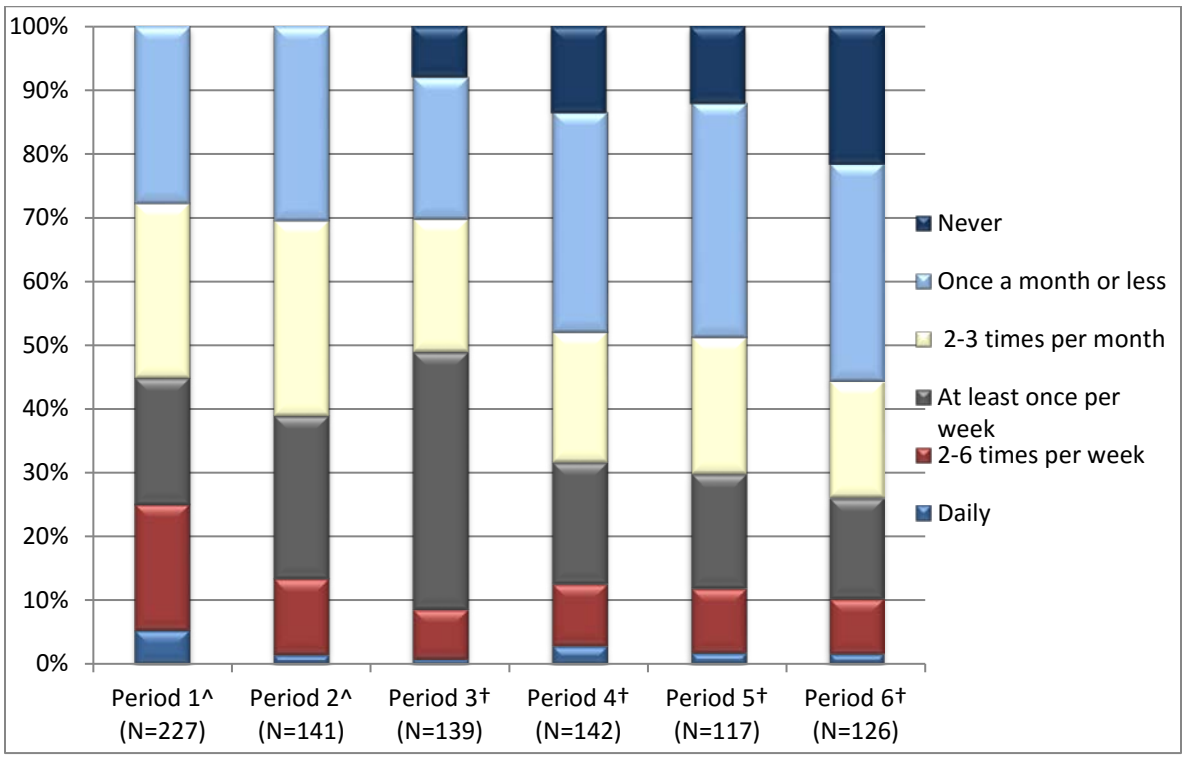
This section focuses on gambling and problem gambling behaviours. First is a general discussion of VLT participation and problem gambling rates among the research panel members. This is followed by an assessment of the impact of MPS features on actual gambling behaviour through the use of statistical modeling techniques. Before delving into these results, we would like to acknowledge that the PGSI was administered at different intervals; results should therefore be interpreted with caution.

6.1 EVIDENCE FROM THE RESEARCH PANEL

6.1.1 VLT Participation

As shown in Figure 24, the VLT participation rate of the research panel decreased over time with the group that participated in VLT gambling either never or less than once a month growing from roughly 28% in period 1 to 56% in period 6. Daily/2-6 times per week participation correspondingly fell, from 25% in period 1 to 10% in period 6. Monitoring over time would therefore capture participants leaving this group, but not capture new VL gamblers who did not play during period 1.

Figure 24: VLT Participation*

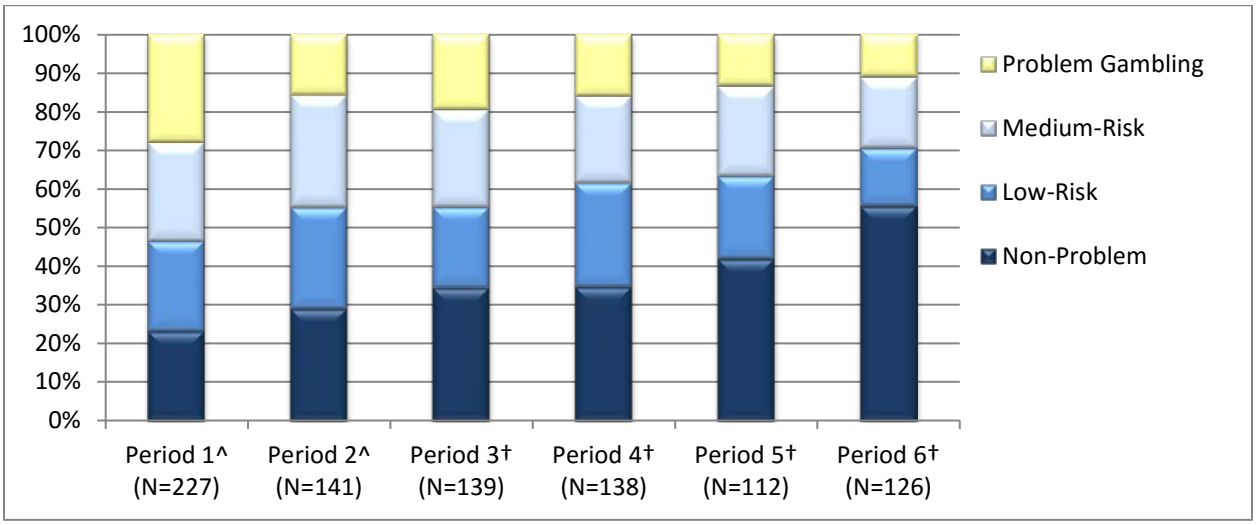


*Never option not available in Periods 1 & 2; ^ Pre MPS introduction; †Post MPS introduction

6.1.2 Problem Gambling Severity

As shown in Figure 25, the share of problem and medium-risk gamblers in the research panel fell from 53% in period 1 to 29% in period 6, and the share of non-problem gamblers increased from 23% to 56% during the period of study. To ensure that this change was not the result of sample attrition, a significance test was conducted on only those gamblers who responded to all six surveys (n=85); analysis of this group produced a statistically significant reduction in gambling at the 0.01 alpha level.

Figure 25: Problem Gambling Severity Index Groups



^ Pre MPS introduction; †Post MPS introduction

Since three of the nine questions on the PGSI directly relate to financial outcomes, it can be useful to examine spending levels among the PGSI categories. As shown in the analysis of the self-reported period 6 data in Figure 26, problem and medium-risk gamblers were disproportionately spending less money than before as compared to non-problem gamblers. Roughly 37% of problem and medium-risk gamblers were spending less money than before, while 22% of non-problem gamblers were spending less money. Additionally, 9% of problem and medium-risk gamblers self-reported spending more money than before.

There is also no evidence to show that the lower risk gamblers have begun to spend more money. Only 2% of non-problem and zero low-risk gamblers reported spending more money on VLT gambling in period 6 (Figure 26). Similar trends were observed with time spent as were observed in the money spent question responses (Figure 27).

Figure 26: Response to "Are you spending more or less money?"
(By PGSI Category in Period 6)

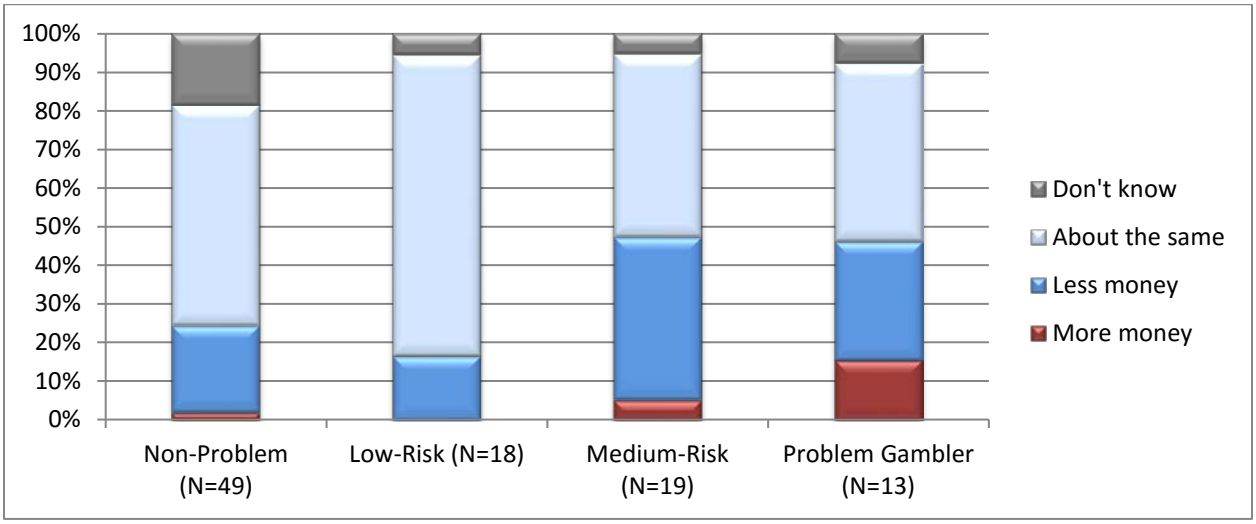
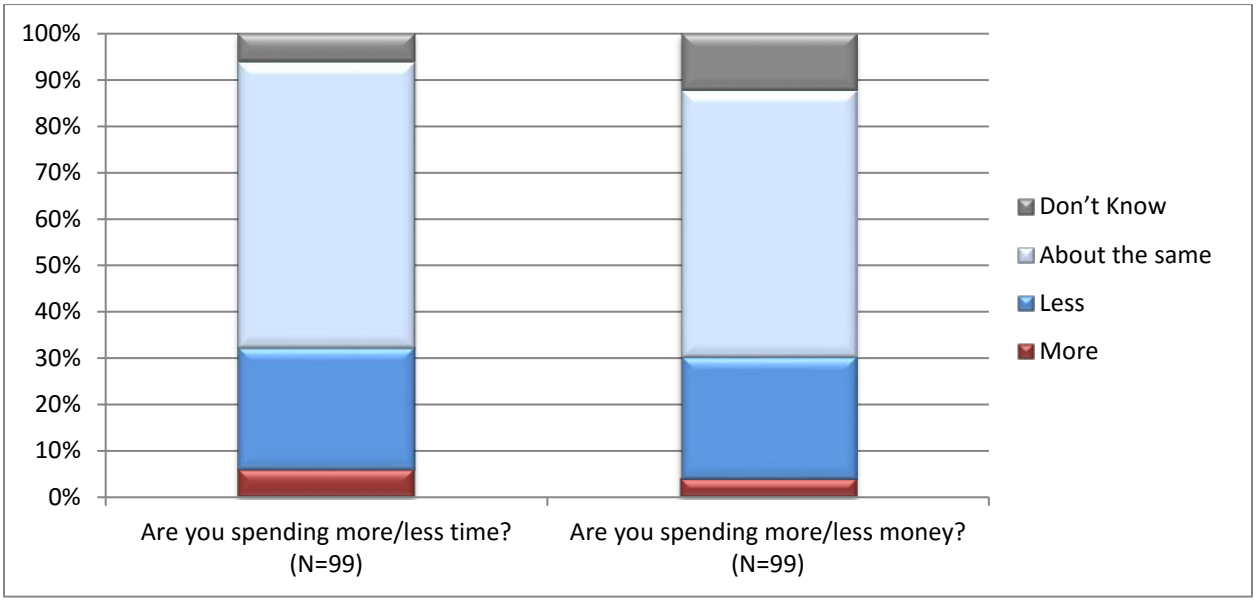


Figure 27: Change in Play Patterns by Users (Period 6)



Overall the results suggest a general decline in problem gambling rates among VL gamblers in the research panel. However, based on the general reduction in PGSI scores for the overall sample, regardless of use of the *My Play Limit* tool, it could also be concluded that time and/or general education may be just as effective in reducing PGSI scores. The next set of analyses using econometric modeling techniques examines whether reductions in problem gambling may be attributed to the availability and usage of the MPS.

The research panel data is an ideal data set to use econometric modeling. As noted earlier, the data set followed the same group of individuals over six different periods, including baseline

measurement prior to the MPS launch, measurement during the voluntary period, and measurement during the mandatory enrollment period. While there was sample attrition during the survey (from 227 participants in period 1 to 126 participants in period 6), fixed-effect modeling estimates the effect of the MPS features in the same individuals over time, rather than as a cross-section of individuals that remain at a given point in time. This allows for a more valid interpretation of the findings.

Analysis of the MPS features' effects on PGSI scores over periods 1 through 6 showed that usage of the *My Play Limit* feature was related to a reduction of average PGSI scores by roughly 3.7 points.[10]. The effects of the feature usage also showed some continued impacts over time, as the lagged value of *My Play Limit* usage was also related to a statistically significant reduction in PGSI score. That is, the model would predict that users of *My Play Limit* in period 5 would have a 3.2 point lower PGSI score in period 6, all else held equal (Table 9). These findings were still observed with the exclusion of period 1 from the analyses.

Table 9: Econometric Model Summary Results: PGSI Score

DV: PGSI Score	Same period	Lagged effect
My Account	N/S	N/S
My Live Action	N/S	N/S
My Money Limit	N/S	N/S
My Play Limit	**** (effect size ~ -3.7)**	**** (effect size ~ -3.2)**
Quick Stop	N/S	N/S
Gambling Involvement	**	-
Employment Status	N/S	-
Household Income	**	-
Marital Status	*	-

** Significant at 0.01α level; * significant at 0.05α level; N/S = not significant

The effect of the *My Play Limit* remained significant when the 'Full Enrollment' players were removed from the sample, suggesting that benefit from the feature does not require 'Full Enrollment.' Indeed, this is a result that could be considered similar to self-exclusion programs that demonstrate an ability to improve outcomes despite limited ability to restrict entry to casinos. For example, consider a recent study of Missouri self-excluders (SEs) by Nelson et al. (2010) which found:

[10] These results are explained in more statistical detail in Appendix D.

> *Most SEs had positive experiences with MVEP [Missouri Voluntary Exclusion Program] and reduced their gambling and gambling problems after enrollment. However, 50% of SEs who attempted to trespass at Missouri casinos after enrollment were able to, indicating that the benefit of MVEP was attributable more to the act of enrollment than enforcement.* (p. 129)[11]

While no other MPS features were shown to have a statistically significant effect, this does not necessarily mean that they provide no benefit. Smaller effects are difficult to identify with the few number of survey takers that have used the MPS features.[12]

6.1.3 VLT Enjoyment

Analysis of the effect of the MPS features on VLT enjoyment produced statistically significant effects for two different control features. Use of the *My Money Limit* feature was found to be related to a reduction of average VLT enjoyment by the research panel members, and use of the *Quick Stop* feature was found to be related to an increase in average enjoyment (Table 10). In part, these divergent findings may be related to differences in the time of commitment and the time of effect related to these features.

My Money Limit is a pre-commitment tool that is set in advance of play. If players reach their pre-set money limit (perhaps due to a quick sequence of losses) and would like to continue gambling, they are locked out of the system and forced to activate a new card. This inconvenience may be what is reducing overall satisfaction. In contrast, use of the *Quick Stop* feature occurs at the

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[11] Nelson, S. E., Kleschinsky, J. H., LaBrie, R. A., Kaplan, S., & Shaffer, H. J. (2010). One decade of self-exclusion: Missouri casino self-excluders four to ten years after enrollment. *Journal of Gambling Studies, 26*(1), 129-144.

[12] In terms of the other control variables, gambling involvement was found to be statistically significant and positively related to PGSI scores. The fixed-effect and period indicator variables were significant, appearing to act as intended controls – the period variables showed a negative trend over time, consistent with the spontaneous recovery narrative. Model residuals were examined visually for heteroskedasticity and no strong presence was found. Some evidence of autocorrelation was found in the panel using the test outlined in Drukker (2003). However, since Drukker tests for autocorrelation over a first-differenced model, rather than a fixed-effect model, the models were re-estimated while clustering over the cross-section identifier to produce standard errors that are robust to autocorrelation, and no changes in the results were found. The model was also estimated using Driscoll and Kraay (1998) standard errors. With both these robustness tests, none of the key findings changed.

Drukker, D. M. (2003). Testing for serial correlation in linear panel-data models, *Stata Journal*, *3*(2), 168-177.

Driscoll, J. C, & Kraay, A. C. (1998). Consistent covariance matrix estimation with spatially dependent data. *Review of Economics and Statistics*, *80*(4), 549–560.

exact point that gamblers feel as though they may need a break. While players are still able to activate a new card and continue playing, the *Quick Stop* feature provides a break in play when desired.

None of the other control features produced statistically significant effects, and no lagged effects were found. Again, these estimates were produced using a model that examined changes within the same players over time.

Table 10: Econometric Model Summary Results: VLT Enjoyment

DV: How much do you enjoy playing VLTs?	Same period	Lagged effect
My Account	N/S	N/S
My Live Action	N/S	N/S
My Money Limit	**** (effect size ~ -0.9)**	N/S
My Play Limit	N/S	N/S
Quick Stop	**** (effect size ~ +0.9)**	N/S
Gambling Involvement	**	-
Employment Status	*	-
Household Income	N/S	-
Marital Status	**	-

** Significant at 0.01α level; * significant at 0.05α level; N/S = not significant

6.1.4 VLT Use Frequency

None of the MPS features were found to have a statistically significant effect on VLT usage by the research panel members (Table 11). Of course, this does not necessarily imply that the features have no effect on usage. The sample may be insufficiently large to capture an effect, or the fixed-effect design may be over-controlling certain aspects of the variables' relationships. It also may be the case that the system in general has had an effect on usage, which is not attributable to any single feature.

Table 11: Econometric Model Summary Results: VLT Usage

DV: VLT Use Frequency	Same period	Lagged effect
My Account	N/S	N/S
My Live Action	N/S	N/S
My Money Limit	N/S	N/S
My Play Limit	N/S	N/S
Quick Stop	N/S	N/S
Gambling Involvement	**	-
Employment Status	*	-
Household Income	N/S	-

DV: VLT Use Frequency	Same period	Lagged effect
Marital Status	**	-

** Significant at 0.01α level; * significant at 0.05α level; N/S = not significant

6.2 EVIDENCE FROM THE SYSTEM DATA

This section summarizes the results of the econometric analysis on the Techlink system data. Full technical results for this analysis are provided in the My-Play Interim Report. The first procedure used to measure the effect of the features in the Techlink system data was a set of ordinary least squares regression models that examined the effect of the MPS features on current behaviour (e.g., the effect of using self-exclusion features in TS Period 2 on money spent in TS Period 2), and the effect on future behaviour (e.g., the effect of using self-exclusion features in TS Period 1 on money spent in TS Period 2). The second estimation method was a fixed-effect modeling procedure that looked at the effect of the features within the same individuals over time. As noted previously, it is important to remember that there is bias present in this data set, as many players may have shared MPS cards and appear to be "one player" in the database. Therefore the described results could only be achieved if the features were used as intended. The low feature usage data is also important to note when considering these results.

6.2.1 Session Type

One statistic that was tracked in the card data is whether a card use session involved gambling (gameplay session) and whether it involved MPS feature use (RG session). An increase in the number of gameplay sessions was found to be related to an increase in the amount spent gambling – roughly $200 to $300 in increased cash played over the six-month period for every gameplay session, translating to a $5-$10 increase in out-of-pocket spending. There was also evidence that an increase in the number of those sessions that involve the use of an RG feature are related to a reduction in player spending – roughly a $400 reduction in cash played over six months for each session, translating to just under $20 in decreased out-of-pocket spending over the same period.

As well, the results show that an increase in use of the features during sessions in the first six months is related to a decrease in play during the second six-month period. It must be noted, however, that this may simply be capturing a relationship that people who are more mindful of their gambling (and therefore more likely to use the features), will be more likely to curb their spending.[13]

[13] Note that analysis of the research panel data found no strong positive correlations with money management and feature usage.

6.2.2 My Play Limit: Self-Exclusion

The results show the lagged effect of using the *My Play Limit* self-exclusion option (i.e., use of self-exclusion in TS Period 1) is related to roughly a 17 hour increase in TS Period 2 time played, an $8,700 increase in TS Period 2 cash played and a $600 increase in TS Period 2 out-of-pocket spending. This does not necessarily mean that the use of self-exclusion leads to increases in future play. Rather, this likely represents potential problem gamblers in the sample who had self-excluded, and then had much higher spending levels than the general population when they returned to playing (i.e., during TS Period 2).

This theory is supported by the fact that the examination of the same player over time (through the fixed-effect models), shows that use of the self-exclusion feature actually *reduces* spending by a statistically significant margin. Hours spent gambling reduces by roughly 12 hours, cash played reduces by $4,100, and out-of-pocket spending reduces by $250 on average over the six-month period.

6.2.3 Other Control Features

Besides the results with the self-exclusion control, there is no robust evidence that control features (*My Money Limit, My Play Limit – Calendar,* and *Quick Stop*) have an effect on player behaviour. This is a consistent observation across all dependent variables, time played, cash played, and out-of-pocket spending. However, the sample issues due to player attrition and significant aggregation of time periods may be hiding significant effects. A more detailed data set may yield different conclusions about these variables.

6.2.4 Monitoring Features

The monitoring features in this data, namely *My Live Action* and *My Account*, both appear to have an important (and statistically significant) relationship with player spending. The results suggest that there is a negative relationship between a player viewing their current play (*My Live Action*) and their spending. Each instance of the player viewing the screen is associated with a reduction of roughly $65 to $100 in cash played on average, equating to a decrease of roughly $2 to $3 in out-of-pocket spending.

Despite the negative relationship between a player viewing their current play and their spending, there appears to be a strong and statistically significant relationship between views of past play history (*My Account*) and spending. Each instance of a player viewing their account summary screen is associated with approximately a $250 to $370 increase in cash played, on average over the six month period. Similarly, each instance is associated with an increase of $11 to $16 in out-of-pocket spending. The values expressed here reflect the estimated impact of a feature use, if all other variables affecting outcomes are held equal. For example, the $250 to $370 increase in cash played (over six months) from the account summary screen use assumes that other

variables, such as demographics or other MPS features, remain unchanged. This allows for the interpretation of individual component impacts, but it should be noted that many variables may have interrelated effects. This finding was supported in both the ordinary least squares model with logged variables and the fixed-effect model, suggesting that the results are fairly robust. Despite this conclusion, it is undetermined if the use of the *My Account* tool unintentionally encouraged increased spending or if there was another unknown factor involved that affected *My Account* views and changes in spending.

6.3 OVERALL RESULTS

Overall the results suggest a general decline in problem gambling rates among VL gamblers participating in the study; this was observed prior to the introduction of the MPS. This is likely partially attributable to general declines, which are a common occurrence in longitudinal studies. Among the research panel group, the proportion of problem and medium-risk gamblers decreased between baseline periods before the MPS was available, from 53% in period 1 to 44% in period 2. There was a decrease from the period immediately preceding introduction of the MPS to the final research panel survey after the MPS was introduced; this was a decrease from 44% in period 2 to 29% in period 6. It also appears as though problem and medium-risk gamblers are disproportionally spending less time and money on VLT gambling than before as compared to non-problem or low-risk gamblers, which could be for a variety of factors as explained below.

Given the observed reduction in problem gambling rates before the introduction of MPS, further testing was done to get a better sense of the decreased problem gambling rates and to determine whether they were related to the availability and usage of the MPS.

While those categorized as moderate-risk or problem gamblers in the research panel decreased from period 1 to period 6 (53% down to 29%, respectively) may be an indicator of the effectiveness of the MPS, it also may be the result of spontaneous recovery as observed in other populations of gamblers. Prior studies have found that prevalence rates tend to fall over time in a static sample of gamblers without any specific intervention[14]. However, this and other factors were controlled for, using panel data methods, in order to identify the specific effect of My-Play features as further noted below.

A fixed effect model design was used to examine the effect of the MPS feature use on PGSI scores. This design allows for the removal of potential inter-player endogenous error that is

[14] E.g., Hodgins, D. C., & El-Guebaly, N. (2000). Natural and treatment-assisted recovery from gambling problems: a comparison of resolved and active gamblers. *Addiction*, *95*(5), 777-789; Slutske, W. S. (2006). Natural recovery and treatment-seeking in pathological gambling: Results of two US national surveys. *American Journal of Psychiatry*, *163*(2), 297-302.

constant over time. That is, individual traits of players that are constant over time, such as gender, year of birth, cognitive ability, or childhood experiences, will be controlled by the model design, in order to avoid bias in the variables of interest. Fixed-effect models are commonly used in panel/longitudinal data sets when there are one or more immeasurable unobserved effect in each subject[15].

To address concerns over the potential impact of spontaneous recovery on the model results, indicator variables were used for each period of the study to control for population-wide declines in problem gambling severity. That is, the fixed-effect variables control for static idiosyncrasies in the participants, while the period variables control for population wide changes, which may include natural recovery trends as described previously. To further control for the possibility that changes in overall gambling involvement are affecting PGSI scores, a variable identifying the number of gambling variants participated in by the subjects was included, as this has been shown to be an important variable in predicting problem gambling severity[16]. Other controls in the model include employment status, household income, and marital status. Given this heavily controlled approach to measurement, it is relatively more likely to produce statistical Type II errors than Type I errors, and as such should be more confident in the validity of statistically significant results.

Overall, the results from the econometric analysis as described above suggest that there is some benefit to use of the *My Play Limit* control feature. Evidence from the research panel study suggests that use of the *My Play Limit* feature was associated with a reduction of average PGSI scores. While the research panel study does not distinguish how the *My Play Limit* feature was used (Calendar Stop or Self-Exclusion), analysis of the system data showed the self-exclusion option to be related to amount spent. That is, on average, each use of the self-exclusion option was related to a reduction in six-month spending by roughly $4,100 in cash played (including re-invested winnings) and $250 in out-of-pocket cash played. Meanwhile, no effect was found from use of the calendar stop component of the *My Play Limit* feature. This suggests that the positive outcome effects on the PGSI scores found in the research panel may be due to the self-exclusion

[15] Wooldridge, J. M. (2006). *Introductory Econometrics: A Modern Approach* (3rd ed.). Mason, OH: Thompson/South-Western.

[16] E.g., LaPlante, D. A., Nelson, S. E., LaBrie, R. A., & Shaffer, H. J. (2011). Disordered gambling, type of gambling and gambling involvement in the British gambling prevalence survey 2007. *The European Journal of Public Health, 21*(4), 532–537. doi:10.1093/eurpub/ckp177; Philander, K. S., & MacKay, T. L. (2014). Online gambling participation and problem gambling severity: Is there a causal relationship? *International Gambling Studies*. Advance online publication. doi:10.1080/14459795.2014.893585

option in the feature.

Challenges emerged in this study, due largely to a change in policy around account usage during the 'mandatory' enrolment period. The ability for players to register in the new 'light enrolment' accounts limits the extent to which the MPS can restrict behaviour. Despite this limitation, a relatively robust relationship was observed between Play Limit setting and reduced PGSI scores. While the fixed effect modeling can control for self-selection in this relationship (the effect should not be attributed to more responsible gamblers simply being those that use the tools), it is not clear whether a given person elects to use the features after already deciding to play more safely. That is, *My Play Limit* use perhaps is a symptom of more reformed gambling behaviour, rather than a cause. However, the causal explanation does receive more support given the fact that only *My Play Limit* tool usage was found to be a robust indicator of lower PGSI scores, while other tools (both informational and limit setting) were not strongly related to lower scores.

While a system that eliminates the ability to avoid set limits may be more effective, the ability to prevent access does not appear to be necessary to enable some effects on predicted problem gambling severity. The effect captured by the Play Limit variable may provide a reminder to the individual of what they thought was reasonable behaviour prior to gambling.

There are also some indicators of how this effect may be occurring. While the results showed no relationship between MPS features and VLT frequency, the results from an analysis of the research panel that were not shown (since the findings were less robust than typically desired in a conservative study), showed evidence that use of *My Play Limit* was related to a reduction in average money spent per session. While gamblers' self-reported spending is notoriously biased and unreliable, if it is consistently biased among individuals, then the measured effect on a likert scale should still be valid. In addition, fixed-effect regression on the impact of *My Play Limit* on the individual PGSI question responses produced significant impacts for one of the nine questions: "Have you felt your gambling had caused financial problems for you or your household?" These results from the research panel, plus the finding from the system data, suggest that the use of *My Play Limit* may be reducing the negative financial outcomes from VL gambling by reducing spending more so than frequency of use.

An alternate conclusion to this finding is that time and/or general education may be just as effective in reducing PGSI scores. This interpretation of the finding is based on the observation that there was a general reduction in PGSI scores for the overall sample, regardless of use of the *My Play Limit* tool. The impact of the tool on PGSI score may therefore be offset by this general decline. It is also possible that those motivated to use the MPS features were also receptive to other responsible gambling initiatives that contributed to their reduced PGSI scores. Thus, while those using the MPS features showed improvement, this may have been coincidental to the effects of other awareness campaigns or RG measures.

The analysis of the system data found that each instance of a player viewing their account summary screen *(My Account)* was associated with a $250 to $370 increase in cash played and $11 to $16 increase in out-of-pocket spending (on average over the six-month period). Similar findings have been discussed in other studies, whereby problem gamblers expressed that being made aware of expenditures may trigger the desire to 'win back' what was lost,[17] and therefore, indications of gamblers increasing spend while using similar systems could have unintended effects[18]. Other interpretations may be possible. However, given the importance of chasing losses as a diagnostic criteria of problem gambling, it is important to understand this potential issue. As such, this is certainly worthy of further investigation, as it remains unclear if use of this MPS tool has the unintended impact of encouraging players to increase spending, or if it is being used in order to assess money lost to determine how much would have to be made up in order to win. In contrast, viewing the account during a session *(My Live Action)* was associated with a decrease in spending.

[17] Bernhard, B.J., Lucas, A.F., & Dongsuk, J. (2006). *Responsible gaming device research report.* Las Vagas: International Gaming Institute, University of Nevada.

[18] Ladouceur, R., Blaszczynski, A., & Lalande, D. R. (2012). Precommitment in gambling: A review of the empirical evidence. *International Gambling Studies.* DOI:10.1080/14459795.2012.658078

7 CONCLUSION

This study builds on the limited research by using a panel of VL gamblers, a database of player data, a general population survey and focus groups to assess the knowledge and attitudes towards the MPS, as well as the impact of the MPS on VLT gambling activity and problem gambling. This report presents the final results of the evaluation of the MPS that took place over a five-year period from 2008 to 2013. Two prior reports include a baseline report before the MPS launch and an interim report during the voluntary period. The present report includes information collected from baseline and both voluntary and mandatory periods of the MPS. Overall, the results suggest that while some aspects of the MPS were associated with reduced negative outcomes for VL gamblers, poor utilization of the system was a significant issue.

7.1 KNOWLEDGE AND UTILIZATION

Over the course of the study, knowledge levels of the MPS did improve. However, the results suggest room for greater understanding of the system in both well-exposed populations (the research panel and the Techlink system users) and a less well-exposed population (the general population). In the *General Population Survey*, 72% of VL players reported being 'not at all' knowledgeable about the MPS during the voluntary enrollment period. While trends in the *Research Panel Survey* (which included surveys occurring on dates later than those of the *General Population Survey*) suggest that this rate would have fallen after the transition from the voluntary to the mandatory program, a priority for any successful implementation must be to increase player knowledge of the MPS and its features.

A more important issue throughout the research process was low utilization rates. Few players enrolled in the MPS during the voluntary enrollment period, and most features continued to have low usage levels in the mandatory period. It is important to note that the low enrollment rates cannot be entirely attributed to lack of program knowledge. Significant resources were directed at implementing a retailer program and materials, providing player education materials at each retail location including posters, brochures and My-Play representatives, developing a MPS specific website, and developing and promoting a retailer and player enrollment and incentive program.

A large majority of VL gamblers expressed interest in using a system such as the MPS during the baseline period. The initial interest in a system followed by slow adoption suggests that players may be open to some sort of system, but that the current system was not perceived to be useful or that the initial interest was overtaken by distrust and privacy concerns.

Of the MPS features, the best known features among the general population of VL players were those related to controlling gambling (*My Money Limit* and *My Play Limit*). In contrast, the *Research Panel Survey* of VL players and the *Player Tracking* data suggest that the *My Account* monitoring feature and the *My Money Limit* control feature were better known. There may be a

divergence between what the general population interprets to be the function of the system and which features players are drawn towards when they use the system. This idea was further supported when regular VL gamblers were compared to occasional VL gamblers in the *General Population Survey*. Regular VL gamblers were more familiar with the MPS monitoring features compared to occasional VL gamblers.

In terms of perceived value by MPS users, the monitoring features appear to have the most perceived utility by players. The *My Account* and *My Live Action* features were not only the most used features of the MPS (as found in the research panel study and in the system data study), but the features were also reported by research panel members to be the most useful tools.

7.2 IMPACTS

In terms of actual impacts, the *Research Panel Survey* findings show that use of the *My Play Limit* feature was correlated with a reduction of PGSI scores. Analysis of the *Player Tracking Data* similarly showed that, on average, each use of the self-exclusion option was related to a reduction in six-month spending. The positive effects on the PGSI scores may be due to the self-exclusion option in the feature. Problem and medium-risk gamblers' spending levels also appear to be falling, as compared to non-problem gamblers. Roughly 37% of problem and medium-risk gamblers reported spending less money gambling in the final survey (during the mandatory period) compared to only 11% that reported spending more money. From the data, it is not clear whether a given person elects to use the features after already deciding to play more safely. That is, *My Play Limit* use perhaps is a symptom of safer gambling behaviour, rather than a cause. It is also plausible that the observed changes in PGSI scores and use of the tool are both attributable to another factor, such as time or general education.

The monitoring features in this data, namely *My Live Action* and *My Account*, both appear to have an important (and statistically significant) relationship with player spending. *My Live Action*, that is a player viewing their current play, was associated with a subsequent decrease in spending. In contrast, the results showed a statistically significant relationship between views of past play history (*My Account*) and spending. Each instance of a player viewing their account summary screen is associated with an increase in cash played and out-of-pocket spending. This finding was supported in both the ordinary least squares model with lagged variables and the fixed-effect model, suggesting that the results are fairly robust. However, the nature of this relationship cannot be definitively described by the current study.

7.3 FINAL THOUGHTS

One of the goals of this evaluation was to assess a voluntary versus mandatory offering of the MPS. However, the large majority of players choosing light enrollment, along with card sharing, using multiple cards, and using a venue card to access the VL, made it exceedingly difficult to

make sense of the data. Ultimately, a decision was made to discontinue the evaluation earlier than originally planned. As such, very little can be said – based on the data- about the relative benefits of voluntary versus mandatory enrollment.

Player resistance to the MPS, whether in the voluntary or mandatory stage, is a key observation and an issue that needs to be addressed in any further adoptions of a system such as the MPS. Throughout, there was a large group of players who simply didn't see a need for such a system because they did not gamble enough or they did not have a gambling problem. Despite extensive efforts to promote and sell the MPS, most players did not come around to see the benefits of using the system for themselves. This begs the question about what is the goal of the MPS. Is it to motivate all gamblers to use tools in order to be more informed of their play? Or is it to make tools available to those who are looking for ways to stay more informed and in control? Or is the target group those who gamble in a risky manner?

Then there are those players who are concerned about the use of their information. Focus group participants consistently raised the concern that the government was monitoring their play and that the information (such as winnings) could be used against them. Despite efforts to dispel these beliefs through communications that clearly showed how players could not be identified, some players continued to hold onto these beliefs. This is not dissimilar to players who are convinced that they can influence the outcomes of an EGM, despite all of the evidence to the contrary. Further investigation would be required to determine how best to boost trust in the confidentiality and anonymity of the player's information.

While few respondents felt that the registration process was difficult, many players found that privacy (in the sign-up process) was a concern. With a voluntary MPS, adding the ability to register at the lottery terminal or remotely would reduce privacy/embarrassment issues around the bar area sign-up process. As well, it may be useful to allow users to input their sign-up information. This would allow players to limit the amount of private information that they must provide, but still allow them to create a profile with which they could self-identify. For example, players would create their own username and password, but would not be required to submit their real name, address, phone number, etc. Other options to encourage repeat account use, such as log in options without a card, may also be worth pursuing. This will nudge players towards continued play on a single account identity with their own personal password.

Given player preferences, simplification of the choice architecture is worth consideration. While removal of the *My Account* and *My Live Action* may not make sense, since these were noted by players to be the most useful features, removal of the *My Money Limit* and *Quick Stop* features may be useful for maximizing harm reduction. Behavioural economic research has shown that given multiple options where the choices are not fully understood, humans may use arbitrary

decision making processes that do not necessarily lead to the best outcome – that is, more choice is not always better[19,20]. However, further research is recommended to determine the best configuration of system tools.

The findings show a positive relationship between *My Account* and spending. Given prior research on gamblers chasing losses,[21] one possible explanation for this correlation may be that the ability to observe past history may make players more likely to increase their play, in order to recoup past losses. That is, the ability to view past history (and generally, on average, past losses) may be making these losses more central in players' minds, and may encourage the chasing of losses. It should be noted that this could also be an occurrence of reversed causality, where players that have lost in the past and are chasing losses may be viewing their account summary more often to review their progress. Or, changes in both viewing *My Account* and one's spending may both be related to another unknown factor. At this juncture, given the limitations of the study, the exact nature of this relationship remains unclear.

Longitudinal studies in this realm are rare and therefore this data has the potential to provide very useful insights. It points to the utility of some of the MPS features in voluntary use – however, it remains to be established that the majority of players use it effectively, that it has a direct causal effect on reducing harm as opposed to other concomitant interventions that have been introduced, and the effect on PGSI scores is greater than spontaneous recovery rates. There is extensive opportunity for future research in this field, including similar longitudinal studies to validate these results. More research is also needed to better understand the process by which these systems may assist players. For example, it is not entirely clear if setting the play restriction is the most important action, whether the reminder of past intentions is most important, or whether use of the feature prompts other behavior, such as seeking treatment.

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[19] Schwartz, B. 2004. *The Paradox of Choice*. HarperCollins, NY.

[20] Reed, D. D., Kaplan, B. A., & Brewer, A. T. (2012). Discounting the freedom to choose: Implications for the paradox of choice. *Behavioural Processes, 90*¸ 424-427.

[21] E.g., Coates, E., & Blaszczynski, A. (2013). Predictors of return rate discrimination in slot machine play. *Journal of Gambling Studies*, 1-15; Hodgins, D. C., Stea, J. N., & Grant, J. E. (2011). Gambling disorders. *The Lancet, 378*(9806), 1874-1884.

APPENDIX A – MY-PLAY SYSTEM AND DATA COLLECTION TIMELINE

APPENDIX B – RESEARCH INSTRUMENTS

The following select study instruments are provided to give the reader an overview of the questions asked of the different respondent groups. The survey questions were developed by RGC in consultation with NSGC via an iterative process.

Research Panel Survey Questions – Pre-MPS Phase (Survey 1 of 6)

Overall Gambling Behaviour

1. What types of gambling have you participated in the PAST 12 MONTHS? [Check all that apply]

- Lottery tickets like 649, Super 7
- Casino games like poker, blackjack, roulette or keno
- Instant win scratch tickets, break open, or pull tab
- Slot machines at Casinos
- Bingo
- Video lottery terminals (VLTs) at bars
- Sport select like Pro-line, over/under
- Internet sports
- Horse races - both live at track and off track
- Internet (casino table games, slot machines/VLTs, Poker)
- Other (specify) _____

VLT Gambling Behaviour

The following questions are about your VLT playing in the PAST 12 MONTHS.

2. How often do you play VLTs? [Select one]

- Daily
- 2-4 times per week
- At least once a per week
- 2-3 times per month
- At least once per month
- At least once every 2 months
- At least once every 3 months
- Less than 4 times per year

3. What is the average amount of MONEY you spend playing VLTs PER SESSION? [A session is the period of time you played]

_____ Dollars

4. What is the average amount of MONEY you spend playing VLTs PER MONTH?

_____ Dollars

5. In a typical session of play, what is the average amount of TIME you spend playing VLTs?

_____ Minutes/Hrs

6. How many HOURS PER MONTH do you play VLTs?

_____ Hrs

The following questions pertain to setting limits for your VLT playing in the PAST 12 MONTHS. This is something you may or may not do personally.

7. Have you EVER set a MONEY limit for playing VLTs?

Yes [show 7a]
No [skip to 10]

7a. If yes, why? [Enter text]

8. Have you EVER set a TIME limit for playing VLTs?

Yes [show 8a]
No [skip to 10]

8a. If yes, why? [Enter text]

9. Have you EVER set a limit on the number of VISITS to the site(s) where you play VLTs?

Yes [show 9a]
No [skip to 10]

9a. If yes, why? [Enter text]

The following questions are about where you go play VLTs in the PAST 12 MONTHS.

10. How often do you visit the site(s) where you play VLTs, including times when you don't play VLTs?
[Select one]

Daily
2-4 times per week
At least once a month
2-3 time per month
At least once per month
At least once every 2 months
At least once every 3 months
Less than 4 times per year

11. How long do you spend at the site(s) where you play VLTs EACH TIME you visit?
[Select one]

Less than 30 minutes
Between 30 minutes and 1 hr
1-2 hrs
3-5 hrs
6-9 hrs
Greater than 9 hours

12. What percentage of the time do you <u>PLAY VLTs</u> at the site(s) you visit? [Select one]

10%
25%
50%
75%
100%

13. What activities OTHER THAN playing VLTs do you do at the site(s) you visit?
[Check all that apply]

Only play VLTs
Drink
Eat
Hang out with my friends
Meet people
People watch
Watch TV
Play games (e.g., pool, darts)
Other (Specify): _____ [Enter text]

VLT Attitudes

14. On a scale of 1 to 5, where 1 is "not at all" and 5 is "completely", how much do you ENJOY playing VLTs? [Select one]

1 Not at all
2 A little
3 Somewhat
4 Very
5 Completely
6 Don't know

15. Why do you play VLTs? [Enter text]

16. On a scale of 1 to 5, where 1 is "not at all" and 5 is "completely", how KNOWLEDGABLE are you about how VLTs work? [Select one]

1 Not at all
2 A little
3 Somewhat
4 Very
5 Completely
6 Don't know

17. Do you have any CONCERNS about your VLT play? [Enter text]

IPCS Attitudes

The following questions are about your thoughts on the Informed Player Choice System (IPCS).

The Nova Scotia Gaming Corporation (NSGC) is going to introduce the Informed Player Choice System (IPCS) in 2009. The IPCS is a card-based system that will be applied to VLTs, where a card would be needed to begin play.

The Informed Player Choice System (IPCS) will provide players with information tools that will allow them to make informed gaming decisions. The IPCS is intended to facilitate informed choice and responsible play. Implementation will begin with a voluntary player registration. Following a transition period the system will transition into a mandatory registration model in April 2010, where players are required to obtain a card to access play on a VLT. Please note that there will be no personal information retained by any party and all cards are completely anonymous. Use of the tools available will always be voluntary.

18. If a VLT could provide the following features, how likely are you to use these features?

Function	Not at all	A little	Somewhat	Very	Extremely	Don't Know
Show you how much money you have won or lost playing VLTs over a period of time						
Show you how much you are winning and losing while you actually play a VLT						
Allow you to set your own money limits on your VLT play						
Allow you to set your own time limits on your VLT play						
Allow you to ban yourself from playing on specific days						
Ban yourself from playing VLTs altogether for a specified period of time (eg. 48 hrs)						

19. Do you think these features would help VLT players set limits and stick to them?
[Select one]

Yes
No

20. Do you think these features would help VLT players play more safely? [Select one]

Yes
No

21. Would you register with the Informed Player Choice System (IPCS), when it is introduced?

Yes
No [show 21a]
Maybe

21a. Why would you not register with IPCS? [Enter text]

General Attitudes Towards Money

The following questions are about your thoughts on money.

22. Please tell us how much do you disagree or agree with the following statement

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I put money aside on a regular basis for the future.					
It is better to spend money today because you never know what will happen tomorrow.					
I follow a careful financial budget.					
I keep track of my money					
I think money should be enjoyed					
I do financial planning for the future.					

Gambling Related Problems

Some of the next questions may not apply to you, but please try to be as accurate as possible.

23. In the past 12 months, would you say you	Never	Some-times	Most of the time	Almost always	Don't Know
a. Bet more than you could really afford to lose?					
b. Needed to gamble with larger amounts of money to get the same feeling of excitement?					
c. Went back another day to try to win back the money you lost?					
d. Borrowed money or sold anything to get money to gamble?					
e. Felt that you might have a problem with gambling?					
f. Felt gambling had caused you any health problems, including stress or anxiety?					
g. Had people criticizing your betting or telling you that you had a gambling problem, regardless of whether or not you thought it was true?					

23. In the past 12 months, would you say you	Never	Some-times	Most of the time	Almost always	Don't Know
h. Felt your gambling had caused financial problems for you or your household?					
i. Felt guilty about the way you gambled or what happened when you gambled?					

24. In the past 12 months, how often have you experienced problems with your gambling? [Select one]

Never
Rarely
Some of the time
Most of the time
All the time

25. In the past 12 months, how often has gambling caused problems with your family members? [Select one]

Never
Rarely
Some of the time
Most of the time
All the time

26. In the past 12 months, how often have you spent more on gambling than you can afford to spend? [Select one]

Never
Rarely
Some of the time
Most of the time
All the time

Demographics

The following questions are about you and your household.

27. What year were you born? [Enter text]

27a. If you don't want to tell me your age, please tell me in which of the following categories you fit under.

[Select one]

19-24
25-34
35-44
45-54

55+

28. What is your gender? [Select one]

Male
Female

29. What is the highest level of education that you have reached? [Select one]

Elementary
Some high-school
Completed high-school
Some post-secondary
Completed post-secondary
Some post graduate degree
Completed post graduate degree

30. What is your employment status? [Select one]

Work part-time
Work full-time
Retired 1 year or less
Retire 1 year or more
Unemployed
Disability

31. What is your current annual household income? [Select one]

No income
Less than $20,000
$20,001 - $40,000
$40,001 - $60,000
$60,001 - $80,000
$80,001 - $100,000
More than $100,001

32. What is your marital status? [Select one]

Single
Married with kids
Married without kids
Common Law
Separated
Divorced
Widowed

33. What is your postal code? [Enter Verbatim]

Research Panel Survey Questions – Voluntary Enrolment Phase (Survey 3 of 6)

Gambling Behaviour

The following question is about your gambling activities in the PAST 6 MONTHS.

1. What types of gambling have you participated in the PAST 6 MONTHS? [Check all that apply]

- Lottery tickets like 649, Lotto Max
- Casino games like poker, blackjack, roulette or keno
- Instant win scratch tickets, break open, or pull tab
- Slot machines at Casinos
- Bingo
- Video lottery terminals (VLTs) at bars
- Sport select like Pro-line, over/under
- Internet sports
- Horse races - both live at track and off track
- Internet (casino table games, slot machines/VLTs, Poker)
- Other (specify) _____

VLT Behaviour

The following questions are about your VLT playing in the PAST 6 MONTHS.

2. In the past 6 months, have you played VLTs? [Select one]

- Yes
- No [skip to 40]

3. How often do you play VLTs? [Select one]

- Daily
- 2- 6 times per week
- At least once a week
- 2-3 times per month
- At least once per month
- At least once every 2 months
- At least once every 3 months
- Less than 4 times per year

4. What is the average amount of MONEY you spend playing VLTs PER SESSION? [A session is the period of time you played]

_____ Dollars

5. What is the average amount of MONEY you spend playing VLTs PER MONTH?

_____ Dollars

6. In a typical SESSION of play, what is the average amount of TIME you spend playing VLTs?

_____ Minutes/Hrs

7. How many HOURS PER MONTH do you play VLTs?

_____ Hrs

The following questions pertain to setting limits for your VLT playing in the PAST 6 MONTHS. This is something you may or may not do personally.

8. Did you set a MONEY limit for playing VLTs?

Yes [show 9]
No [skip to 10]

9. Did you ever GO OVER your preset MONEY limits?

Yes [show 9a]
No [skip to 10]

9a. If yes, why? [Enter text]

10. Did you set a TIME limit for playing VLTs?

Yes [show 11]
No [skip to 12]

11. Did you ever GO OVER your preset TIME limits?

Yes [show 11a]
No [skip to 12]

11a. If yes, why? [Enter text]

12. Did you set a limit on the number of VISITS to the place where you play VLTs?

Yes [show 13]
No [skip to 14]

13. Did you ever GO OVER your preset VISIT limits?

Yes [show 13a]
No [skip to 14]

13a. If yes, why? [Enter text]

The following questions are about where you go play VLTs in the PAST 6 MONTHS.

14. How often do you visit the sites(s) where you play VLTs, including times when you don't play VLTs at the site(s)? [Select one]

Daily
2-6 times per week
At least once a week
2-3 times per month
At least once per month
At least once every 2 months
At least once every 3 months

Less than 4 times per year

15. How long do you spend at the site(s) where you play VLTs each time you visit the site? [Select one]

Less than 30 minutes
Between 30 minutes and 1 hr
1-2 hrs
3-5 hrs
6-9 hrs
Greater than 9 hours

16. What percentage of the time do you play VLTs at the site(s) you visit? [Select one]

10%
25%
50%
75%
100%

17. What activities other than playing VLTs do you do at the site(s) you visit? [Check all that apply]

Only play VLTs
Drink
Eat
Hang out with my friends
Meet people
People watch
Watch TV
Play games (e.g., pool, darts)
Other (Specify): _____ [Enter text]

VLT Attitudes

The following questions are about your thoughts on VLTs in the PAST 6 MONTHS.

18. On a scale of 1 to 5, where 1 is "not at all" and 5 is "completely", how much do you ENJOY playing VLTs? [Select one]

Not at all
A little
Somewhat
Very
Completely
Don't know

19. On a scale of 1 to 5, where 1 is "not at all" and 5 is "completely", how KNOWLEDGABLE are you about how VLTs work? [Select one]

Not at all
A little
Somewhat
Very

Completely
Don't know

20. Do you have any CONCERNS about your VL play?

Yes [Go to 20a]
No [Go to 21]

20a. If yes, are you concerned about?

Spending too much money playing VLTs
Spending too much time playing VLTs
Other (specify): _____ [Enter text]

My-Play Behaviour

As you may be aware, the Nova Scotia Gaming Corporation (NSGC) introduced the My-Play system this past summer. My-Play system is a card-based system that gives players access to information tools. These information tools include things such as keeping track of wins and losses over a period of time and setting limits on how much money can be spent over a period of time or how long you want to play. To access these information tools you need to enroll in the system and obtain a My-Play card. You then use the card at the machine to access the information tools.

21. Overall, how knowledgeable would you say you are about the My-Play System?

Not at all knowledgeable
Somewhat knowledgeable
Moderately knowledgeable
Very knowledgeable
Extremely knowledgeable

22. Based on your understanding, do you think that the My-Play system is a good thing to offer VL players?

[Select one]

Yes
No

23. Do you think that the My-Play system can help VL players be more informed about their play? [Select one]

Yes
No

24. Do you think that the My-Play system can help VL players manage their VL play? [Select one]

Yes
No

Right now, enrollment in the My-Play system is voluntary. This means that players are not required to enroll in the system or use a My-Play card to play VLTs in the province. But if they want to use the My-Play card information tools (e.g., setting spending limits, tracking amounts spent), they have to enroll and obtain a card.

25. Have you enrolled or will you enroll with My-Play during the voluntary enrollment period?

Yes [GO TO 25c]
No [GO TO 25a]
Maybe [GO TO 25a]

25a. Why have you NOT or would you NOT enroll with My-Play? YES OR NO TO EACH

Reason	Yes	No
I don't play VLTs enough to need to use My-Play and its information tools		
I plan to stop playing VLTs and therefore I don't need to use My-Play and its information tools		
I don't have problems with my gambling to need to use My-Play and its information tools		
Enrollment with My-Play seems too complicated		
My-Play seems too difficult to understand or use		
My-Play will take too much time to use		
I don't want to give out my personal information		
I don't know enough about the enrollment process		
I don't know enough about My-Play in general		
I want to try out My-Play first before I make any commitments to it		
I don't trust the My-Play system		

25b. Are there any other reasons why you have NOT or would NOT enroll with My-Play? [Enter text] [Skip to 36]

25c. When did you enroll with the My-Play System? [Select one]

In the last two weeks
In the last month
In the last 2 – 4 months
In the last six months

25d. Why did you enroll with the My-Play System? [Select one]

Curiosity
Someone suggested I use the My-Play system
I want to keep track of my winnings and losses
I want to set time or money limits on my VLT play
I want to ban myself from play for a specified day or time period
Thought I had to in order to play
Other (specify) _____ [Enter text]

26. Did you use the My-Play card each time you played a VLT?

Yes
No [show 26a]

26a. Why did you not use the card each time you played on VLTs? [Enter text]

27. Are you aware of any of the following tools? [Check all that apply; interviewer read list with details]

My Account – provides information on past wins, losses and money spent
My Live Action – provides information on current wins, losses and money spent
My Money Limit - allows the player to set money limits
My Play Limit – allows the player to set non-play days
My Stop Play – allows the player to exclude themselves from play

The following questions are about your use of the My-Play tools in the PAST 6 MONTHS.

28. Since you enrolled, how often have you used any of the following information tools? [Check all that apply]

	Never	Rarely/ One Time	Occasionally	Regularly	Don't Know
My Account					
My Live Action					
My Money Limit					
My Play Limit					
My Stop Play					

29. Which information tool would you say is the MOST useful? [Select one]

My Account
My Live Action
My Money Limit
My Play Limit
My Stop Play

30. Which information tool would you say is the LEAST useful? [Select one]

My Account
My Live Action
My Money Limit
My Play Limit
My Stop Play

31. Have you ever ignored an information tool you set through the My-Play System (e.g., My Play Limit, My Money Limit, or My Stop Play) by playing without your card?

No
Yes [show 31a]

31a. Why did you ignore the information tool that you set through the My-Play System? [Enter type]

My-Play Attitudes

The following questions are about your thoughts on the My-Play System and its information tools in the PAST 6 MONTHS.

32. How EASY was it to do the following?

Overall…	Not at all	A little	Somewhat	Very	Extremely	Don't know
For you to use My-Play?						
For you to use the My-Play information tools?						

33. How EFFECTIVE would you say the My-Play System is in doing the following?

Function	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly Agree	Don't know
Helping to set and stick to budget for VLT playing						
Helping to make decisions about VLT playing						
Helping to manage VLT play						
Providing useful information						

34. How much do you disagree or agree with the following statements about your use of the information tools of the My-Play System.

Function	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly Agree	Don't know
My-Play makes it safer for me to play VLTs						
My-Play encourages me to spend more money on VLTs						
My-Play encourages me to spend less money on VLTs						
My-Play encourages me to win back money I lost						
My-Play makes me more aware of my VLT playing behaviour (e.g., how much I play or spend)						

35. Overall, how SATISFIED are you with the My-Play System on the following?

Function	Not at all	A little	Somewhat	Very	Extremely	Don't know
Ease of enrollment						
How quickly you could start play once card is swiped						

Information on how to enroll						
Quality of the information received from the My-Play System						
The privacy when using the My-Play System's information tools						
User friendliness of the My-Play System						

In the future, enrollment in the My-Play System may become mandatory; meaning that to play a VLT all players will need to enroll and insert a card. However, the use of the My-Play information tools such as keeping track of wins and losses etc. will remain voluntary.

36. If you needed a My-Play card to play a video lottery terminal, would you… [Select one]

Enroll with My-Play and use the information tools (GO TO 38)
Enroll with My-Play but not use the information tools (GO TO 38)
Enroll with My-Play to try out the information tools and then decide if I want to continue to be enrolled with My-Play (GO TO 38)
Not enroll with My-Play and stop playing VLTs altogether (GO TO 36b)
Not enroll with My-Play and wait to see how your friends or others like it (GO TO 36b)
Not enroll with My-Play but use someone else's My-Play card (GO TO 36b)
Not enroll with My-Play but play VLTs somewhere else besides Nova Scotia (e.g., internet, another province) (GO TO 36b)
Not enroll with My-Play and start gambling on something else besides VLTs (e.g., bingo, table games) (GO TO 36b)
Other _____

36b. What are your concerns with being required to enroll with My-Play in order to play VLTs? (Check all that apply)

Enrollment with My-Play seems too complicated (GO TO 36c)
My-Play seems too difficult to understand or use (GO TO 36d)
I don't like the fact I have to give out my personal information to enroll for My-Play (GO TO 36e)
I don't want the government to have information on my personal gambling activity (GO TO 36e)
My-Play will make playing VLTs a hassle for me (e.g., need to have my card all the time) (GO TO 37)
There is no benefit for me to enroll and obtain the card other than allowing me to play VLTs (GO TO 37)
I don't know enough about the enrollment process for My-Play (GO TO 37)
I don't know enough about My-Play in general (GO TO 37)
I don't trust the My-Play system (GO TO 37)
Other _____ (GO TO 37)

36c. If the enrollment process could be made simple, would you enroll for My-Play?

Yes (GO TO 38)
No (GO TO 37)
Maybe (GO TO 37)

36d. If My-Play could be made simple to use and easy to understand, would you enroll for My-Play?

Yes (GO TO 38)
No (GO TO 37)
Maybe (GO TO 37)

36e. If it could be shown that your personal information was only used to generate a unique player account and then permanently deleted and that your information was completely anonymous would you enroll in the My-Play System?

Yes (GO TO 38)
No (GO TO 37)
Maybe (GO TO 37)

37. If you knew that requiring everyone to enroll for My-Play may help many VL players stay within their limits when playing video lotteries, would you enroll for My-Play even though you, yourself, may not need it?

Yes
No
Maybe

Please answer the following questions.

Questions	Not at all comfortable	A little comfortable	Moderately comfortable	Very comfortable	Extremely comfortable
38. How comfortable are you with using your bank card to do your banking or to buy things (i.e., interact)?					
39. How comfortable are you with buying things online (i.e., internet)?					

General Attitudes Towards Money

The following questions are about your thoughts on money.

40. Please tell us how much do you disagree or agree with the following statement

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I put money aside on a regular basis for the future.					
It is better to spend money today because you never know what will happen tomorrow.					
I follow a careful financial budget.					
I keep track of my money					
I think money should be enjoyed					
I do financial planning for the future.					

Gambling Related Problems

Some of the next questions may not apply to you, but please try to be as accurate as possible.

41. In the past 6 months, would you say you	Never	Some-times	Most of the time	Almost always	Don't Know
a. Bet more than you could really afford to lose?					
b. Needed to gamble with larger amounts of money to get the same feeling of excitement?					
c. Went back another day to try to win back the money you lost?					
d. Borrowed money or sold anything to get money to gamble?					
e. Felt that you might have a problem with gambling?					
f. Felt gambling had caused you any health problems, including stress or anxiety?					
g. Had people criticizing your betting or telling you that you had a gambling problem, regardless of whether or not you thought it was true?					
h. Felt your gambling had caused financial problems for you or your household?					
i. Felt guilty about the way you gambled or what happened when you gambled?					

42. In the past 6 months, have you experienced problems with your gambling? [Select one]

Never
Rarely
Some of the time
Most of the time
All the time

43. In the past 6 months, has gambling caused problems with your family members? [Select one]

Never
Rarely
Some of the time
Most of the time
All the time

44. In the past 6 months, have you spent more on gambling than you can afford to spend? [Select one]

Never
Rarely
Some of the time
Most of the time
All the time

Demographics

The following questions are about you and your household.

45. What is your employment status? [Select one]

Work part-time
Work full-time
Retired 1 year or less
Retired 1 year or more
Unemployed
Disability
Student

46. What is your current annual household income? [Select one]

No income
Less than $20,000
$20,001 - $40,000
$40,001 - $60,000
$60,001 - $80,000
$80,001 - $100,000
More than $100,001

47. What is your marital status? [Select one]

Single

Married with kids
Married without kids
Common Law
Separated
Divorced
Widowed

48. What is your postal code? [Enter Verbatim]

Research Panel Survey Questions – Mandatory Enrolment Phase (Survey 6 of 6)

Gambling Behaviour

The following question is about your gambling activities in the PAST 6 MONTHS.

1. What types of gambling have you participated in the PAST 6 MONTHS? [Check all that apply]
Lottery tickets like 649, Lotto Max
Casino games like poker, blackjack, roulette or keno
Instant win scratch tickets, break open, or pull tab
Slot machines at Casinos
Bingo
Video lottery terminals (VLTs)
Sport select like Pro-line, over/under
Internet sports
Horse races - both live at track and off track
Internet (casino table games, slot machines/VLTs, Poker)
Other (specify) _____

VLT Behaviour

The following questions are about your VLT playing in the PAST 6 MONTHS.

2. In the past 6 months, have you played VLTs? [Select one]
Yes
No [Skip to 44]

3. How often do you play VLTs? [Select one]
Daily
2- 6 times per week
At least once a week
2-3 times per month
At least once per month
At least once every 2 months
At least once every 3 months
Less than 4 times per year

4. What is the average amount of MONEY you spend playing VLTs PER SESSION? [A session is the period of time you played]

_____ Dollars

5. What is the average amount of MONEY you spend playing VLTs PER MONTH?

_____ Dollars

6. In a typical SESSION of play, what is the average amount of TIME you spend playing VLTs?

_____ Minutes/Hrs

7. How many HOURS PER MONTH do you play VLTs?

_____ Hrs

The following questions pertain to setting limits for your VLT playing in the PAST 6 MONTHS. This is something you may or may not do personally.

8. Did you set a MONEY limit for playing VLTs?

Yes [Show 9]
No [Skip to 10]

9. Do you ever GO OVER your preset MONEY limits?

Yes [Show 9a]
No [Skip to 10]

9a. If yes, why? [Enter text]

10. Did you set a TIME limit for playing VLTs?

Yes [Show 11]
No [Skip to 12]

11. Do you ever GO OVER your preset TIME limits?

Yes [Show 11a]
No [Skip to 12]

11a. If yes, why? [Enter text]

12. Did you set a limit on the number of VISITS to the place where you play VLTs?

Yes [Show 13]
No [Skip to 14]

13. Do you ever GO OVER your preset VISIT limits?

Yes [Show 13a]
No [Skip to 14]

13a. If yes, why? [Enter text]

The following questions are about where you go play VLTs in the PAST 6 MONTHS.

14. How often do you visit the site(s) where you play VLTs, including times when you don't play VLTs at the site(s)? [Select one]

Daily
2-6 times per week
At least once a week
2-3 times per month
At least once per month
At least once every 2 months
At least once every 3 months
Less than 4 times per year

15. How long do you spend at the site(s) where you play VLTs each time you visit the site? [Select one]

Less than 30 minutes
Between 30 minutes and 1 hr
1-2 hrs
3-5 hrs
6-9 hrs
Greater than 9 hours

16. What percentage of the time do you play VLTs at the site(s) you visit? [Select one]

10%
25%
50%
75%
100%

17. What activities other than playing VLTs do you do at the site(s) you visit? [Check all that apply]

Only play VLTs
Drink
Eat
Hang out with my friends
Meet people
People watch
Watch TV
Play games (e.g., pool, darts)
Other (Specify): _____ [Enter text]

VLT Attitudes

The following questions are about your thoughts on VLTs in the PAST 6 MONTHS.

18. On a scale of 1 to 5, where 1 is "not at all" and 5 is "completely", how much do you ENJOY playing VLTs? [Select one]

Not at all
A little
Somewhat

Very
Completely

19. On a scale of 1 to 5, where 1 is "not at all" and 5 is "completely", how KNOWLEDGABLE are you about how VLTs work? [Select one]

Not at all
A little
Somewhat
Very
Completely

20. Do you have any CONCERNS about your VL play?

Yes [Go to 20a]
No [Go to 21]

20a. If yes, are you concerned about?

Spending too much money playing VLTs
Spending too much time playing VLTs
Other (specify): _____ [Enter text]

My-Play Behaviour

As you may be aware, the Nova Scotia Gaming Corporation (NSGC) introduced the My-Play system in August 2010. My-Play system is a card-based system that gives players access to information tools. These information tools include things such as keeping track of wins and losses over a period of time and setting limits on how much money can be spent over a period of time or how long you want to play. To access these information tools you need to enroll in the system and obtain a My-Play card. You then use the card at the machine to access the information tools.

21. Overall, how knowledgeable would you say you are about the My-Play System?

Not at all knowledgeable
Somewhat knowledgeable
Moderately knowledgeable
Very knowledgeable
Extremely knowledgeable

22. Based on your understanding, do you think that the My-Play system is a good thing to offer VL players? [Select one]

Yes
No

23. Do you think that the My-Play system can help VL players be more informed about their play? [Select one]

Yes
No

24. Do you think that the My-Play system can help VL players manage their VL play? [Select one]

Yes
No

Right now, enrollment in the My-Play system is mandatory. This means that players are required to enroll in the system and use a My-Play card to play VLTs in the province. But enrollment comes in two forms: light and full enrollment. Light enrollment does not require a patron to provide personal information (i.e. name, address, etc.) to obtain a card. Full enrollment does require a patron to provide personal information to obtain a card.

25. What enrollment option are you using to gamble on VLTs?

Light - enrollment without providing identification [Show 25a, b, c]
Full - enrollment with identification (e.g. driver's license) [Show 26]

25a. Why have you chosen light enrollment over full enrollment? YES OR NO TO EACH

Reason	Yes	No
I don't play VLTs enough to use full enrollment		
I plan to stop playing VLTs		
I don't have problems with my gambling		
Full enrollment with My-Play seems too complicated		
Full enrollment seems too difficult to understand or use		
Full enrollment will take too much time to use		
I don't want to give out my personal information		
I don't know enough about the enrollment process		
I don't know enough about My-Play in general		
I want to try out My-Play first before I make any commitments to it		
I don't trust the My-Play system		

25b. Are there any other reasons why you have NOT or would NOT choose full enrollment to play VLTs?
[Enter text]

25c. Do you do any of the following when you play VLTs? YES OR NO TO EACH [Skip to 29]

Statement	Yes	No
I obtain a new card each time I play		
I carry the same card with me each time I play		
I use someone else's card each time I play		
I leave my card in the machine when I am done playing		
I throw the card out when I am done playing		

26. When did you enroll with the My-Play System? [Select one]

In the last two weeks
In the last month
In the last 2 – 4 months
In the last six months
Longer than 6 months

27. Why did you choose full enrollment? [Check all that apply]

I thought it was mandatory to enroll

Curiosity
Someone suggested I use the My-Play system
I want to keep track of my winnings and losses
I want to set time or money limits on my VLT play
I want to ban myself from play for a specified day or time period
Thought I had to in order to play
Other (specify) _____ [Enter text]

We are asking all participants to provide their My-Play card number. This will provide valuable information into understanding play patterns.

28. Please provide your My-Play card number? [Enter text]

29. Have you played VLTs outside of Nova Scotia since the cards became mandatory?
Yes [Show 29a]
No

29a. What are the reasons you played VLTs outside of Nova Scotia? [Enter text]

30. Since the My-Play card became mandatory to play VLTs (i.e. April 2012), did you borrow someone else's My-Play card in order to play a VLT? [Show 30a and 30b]
Every time I play
Most of the time I play
Some of the time I play
Never [Go to 31]

30a. How many times in total did you borrow someone else's My-Play card to play a VLT? [enter text]

30b. Why did you borrow someone else's My-Play card? [Check all that apply]
I lost my card
I forgot my card
My card had restrictions on it so I could not use it to play
My card was broken or damaged
Don't want to get a card
Other (specify)

31. Since My-Play card became mandatory to play VLTs (i.e. April 2012), did you borrow someone else's identification to register for a new card?
Yes [show 31a]
No [Go to 32]

31a. How many times did you borrow someone else's identification in order to register for a new card?

32. Are you aware of any of the following tools? [Check all that apply]
My Account – provides information on past wins, losses and money spent
My Live Action – provides information on current wins, losses and money spent
My Money Limit – allows the player to set money limits

My Play Limit – allows the player to set non-play days
My Stop Play – allows the player to exclude themselves from play

The following questions are about your use of the My-Play tools in the PAST 6 MONTHS.

33. How often have you used any of the following information tools? [Check all that apply]

	Never	Rarely/ One Time	Occasionally	Regularly
My Account				
My Live Action				
My Money Limit				
My Play Limit				
My Stop Play				

34. Which information tool would you say is the MOST useful? [Select one]
My Account
My Live Action
My Money Limit
My Play Limit
My Stop Play

34a. Explain why this information tool is the MOST useful? [Enter text]

35. Which information tool would you say is the LEAST useful? [Select one]
My Account
My Live Action
My Money Limit
My Play Limit
My Stop Play

35a. Explain why this information tool is the LEAST useful? [Enter text]

36. Have you ever ignored an information tool you set through the My-Play System (e.g., My Play Limit, My Money Limit, or My Stop Play) by playing with a different card?
No
Yes [show 36a]

36a. Why did you ignore the information tool that you set through the My-Play System? [Enter text]

37. Are you spending more, less or about the same amount of money playing VLTs compared to the time before you enrolled in My-Play? [Select one]
More [show 37a]
Less [show 37b]
About the same [go to 38]
Don't know [go to 38]

37a. What are some of the reasons for spending more money? [Enter text]

37b. What are some of the reasons for spending less money? [Enter text]

38. Are you spending more, less or about the same amount of time playing VLTs compared to the time before you enrolled in My-Play? [Select one]

More [show 38a]
Less [show 38b]
About the same [go to 39]
Don't know [go to 39]

38a. What are some of the reasons for spending more time? [Enter text]

38b. What are some of the reasons for spending less time? [Enter text]

My-Play Attitudes

The following questions are about your thoughts on the My-Play System and its information tools in the PAST 6 MONTHS.

39. How EASY was it to do the following?

Overall…	Not at all	A little	Somewhat	Very	Extremely	Don't know
For you to use My-Play?						
For you to use the My-Play information tools?						

40. How EFFECTIVE would you say the My-Play System is in doing the following?

Function	Not at all	A little	Somewhat	Very	Extremely	Don't know
Helping to set and stick to a budget for VLT playing						
Helping to make decisions about VLT playing						
Helping to manage VLT play						
Providing useful information						

41. How much do you disagree or agree with the following statements about your use of the My-Play information tools.

Function	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly Agree	Don't know
My-Play makes it safer for me to play VLTs						

My-Play encourages me to spend more money on VLTs						
My-Play encourages me to spend less money on VLTs						
My-Play encourages me to win back money I lost						
My-Play makes me more aware of my VLT playing behaviour (e.g., how much I play or spend)						

42. Overall, how SATISFIED are you with the My-Play System on the following?

Function	Not at all	A little	Somewhat	Very	Extremely	Don't know
Ease of enrollment						
How quickly you could start play once card is swiped						
Information on how to enroll						
Quality of the information received from the My-Play System						
The privacy when using the My-Play System's information tools						
User friendliness of the My-Play System						

43. Please answer the following questions.

Questions	Not at all comfortable	A little comfortable	Moderately comfortable	Very comfortable	Extremely comfortable
How comfortable are you with using your bank card to do your banking or to buy things (i.e., interact)?					
How comfortable are you with buying things online (i.e., internet)?					

General Attitudes Towards Money

The following questions are about your thoughts on money.

44. Please tell us how much do you disagree or agree with the following statement

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I put money aside on a regular basis for the future.					
It is better to spend money today because you never know what will happen tomorrow.					
I follow a careful financial budget.					
I keep track of my money					
I think money should be enjoyed					
I do financial planning for the future.					

Gambling Related Problems

Some of the next questions may not apply to you, but please try to be as accurate as possible.

45. In the past 6 months, would you say you	**Never**	**Some-times**	**Most of the time**	**Almost always**
a. Bet more than you could really afford to lose?				
b. Needed to gamble with larger amounts of money to get the same feeling of excitement?				
c. Went back another day to try to win back the money you lost?				
d. Borrowed money or sold anything to get money to gamble?				
e. Felt that you might have a problem with gambling?				
f. Felt gambling had caused you any health problems, including stress or anxiety?				
g. Had people criticizing your betting or telling you that you had a gambling problem, regardless of whether or not you thought it was true?				
h. Felt your gambling had caused financial problems for you or your household?				
i. Felt guilty about the way you gambled or what happened when you gambled?				

46. In the past 6 months, have you experienced problems with your gambling? [Select one]

Never
Rarely

Some of the time
Most of the time
All the time

47. In the past 6 months, has gambling caused problems with your family members? [Select one]
Never
Rarely
Some of the time
Most of the time
All the time

48. In the past 6 months, have you spent more on gambling than you can afford to spend? [Select one]
Never
Rarely
Some of the time
Most of the time
All the time

Demographics

The following questions are about you and your household.

49. What is your employment status? [Select one]
Work part-time
Work full-time
Retired 1 year or less
Retire 1 year or more
Unemployed
Disability
Student

50. What is your current annual household income? [Select one]
No income
Less than $20,000
$20,001 - $40,000
$40,001 - $60,000
$60,001 - $80,000
$80,001 - $100,000
More than $100,001

51. What is your marital status? [Select one]
Single
Married with kids
Married without kids
Common Law
Separated
Divorced

Widowed

52. What is your postal code? [Enter text]

General Population Survey Questions – Pre-MPS Baseline

Overall Gambling Behaviour

1. Have you EVER gambled?

1 Yes
0 No [skip to 28]

2. Have you EVER gambled in the PAST 12 MONTHS?

1 Yes
0 No [skip to 28]
2 Refused [ask Q3 and skip to 28]

The following questions are about your gambling activities in the PAST 12 MONTHS.

3. What types of gambling have you participated in, in the PAST 12 MONTHS?
[Read list, Check all that apply]

1 Lottery tickets like 649, Super 7
2 Casino games like poker, blackjack, roulette or keno
3 Instant win scratch tickets, break open, or pull tab
4 Slot machines at Casinos
5 Bingo
6 Video lottery terminals (VLTs) at bars
7 Sport select like Pro-line, over/under
8 Internet sports betting
9 Horse races - both live and off track
10 Internet (casino table games, slot machines/VLTs, Poker)
11 Other (specify) _____
12 Refused [skip to 28]

4. Which type of gambling have you done MOST OFTEN? [Don't read list, Select one]

1 Lottery tickets like 649, Super 7
2 Casino games like poker, blackjack, roulette or keno
3 Instant win scratch tickets, break open, or pull tab
4 Slot machines at Casinos
5 Bingo
6 Video lottery terminals (VLTs) at bars
7 Sport select like Pro-line, over/under
8 Internet sports betting
9 Horse races - both live and off track
10 Internet (casino table games, slot machines/VLTs, Poker)
11 Other (specify) _____

5. Which type of gambling have you done SECOND most often? [Don't read list, Select one]

1 Lottery tickets like 649, Super 7
2 Casino games like poker, blackjack, roulette or keno
3 Instant win scratch tickets, break open, or pull tab
4 Slot machines at Casinos
5 Bingo
6 Video lottery terminals (VLTs) at bars
7 Sport select like Pro-line, over/under
8 Internet sports betting
9 Horse races - both live and off track
10 Internet (casino table games, slot machines/VLTs, Poker)
11 Other (specify) _____

IF Q3-5 not = 6, ASK 6.

IF Q 3-5 = 6, GO TO 7.

VLT Gambling Behaviour

The following questions are about your VLT playing in the PAST 12 MONTHS.

6. In the past 12 months, have you played VLTs? [Don't read list, unless need prompting]
1 Yes
2 Yes but only a few times
0 No [skip to 27]

7. How often have you generally played VLTs? [Select one]
1 Daily
2 2 – 6 times per week
3 At least once per week
4 At least once per month
5 At least once every 3 months
6 Less than 4 times per year

If at least once per month or more, at the end of the survey ask if they would like to be part of research panel.

8. What is the average amount of <u>MONEY</u> you have spent playing VLTs PER SESSION? [A session is the period of time you played from start to finish]
_____ Dollars

9. What is the average amount of MONEY you have spent playing VLTs PER MONTH?
_____ Dollars

10. In a typical SESSION of play, what is the average amount of <u>TIME</u> you have spent playing VLTs?
_____ Minutes/Hrs

11. How many <u>HOURS PER MONTH</u> have you played VLTs?

_____ Hrs

12. Have you set any of the following LIMITS on your VLT play, in the PAST 12 MONTHS? [Read list, Check all that apply]

1 a. A limit on amount of money you spend [if a, ask 13]
2 b. A limit on amount of time you spend [if b, ask 14]
3 c. You do not set any limits [if c, skip to 17]

13. What type of <u>MONEY</u> limits did you usually set for playing VLTs? [Read responses, Check all that apply]

1 Session limits
2 Daily limits
3 Weekly limits
4 Monthly limits
5 Other

14. What type of <u>TIME</u> limits did you usually set for playing VLTs? [Read responses, Check all that apply]

1 Session limits
2 Daily limits
3 Weekly limits
4 Monthly limits
5 Other

15. Have you ever GONE OVER your MONEY limits in the PAST 12 MONTHS?

1 Yes [ask 15a]
0 No [skip to 17]

15a. If yes, why? [Don't read list, Select One]

1 had access to ATMs at venue
2 had cash on hand
3 Was gambling with others
4 Was gambling alone
5 Was on a winning streak
6 Was feeling bored or lonely
7 Was feeling stressed out
8 Other (specify): _____ [Enter verbatim]

16. Have you ever GONE OVER your TIME limits in the PAST 12 MONTHS?

1 Yes [ask 16a]
0 No [skip to 17]

16a. If yes, why? [Don't read list, Select One]

1 had access to ATMs at venue
2 had cash on hand
3 Was gambling with others
4 Was gambling alone
5 Was on a winning streak
6 Was feeling bored or lonely

7 Was feeling stressed out
8 Other (specify): _____ [Enter verbatim]

VLT Attitudes

The following questions are about your thoughts related to VLTs.

17. Why do you play VLTs? [Don't read list, check all that apply]

1 To socialize
2 To forget problems
3 To pass time
4 To win money
5 For leisure/entertainment
6 For excitement/ thrill
7 Other (specify) _____ [Enter verbatim]

18. How much do you ENJOY playing VLTs? [Read responses, Select one]

1 Not at all
2 A little
3 Somewhat
4 Very
5 Completely
6 Don't know

19. How KNOWLEDGABLE are you about how VLTs work? [Read responses, Select one]

1 Not at all
2 A little
3 Somewhat
4 Very
5 Completely
6 Don't know

20. Do you have any CONCERNS about your VLT play? [Don't read list, Select one]

1 No concerns
2 Spend too much money playing VLTs
3 Spend too much time playing VLTs
4 It is too inconvenient to play VLTs
5 No control/hard to stop
6 It is difficult to know how much money I spend on VLTs
7 Other (specify) _____ [Enter verbatim]

IPCS Attitudes

The following questions are about your thoughts on the Informed Player Choice System, also known as the IPCS.

The following questions are about your thoughts on the Informed Player Choice System, also known as the IPCS. The Nova Scotia Gaming Corporation is going to introduce the IPCS in 2009. It is a card-based system that will be applied to VLTs, where a card would be needed to begin play. The IPCS will provide players with information tools that will allow them to make informed gaming decisions. It is intended to facilitate informed choice and responsible play. Implementation will begin with a voluntary player registration. Following a transition period, the system will switch to a mandatory registration model in April 2010, where players will be required to obtain a card to access play on a VLT. There will be no personal information retained by any party and all cards will be completely anonymous. Use of the tools available will always be voluntary.

21. What do you think about this? [Enter verbatim]

22. The IPCS will require a card to play VLTs. Do you think you would get an IPCS card during the voluntary phase?

0 No [ask 22b]
1 Yes [ask 22a]
2 Maybe [ask 22a]
3 Don't know [ask 22b]

22a. If yes or maybe, why? [Enter verbatim]

22b. If no or don't know, why not? [Enter verbatim, skip to 24]

23. During the voluntary phase, would you use the information offered by the IPCS such as tracking wins and losses or setting money or time limits?

1 Yes [ask 23a]
0 No [ask 23b]

23a. If yes, why? [Enter verbatim]

23b. If no, why not? [Enter verbatim]

24. How useful would it be for you to be able to do the following… [Read responses]

	Not at all (1)	A little (2)	Somewhat (3)	Very (4)	Extremely (5)	Don't Know (6)
Keep track of how much money you have won or lost playing VLTs over a period of time?						
See how much you are winning and losing while playing a VLT?						
Set money limits on your VLT play?						
Set time limits on your VLT play? For example, the number of days or specific days that you could play VLTs (eg. Ban self on pay day)						

Ban yourself from playing VLTs altogether for a specified period of time?						

25. When the card becomes MANDATORY, will you stop playing VLTs or will you register for the card? [Ask if Q22 = 0,2,3; Don't read list, select one]

1 Stop playing VLTs [skip to 27]
2 Register for card and continue playing [ask 26]
3 Will try it for a bit and decide [ask 26]
4 Don't know [skip to 27]
5 Other [Enter verbatim, skip to 27]

26. Again, when the card becomes MANDATORY, do you think you would use the information offered by the IPCS such as tracking wins and losses or setting money or time limits? [ask if Q23 = 0 Don't read list, select one]

0 No [ask 26b]
1 Yes [ask 26a]
2 Maybe [ask 26a]
3 Don't know [ask 26b]

26a. If yes or maybe, why? [Enter verbatim]

26b. If no or don't know, why not? [Enter verbatim]

Gambling Related Problems

Some of the next questions may not apply to you, but please try answer them as accurately as possible.

27. In the past 12 months, would you say you have	**Never (1)**	**Some-times (2)**	**Most of the time (3)**	**Almost always (4)**	**Don't Know (5)**
a. Bet more than you could really afford to lose?					
b. Needed to gamble with larger amounts of money to get the same feeling of excitement?					
c. Went back another day to try to win back the money you lost?					
d. Borrowed money or sold anything to get money to gamble?					
e. Felt that you might have a problem with gambling?					

27. In the past 12 months, would you say you have	Never (1)	Some-times (2)	Most of the time (3)	Almost always (4)	Don't Know (5)
f. Felt gambling had caused you any health problems, including stress or anxiety?					
g. Had people criticizing your betting or telling you that you had a gambling problem, regardless of whether or not you thought it was true?					
h. Felt your gambling had caused financial problems for you or your household?					
i. Felt guilty about the way you gambled or what happened when you gambled?					

General VLT Attitudes

28. Overall, what kind of effect do you think VLTs have on you personally? [Read responses, Select one]

0 Negative effect
1 Positive effect
2 No effect at all
3 Not sure
4 Don't know

28a. In what way? [Enter verbatim]

29. Overall, what kind of effect do you think VLTs have on the LOCAL COMMUNITY? [Read responses, Select one]

0 Negative effect
1 Positive effect
2 No effect at all
3 Not sure
4 Don't know

29a. Why is that? [Enter verbatim]

30. *Please tell me how much you agree or disagree with following statement:* **In the past few years Nova Scotia has made a reasonable effort to address VLT-related problem gambling.** [Read statements, Select one]

1 Completely disagree
2 Strongly disagree
3 Somewhat disagree
4 Neither agree nor disagree
5 Somewhat agree

6 Strongly agree
7 Completely agree

31. *Please tell me how much you agree or disagree with following statement:* **VLT gambling in Nova Scotia is provided in a socially responsible way.** [Read statements, Select one]

1 Completely disagree
2 Strongly disagree
3 Somewhat disagree
4 Neither agree nor disagree
5 Somewhat agree
6 Strongly agree
7 Completely agree

Demographics

The following questions are about you and your household.

32. What year were you born? [Enter verbatim]

31a. If you don't want to tell me your age, please tell me in which of the following categories you fit under.

[Read list, Select one]

1 19-24
2 25-34
3 35-44
4 45-54
5 55+

32. What is your gender? [Don't ask, record by observation]

1 Male
2 Female

33. What is the highest level of education you have reached? [Read list, Select one]

1 Elementary
2 Some high-school
3 Completed high-school
4 Some post-secondary
5 Completed post-secondary
6 Some post graduate degree
7 Completed post graduate degree

34. What is your employment status? [Read list, Select one]

1 Work part-time
2 Work full-time
3 Retired 1 year or less
4 Retire 1 year or more
5 Unemployed

6 On disability
7 Other (please specify)

35. What is your current annual household income? (that is, the income of all members in your household combined) [Read list, Select one]

0 No income
1 Less than $20,000
2 $20,001 - $40,000
3 $40,001 - $60,000
4 $60,001 - $80,000
5 $80,001 - $100,000
6 More than $100,001

36. What is your marital status? [Read list, Select one]

1 Single
2 Married with kids
3 Married without kids
4 Common Law
5 Separated
6 Divorced
7 Widowed

37. What is your postal code? [Enter verbatim]

General Population Survey Questions – Voluntary Enrolment Phase

Gambling Behaviour

The following questions are about your gambling activities in the PAST 12 MONTHS.

1. What types of gambling have you participated in, in the PAST 12 MONTHS? [Check all that apply]

1 Lottery tickets like 649 or Lotto Max
2 Casino games like poker, blackjack, roulette or keno
3 Instant win scratch tickets, break open, or pull tab
4 Slot machines at Casinos
5 Bingo
6 Video lottery terminals (VLTs) at bars
7 Sport select like Pro-line, over/under
8 Internet sports
9 Horse races - both live at track and off track
10 Internet (casino table games, slot machines/VLTs, Poker)
11 Other (specify) _____

2. Which type of gambling have you done MOST OFTEN, in the PAST 12 MONTHS? [Don't read list, Select one]

1 Lottery tickets like 649 or Lotto Max
2 Casino games like poker, blackjack, roulette or keno
3 Instant win scratch tickets, break open, or pull tab
4 Slot machines at Casinos
5 Bingo
6 Video lottery terminals (VLTs) at bars
7 Sport select like Pro-line, over/under
8 Internet sports
9 Horse races - both live at track and off track
10 Internet (casino table games, slot machines/VLTs, Poker)
11 Other (specify) _____

3. Which type of gambling have you done SECOND most often, in the PAST 12 MONTHS? [Don't read list, Select one]

1 Lottery tickets like 649 or Lotto Max
2 Casino games like poker, blackjack, roulette or keno
3 Instant win scratch tickets, break open, or pull tab
4 Slot machines at Casinos
5 Bingo
6 Video lottery terminals (VLTs) at bars
7 Sport select like Pro-line, over/under
8 Internet sports
9 Horse races - both live at track and off track
10 Internet (casino table games, slot machines/VLTs, Poker)
11 Other (specify) _____

IF VLTs ARE NOT part of answers to questions 1-3, ASK 4.

IF VLTs ARE part of answers to questions 1-3, GO TO 5.

VLT Gambling Behaviour

The following questions are about your VLT playing in the PAST 12 MONTHS.

4. In the past 12 months, have you played VLTs? [Don't read list, unless need prompting]

1 Yes
2 Yes but only a few times
3 No [skip to 14]

5. How often do you play VLTs? [Select one]

1 Daily
2 2 – 6 times per week
3 At least once per week
4 At least once per month
5 At least once every 3 months
6 Less than 4 times per year

6. What is the average amount of MONEY you spend playing VLTs PER SESSION? [A session is the period of time you played]

_____ Dollars

7. What is the average amount of MONEY you spend playing VLTs PER MONTH?

_____ Dollars

8. In a typical SESSION of play, what is the average amount of TIME you spend playing VLTs?

_____ Minutes/Hrs

9. How many HOURS PER MONTH do you play VLTs?

_____ Hrs

The following questions are about setting limits for your VLT playing in the PAST 12 MONTHS. This is something you may or may not do.

10. Do you set any of the following LIMITS on your VLT play? [Read list, Select one]

1 A limit on amount of money you spend [if a, ask 11]
2 A limit on amount of time you spend on VLTs [if b, ask 12]
3 A limit on amount of money and time you spend on VLTs [if c, ask 11-13]
4 You do not set any limits [if d, skip to 14]

11. What type of MONEY limits do you usually set for playing on VLTs? [Read responses, Check all that apply]

1 Session limits
2 Daily limits

3 Weekly limits
4 Monthly limits
5 Other (eg. yearly - specify) : _____ [Enter verbatim]

12. What type of TIME limits do you usually set for playing on VLTs? [Read responses, Check all that apply]
1 Session limits
2 Daily limits
3 Weekly limits
4 Monthly limits
5 Other (eg. yearly - specify) : _____ [Enter verbatim]

13. Do you ever go over your preset MONEY or TIME limits?
1 Yes [ask 13a]
2 No

13a. If yes, why? [Don't read list, Select One]
1 I had access to ATM at venue
2 I had cash on me while at the venue
3 I was gambling with a group
4 I was gambling by myself
5 I had a win during gambling
6 I was feeling bored or lonely
7 I was feeling stressed out
8 Lost track of time
9 Other (specify): _____ [Enter verbatim]

My-Play Behaviour

This year, the Nova Scotia Gaming Corporation (NSGC) introduced the My-Play system. My-Play is a card-based system for video lottery (VL) players. With the My-Play card, players can choose to monitor and control their VL play, including seeing how much they have won or lost over a period of time , how long they have been playing and the ability to set money or time limits.

Enrollment in the My-Play system is voluntary. This means that players are not required to enroll in the system or use a My-Play card to play VLTs in the province. But if they want to use the information tools (e.g. setting money spending limits), they have to enroll with the My-Play system and obtain a card.

14. Overall, how KNOWLEDGEABLE would you say you are about the My-Play System?
1 Not at all
2 Somewhat
3 Moderately
4 Very
5 Extremely

15. Have you enrolled with My-Play during the voluntary enrollment period?
1 Yes [GO TO 15a]
2 No [GO TO 15b]

15a. If yes, why did you enroll with My Play? [Check all that apply, Go to 16]

1 Curiosity
2 Someone suggested I use the My Play system
3 I want to keep track of my winnings and losses
4 I want to set time or money limits on my VLT play
5 I want to ban myself from play for a specified day or time period
6 I thought I had to in order to play
7 Other (specify) _____

15b. Will you enroll with My-Play during the voluntary enrollment period?

1 Yes [Go to 19]
2 No [Go to 15d]
3 Maybe [Go to 15d]

15c. Why have you NOT or would you NOT enroll with My-Play? YES OR NO TO EACH [Go to 15e and then skip to 23]

Reason	Yes (1)	No (2)
I don't play VLTs enough to need to use My-Play and its information tools		
I plan to stop playing VLTs and therefore I don't need to use My-Play and its information tools		
I don't have problems with my gambling and don't need to use My-Play and its information tools		
Enrollment with My-Play seems too complicated		
My-Play seems too difficult to understand or use		
My-Play will take too much time to use		
I don't want to give out my personal information		
I don't know enough about the enrollment process		
I don't know enough about My-Play in general		
I want to try out My-Play first before I make any commitments to it		
I don't trust the My-Play system		

15d. Are there any other reasons why you have NOT or would NOT enroll with My-Play? [Enter text]

Player Information Tools

16. Are you aware of any of the following information tools offered by the My Play system? [Read description]

1 My Account – provides information on the time and money played for a day, week, month or year
2 My Live Action – provides information on current wins, losses and time spent playing
3 My Money Limit - allows the player to set money limits

4 My Play Limit – allows the player to set time limits and block times they do not want to play

5 My Stop Play – allows the player to immediately exclude themselves from play

17. Have you used any of the My Play information tools?

1 Yes [Go to 18]

2 No [skip to 19]

18. Since you enrolled, how OFTEN have you used any of the following information tools? [Check all that apply]

Tool	Never (1)	Rarely/ One Time (2)	Occasionally (3)	Regularly (4)
a. My Account Information on past wins, losses and money spent				
b. My Live Action Information on current wins, losses and money spent				
c. My Money Limit Allows player to set money limits				
d. My Play Limit Allows player to set non-play days				
e. My Stop Play Allows player to exclude themselves from play				

My-Play Attitudes

The following questions are about your thoughts on the My-Play system.

19. On a scale of 1 to 5, where 1 is "not at all" and 5 is "completely", how SATISFIED are you with the My-Play system? [Read responses, Select one]

1 Not at all

2 A little

3 Somewhat

4 Very

5 Completely

6 Don't know

20. On a scale of 1 to 5, where 1 is "not at all" and 5 is "completely", how EFFECTIVE is the My-Play system at setting limits and helping players stick to them? [Read responses, Select one]

1 Not at all

2 A little

3 Somewhat

4 Very

5 Completely

6 Don't know

21. Are you spending more, less or about the same amount of MONEY playing VLTs compared to the time before the My-Play system was introduced? [Select one]

1 More [ask 21a]

2 Less [ask 21b]
3 About the same
4 Don't know

21a. What are some of the reasons for spending MORE money? [Enter verbatim]

21b. What are some of the reasons for spending LESS money? [Enter verbatim]

22. Are you spending more, less or about the same amount of TIME playing VLTs compared to the time before the My-Play system was introduced? [Select one]

1 More [ask 22a]
2 Less [ask 22b]
3 About the same
4 Don't know

22a. What are some of the reasons for spending MORE time? [Enter verbatim]

22b. What are some of the reasons for spending LESS time? [Enter verbatim]

The My-Play system will become Mandatory in the Fall of 2011. This means that VLT Players will need a card to begin play on VLTs.

23. When the card becomes MANDATORY, will you enroll? YES OR NO TO EACH [Read list]

	Yes (1)	No (2)
Enroll for card and continue playing		
Stop playing VLTs		
Will try it for a bit and decide		
Don't know		
Other [Enter verbatim]		

VLT Attitudes

The following questions are about your thoughts related to VLTs.

24. Why do you play VLTs? [Don't read list, check all that apply]

1 To socialize
2 To forget problems
3 To pass time
4 To win money
5 For leisure/entertainment
6 For excitement/ thrill
7 Other (specify) _____ [Enter verbatim]

25. How KNOWLEDGEABLE are you about how VLTs work? [Read responses, Select one]

1 Not at all

2 A little
3 Somewhat
4 Very
5 Completely
6 Don't know

26. Do you have any CONCERNS about your VL play?

1 Yes [Go to 26a]
2 No [Go to 27]

26a. If yes, are you concerned about?

1 Spending too much money playing VLTs
2 Spending too much time playing VLTs
3 Other (specify): _____ [Enter text]

27. *Please tell me how much you agree or disagree with following statement:* **In the past yaer Nova Scotia has made a reasonable effort to address VLT-related problem gambling.** [Read statements, Select one]

1 Completely disagree
2 Strongly disagree
3 Somewhat disagree
4 Neither agree nor disagree
5 Somewhat agree
6 Strongly agree
7 Completely agree

Gambling Related Problems

Some of the next questions may not apply to you, but please try to be as accurate as possible.

28. In the past year, would you say you	**Never**	**Some-times**	**Most of the time**	**Almost always**	**Don't Know**
a. Bet more than you could really afford to lose?					
b. Needed to gamble with larger amounts of money to get the same feeling of excitement?					
c. Went back another day to try to win back the money you lost?					
d. Borrowed money or sold anything to get money to gamble?					
e. Felt that you might have a problem with gambling?					

28. In the past year, would you say you	Never	Some-times	Most of the time	Almost always	Don't Know
f. Felt gambling had caused you any health problems, including stress or anxiety?					
g. Had people criticizing your betting or telling you that you had a gambling problem, regardless of whether or not you thought it was true?					
h. Felt your gambling had caused financial problems for you or your household?					
i. Felt guilty about the way you gambled or what happened when you gambled?					

Demographics

The following questions are about you and your household.

29. What year were you born? [Enter verbatim]

29a. If you don't want to tell me your age, please tell me in which of the following categories you fit under.

[Select one]

1 19-24
2 25-34
3 35-44
3 45-54
5 55+

30. What is your gender? [Select one]

1 Male
2 Female

31. What is the highest level of education that you have reached? [Select one]

1 Elementary
2 Some high-school
3 Completed high-school
4 Some post-secondary
5 Completed post-secondary
6 Some post graduate degree
7 Completed post graduate degree

32. What is your employment status? [Select one]

1 Work part-time
2 Work full-time
3 Retired 1 year or less
4 Retired 1 year or more
5 Unemployed
6 Disability

33. What is your current annual household income? [Select one]

1 No income
2 Less than $20,000
3 $20,001 - $40,000
4 $40,001 - $60,000
5 $60,001 - $80,000
6 $80,001 - $100,000
7 More than $100,001

34. What is your marital status? [Select one]

1 Single
2 Married with kids
3 Married without kids
4 Common Law
5 Separated
6 Divorced
7 Widowed

35. What is your postal code? [Enter verbatim]

Focus Group Questions – VLT Players (Pre-MPS)

IPCS

Your feedback is required on the informed player choice system (IPCS) that will be added to VLTs in the near future. I am going to show you a presentation of the technology and then we'll discuss as a group.

What are your first comments/reactions to the IPCS?

Have you ever had any experience with a similar product – where/when?

What would you say is the purpose of the IPCS – based on what?

What would you say are the benefits of the IPCS – why is this a benefit?

IPCS tools

Now we are going to discuss some of the information tools of the IPCS.

(Discuss "My Account" tool)

Do you think this tool is useful for you?

What do you like about this tool?

What do you not like about this tool?

Would you use this tool – why or why not?

How often would you use this tool?

(Discuss "Live Action" tool)

Do you think this tool is useful for you?

What do you like about this tool?

What do you not like about this tool?

Would you use this tool – why or why not?

How often would you use this tool?

(Discuss "My Money Limit" tool)

Do you think this tool is useful for you?

What do you like about this tool?

What do you not like about this tool?

Would you use this tool – why or why not?

How often would you use this tool?

(Discuss "My Play Limit" tool)

Do you think this tool is useful for you?

What do you like about this tool?

What do you not like about this tool?

Would you use this tool – why or why not?

How often would you use this tool?

(Discuss "Stop Play" tool)

Do you think this tool is useful for you?

What do you like about this tool?

What do you not like about this tool?

Would you use this tool – why or why not?

How often would you use this tool?

(After all tools are discussed)

Are the tools easy to use/understand?

Which tool did you like the most?

Which tool did you like the least?

Do the tools encourage you to set limits and stick to them?

Are there privacy concerns that you would have with using any of these tools?

Do you have any concerns with the device or its tools – based on what?

Would you voluntarily register to use these tools – why or why not?

Would these tools interfere with the gambling experience of those without any gambling problems?

Would these tools help or hinder your play experience?

How would you describe this technology to another player?

What do you think the messages are?

Communication - Print Materials

I'd like to show you a few preliminary print materials on the IPCS. These are the materials that will be used in the IPCS rollout. Their purpose is to present the tools and explain to customers how the IPCS works. Please take about 5 minutes to examine them. Once you've looked over them, I'd like to talk with you about your overall reactions. [Give participants 5 minutes to review materials]

What are your first comments/reactions to this communication?

Who do you see as the target of this material? Please explain.

What is the material asking of you?

How do you know that is the message?

Is the message useful/ important? Please explain.

Do you find anything appealing about this communication?

Do you think this communication is appropriate? Please explain.

After reading this communication, would you register?

Do you like these materials – why or why not? Please explain.

Which one has the most potential – why?

What could be done to improve the materials impact?

Do you have a better understanding as to why the IPCS exists?

Does it provide you a sense of comfort that your privacy is protected?

Does it tell you enough about the program?

Before we finish with the discussion, do you have any additional comments you would like to make on tonight's topics?

Focus Group Questions – VLT Players, Non-Information Tool Users (Voluntary Enrolment Phase)

My-Play

Before today's focus group did you know about the informed player choice system (IPCS)?

Your feedback is required on the informed player choice system (IPCS) that has recently been added to VLTs.

Have you registered with the IPCS?

a. If so, what are your reasons for registering with the IPCS?

b. If not, what are you reasons for not registering with the IPCS?

Have you used the IPCS?

a. If not, what are you reasons for not using the IPCS?

What do you think of the IPCS?

Have you taken a look/explored some of the IPCS tools?

a. If so, which ones?

Some players like to keep track of their wins and losses to help manage their spending.

Do you track your winnings and losses – why or why not?

Do you know that that IPCS can help you track your winning and losses over time and current play session?

a. if so, what are your reasons for not using the IPCS tools to help you keep track of your winnings and losses?

Some players set either money or time limits before they play in order to help manage their spending.

Do you set any limits when you play – why or why not?

Do you know that the IPCS can help you set limits?

a. If so, what are your reasons for not using the IPCS tools to help you set limits?

Some players set play limits in order to help them with them manage their gambling. That is they ban themselves from playing for specific days or time period.

Do you set play limits – why or why not?

Do you know that the IPCS can help you set limits?

a. If so, what are your reasons for not using the IPCS tools to help you set limits?

Are there privacy concerns that you would have with any of these tools?

a. If so, what are they?

Do you think using the tools encourage you to set limits and stick to them?

a. Would these tools encourage other VLT players to set limits and stick to them?

Do you have any concerns with the IPCS or its tools – based on what?

How can we encourage VLT players to use the IPCS tools?

What more can be done to encourage the use of the IPCS?

Before we finish with the discussion, do you have any additional comments you would like to make on tonight's topics?

APPENDIX C – DISPOSITION OF GENERAL POPULATION SAMPLES

Response rates were calculated as the number of cooperative contacts divided by the total number of eligible numbers attempted. At GP Baseline, of the eligible numbers, interviewers were unable to talk to anyone at 11,212 numbers, leaving a total of 12,252 numbers at which potential participants were asked to participate in the study. Of this figure, 2,639 co-operated for an acceptance rate of 21.5%. Table A-1 outlines the final disposition of the GP Baseline sample.

Table C - 1: Response Rate Calculations for Baseline General Population Survey Sample

A(1-14)	**Total Attempted**	**34,374**
1	Not in service	1680 (5%)
2	Fax	743 (2%)
3	Invalid#/Wrong#	8487 (25%)
B (4-14)	**Total Eligible**	**23,464**
4	Busy	294 (1%)
5	Answering machine	3,057 (9%)
6	No answer	5,776 (17%)
7	Language barrier	63 (.02%)
8	Ill/Incapable	88 (.3%)
9	Eligible not available/Callback	1,934 (6%)
C (10-14)	**Total Asked**	**12,252**
10	Household/Company Refusal	356 (1%)
11	Respondent Refusal	9,257 (27%)
12	Qualified Termination	0 (0%)
D (13-14)	**Co-operative Contact**	**2,639**
13	Not qualified	638 (2%)
14	Completed interview	2,001 (6%)
	REFUSAL RATE	**78.46%**
	(10+11+12) /C	
	RESPONSE RATE	**11.25%**
	D (13-14)/B (4-14)	
	INCIDENCE	**75.82%**
	[(14+12) / (13+14+12)]*100	

At GP Period 1, response rates for the GP Baseline participants who were followed-up and participants from the new survey sample are shown in Table A-2 below. Of the 2001 original baseline survey participants, 878 provided phone numbers at the baseline survey to be contacted for participation in a follow-up survey. However, only 657 numbers were eligible due to encountering invalid numbers (e.g., not in service, fax). Of the eligible numbers, interviewers

were unable to talk to anyone at 131 numbers, leaving a total of 526 numbers at which potential participants were asked participate in the study. Of this group, 71 refused producing an acceptance rate of 87%. In total, the rate of response for the GP Baseline recruits was 69% (Co-operative Contact/Total Eligible).

The rate of response for the new GP Period 1 recruits was 10%. The response rate was calculated as the number of cooperative contacts (2,266) divided by the total number of eligible numbers attempted (22,649). Of the eligible numbers, the interviewers were unable to talk to anyone at 12,594 numbers, leaving a total of 10,325 numbers at which potential participants were asked to participate in the study. Of this figure, 2,266 co-operated for an acceptance rate of 22%.

Table C - 2: Response Rate Calculations for Period 1 General Population Survey Sample

		Baseline Recruits (%)*	Period 1 Recruits (%)*
A(1-14)	**Total Attempted**	**878**	**39,504**
1	Not in service	129 (15%)	15,456 (39%)
2	Fax	1 (0%)	891 (2%)
3	Invalid#/Wrong#	91 (10%)	508 (1%)
B (4-14)	**Total Eligible**	**657**	**22,649**
4	Busy	1 (0%)	217 (1%)
5	Answering machine	34 (4%)	3,520 (9%)
6	No answer	3 (0%)	8,625 (22%)
7	Language barrier	0 (0%)	21 (.1%)
8	Ill/Incapable	84 (10%)	126 (.3%)
9	Eligible not available/Callback	9 (1%)	85 (.2%)
C (10-14)	**Total Asked**	**526**	**10,325**
10	Household/Company Refusal	5 (1%)	264 (1%)
11	Respondent Refusal	61 (7%)	7,404 (19%)
12	Qualified Termination	5 (1%)	391 (1%)
D (13-14)	**Co-operative Contact**	**455**	**2,266**
13	Not qualified/cleaned	10 (1%)	647 (2%)
14	Completed interview	445 (51%)	1,619 (4%)
	REFUSAL RATE	**13%**	**78%**
	(10+11+12) /C		
	RESPONSE RATE	**69%**	**10%**
	D (13-14)/B (4-14)		
	INCIDENCE	**N/A**	**79%**
	[(14+12) / (13+14+12)]*100		

*Percentages indicated are derived from the initial total number of potential respondents attempted.

APPENDIX D – DETAILED PGSI ECONOMETRIC MODELING

As shown in Table B-1, neither of the monitoring features (*My Account* and *My Live Action*) showed any significant relationship with PGSI scores (models 1-2). However, each limit setting tool showed significant effects in their individual model specifications (models 3-5). These variables are all found to be negatively related to PGSI scores, consistent with the expected direction of the effect.

In model 6, where all features are tested simultaneously, only the play limit variable remained significant. Given these changes in significance outcomes, it appears as though part of the significance of the *Quick Stop* feature in model 3 and the *My Money Limit* feature in model 4, may be due to their strong correlation with use of the *My Play Limit* feature – those two features have correlations of .81 and .74 respectively with the *My Play Limit* feature. Similarly, 95.8% of players that reported using the *Quick Stop* feature in a given period and 64.4% of players reported using the *My Money Limit* feature in a given survey period, also reported using the *My Play Limit* feature in the same period. The *My Play Limit* variable coefficient also has the highest estimated effect size and significance level among the variables. While it is difficult to estimate the exact importance of each feature due to potential multicollinearity issues, the available evidence suggest that *My Play Limit* exhibits the most meaningful effect in reducing predicted PGSI scores, and that model 5 is the most accurate estimate of the variable's effects.

In terms of the other control variables, there were no unexpected findings. Gambling involvement was found to be statistically significant and positively related to PGSI scores. The fixed-effect and period indicator variables were significant, appearing to act as intended controls – the period variables showed a negative trend over time, consistent with the spontaneous recovery narrative. Model residuals were examined visually for heteroskedasticity and no strong presence was found. Some evidence of autocorrelation was found in the panel using the test outlined in Drukker (2003). However, since Drukker tests for autocorrelation over a first-differenced model, rather than a fixed-effect model, we re-estimated the models while clustering over the cross-section identifier to produce standard errors that are robust to autocorrelation. We also estimated the model using Driscoll and Kraay (1998) standard errors. With both these robustness tests, none of the key findings changed.

Table D - 1: Linear model results – DV: PGSI score

	(1)	(2)	(3)	(4)	(5)	(6)
My Account	0.0731					0.963
	(0.18)					(1.66)
My Live Action		-0.372				-0.137
		(-0.85)				(-0.20)
Quick Stop			-1.671**			-0.00275
			(-2.59)			(-0.00)
My Money Limit				-1.135*		-0.228
				(-2.24)		(-0.29)
My Play Limit					-1.832**	-2.171*
					(-3.27)	(-2.03)
Gambling Involvement	0.305*	0.307*	0.304*	0.311**	0.297*	0.287*
	(2.54)	(2.55)	(2.54)	(2.59)	(2.49)	(2.41)
Marital Status	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*
Employment Status	Yes	Yes	Yes	Yes	Yes	Yes
Household Income	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*
Period of Survey	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***
Fixed-Effects	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***
Observations	870	870	870	870	870	870

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

In order to further verify the robustness of the findings in Table B-1, and the duration of the effects, we examined similar model specifications with lagged versions of the MPS variables. Play limits set on an account in a given period will often still be in effect in the subsequent period. Therefore, if contemporaneous usage has an effect, lagged usage should also have an effect, although it should generally be weaker since some players may have registered a new account over the period between surveys.

As shown in Table B-2, the results are generally similar to the contemporaneous effect models. Again, neither of the monitoring features (*My Account* and *My Live Action*) showed any significant relationship with PGSI scores (models 1-2), each of the limit setting tools showed contemporaneous relationships with PGSI scores (models 3-5), and only the *My Play Limit* tool showed a statistically significant relationship in the fully specified model (6). In terms of lagged effects, the *My Play Limit* tool was again the only feature with a statistically significant relationship (model 5). This finding suggests that use of *My Play Limit* is related to reduced predicted PGSI scores in future periods, as well as contemporaneous periods. The contemporaneous effect size in model 5 of Table B-2 (-1.818) is nearly identical to the effect size

in model 5 of Table B-1 (-1.832), suggesting that the effect of the lagged variable is incremental to the effects shown in Table B-1. The effect sizes associated with the contemporaneous and lagged variables are consistent with the hypothesis that contemporaneous effects should be larger than lagged effects.

The t-statistics for the gambling involvement variable are lower for all model specifications, but this may be a result of the smaller sample size (due to the loss of the first period of observations with lagged terms). Among the indicator control variables, marital status was no longer found to be a statistically significant control variable, which may also be due to the reduced sample size. Similar diagnostic procedures of the model assumptions were carried out as noted for Table -1; all of the key results appear to be robust to these tests.

Table D - 2: Lagged model results – DV: PGSI score

	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
My Account	0.121					0.964
	(0.31)					(1.74)
Lag My Account	-0.137					-0.0847
	(-0.28)					(-0.11)
My Live Action		-0.412				-0.227
		(-0.96)				(-0.35)
Lag My Live Action		-0.0190				0.581
		(-0.04)				(0.66)
Quick Stop			-1.700**			0.0971
			(-2.84)			(0.10)
Lag Quick Stop			-1.339			-0.0163
			(-1.73)			(-0.01)
My Money Limit				-0.994*		0.133
				(-2.04)		(0.17)
Lag My Money Limit				-0.818		-0.273
				(-1.32)		(-0.28)
My Play Limit					-1.818***	-2.441*
					(-3.55)	(-2.48)
Lag My Play Limit					-1.301*	-1.466
					(-1.98)	(-1.15)
Gambling Involvement	0.297*	0.294*	0.276*	0.274*	0.253	0.233
	(2.18)	(2.16)	(2.04)	(2.02)	(1.89)	(1.72)
Marital Status	Yes	Yes	Yes	Yes	Yes	Yes
Employment Status	Yes	Yes	Yes	Yes	Yes	Yes

Household Income	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***
Period	Yes*	Yes*	Yes	Yes	Yes	Yes*
Fixed-Effects	Yes***	Yes***	Yes***	Yes***	Yes***	Yes***
Observations	579	579	579	579	579	579

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The My-Play System Evaluation 2008-2011: Baseline Report

March 2011

RGC
CENTRE FOR THE ADVANCEMENT OF BEST PRACTICES

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CHAPTER 1: BACKGROUND

The *RGC Centre for the Advancement of Best Practices* is undertaking the evaluation of the My-Play System (MPS) (formerly known as the Informed Player Choice System or IPCS) in Nova Scotia. The MPS is a card-based system that will be integrated into video lottery terminals (VLTs) in Nova Scotia to enable players to obtain information about their play activity, as well as set limits on their play. The overall goal of the evaluation is to assess the impact of the MPS on video lottery (VL) play activity in the province over time.

This baseline report presents the findings from the first three study components of the evaluation: The *General Population Survey Study*, *Research Panel Survey Study*, and *Environmental Scan*. These findings will serve as baseline measurements of VL play activity and related attitudes prior to MPS availability in Nova Scotia and will be compared to findings from subsequent evaluation stages that will occur when the system has been made available and used by players in a live environment.

My-Play System Background

In 2005, the Government of Nova Scotia introduced *A Better Balance: Nova Scotia's First Gaming Strategy.* It was a five-year plan that focused on addressing problem gambling treatment and prevention. Among the 23 initiatives outlined in the *Gaming Strategy*, those that pertained to VL called for the reduction of VL hours, terminals, speed of games, the removal of the stop button feature, and the pilot of a VL "player management tool" that would provide players with their play information.

In line with this strategy, the Nova Scotia Gaming Corporation (NSGC) conducted an 18-month research study on the responsible gaming tools of Techlink Entertainment's *Responsible Gaming Device* (RGD). The RGD is a device that is attached to existing VLTs to track and store player data. The purpose of the study was to assess the impact various responsible gaming tools had on players' attitudes and behaviours. The tools gave players information on their play history and the ability to set money or time limits. The study sought to determine if the tools:

- Had a positive effect of informing players;
- Provided players with an opportunity to exercise more control of their play; and,
- Facilitated responsible gambling behaviour.

The RGD study was pilot tested in Windsor and Mt. Uniacke, Nova Scotia in 2005-06. All VL players in these two areas were required to use a 'responsible gaming card' to begin play on a VLT during the study period. After entering their personal PIN, players had the option of using or ignoring the player information tools of the card during play. The study found that a majority of players benefited from having the ability to check their play history by helping them to stay within budget.

Independent evaluations of the RGD study were conducted by three research groups: Omnifacts Bristol Research, Focal Research Consultants Ltd. and Dr. Bo Bernhard of the University of Nevada. All three evaluations recommended the implementation of the RGD with voluntary or mandatory player enrolment and voluntary access to all the information tools.

2010 My-Play System

With the positive findings from three independent evaluations of the RGD, the NSGC committed to a province-wide launch of the MPS for its VLTs. The MPS had five information tools that were intended to help players make more informed gaming decisions as follows:

- *My Live Action*: Shows players information on the VLT currently in play for the current session. It begins when the player logs into the system and ends when the card is removed.
- *My Account*: Displays the total amount of money spent and time played for the current year, month, week or day. The tool gives the player two options to view - money played or time played.
- *My Money Limit*: Allows players to choose the maximum amount they wish to spend for a day, week, month or year.
- *My Play Limit*: Allows players to restrict the amount of time played and block the times they do not want to play.
- *My Stop Play*: Immediately stops players from playing for 24, 48 or 72 hours. Once the Stop is set, it cannot be undone.

The roll-out of the MPS was expected to take approximately 18 months and begin in 2009 with a *voluntary* enrolment phase when players could choose to enroll with the MPS, but enrolment was not required to play a VLT. It was anticipated at that time that after a year, the system would then transition to a *mandatory* enrolment phase whereby players would be required to enroll with the MPS to play a VLT. Irrespective of either type of enrolment, the use of the specific information tools would remain voluntary.

VL players can enroll at any venue across the province. To create an account, players would swipe or scan a government issued ID at an enrolment terminal. The ID data is then scrambled and discarded to make a unique, confidential account identifier in the system. This unique identifier allows players to access their play activity as well as use the player information tools. These tools are accessed through a separate player interface that has been integrated into each VLT.

Overall Goal of the MPS Evaluation

In 2008, the NSGC issued a Request for Proposal to assess the impact of the MPS on VL activity and attitudes in Nova Scotia and the *RGC Centre for the Advancement of Best Practices* was awarded the project. To conduct this evaluation, the RGC has employed a longitudinal study design where VL activity and attitudes are monitored over time to determine any changes from before the system was available to after the system has been operational for a period of time. Central to all the study components of the evaluation are two tools:

- A *baseline* measurement whereby data on VL activity and attitudes is collected prior to MPS implementation.
- An *impact assessment* whereby data on VL activity and attitudes is collected for a time period during MPS availability and will be compared to the baseline measurements to determine any changes in VL activity and attitudes.

Evaluation Study Components

The evaluation consists of six individual study components that investigate the impact of the MPS from different perspectives.

General Population Survey Study

Purpose: Assess the impact of the MPS at a provincial populational level.

This study surveys Nova Scotians about their VL play behaviours and attitudes, gambling and problem gambling behaviour, MPS perceptions and use, and general perceptions and attitudes towards VL provision in Nova Scotia. The study will administer three surveys: a baseline and two follow-up surveys. A baseline survey was administered to 2,001 randomly selected Nova Scotians prior to the implementation of the system. The two follow-up surveys will aim to survey baseline survey participants to obtain their perceptions, attitudes and behaviours during the voluntary and mandatory enrolment phases of the MPS implementation.

Given we might experience a potentially higher than expected attrition rate due to the long delay between the baseline and first follow-up surveys and the fact that just over 800 of the original baseline survey respondents consented to being contacted for the follow-up surveys, we decided to add more newly recruited study participants from the general population for the first follow-up survey. Since this group would not have done the baseline survey, they would be precluded from any baseline comparisons. They will, however, help to generate a larger sample to allow comparisons between the two follow-up surveys and facilitate our analyses of the MPS voluntary and mandatory enrolment phases. The sample size for the first follow-up survey will consist of the number of baseline survey respondents who agree to participate in the follow-up survey topped up by newly recruited survey participants to a total of 1000 participants for the first follow-up survey. Ideally, we would like all baseline survey respondents (100% retention rate) and sufficient new study participants for a total of 1000. The second follow-up survey will recruit solely from the 1000 first follow-up survey participants.

The first follow-up survey is being currently conducted in March 2011 and the second follow-up survey will occur approximately 1 year later when the mandatory enrolment phase has been implemented (March 2012). The two follow-up survey findings will be compared with each other as well as to the initial baseline survey results to assess the impact of the MPS and the different registration phases amongst the general population in Nova Scotia.

Research Panel Survey Study

Purpose: Assess the more direct impact of the MPS on regular VL players

The study will follow a research panel of 227 regular VL players (i.e., played at least once a month) on their VL play behaviour and attitudes, MPS attitudes and usage, and gambling and problem gambling behaviour. The panel will be surveyed six (6) times over a three-year period that will cover the pre-system, voluntary enrolment, and mandatory enrolment phases.

Focus Group Study

Purpose: Obtain qualitative feedback on VL players and retailers' opinions of the MPS and its information tools for the development of MPS promotional materials and an elaboration of findings from the *Research Panel Survey Study*.

This study will obtain specific views of VL players towards the MPS as well as information about their information usage. Focus groups enable a deeper and richer understanding of players' views than that collected from the *General Population Survey* and *Research Panel Survey*. Two focus groups were conducted in November 2008 with VL players and retailers to aid in the development of promotional materials. Two additional focus groups will take place during each of the voluntary and mandatory enrolment phases of the MPS to further explore findings from the *Research Panel Survey*.

Tracking Data Study

Purpose: Assess impact of MPS information tool usage on actual VL play activity

Whereas the *General Population Survey* and *Research Panel Survey* studies rely on self-reported data, this study will be based upon actual play activity and MPS usage data of VL players, which is held within the VL central computer system database. Therefore, only VL players who enrol for and use the card are eligible for this study. Specific data on VL play activity (e.g., cash-in, cash-out) and player information tool usage (e.g., viewing play history, setting limits) will be tracked over the course of the roll-out for both the research panel and all VL players enrolled for the MPS card.

The tracking of the research panel members will enable an analysis of their actual VL play patterns and MPS usage, as well as an assessment of the accuracy of the research panel's self-reported play activity by comparing their estimates to their actual play activity. The tracking of all VL players enrolled for the MPS will enable an analysis of VL play and MPS usage on a wider level for all VL players, particularly during mandatory enrolment when all players must be enrolled to access terminals in Nova Scotia.

VL Revenue Tracking Data Study

Purpose: Assess the impact of the MPS on VL revenue activity

This study explores any changes to the VL revenue activity in Nova Scotia as it relates to the MPS implementation. Revenue activity of all VL in Nova Scotia will be collected in aggregate and will be assessed for the periods prior to the implementation of My Play, as well as during the voluntary and mandatory enrolment periods.

Environmental Scan

Purpose: Provide the broader context in which the MPS is being implemented and evaluated

This study looks at other factors that may have an impact on the VL business line. These include: government regulations; economic environment of Nova Scotia; VL market in Nova Scotia, emerging trends and any new strategies developed by government. A total of two scans will be conducted: one prior to the implementation of the MPS and another at the end of the evaluation.

The Institutional Review Board[1] reviewed and approved all study components' methodologies, including the following instruments: recruitment advertisements, consent forms, general population surveys, research panel surveys, pre-focus group questionnaires, and focus group discussion guides.

The results of all study components will be presented in three reports based on the stage of data collection for each study:

- Baseline Report
- Interim Report
- Final Report

Baseline Report

This report presents the baseline results from the *General Population Survey Study*, the *Research Panel Survey Study*, and the *Environmental Scan*. The data from these studies were collected for

[1] The IRB is a private, independent company that specializes in expediting Ethics Review for proposed research involving human participants in Canada and other countries.

the period prior to the MPS implementation and will be used for baseline comparison against the subsequent data collected in the future stages of each study.

CHAPTER 2: GENERAL POPULATION SURVEY STUDY

OVERALL STUDY OBJECTIVES

This study assesses the impact of the MPS at the level of the VL players and the general adult population in Nova Scotia. The study will administer a baseline survey to a randomly selected sample of adult Nova Scotians prior to the MPS implementation. A follow-up survey will be administered to a sub-sample of this baseline sample when the MPS has been implemented. By comparing the results from the baseline and follow-up surveys, we will attempt to assess the broader impact of the system on the general Nova Scotia adult population in terms VL gambling, system usage and related-behaviours and attitudes.

This report presents the findings from the baseline survey. Specifically, it provides a broad current snapshot of Nova Scotia in the following areas:

- VL Players
- VL Players and Problem Gambling Severity Index (PGSI) Classification
- VL Players' Perceptions and Attitudes towards the MPS
- General Public Perceptions and Opinions

Before we provide the details of the study, we first present a summary and discussion of the key findings.

A SNAPSHOT OF VL GAMBLING IN NOVA SCOTIA: A DISCUSSION OF KEY BASELINE FINDINGS

Characteristics of Past Year VL Players

About 1 in 10 adults surveyed (11.1%) played VL in the past year. Of this group, approximately 44.6% played regularly (i.e., at least once a month).

VL players on average reported spending $29.10 per session and $17.22 per month on VL in the past year. In terms of time, they reported spending averages of 0.66 hours per session and 0.37 hours per month. The majority of VL players set some type of spending limit on their VL play, with the most common type of limit being money limits.

Most players who set limits either by time or money - did so by session (54.1% of money limit users and 64.2% of time limit users). Moreover, exceeding their self-imposed limits was not uncommon, although exceeding time limits was more common than exceeding money limits.

VL players mostly played VL for leisure and entertainment. About 1 in 5 players said they *very* or *completely* enjoy playing VL, but almost half reported enjoying them *a little* or *not at all*.

Almost half of players also reported being only *a little* or *not at all* knowledgeable about how VLTs work.

Regular VL players tended to be single males with a high school education and an annual household income of $20,000 to $40,000. Compared to occasional players, they reported spending about twice as much money per session and nine times as much money per month. These groups did not differ, however, in their VL time expenditures.

Regular players tended to play VL to pass the time and to win money. They reported enjoying the game much more, as well as feeling more knowledgeable about how VLTs work. Nonetheless, regular players were also more likely to express some concern about their own VL play and feel that VL has had a negative effect on them personally.

Problem Gambling among VL players

Among all the past year gamblers in the sample, those with gambling problems or at-risk of having gambling problems were more likely to have played VL in the past year, particularly regularly, than those who gambled without problems.

VL players with gambling problems did not differ from those who were at-risk of having problems or had no problems in terms of gender, age, marital status, education, employment status, household income, and region of residence.

On average, VL players with gambling problems reported spending 2 to 3 times more dollars per session and 3.5 to 12 times more dollars per month on VL than those who gambled at-risk or with no problems. In terms of time, they reported spending 3 to 5 times more hours per session and 4 to 18 times more hours per month than the other two groups. Lastly, all three groups set money and time limits on their VL play to the same extent, but players with gambling problems were more likely to exceed those limits.

Perceptions and Attitudes towards the MPS

Generally speaking, VL players showed considerable interest in the MPS. The majority of players (58.4%) thought the MPS was a good idea but about one-quarter of them believed it was a bad idea. About 1 in 5 players (20.1%) indicated they would enroll for a card during a voluntary enrolment phase and 41.7% indicated they would enroll during a mandatory phase. A large proportion (43.5%), however, also said they would stop playing VL altogether if the card became mandatory. The most common reasons for not enrolling for a card were because players were simply uninterested or felt the MPS was unnecessary for their amount of play.

The large majority (over 80%) of players who would enroll for a card during a mandatory phase would use the card's player information tools. This suggests the specific tools are attractive to players at least in the initial stages and that they should be fully promoted during the MPS

initiative. Indeed, while only 20.1% of players initially indicated they would enroll for the card during the voluntary phase, 41.7% of players said they would use its player information tools.

During a voluntary enrolment phase, regular players would be more likely than occasional players to intend on enrolling for an MPS card, while problem gambling was related to intended use of the player information tools. Almost two-thirds of players with gambling problems (64.7%) indicated they would use these tools; more than the at-risk and non-problem gambling groups. No differences were found among the player frequency and PGSI groups for both enrolment and information tool use for the mandatory enrolment phase.

Overall, the MPS information tools that VL players thought would be most useful were the capacity to set money limits on their VL play and to see how much they were winning and losing during a game. Players with gambling problems, in particular, felt the latter function was *very* or *extremely* useful.

The self-exclusion and time limits functions were considered to be the least useful tools. Regular players, however, were 3 times more likely than occasional players to view them as *extremely* useful. Moreover, players with gambling problems also tended to see the self-exclusion option as *very* or *extremely* useful compared to those who were at-risk of problems or did not have any problems.

VL-Related Perceptions and Attitudes of Nova Scotians

Respondents' perceptions of VL and VL provision in Nova Scotia suggest somewhat mixed feelings. Although three-quarters of them felt that VL had no effect on them personally, two-thirds believed that VL had a negative effect on their local community (i.e., financial problems). About half of all respondents believed that Nova Scotia has made reasonable efforts to address VL-related problem gambling but fewer (39.6%) agreed that VL gambling in Nova Scotia is provided in a socially responsible way. Overall, approximately one-quarter of all respondents disagreed with both statements.

Regular VL players tended to have more negative perceptions of VL as they were more likely than occasional players to perceive some kind of negative impact from VL. Regular players also tended to be more concerned about their own VL play and believe that VL had a negative effect on them personally. Nonetheless, about half of regular players still believed that Nova Scotia has made a reasonable effort to address VL-related problem gambling and that VL gambling in Nova Scotia is provided in a socially responsible way.

Lastly, almost 60% of players with gambling problems disagreed that Nova Scotia has made reasonable efforts to address VL-related problem gambling; significantly more than players who were at-risk of gambling problems or gambled without problems.

STUDY METHODOLOGY

The RGC commissioned *Thinkwell Research Inc*. to administer the general population telephone survey to 2001 adults 19 and over in Nova Scotia. Located in Halifax, Nova Scotia, *Thinkwell Research* designed and managed the sampling process, as well as managed the data collection process throughout the telephone survey administration.

Survey Design

The survey questionnaire was designed by the RGC in consultation with NSGC. The areas of enquiry were:

- General gambling behaviours;
- VL gambling behaviours and specific attitudes;
- Attitudes towards the MPS;
- Gambling-related problems;
- General attitudes towards VL and VL provision; and,
- Socio-demographic characteristics.

To assess gambling-related problems, the survey included the PGSI from the Canadian Problem Gambling Index (CPGI). The PGSI measures the severity of gambling-associated problems that survey respondents experienced in the past 12 months[2]. The PGSI has nine question items, which include chasing losses, escalating to maintain excitement, borrowing/selling to get gambling money, betting more than one can afford, feeling guilty, being criticized by others, harm to health, financial difficulties, and feeling one might have a problem with gambling. Scoring is based on the frequency in which respondents experienced these items within the past 12 months and the scores can range from 0 to 27.

Respondents were divided into four main classifications based on their PGSI score. Table 1 gives a description of each classification and their respective PGSI scores. Due to the low counts found in each group, those who had moderate to severe gambling problems were combined into one group (i.e., problem gambling) to enable more statistically reliable and useful PGSI analyses.

[2] Ferris, J. & Wynne, H. (2001, February). The Canadian Problem Gambling Index: Final report. Ottawa, ON: Canadian Centre on Substance Abuse.

TABLE 1: PGSI Classification Used For General Population Survey Study

PGSI classification	Description	PGSI score
Non-gambling	Did not gamble in past 12 months	PGSI not administered
Non-problem gambling	Gambled without problems in past 12 months	0
At-risk gambling	Are at risk of having gambling problems	1-2
Problem gambling	Have moderate to severe gambling problems	3+

The CPGI has received extensive psychometric testing[3]. Reliability of the measure has been shown to be good, with a co-efficient alpha of .84. Test-retest analysis produced an acceptable correlation of .78.

Sampling Strategy

Sampling Modeling Research Technologies Inc. (SMRT) provided the survey sample in co-ordination with *Thinkwell Research Inc*. Using SMRT's "Instant Sampler", the telephone sample was drawn from a compiled database of all listed numbers along with injected RDD (Random Digit Dialing) numbers that were cleaned against listed and injected numbers to represent the proportion of unlisted numbers in each geographic region.

Survey Administration

Under the supervision of *Thinkwell Research, Vision Research Inc*., a call centre facility in Charlottetown, PEI, conducted the telephone interviews between October 24 and November 23, 2008. All interviewing was conducted by fully-trained and supervised interviewers.

Once someone answered the phone, the interviewer first introduced themselves as a representative from Thinkwell Research who was conducting a research survey on behalf of the Responsible Gambling Council, an independent non-profit organization committed to problem gambling prevention. Potential participants were told the survey was about gambling among Nova Scotia adults and would like to include a variety of people with different perspectives. Participation would be completely voluntary and anonymous. The interviewer asked for the person in the household with the most recent birthday and who was over 19 years of age.

Upon completion of the survey, the interviewers asked respondents if they would be interested in being contacted for a follow-up survey in approximately 16 months when the VLTs were scheduled to be equipped with the MPS. For their participation in the follow-up survey, the study

[3] Ferris, J. & Wynne, H. (2001, February). The Canadian Problem Gambling Index: Final report. Ottawa, ON: Canadian Centre on Substance Abuse.

offered participants the chance to win a $1,000 gift certificate by having their names entered into a draw.

At a minimum, 5% of calls were validated randomly through telephone and visual monitoring of at least 75% of the interviews. In these cases, the supervisor listens in to the call and watches the interviewer's computer screen (remotely) at the same time to ensure that the interviewer is coding the responses correctly on screen. Each survey took an average of 10 to 12 minutes to complete. The total number of people who participated in the study was 2001.

Response Rate

The rate of response for the *General Population Survey* was 11.25%. The response rate was calculated as the number of cooperative contacts (2,639) divided by the total number of eligible numbers attempted (23,464). Of the eligible numbers, the interviewers were unable to talk to anyone at 11,212 numbers, leaving a total of 12,252 numbers at which potential participants were asked to participate in the study. Of this figure, 2,639 co-operated for an acceptance rate of 21.5%. The final disposition of all telephone numbers called is shown in Table 2 below in accordance with the Marketing Intelligence and Research Association's *Empirical Method of Response Rate Calculation Formula.*

Table 2: Response Rate Calculations

A(1-14)	**Total Attempted**	34,374
1	Not in service	1680
2	Fax	743
3	Invalid#/Wrong#	8487
B (4-14)	**Total Eligible**	23,464
4	Busy	294
5	Answering machine	3,057
6	No answer	5,776
7	Language barrier	63
8	Ill/Incapable	88
9	Eligible not available/Callback	1,934
C (10-14)	**Total Asked**	12,252
10	Household/Company Refusal	356
11	Respondent Refusal	9,257
12	Qualified Termination	0
D (13-14)	**Co-operative Contact**	2,639
13	Not qualified	638
14	Completed interview	2,001
	REFUSAL RATE	**78.46**
	(10+11+12) /C	
	RESPONSE RATE	**11.25**
	D (13-14)/B (4-14)	
	INCIDENCE	**75.82**
	[(14+12) / (13+14+12)]*100	

Sampling Error

As with any quantitative study, the data reported in this study are subject to sampling error, which can be defined as the likely range of difference between the reported results and the results that would have been obtained had we been able to interview everyone in the relevant population. Sampling error decreases as the size of the sample increases and as the percentage giving a particular answer moves towards unanimity.

At the 95% confidence interval, "worst-case" potential sampling error for a sample of 2001 is +- 2.2%. That is, based on this study's survey sample size of 2001, estimates for the overall population of Nova Scotia are accurate within +- 2.2%, 95 out of 100 times.

Analytical Strategy

The central aim of the *General Population Survey Study* was to provide overall population estimates for Nova Scotia. This was done by calculating measures of central tendency, frequency distributions, and cross-tabulations for our survey sample. In addition, we analyzed survey respondents by their frequency of VL play and PGSI classification. Respondents were divided into 3 groups based on their VL participation frequency in the past year. Table 3 below defines each group.

TABLE 3: Classification of All Survey Respondents

Frequency of Play	Description
Non-VL player	Did not play VL in past year
Occasional player	Played less than once a month in past year
Regular player	Played at least once a month in past year

We used the Pearson Chi-square to test for associations between categorical variables. A chi-square is a statistical procedure used with data that fall into mutually exclusive categories (e.g., gender) and tests whether one variable is associated with another and not independent of one another.[4]

To test group differences in VL gambling (money and time) expenditures, we conducted ANOVA and t-tests. These tests are statistical procedures to see if the average of one group is significantly different from the average of another group. The ANOVA test was used when there was more than one group to be compared while the t-test was used when there were only two groups to be compared.[5]

Respondents' initial per session and per month expenditure estimates were somewhat inconsistent because a significant number of players who reported higher than expected monthly estimates given they participated infrequently (i.e., less than four times a year). Infrequent players may have had some difficulty giving an average monthly amount since 17 of these players who reported a money estimate and 31 who reported a time estimate for their session expenditure did not report a corresponding monthly estimate. Presumably this is because there are various ways to determine the monthly spending. Respondents could have reported 0 dollars or hours since they do not play in a typical month or they could have taken their total amount spent for the year and averaged it out over the months.

To achieve some consistency, we calculated our own monthly spending estimate by multiplying

[4] For a detailed description of the analyses see Appendix A.
[5] For a detailed description of the analyses see Appendix A.

the session estimate by frequency of gambling and converting it to a monthly expenditure. For example, if a respondent played daily and reported a session spending of $10, we calculated a monthly expenditure of $280 (i.e., $10 * 7 (days in week) * 4 (4 weeks in a month)). We calculated conservatively using the least frequent option within a selected frequency option. For example, if a respondent reported playing VL two to six times a week, we used the lower end of the response (i.e., two). In addition, this calculation assumes that each session counts as one time they played, although it is possible that they may have played multiple sessions each time they played.

Most survey data are presented in table format. For tables presenting data that was subject to statistical testing, we provided asterisks to indicate overall statistical significance. The probability (p) levels of significance used for this study are $p<.05$ (*), $p<.01$ (**), and $p<.001$ (***). The levels of significance indicate the probability that a statistical finding is due to chance alone and not some significant difference or association between the variables. The lower the probability (i.e., $p<.001$), the more confident we can be that there is some real association or difference between the variable and it is not due to random chance.

For chi-square tables reporting proportion frequencies between variables, a single arrow marker (^) beside a numerical value in an individual cell indicates that the value was significantly different (i.e., higher or lower) than the value for the total group. These markers are given only if an overall significant relationship was found between the variables and indicate which specific group is different (i.e., has a higher or lower proportion) from the rest.

Lastly, all statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) computer software program.

Sample Weighting and Socio-demographic Characteristics

The sample was weighted by gender, age and geographic region of residence to ensure it was representative of the Nova Scotia population on these variables.[6] Table 4 shows the proportions of the unweighted and weighted samples for each of these variables.

[6] Note that due to sample weighting and estimate rounding, table values may not add up exactly.

Table 4: Gender, Age and Regional Characteristics of General Population Baseline Sample (Weighted and Unweighted)

Demographic Variable	% of total sample Unweighted N=2001	% of total sample Weighted N=2001
Gender		
Male	46.7	48.4
Female	53.3	51.6
Age		
19-24	7.6	11.5
25-34	14.6	14.6
35-44	18.5	18.3
45-54	22.6	20.7
55 +	35.7	33.9
Refused	.8	.9
Region		
Halifax Regional Municipality (HRM)	40.8	40.7
Industrial Cape Breton	12.3	12.4
Strait	6.2	6.3
Valley	15.1	15.3
South Shore	11.4	11.3
Northeastern Nova Scotia	14.0	14.1

Table 5 shows the proportions of the weighted sample for the other socio-demographic variables that were included in the study for analysis: marital status, education, employment status, and household income.

Table 5: Marital Status, Education, Employment, and Household Income Characteristics of General Population Baseline Sample (Weighted)

Demographic Variables	% of Total Sample Weighted N=2001
Marital Status	
Single	22.9
Married	52.7
Common law	8.4
Separated/divorced	7.6
Widowed	6.8
Refused	1.5
Education	
Elementary	2.5
Some High School	10.7
Completed High School	21.9
Some Post-Secondary	10.2
Completed Post-Secondary	25.8
Some Post-Graduate	7.2
Completed Post-Graduate	21.1
Refused	.6
Employment Status	
Employed - Part-Time	10.8
Employed - Full-Time	48.1
Retired	23.2
Unemployed	9.0
Disability	2.1
Other	6.0
Refused	.8
Household Income	
No Income	1.6
< $20,000	9.8
$20,000 -$40,000	19.2
$40,001 – $60,000	16.6
$60,001 – $80,000	11.2
$80,001 - $100,000	7.7
> $100,000	11.3
Refused	22.7

RESULTS

VL Players

The following section examines two general areas:

- VL gambling characteristics
- Attitudes towards VL

VL Gambling Characteristics

i) Past year participation and frequency

Of the total sample, just over 1 in 10 (11.1%) played VL in the past year. Table 6 shows their frequency of play. Of the VL players, 55.4% played occasionally, defined as less than once a month and 44.6% played regularly, defined as at least once a month.

TABLE 6: Past Year VL Participation and Frequency

VL Participation	Overall N=2001	VL Player Frequency N=223	
		Occasional (less than once a month)	Regular (at least once a month)
% who played VL in past year	11.1	55.4	44.6

ii) Socio-demographic Characteristics

Of the seven socio-demographic variables included in the study, past year VL play was related to age, marital status, and household income. The proportions of past year VL play for each of these socio-demographic variables are presented in Table 7.[7] As shown, respondents between 25-34 years of age were most likely to have played VL in the past year (19%), while those over 55 years old were most likely to not have played VL (91.4%).

Respondents who were in common law relationships (18.6%) or single (14.5%) were most likely to be past year VL players, while those who were widowed (4.6%) or married (9.6%) were most likely to be non-VL players.

Lastly, respondents reporting household incomes of between $20,000 and $40,000 were the most likely income group to play VL in the past year. Curiously, respondents who refused to divulge their incomes were the most likely group to report not playing VL during this time (93.8%).

[7] Complete table is provided in Appendix B

TABLE 7: Past Year VL Play by Socio-demographic Groups

Demographic Group	% Who Played VL in Past Year N=2001
Total Sample	11.1
Age* **	N=1992
19-24	12.2
25-34	19.0 ^
35-44	11.5
45-54	8.7
55 +	8.6 ^
Refused	16.7
Marital Status* **	N=1993
Single	14.5 ^
Married	9.6 ^
Common law	18.6 ^
Separated/divorced	11.2
Widowed	4.4 ^
Refused	9.7
Household Income **	N=1991
No Income	6.3
< $20,000	10.7
$20,000 -$40,000	15.5 ^
$40,001 – $60,000	10.9
$60,001 – $80,000	11.7
$80,001 - $100,000	11.1
> $100,000	14.5
Refused	6.2 ^

* <.05, ** <.01, *** < .001 ^ significant cell difference

When looking at VL players only, occasional and regular VL players differed only by gender. Regular players were more likely to be male (52.9% vs. 47.1%), while occasional players were more likely to be female (65% vs. 35%) (see Table 8).

TABLE 8: Past Year VL Play Frequency by Gender

Gender** N=222	% Who Played Occasionally (< once every 3 months)	% Who Played Regularly (at least once a month)
Male	47.1 ^	52.9 ^
Female	65.0 ^	35.0 ^

* <.05, ** <.01, *** < .001 ^ significant cell difference

iii) VL gambling expenditures

Table 9 shows the average dollars reportedly spent per session and per month for all VL players, as well as for those who played occasionally and regularly. Overall, using geometric averages, VL players reported spending on average, $29.10 per session and $17.22 per month on VL. When comparing occasional and regular players, regular players spent more per session ($43.82 vs. $20.80) [8] and per month ($107.97 vs. $3.81).[9]

TABLE 9: Reported Dollars Spent on VL per Session and Month by VL Player Frequency

VL Player Frequency		Dollar Spent	
		Per session* N=218	Per month* N=218
Occasional Players (less than once a month)	Mean (SE)	39.98 (8.89) ^	7.97 (1.73) ^
	Geometric mean	20.80	3.81
	Median	20.00	3.33
Regular Players (at least once a month)	Mean (SE)	76.36 (13.01) ^	491.64 (227.18) ^
	Geometric mean	43.82	107.97
	Median	40.00	100.00
All VL Players	**Mean (SE)**	**56.39 (7.71)**	**226.08 (103.46)**
	Geometric mean	**29.10**	**17.22**
	Median	**20.00**	**16.67**

* <.05, ** <.01, *** < .001 ^ significant cell difference

Table 10 shows the average hours reportedly spent per session and per month for all VL players, as well as for those who played occasionally and regularly. Overall, VL players reported spending .66 hours per session and .37 hours per month on VL.[10] There were no significant differences between occasional and regular players in the number of hours they reported spending per session p>.05 but they did differ in the estimated monthly hours spent.[11] Occasional players were estimated to have spent .09 hours per month while regular players were estimated to have spent 2.35 hours per month.

[8] t = -2.37, df = 216, p<.05
[9] t = -2.13, df = 216, p<.05
[10] These numbers are the geometric means, which provide a more stable indicator of the central tendency of the data.
[11] t=-2.918 df=85.52, p<.01

TABLE 10: Reported Hours Spent on VL per Session and Month by VL Player Frequency

VL Player Frequency		Hours Spent	
		Per session N=201	**Per month** N=201**
Occasional Players (less than once a month)	Mean (SE)	1.33 (.26)	.26 (.06) ^
	Geometric mean	.50	.09
	Median	.50	.08
Regular Players (at least once a month)	Mean (SE)	2.26 (.51)	12.90 (4.33) ^
	Geometric mean	.95	2.35
	Median	1.00	2.00
All VL Players	**Mean (SE)**	**1.73 (.27)**	**5.71 (1.91)**
	Geometric mean	**.66**	**.37**
	Median	**.91**	**.33**

* <.05, ** <.01, *** < .001 ^ significant cell difference

iv) VL limits

VL players were asked if they set limits on their VL play in the past year. About one-third of players (35.6%) indicated they set no limits in the past year. Of those who set limits, 97.7% set money limits and 31.5% set time limits in the past year (see Table 11 below). The type of limit set was not related to their VL playing frequency, p>.05.

TABLE 11: Types of Past Year VL Limits Set by VL Players

Type of Limit Set in Past Year	% of VL Players Who Set Limits	N
Set limit on amount of money spent	97.7	144
Set limit on amount of time spent	31.5	144

* <.05, ** <.01, *** < .001 ^ significant cell difference

Money limits

With respect to money limits specifically, the most common type of limit set by VL players was session limits. Approximately half of the players (54.1%) who set money limits did so by session. The next most common type of money limit set was a monthly limit (25.5%) (see Table 12 below).

TABLE 12: Types of Money Limits Usually Set for VL Limit Setters

Type of Money Limit	% of VL Players Who Set Money Limits N=124
Session	54.1
Monthly	25.5
Daily	7.1
Yearly	5.5
Weekly	3.7

VL players who set money limits were also asked if they had gone over their limits in the past year. About 1 in 4 players (27.6%) reported going over their limit. When asked to choose from a list of reasons for going over their money limit, the most common reasons were they had cash on hand (25.2%); had access to the ATM at the venue (17%); were on a winning streak (14.1%); and were gambling with others (11.7%) (see Table 13).

TABLE 13: Exceeded Money Limits and Reasons for Exceeding of VL Limit Setters

Exceeded Money Limit	% of VL Players Who Set Money Limits N=140
In past 12 months	27.6
Reasons (from list)	**N=39**
Had cash on hand	25.2
Had access to ATM at venue	17.0
Was on a winning streak	14.1
Was gambling with others	11.7
Was feeling bored or lonely	7.5
Was gambling alone	2.5

Time limits

Table 14 shows the types of time limits set on VL play. Of those who set time limits on their play, almost two-thirds (64.2%) set the limit by session. Only 12.7% set a time limit by month and another 9.1% set it by year. No player reported setting a time limit by week.

TABLE 14: Types of Time Limits Usually Set by VL Limit Setters

Type of Time Limit	% of VL players who set time limits N=30
Session	64.2
Daily	8.3
Weekly	0.0
Monthly	12.7
Yearly	9.1
Other	5.7

When asked if they exceeded their time limits in the past year, 39.8% reported that they did so. Based on their selection from a list of reasons for exceeding their limit, the most common reasons for exceeding their limits were they felt bored or lonely (28%); were on a winning streak (21.8%); and had access to ATM at the venue (15.1%) (see Table 15 below).

TABLE 15: Exceeded Time Limits and Reasons for Exceeding of VL Limit Setters

Exceeded Time Limit	% of VL Players who Set Time Limits N=39
In past 12 months	39.8
Reasons (from list)	**N=15**
Was feeling bored or lonely	28.0
Was on a winning streak	21.8
Had access to ATM at venue	15.1
Was gambling alone	6.3

Attitudes towards VL

i) Reasons for VL play

Table 16 shows the reasons why respondents play VL. The most common reasons were for leisure or entertainment (49%), to pass the time (25.4%), and the excitement and thrill (16.8%).

TABLE 16: Reasons for VL Play for All VL Players

Reasons	% of All VL Players N=223
Leisure/entertainment	49.0
Pass time	25.4
Excitement/thrill	16.8
Socialize	13.4
Win money	13.3
Other	5.4
Forget problems/relieve stress	2.4

When examined by frequency of VL play, regular players were more likely than occasional players to cite passing time (32% vs. 20.3%) and winning money (18.2% vs. 8.9%) as reasons for playing VL (see Table 17).

TABLE 17: Reasons for VL Play by VL Player Frequency (Occasional vs. Regular)

Reasons	% of Occasional Players (less than once a month)	% of Regular Players (at least once a month)	N
Socialize	17.1	9.0	223
Forget problems/relieve stress	1.6	2.0	223
Pass time*	20.3 ^	32.0 ^	223
Win money*	8.9 ^	18.2 ^	222
Leisure/entertainment	51.6	46.0	223
Excitement/thrill	17.9	15.2	222
Other	4.9	6.0	223

* <.05, ** <.01, *** < .001 ^ significant cell difference

ii) Enjoyment and knowledge of VL

The survey asked VL players to rate their enjoyment of VL. Almost 1 in 5 (18.8%) reported that they very or completely enjoy playing VL and 45.7% reported enjoying them a little or not at all (see Table 18)

Regular players were more than twice as likely to *very* or *completely* enjoy VL (27.3% vs. 12.1%) and less likely to enjoy them *a little* or *not at all* (34.3% vs. 54.8%) (see Table 18).

TABLE 18: Enjoyment of VL by VL Player Frequency (Occasional vs. Regular)

Enjoyment of VL**	% of Occasional Players (less than once a month)	% of Regular Players (at least once a month)	% All VL Players N=223
Not at all/ a little	54.8 ^	34.3 ^	45.7
Somewhat	33.1	38.4	35.4
Very/completely	12.1^	27.3 ^	18.8

* <.05, ** <.01, *** < .001 ^ significant cell difference

In terms of their knowledge of how VL works, about one-third of players (35.7%) felt they are *very* or *completely* knowledgeable in this area. About half of players (47%), however, reported being *not at all* or *a little* knowledgeable.

Regular players were more than twice as likely to report being *very* or *completely* knowledgeable (51.6% vs. 22.5%). Occasional players, on the other hand, were about twice as likely to be *not at all* or *a little* knowledgeable (61.7% vs. 29.5%) (see Table 19 below).

TABLE 19: Knowledge of how VL work by VL Player Frequency (Occasional vs. Regular)

Knowledge of How VL Works***	% of Occasional Players (less than once a month)	% of Regular Players (at least once a month)	% All VL Players N=215
Not at all/a little	61.7 ^	29.5 ^	47.0
Somewhat	15.8	18.9	17.3
Very/completely	22.5 ^	51.6 ^	35.7

* <.05, ** <.01, *** < .001 ^ significant cell difference

iii) Concerns about own VL play

When asked if they had any concerns about their VL play, 11.2% of all VL players responded they had some concern. The most common concerns cited were spending too much money on VL (36.4%) and having no control or being unable to stop (28.2%).

Having concerns about their own VL play was associated with VL play frequency. Regular VL players were much more likely to report a concern compared to occasional players (23% vs. 1.6%).

The heightened concern about own VL play reported by regular players was consistent with their greater perception that VL had a negative effect on them personally. Table 20 below shows the proportions of non-VL, occasional, and regular players who believed that VL had either a negative, positive or no personal effect on them. We included non-VL players because they may have experienced a negative personal effect in the past or have been personally affected by someone else's gambling (e.g., spouse, friend). More than one-quarter of regular players (27.3%) believed VL had a negative effect on them compared to 5.7% of occasional players. Occasional

players were more likely than the other groups to believe that VL had no effect at all on them (84.6%).

TABLE 20: Perception of Personal Effect of VL by Past Year VL Player Frequency

Overall what kind of effect do you think VL has on you personally? ***	% of Non-VL Players	% of Occasional Players (less than once a month)	% of Regular Players (at least once a month)
Negative effect	16.2	5.7 ^	27.3 ^
Positive effect[12]	.8 ^	7.3	14.1
No effect at all	76.6	84.6 ^	54.5 ^
Not sure/Don't know	6.4	2.4	4.0

* <.05, ** <.01, *** < .001 ^ significant cell difference

VL Players and PGSI Classification

This section identifies specific characteristics of VL players with gambling problems. It compares the PGSI classification types (i.e., non-problem gambling, at-risk gambling, and problem gambling) in the following areas:

- Frequency of VL play
- Socio-demographic characteristics
- VL gambling expenditures
- Spending limit use

The problem gambling group was composed of those with moderate or severe problem gambling because of the small counts for each individual group.

Frequency of VL play

Table 21 below presents past year VL play for all gamblers according to their PGSI classification types. A larger proportion of the problem gambling (66.7%) and at-risk gambling (51.3%) groups played VL in the past year compared to the proportion of the non-problem gambling group who played VL (22.6%).

[12] Occasional and regular gamblers were more likely to think that VLTs had a positive effect on them personally. However, due to the small cell counts (i.e., expected count < 5), this conclusion is statistically unreliable.

TABLE 21: Past Year VL Play Frequency by PGSI Classification (All Gamblers Only)

PGSI Classification***	% Who Played VL N=768
Non-problem gambling	22.6 ^
At-risk gambling	51.3 ^
Problem gambling	66.7 ^
Total sample	**28.5**

* <.05, ** <.01, *** < .001 ^ significant cell difference

When comparing frequency of VL play by PGSI classification, 76.5% of problem gambling respondents and 69% of at-risk respondents played VL regularly compared to only 29.9% of non-problem gambling respondents. (see Table 22)

TABLE 22: Past Year VL Play Frequency by PGSI Classification

PGSI Classification*** N=220	% Who Played VL Occasionally (less than once per month)	% Who Played VL Regularly (at least once per month)
Non-problem gambling	70.1 ^	29.9 ^
At-risk gambling	31.0 ^	69.0 ^
Problem gambling	23.5 ^	76.5 ^
Total sample	**55.5**	**44.5**

* <.05, ** <.01, *** < .001 ^ significant cell difference

Socio-demographic Characteristics

To identify any specific socio-demographic characteristic associated with problem gambling among VL players, the study examined the rates of PGSI classification types among the seven socio-demographic variables of interest: gender, age, marital status, education, employment status, household income, and region of residence. None of these variables were related to problem gambling, p>.05.[13] That is, the rates of problem gambling among VL players did not significantly differ across the socio-demographic categories.

VL Gambling Expenditure

i) Money spent on VL per session and per month

VL players were asked how much money they spent on VL per session and per month in the past year. Table 23 below presents the mean or average dollars spent according to the players' PGSI

[13] Due to small sample sizes, we collapsed the non-problem and at-risk gambling groups into one category and compared it to those with gambling problems. Where appropriate, we also collapsed many of the socio-demographic groupings to increase the power of finding any significant associations from the chi-square tests.

classification types. Given there was a fairly wide range of estimates of how much they spent, we refer to the geometric average.[14]

Our analyses revealed significant PGSI group differences in their average estimates for both the reported dollars spent per session ($F(214) = 27.34$, $p<.05$) and per month ($F(191) = 42.21$, $p<.05$).[15] Further, all three groups' spending differed from each other, indicating that the problem gambling players spent the most money per session and per month, followed by the at-risk gambling players, and then the non-problem gambling players.

For money spent per session, the problem gambling group reported spending an average of $79.57, compared to $37.17 for the at-risk group and $21.42 for those without gambling problems.[16] In terms of money spent per month, players with gambling problems reported spending the most at $152.47 per month, followed by the at-risk group ($37.36) and those without gambling problems ($8.22).[17]

TABLE 23: Average Dollars Spent on VL per Session and Month (constructed) in Past Year by PGSI Classification

PGSI Classification		Dollars Spent	
		Per session* N=215**	**Per month*** N=215**
Non-problem gambling	Mean (SE)	32.72 (3.41) ^	36.28 (6.78) ^
	Geometric mean	21.42	8.22
	Median	20.00	6.67
At-risk gambling	Mean (SE)	51.90 (6.47) ^	103.07 (21.08) ^
	Geometric mean	37.17	37.36
	Median	40.00	60.00
Problem gambling	Mean (SE)	161.38 (42.20) ^	1158.55 (637.46) ^
	Geometric mean	79.57	152.47
	Median	61.18	185.28
All VL players	**Mean (SE)**	**56.84 (7.80)**	**228.25 (104.75)**
	Geometric mean	**29.24**	**17.32**
	Median	**20.00**	**16.67**

* <.05, ** <.01, *** < .001 ^ significant cell difference

[14] The geometric mean is less affected by extreme scores and therefore, a more stable measure of the "average" player.

[15] Due to unequal variances of the raw scores, we transformed the scores into their log values to conduct the ANOVA and Sheffe tests.

[16] The post hoc Sheffe tests compared all three group means for the money spent per session and revealed that each groups' means significantly differed from each other, $p<.01$

[17] The post hoc Sheffe tests compared all three group means for the money spent per month and revealed that each groups' means significantly differed from each other, $p<.01$

ii) Time spent on VL per session and per month

Table 24 presents respondents' average reported hours spent playing VL per session and per month, according to their PGSI classification. Again, given the high degree of variation in player estimates of how much time they spent, we refer to the geometric average in the table, which is less affected by outliers to the mean and thus, a better indicator of the "average" player.

ANOVA analyses revealed that player estimates of their hours spent playing VL were related to their PGSI classification for both per session ($F(197) = 19.49$, $p<.001$) and per month ($F(197) = 36.04$, $p<.001$) estimates.[18] The problem gambling players reported spending the most number of hours per session (2.41) and per month (4.50) compared to the at-risk and non-problem gambling groups. Players who were at-risk of having gambling problems and those who had no gambling problems did not differ in their reported hours spent per session but the at-risk group did spend more hours per month.[19]

TABLE 24: Average Hours Spent on VL per Session and Month (constructed) in Past Year by PGSI Classification

PGSI Classification		Hours Spent	
		Per session *** N=199	Per month *** N=199
Non-problem gambling	Mean (SE)	1.23 (.29)	2.28 (1.11) ^
	Geometric mean	.47	.17
	Median	.50	.17
At-risk gambling	Mean (SE)	1.49	3.88 (1.26) ^
	Geometric mean	.76	.77
	Median	1.00	1
Problem gambling	Mean (SE)	4.30 ^	23.91 (11.73) ^
	Geometric mean	2.41	4.50
	Median	2.04	5.00
All VL players	**Mean (SE)**	**1.73**	**5.76 (1.93)**
	Geometric mean	**.65**	**.37**
	Median	**.75**	**.33**

* <.05, ** <.01, *** < .001 ^ significant cell difference

[18] Due to unequal variances of the raw scores, we transformed the scores into their log values to conduct the ANOVA and Sheffe tests.

[19] The post hoc Sheffe tests compared all three groups on the mean time spent per session and per month and revealed that the problem gambling group spent more hours per session and per month than the at-risk or non-problem gambling groups $p<.01$. The at-risk and non-problem gambling groups differed with each only on the monthly spending estimate, $p<.001$.

VL Limits

The survey asked VL players about the types of spending limits they set on their VL gambling in the past year. Table 25 compares the use and non-use of spending limits among the PGSI classification types. There were no significant differences in the groups' use of money and time limits, nor were there any differences in the percentage of whom did not set any limits, p>.05.

TABLE 25: Types of Spending Limits Set by VL Players in Past Year by PGSI Classification

Set …	% of Non-problem Gamblers	% of At-risk Gamblers	% of Problem Gamblers	% of All VL Players	N
Money limit	67.6	56.1	54.3	63.3	221
Time limit	18.8	23.8	23.5	20.5	220
No limit	30.6	41.5	45.7	35.0	220

* <.05, ** <.01, *** < .001 ^ significant cell difference

i) Money limits

Since money limits were the most common types of limits set by VL players (63.3%) (see Table 25 above), the study assessed whether specific types of money limits set were related to PGSI classification type.[20] There were no significant differences between the 3 PGSI classifications in terms of the specific types of money limits set (e.g., session, daily) (p >.05).[21] However, those without any problems were more likely to set a money limit by session than those reporting at least one gambling problem (i.e., at-risk and problem) (61.4% vs. 37.5%).[22]

Problem gambling players were most likely to report having gone over their money limit in the past year (61.1%), followed by the at-risk players (41.7%). Players without problems were least likely to have exceeded their limit (18.4%).

VL Players' Perceptions and Attitudes towards the MPS

In order to assess the interest of VL players in using the MPS, the survey gave a brief description of My-Play, which included its player information tools, goals, and plan of implementation, and asked a series of questions about respondents' views towards the MPS and its tools. In this section, we report players':

- General first thoughts about the MPS;
- Intention to use MPS during voluntary enrolment phase;
- Intention to use MPS during mandatory enrolment phase; and,

[20] We also examined time limits but the small sample size of those who set time limits limited any meaningful statistical analyses in relation to PGSI classification (N=31).
[21] See Appendix for complete table.
[22] A significant difference was also found between these two groups for weekly money limits. Due to the small sample who reported using money limits (N=5), however, this finding is statistically unreliable.

- Perceptions of the usefulness of the player information tools.

General First Thoughts about the MPS

Survey participants were asked what they thought about the MPS initiative in an open-ended format question.[23] The majority of players (58.4%) thought the MPS was a good idea. One-quarter of them (25.7%), however, thought it was a bad idea. A further 6.8% were unsure.

Voluntary Enrolment Phase

i) MPS Enrolment

The survey explained to participants that the MPS implementation will begin as a voluntary initiative where VL players will have the option of getting (i.e., enrolling) a MPS card. If players do not enroll for a card, they would still be able to play VL as usual. Only 20.1% reported that they would get the card (see Table 26).

TABLE 26: Intention to Obtain a MPS Card During Voluntary Enrolment Phase for All VL Players

Would obtain a MPS card during voluntary enrolment phase	% of All VL players N=223
No	66.1
Yes	20.1
Maybe	9.4
Don't know	4.4

Players who would not get a card or were unsure about getting a card provided many reasons for their responses, which are presented in Table 27. The most common reasons were that players were simply not interested or did not gamble enough (58%) or felt the MPS was a waste of time or would not work (12.7%).

[23] Survey company recorded the open-ended responses and then coded them into general categories based on their content similarities.

TABLE 27: Reasons why VL players would not get a MPS card or were unsure if they would get a MPS card

Reason for not getting/unsure a MPS card	% of VL players who would not get a card	% of VL players who were unsure about getting a card	Total N=157
It's an inconvenience/too complicated	5.4	22.2	6.4
Waste of time/won't work	13.5	0.0	12.7
Not interested/don't gamble enough	59.5	33.3	58.0
Scared to pick up old habits/get addicted	2.0	0.0	1.9
I have limits	2.7	0.0	2.5
The government doesn't care/government trying to control you	2.0	0.0	1.9
It's like taking away freedom of choice/no freedom of choice	1.4	11.1	1.9
Other	10.1	11.1	10.2
Don't know	3.4	22.2	4.5

We also examined whether enrolment was related to VL players' frequency of play and PGSI classification. While intention to get a MPS card did not vary with PGSI classification, $p>.05$, it was associated with frequency of play. One-quarter of regular players (26%) compared to 15.3% of occasional players reported that they would get a MPS card during the voluntary enrolment phase (see Table 28).

TABLE 28: Intention to Obtain a MPS card during voluntary phase by VL Play Frequency (Occasional vs. Regular)

Would obtain a MPS card during voluntary enrolment*	% of Occasional Players (less than once a month)	% of Regular Players (at least once a month)	% ALL VL players N=223
Yes	15.3^	26.0^	20.1

* <.05, ** <.01, *** < .001 ^ significant cell difference

ii) MPS information use

The MPS card offers users a number of voluntary information tools such as a providing a tracking report of a player's wins and losses and an ability to set limits on their play. The survey asked VL players if they would use these tools MPS and 41.7% indicated that they would. The reasons why VL players would not use the player information tools are presented in Table 29. The most common reasons were that players felt they did not play enough to warrant using the tools (39.4%); they did not need the card or could not be bothered to get one (21.2%); and they thought the card was a waste of time or pointless (13.2%).

TABLE 29: Reasons Why VL Players Would Not Use the MPS Information Tools during Voluntary Enrolment Phase

Reasons	% of VL players who would not use information tools N=130
Don't play very much/wouldn't use it/don't go to the casino	39.4
Don't need a card/couldn't be bothered	21.2
Waste of time/pointless	13.2
Don't know/not sure	7.8
Don't need anybody telling me how much I can spend	7.4
Not concerned about my spending/not addicted/no problems	7.4
Other	3.6

When looking at players' intention to use the information tools in relation to their VL playing frequency, we found no differences between occasional and regular players, $p>.05$. However, in terms of PGSI, as shown in Table 30, players with gambling problems were the most likely group that would use the information tools (64.7%), while those without problems were the least likely group that would use the tools (36.6%).

TABLE 30: Intention to Use Information Tool During Voluntary Enrolment Period by PGSI Classification

Would use MPS information tools during voluntary enrolment period*	% of Non-problem Gamblers	% of At-risk Gamblers	% of Problem Gamblers	% of All VL Players N=220
Yes	36.6 ^	41.5	64.7 ^	41.8

* <.05, ** <.01, *** < .001 ^ significant cell difference

Mandatory Enrolment Phase

In addition to assessing attitudes towards a voluntary card, the survey asked a series of questions regarding a mandatory card system whereby VL players would have to enroll for a card to play. Use of the information tools such as spending limits and activity history, however, would remain voluntary.

i) Card enrolment

VL players were asked what they would do when the card becomes mandatory and Table 31 shows their options and the proportions that chose those options. An approximately equal proportion of players would either enroll for the card to continue playing VL (40.5%) or stop playing altogether (43.5%). A small proportion would try it for a bit and decide (3.1%) or did not know what they would do (10.2%).

Players' intention to enroll for a card during the mandatory enrolment period was not related to their VL playing frequency, nor their PGSI classification p>.05.

TABLE 31: Intention to Enroll during Mandatory Enrolment Period by All VL Players

When the card becomes mandatory, will you stop playing VL or will you enroll for the card?	% of All VL Players N=223
Stop playing VL	43.6
Enroll for card and continue playing	40.5[24]
Will try it for a bit and decide	3.1
Other	2.6
Don't know	10.2

ii) MPS player information tool use

While enrolment would be required to play the VL during the mandatory enrolment period, the use of the information tools would be strictly voluntary. The survey asked respondents if they would use the player information tools during the mandatory enrolment period and 81% of the VL players who would enroll for the card, would use the information tools.

The two most common reasons why VL players would not use the information tools were because they do not gamble enough to bother (32.3%) or they thought it was a waste of time or effort (15.3%).

Lastly, intention to use the information tools was not related to the players' frequency of VL play nor their PGSI classification, p>.05.

Perceptions of the Usefulness of the MPS Player Information Tools

i) Overall perceptions

[24] Players who indicated they would get a card during the voluntary enrolment phase were assumed to also intend on getting a card during the mandatory phase (N=42).

The MPS offers tools that are intended to assist VL players in gambling in a safer and more informed manner. The survey sought to assess players' perceptions of the usefulness of five particular player information tools.

The tools that players thought were most useful were being able to set money limits on their VL play and to see how much they were winning and losing while playing a VLT. Thirty-seven percent (37.2%) and 31.6% respectively thought these functions would be *very* or *extremely* useful.

Banning themselves from playing VL altogether for a specified period of time and setting time limits on their VL play were considered the least useful functions as 59.3% and 55.3%, respectively felt that they were *not at all* useful. (see Table 32)

TABLE 32: VL Players' Overall Perceptions of Usefulness of the MPS Player Information Tools

Player Tools	% of All VL Players						N
	Not at all	A little	Somewhat	Very	Extremely	Don't know	
Keep track of money you have won or lost playing VL over a period of time	45.3	10.7	14.3	15.8	9.5	4.4	223
See how much you are winning and losing while playing VL	43.3	9.6	11.4	21.1	10.5	4.2	223
Set money limits on your VL play	40.8	8.4	12.0	21.5	15.7	1.7	223
Set time limits on your VL play	55.3	7.3	7.6	14.1	10.4	5.1	223
Ban yourself from playing VL altogether for a specified period of time	59.3	5.4	8.4	12.1	11.4	3.3	223

ii) Perceptions by frequency of VL play

When looking at players' perceptions of the usefulness of player tools according to their frequency of play, regular and occasional players differed in their perceptions on two of the five tools. Regular players were about 3 times more likely to feel that being able to set time limits on their VL play (17.2% vs. 5.6%) and ban themselves from playing VL for a specified period of time (17% vs. 6.5%) would be extremely useful (see Table 33).

TABLE 33: Percentage of Occasional and Regular Players who Felt the Player Information Tools were Extremely Useful

Felt information tool was extremely useful	% of Occasional Players (less than once a month)	% Regular Players (at least once a month)	N
Set time limits on your VL play (e.g., number of days or specific days that you could play VL)*	5.6	17.2	223
Ban yourself from playing VL altogether for a specified period of time*	6.5	17.0	223

* <.05, ** <.01, *** < .001

iii) Perceptions by PGSI classification

As shown in Table 34 below, problem gambling players were most likely to believe that being able to see how much a player is winning and losing while playing a VLT (55.9%) and being able to ban themselves from playing VL for a specified period (50%) would be very or extremely useful, while non-problem gambling players were least likely to feel this way about these functions.

TABLE 34: Percentage of PGSI Classification Groups who felt the MPS Player Information Tools were Very or Extremely Useful

Felt information tool was *very* or *extremely* useful	% of Non-Problem Gamblers	% of At-risk Gamblers	% of Problem Gamblers	% of All VL Players	N
See how much you are winning and losing while playing a VL***	27.5 ^	33.3	55.9 ^	33.2	214
Ban yourself from playing VL altogether for a specified period of time***	18.7 ^	22.0	50.0 ^	24.3	214

* <.05, ** <.01, *** < .001 ^ significant cell difference

General Public Perceptions and Opinions

This section examines general perceptions and attitudes towards VL and VL provision among the entire sample combined (VL and non-VL players). Specifically, it includes their perception of the effects of VL; and opinion of VL provision in Nova Scotia.

Perception of Effects of VL

All respondents were asked for their view of the kind of effect VL has on them personally, as well as on the local community.

i) Personal effects

Most respondents (76%) indicated that VL had no effect at all on them personally, whereas only 16% and 1.9%, respectively, reported that they had a negative and positive effect on them, personally (see Table 35).

TABLE 35: Perception of Personal Effect of VL for Total Sample

Overall what kind of effect do you think VL has on you personally?	% of Total Sample N=2001
Negative effect	16.0
Positive effect	1.9
No effect at all	76.0
Not sure/Don't know	6.1

Among those who were negatively affected, 31.5% responded that VLs are addicting, and 10.3% said they were a waste of (tax payers and players) money (10.3%). Approximately 1 in 10 (13.4%) stated they simply did not like or approve of gambling (see Table 36).

TABLE 36: Most Commonly Cited Ways in which VL Has a Negative Personal Effect

Most common ways	% of Respondents Who Cited Negative Effects N=321
They are addicting	31.5
I do not like/I do not approve of gambling etc.	13.4
Waste of money - tax payers and individuals' money	10.3

ii) Community effects

When asked what kind of effect VLs have on their local community, two-thirds of all respondents (66.9%) felt they had a negative effect. Only 2.9% believed that they had a positive effect and 8.6% believed VL had no effect at all (see Table 37).

TABLE 37: Perception of Community Effect of VL for Total Sample

Overall what kind of effect do you think VL has on the local community?	% of Total Sample N=2001
Negative effect	66.9
Positive effect	2.9
No effect at all	8.6
Not sure/Don't know	21.6

Of those who felt that VL had a negative effect, about half (47.6%) cited the financial consequences of people gambling more than they could afford, and 1 in 5 (18.3%) stated that VLs encourage addiction (see Table 38).

TABLE 38: Most Commonly Cited Ways in which VL Has a Negative Effect on the Local Community

Type of Negative Effects	% of Respondents Who Cited Negative Effects N=1339
Financial problems - people gamble more than they could afford	47.6
Encourages addiction/people don't know when to stop	18.3
Have family members/friends with gambling problems	2.5
VL are a false hope of becoming rich	2.5

Opinion of VL Provision in Nova Scotia

Questions were posed to gauge the general population sentiment regarding VL provision in Nova Scotia.

i) Response to VL-related problem gambling

First, all respondents were asked if they agreed or disagreed with the statement that "Nova Scotia has made a reasonable effort to address VL-related problem gambling". Most (49.3%) agreed that Nova Scotia has made reasonable efforts to address VL-related problem gambling, while one-third (33.6%) disagreed and 17.1% neither agreed nor disagreed.

Opinion by frequency of VL play

Table 39 reports all respondents' opinions by their VL playing frequency, including non-VL players. Occasional players were most likely to agree that Nova Scotia has made a reasonable effort to address VL-related problem gambling (65%), while non-VL players were most likely to neither agree nor disagree with it (17.7%). There were no differences among regular players in their opinions.

TABLE 39: Opinion of Nova Scotia Response to VL-related Problem Gambling by VL Player Frequency

In the past few years, Nova Scotia has made a reasonable effort to address VL-related problem gambling**	% of Non-VL Players	% of Occasional Players (less than once a month)	% of Regular Players (at least once a month)	% of Total Sample N=1993
Disagree	33.7	23.6 ^	42.0	33.5
Neither agree nor disagree	17.7 ^	11.4	12.0	17.1
Agree	48.5 ^	65.0 ^	46.0	49.4

* <.05, ** <.01, *** < .001 ^ significant cell difference

Opinion by PGSI classification

Table 40 shows all respondents' opinions based on their PGSI classification (including non-gamblers). The problem gambling group differed significantly from the other groups in that they were most likely to disagree with the view that in the past few years, Nova Scotia has made a reasonable effort to address VL-related problem gambling (58.8%).

TABLE 40: Opinion of Nova Scotia Response to VL-related Problem Gambling by PGSI Classification

In the past few years, Nova Scotia has made a reasonable effort to address VL-related problem gambling*	% of Non-Gambling	% of Non-Problem Gambling	% of At-risk Gambling	% of Problem Gambling	% of Total Sample N=1985
Disagree	33.4	31.8	32.1	58.8 ^	33.5
Neither agree nor disagree	17.2	16.6	19.8	13.7	17.0
Agree	49.4	51.6	48.1	27.5 ^	49.5

* <.05, ** <.01, *** < .001 ^ significant cell difference

ii) Socially responsible VL provision

The survey asked all respondents if they agreed or disagreed with the statement “VL gambling in Nova Scotia is provided in a socially responsible way” and 39.6% agreed with it, while 45.9% disagreed and 14.5% neither agreed nor disagreed.

Opinion by VL play frequency

Table 41 provides the proportions of respondents who agreed and disagreed with the view that VL gambling in Nova Scotia is provided in a socially responsible way by their VL playing frequency (including non-VL players). Occasional (55.3%) and regular players (49%) were most likely to agree with the view, while non-VL players were most likely to disagree with it (47.1%).

TABLE 41: Opinion of Socially Responsible VL Provision in Nova Scotia by VL Player Frequency

VL gambling in Nova Scotia is provided in a socially responsible way***	% of Non-VL Players	% of Occasional Players (less than once a month)	% of Regular Players (at least once a month)	% of Total Sample N=1993
Disagree	47.1 ^	35.0 ^	39.0	45.9
Neither agree nor disagree	15.0	9.8	12.0	14.5
Agree	38.0 ^	55.3 ^	49.0 ^	39.6

* <.05, ** <.01, *** < .001 ^ significant cell difference

Opinion by PGSI classification

There were no significant differences in the rates at which the PGSI classification types agreed or disagreed with the view, p>.05.[25]

[25] See Appendix for complete table.

Summary of Key Baseline Measures

This summary lists the key baseline measures for each of the main sections of the Results Section. These highlights pertain mostly to those areas that will be monitored and evaluated over the course of the *General Population Survey Study* to assess the impact of the MPS on VL gambling and related behaviours and attitudes in Nova Scotia.

VL Gambling Characteristics

- About 1 in 10 of all respondents (11.1%) played VL in the past year and almost half of these players (44.6%) played regularly (i.e., at least once a month).
- Overall, VL players reported spending averages of $29.10 per session and $17.22 per month on VL. Regular players reported spending twice as much per session ($43.82 vs. $20.80) and 28 times as much per month ($107.97 vs. $3.81) in the past year compared to occasional players.
- Overall, VL players reported spending averages of 0.66 hours per session and 0.37 hours per month on VL in the past year.
- In the past year, almost two-thirds of players (63%) set money limits; the most common type of limits used on VL. About one-third of players (35.6%) set no limits. The use of VL limits was not related to frequency of play.
- VL players mostly set money and time limits by session. Over half of those who set money (54.1%) and time (64.2%) limits did so by session.
- About one-quarter of players (27.6%) who set money limits in the past year exceeded them. The most common reasons for doing so were players had cash on hand (25.2%); had access to the ATM at the venue (17%); were on a winning streak (14.1%); and were gambling with others (11.7%).
- About 40% of players (39.8%) who set time limits in the past year exceeded them. The most common reasons for doing so were they felt bored or lonely (28%); were on a winning streak (21.8%); and had access to ATM at the venue (15.1%).

Attitudes towards VL

- The most common reasons VL players cited for playing VL were leisure or entertainment (49%), passing time (25.4%), and the excitement and thrill (16.8%). Regular players were more likely than occasional players to play VL to pass time and win money.
- Almost 1 in 5 VL players (18.8%) said they *very* or *completely* enjoy playing VL. These players were most likely to play regularly. Almost half (45.8%) all players reported enjoying them *a little* or *not at all*.

- About half of VL players (47.2%) reported being *a little* or *not at all* knowledgeable about how VL works while one-third (35.4%) felt they are *very* or *completely* knowledgeable. Regular players were more than twice as likely as occasional players to feel *very* or *completely* knowledgeable.

- 11.2% of VL players said they had some concern about their own VL play. The most common concerns cited were spending too much money on VL (36.4%) and feeling like they have no control or are unable to stop (28.2%). Regular players were much more likely to be concerned than occasional players.

- More than one-quarter of regular players (27.3%) believed VL had a negative effect on them personally compared to only 5.7% of occasional players. The large majority of occasional players believed that VL had no effect at all on them (84.6%).

VL Players and PGSI Classification

Frequency of VL Play

- Two-thirds of respondents (66.7%) with gambling problems and one-half of those (51.3%) who were at-risk of having problems played VL in the past year compared to only 22.6% of those who gambled without problems. They were also more likely to gamble regularly.

VL Gambling Expenditures

- On average, VL players with gambling problems reported spending the most money per session ($79.57) and per month ($152.47), followed by players who were at-risk of having problems and then those without any problems.
- On average, VL players with gambling problems reported spending more hours per session (2.41) and per month (4.5) than those who were at-risk of having problems and those without any problems.

VL Limits

- VL players with gambling problems set money and time limits on their VL play in the past year to the same extent as those who were at risk of having problems or who gambled without problems.
- The majority of VL players with gambling problems exceeded their money limits (61.1%) compared to only about 2 out of 10 players without gambling problems (18.4%).

VL Players' Perceptions and Attitudes towards the MPS

- A majority of VL players (58.4%) thought the MPS was a good idea. One-quarter of them (25.7%) believed it was a bad idea.

Voluntary Enrolment Phase

- 20.1% of VL players would get a card during the voluntary enrolment phase. The most common reasons for why players would not get a card or did not know if they would get one were that they were simply uninterested or felt they did not gamble enough (58%), or that the MPS was a waste of time or would not work (12.7%).
- 26% of regular VL players intend on getting a MPS card during the voluntary enrolment phase, compared to only 15.3% of occasional players.
- 41.7% of VL players said they would use the player information tools during the voluntary enrolment period. The most common reasons why players would not use the tools were that they did not play enough to warrant using them (39.4%); they did not need the card or could not be bothered to get one (21.2%); and they thought the card was a waste of time or pointless (13.2%).
- VL players with gambling problems were the most likely group to use the MPS and the player information tools during the voluntary enrolment period (64.7%), while players reporting no problems were least likely to do so (36.6%).

Mandatory Enrolment Phase

- When the MPS becomes mandatory, 40.5% of VL players would enroll while 43.5% would stop playing altogether.
- 4 out of 5 of VL players (81%) who would enroll for the MPS card during the mandatory enrolment phase, would use the player information tools. The two most common reasons why players would not use these tools were they do not gamble enough to bother (32.3%) or they thought it was a waste of time or effort (15.3%).
- Regular and occasional VL players did not differ in their intention to enroll for a MPS card or use its information tools during either the mandatory or voluntary periods.
- VL players with gambling problems were not different from players who were at risk of having problems or those who gambled without problems in terms of what they would do when the system becomes mandatory and whether they would use the information tools during this period.

Perceptions of the Usefulness of the MPS Player Information Tools

- The player information tools that players thought were most useful to them were the functions to set money limits on their VL play and to see how much they were winning and losing while playing a VL; 37.2% and 31.6%, respectively, thought these tools would be *very* or *extremely* useful.

- VL players considered the ability to ban themselves from playing VL altogether for a specified period of time and to set time limits on their VL play to be least useful tool; 59.3% and 55.3%, respectively felt that they were *not at all* useful.
- Regular VL players were about 3 times more likely than occasional players to feel that setting time limits on their VL play and banning themselves from playing VL for a specified period of time would be extremely useful.
- VL players with gambling problems were most likely to believe that the ability to see how much a player is winning and losing while playing a VL (55.9%) and to ban a player from playing VL for a specified period (50%) is very or extremely useful. Those without gambling problems were most likely to feel that these functions were somewhat, a little, or not at all useful.

General Public Perceptions and Opinions

Perception of Effects of VL

- Three-quarters of all respondents (76%) indicated that VL had no personal effect at all on them while 16% felt they had a negative personal effect on them. The most commonly cited negative personal effects were that VL was addicting (31.5%) and a waste of (tax payers and players) money (10.3%).

- Two-thirds of all respondents (66.9%) believed that VL had a negative effect on their local community. Only 2.9% believed they had a positive effect. The most commonly cited negative effect was the financial consequences for people who gambled more than they could afford.

Opinion of VL Provision in Nova Scotia

- Half of all respondents (49.3%) agreed that Nova Scotia has made reasonable efforts to address VL-related problem gambling in the past few years, while one-third (33.6%) disagreed.
- Among the PGSI classification groups, VL players with gambling problems were most likely to disagree with the view that in the past few years, Nova Scotia has made a reasonable effort to address VL-related problem gambling. Almost 60% of these players disagreed with this view.
- The majority of all respondents (45.9%) disagreed that VL gambling in Nova Scotia is provided in a socially responsible way, while 39.6% agreed this view.
- Half of VL players with gambling problems (50%) disagreed that VL gambling in Nova Scotia is provided in a socially responsible way but this proportion was not different from that of the other PGSI classification groups.

CHAPTER 3: RESEARCH PANEL SURVEY STUDY

OVERALL STUDY OBJECTIVES

The goal of the *Research Panel Survey Study* is to assess how VL players' behaviours and attitudes are affected by the provision of the MPS. The study follows a panel of regular VL players (i.e., play at least once a month) by administering 6 surveys over a 3 year period of time to ask them about their VL and My-Play-related behaviours and attitudes. This report presents the prevalence of these behaviours and attitudes among the research panel prior to the system's implementation and will serve as a benchmark to which subsequent survey findings can be compared.

The baseline report presents in particular, the characteristics of the research panel in five areas:

- VL Gambling
- VL Attitudes
- VL Site Behaviour and Other Gambling Activities
- Gambling Problems
- MPS Attitudes and Opinions

A SNAPSHOT OF THE VL PLAYER RESEARCH PANEL: A DISCUSSION OF KEY BASELINE FINDINGS

The research panel consists of 227 VL players who played at least once a month in the past year. About half of the panel played at least 4 times a month (i.e., once a week), while the other half played about 1-3 times a month. On average, the panel reported spending $48 per session and $134 per month on VL. In terms of time, the average was about 2 hours per session and 14 hours per month. Over three-quarters of players set money limits on their VL spending while about a third of them set time limits.

The majority of the panel (44.5%) reported spending 1-2 hours at the VL site, although not all of the time spent at the site was devoted to VL playing. Only a quarter of the players said they spent 100% of the time at the VL site playing VL. The most common non-VL activities were eating, hanging out with friends, and drinking.

The large majority of VL players were involved in other types of gambling. Over three-quarters also played lottery, instant win/scratch, break-open or pull-tab tickets. Slightly more than half of the panel played casino slot machines.

Slightly more than half of the panel experienced severe (26.1%) or moderate (27%) gambling problems. About 1 in 10 of all panel members felt they experienced problems with their own gambling most or all of the time. Players with severe problems tended to play more than once a

week and reported spending on average $89 per session (a little less than 2 times the average panel member) and $352 per month (about 2.5 times the average panel member). In terms of time, they reported spending on average about 2.5 hours per session and 15 hours per month.

The large majority of the research panel showed interest in the MPS with approximately 7 out of 10 indicating they would enroll or consider enrolling for a card when it is introduced. If enrolment becomes mandatory, 86% said they would enroll. The most frequent players were most likely to intend on enrolling. In general, the large majority of players believed the player information tools could help VL players be more informed about their play, as well as manage it. The specific tools that were most appealing to them were those that enabled them to track their spending (both during play and over time) and set money limits. Although the self-banning tools were the least likely tools to be used by the panel overall, the most frequent players and the players with gambling problems expressed more interest in using them.

STUDY METHODOLOGY

Survey Design

The Research Panel Survey was designed by RGC in consultation with the NSGC. It consisted of multiple choice and open-ended questions. The areas of inquiry included:

- General gambling behaviours;
- VL gambling behaviours;
- General attitudes towards VL;
- General perceptions of the MPS;
- General attitudes towards money;
- Gambling-related problems; and
- Socio-demographic characteristics.

The survey included the PGSI from the CPGI in order to assess the prevalence of gambling-related problems among the research panel.[26]

Participant Recruitment

The research panel was composed of VL players who played at least once a month in the past year. They were recruited through the following three sources: the general population survey, VL sites, and newspaper advertisements.

[26] See methodology for *General Population Telephone Survey* for a more detailed description of the PGSI.
[25] Subsequent to the general population survey, an additional sixth survey has also been added.

i) General population survey

Upon completion of the *General Population Survey*, the interviewer asked 97 survey respondents who indicated that they played VL at least once a month to participate in the *Research Panel Study*. Potential participants were told that the purpose of the *Research Panel Study* was to "assess VL player attitudes and behaviours as well as the MPS usage over time". Participation would involve completing five surveys over 24 months and the surveys could be completed either by phone or online. Participants would be compensated with a $25 gift card to a local retailer for each completed survey for a total of $125.[26] Only 37 VL players indicated that they would participate in the study by providing contact information (i.e., phone number or email) so they could be administered the surveys.[25]

ii) VL sites

NSGC provided RGC with a list of VL retailer sites from which they could recruit VL players (11 in Halifax and 10 in Sydney). From November 20th to 30th 2008, research assistants visited the sites and approached patrons 19 years of age or older who were either i) playing a VL and were in between games, or ii) waiting to play a VL. RAs asked patrons if they would be interested in participating in a survey study on a new card based gaming technology being implemented in Nova Scotia sometime next year. They were briefly told about the MPS and that participation would consist of completing five surveys – via online or telephone - over 24 months. For each completed survey they would receive a $25 gift card to a local retailer. They were also assured that the survey was anonymous and confidential. Only 15 VL players agreed to participate and provided their contact information.

iii) Newspaper advertisements

Because of the low recruitment from the general population telephone survey and the VL site visits, a study recruitment advertisement aimed at VL players was placed in the *Chronicle Herald*, a province-wide newspaper and the *Metro* a Halifax newspaper, for two days in December 2008 and 4 days in January 2009. The advertisement stated the study was about the MPS and required completing up to five surveys over 24 months. Over 250 individuals called to enroll for the study. Callers were screened to determine if they met the frequency of play criteria of gambling at least once a month by asking follow-up questions about the VL sites they frequented. Those who met the criteria were invited to participate either by telephone or online. In exchange for completing each survey, they were offered a $50 gift card to a local retailer (i.e. Best Buy, Canadian Tire, The Bay, Winners or Wal-mart).

Baseline Survey Administration

Potential research panel participants were invited to complete the survey either online or by telephone from December 1, 2008 to January 30, 2009. A total of 227 VL players participated in the research panel.

i) Telephone survey

For participants who chose the telephone survey method, a trained research assistant (RA), under the supervision of the project coordinator, administered the survey. The RA called participants using the phone numbers received from the recruitment process. When a potential participant answered the phone, the RA introduced herself as a representative of the Responsible Gambling Council and briefed the participant about the general purpose of the study and the MPS, specifically. They were told the study wanted their thoughts on the MPS, a "card-based system" for VL that would give players information about their VL play activity. The RA also assured participants of complete anonymity and the confidentiality of any information they provided.

On average the telephone surveys took about 30 minutes to complete. Upon completion of the survey, the RA gave participants the Nova Scotia problem gambling helpline number in case they were looking for help to address any gambling related concerns, as well as reminded them that they would be contacted again another 4 times throughout the next two years.

ii) Online survey

Participants who chose the online survey method received a unique email link generated by *Survey Monkey* to access the survey. *Survey Monkey* is a web-based survey data collection application. Once they accessed the survey, participants were given the same information about the study as that given in the telephone survey, including a description of the MPS and the purpose of the study, assurances of anonymity and confidentiality, and the voluntary nature of participation.

Each participant had one week to complete the online survey from the date of enrolment. On average the online survey took about 15 minutes to complete. At the end of the survey, participants were given the Nova Scotia problem gambling helpline number in case they were looking for help to address any gambling related concerns as well as reminded that they would be contacted again to do the remaining 4 surveys.

A total of 227 VL players participated in the research panel; 53 people completed the telephone survey and 174 completed the online survey.

Completed surveys from both survey methods were collected on a weekly basis and the project co-ordinator mailed out participant selected gift cards within two weeks of survey completion. In addition, the co-ordinator included a reminder of approximately when the participant could expect to be contacted with details of the next survey period.

Baseline II Survey

Originally, the study methodology proposed one baseline survey measure. However, because there was an approximate one year delay between the initial baseline survey and the implementation of the MPS, we conducted a second baseline panel survey to obtain more current information on our research panel, as well as to ask further questions about the system. The research panel was contacted via email and phone and asked to complete a second survey for the MPS study. Online survey administration was conducted between June 18th and July 4th 2010 while the telephone survey was conducted between June 21 and July 4th 2010. The panel had an approximately 14-17 day window to complete the Baseline II survey; 26 respondents completed a telephone survey and 115 completed the online survey for a total of 141 survey respondents. The lower response rate for the Baseline II survey was likely attributable in large part to the shorter survey administration period (2 weeks vs. 6 weeks). The shorter survey period was at the request of Nova Scotia Gaming Corporation who wanted the data before the province wide implementation of the MPS.

Both the Baseline I and II surveys contained mostly the same questions and the results of each survey are provided in this report. Given that the Baseline I survey had the total sample size for the study, we present the findings from the Baseline I survey in the main section of the report. The Baseline II survey results are provided in tabular form in the appendix. The exception is the section on attitudes and opinions of the MPS, which contains results from Baseline II since this survey posed additional questions not found in the Baseline I survey.

The comparison between Baselines I and II survey findings and each subsequent research panel survey conducted post-MPS will be central to the longitudinal analyses that will be conducted at the completion of the total three year study period and presented in the final report of the *Research Panel Survey Study*.

Analytical Strategy

The central aim of the *Research Panel Study* was to follow a panel of regular VL players (i.e., played at least once a month) over an extended period of time to assess how their VL-related behaviours and attitudes were influenced by the MPS provision. This report consists of the baseline measurement of their behaviours and attitudes and therefore contains mainly descriptive statistics. These statistics were provided by calculating measures of central tendency, frequency distributions, and cross-tabulations for our survey sample.

In addition, we analyzed the research panel by their frequency of VL play and PGSI classification to determine if players who played frequently or had gambling problems responded differently to the MPS than those who played less frequently or with less problems. For the frequency analyses, the panel was divided into four groups (i.e., more than once a week, once a week, 2-3 times a month, and once a month). For PGSI classification, respondents were divided into four main types based on their PGSI score. Table 42 gives a description of each type and their respective PGSI scores.

TABLE 42: PGSI Classification Used For Research Panel Survey Study

PGSI classification	Description	PGSI score
Non-problem gambling	Gamble without problems	0
At-risk gambling	At risk of having gambling problems	1-2
Moderate problem gambling	Have moderate gambling problems	3-7
Severe problem gambling	Have severe gambling problems	8+

We used the Pearson Chi-square to test for associations between categorical variables. A chi-square is a statistical procedure used with data that fall into mutually exclusive categories (e.g., gender) and tests whether one variable is associated with another and not independent of one another.[27]

To test group differences in VL gambling (money and time) expenditures, we conducted ANOVA for overall differences and the Scheffe test for pair-wise comparisons. These tests are statistical procedures to see if the average of one group is significantly different from the average of another group. The ANOVA test was used to test for an overall significant difference between multiple (more than two) groups and if there was a significant finding, the Sheffe test was conducted to test which specific groups were different.[28] Lastly, we also conducted Pearson correlations to assess any general linear relationships between two variables, that is, to see if one variable is positively or negatively correlated with another variable.

Most survey data are presented in table format. For tables presenting data that was subject to statistical testing, we provided asterisks to indicate overall statistical significance. The probability (p) levels of significance given are $p<.05$ (*), $p<.01$ (**), and $p<.001$ (***). A single arrow marker (^) beside a numerical value in an individual cell indicates that the value was significantly different (i.e., higher or lower) than the average value for the total group. These markers are given only if an overall significant relationship was found between the variables.

All statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) computer software program.

Socio-demographic Characteristics of Research Panel

The majority of the research panel was female (57.3%). The panel tended to be older with more than half (60.8%) being 45 years of age or older; 2.6% were between 19 and 24 years-old. Slightly more than half of the panel (55.1%) were married or in a common-law relationships and one-quarter (25.6%) were single. Almost half of the panel (47.1%) completed high school and about a third (34.8%) completed a post-secondary education. Most were employed (62.2%), with the majority holding full-time positions. About 1 in 5 (21.6%) were retired. Lastly, slightly more than half of the panel (56%) reported annual household incomes of between $20,000 and $60,000. (see Table 43)

[27] For a detailed description of the analyses see Appendix A.
[28] For a detailed description of the analyses see Appendix A.

TABLE 43: Socio-demographic Characteristics of Research Panel

Socio-demographic Characteristic	% of Panel N=227
Gender	
Male	42.7
Female	57.3
Age	
19-24	2.6
25-34	16.7
35-44	19.8
45-54	24.2
55 +	36.6
Marital Status	
Single	25.6
Married/common law	55.1
Separated/divorced	14.6
Widowed	4.8
Education	
Less than high school	13.7
Completed high school	47.1
Completed post-secondary	34.8
Completed post-graduate	4.4
Employment Status	
Employed - Part-Time	11.5
Employed - Full-Time	50.7
Retired	21.6
Unemployed	9.1
On disability	6.6
Household Income	
No income	2.6
< $20,000	13.7
$20,001 - $40,000	34.4
$40,001 – $60,000	21.6
$60,001 – $80,000	13.2
$80,001 - $100,000	8.4
> $100,001	6.2

RESULTS

The results of the research panel survey are organized into 5 sections:

- VL Gambling;
- VL Attitudes;
- VL Site Behaviour and Other Gambling Activities;
- Gambling Problems; and,
- MPS Attitudes and Opinions.

VL Gambling

1) Frequency of Play

Almost one-half of all survey respondents (45.6%) played at least once a week with 25.1% playing more than once a week. About one-quarter played only once a month (27.8%) (see Table 44).

TABLE 44: Frequency of VL Play of Research Panel

% of Panel Who Play … N=227				
Daily	**2-6 times a week**	**Once a week**	**2 -3 times a month**	**Once a month**
5.3	19.8	19.8	27.3	27.8

The frequency of VL play was associated with four socio-demographic characteristics: age, education, employment status, and annual household income (see Table 45). In terms of age, generally, the older the respondent, the more frequent their play ($r = .20$, $p<.01$). Respondents over 55 years of age were the most likely age group to play VL more than once a week (34.9%).

With respect to education, the higher the education, the less frequent their VL play ($r=-.24$, $p<.001$) although respondents who completed a post-secondary education were the least frequent players. About three-quarters (75.9%) of this group played VL less than once a week.

Respondents who were retired were most likely to play more than once a week (40.8%), while those who were unemployed or on disability were most likely to play once a week (32.4%). Those who were employed part-time tended to play the least frequently at once a month (57.7%).

Lastly, generally speaking, the higher the income, the less frequent the VL play (r=-.20, p <.01). Respondents who reported an income less than $20,000 tended to play more than once a week (48.6%) while those with an income more than $80,000 reported playing once a month (48.5%).

TABLE 45: Frequency of VL Play by Socio-demographic Groups

Socio-demographic Group	% of Panel Who Play … (N=227)			
	More than once a week	Once a week	2 -3 times a month	Once a month
All respondents	**25.1**	**19.8**	**27.3**	**27.8**
Age*				
19-24	0.0	16.7	33.3	50.0
25-34	21.1	10.5	44.7 ^	23.7
35-44	15.6	15.6	35.6	33.3
45-54	23.6	27.3	21.8	27.3
55 +	34.9 ^	21.7	18.1 ^	25.3
Education*				
Less than high school	35.5	22.6	16.1	25.8
Completed high school	33.9	25.4	27.1	13.6 ^
Some post-secondary	29.2	22.9	20.8	27.1
Completed post-secondary	11.4 ^	12.7 ^	36.7 ^	39.2 ^
Completed post-graduate	30.0	20.0	20.0	30.0
Employment Status***				
Employed - part-time	19.2	11.5	11.5	57.7 ^
Employed - full-time	20.0	17.4	37.4 ^	25.2
Retired	40.8 ^	20.4	12.2 ^	26.5
Unemployed/disability	24.3	32.4 ^	27.0	16.2
Household Income***				
< $20,000	48.6 ^	16.2	8.1 ^	27.0
$20,000 - $40,000	20.5	17.9	30.8	30.8
$40,001 – $60,000	22.4	32.7 ^	24.5	20.4
$60,001 – $80,000	23.3	16.7	50.0 ^	10.0 ^
> $80,000	15.2	12.1	24.2	48.5 ^

* <.05, ** <.01, *** < .001 ^ significant cell difference

2) VL Expenditures

i) Money Expenditure

Table 46 presents the average dollars reportedly spent per session and per month in the past year for all respondents according to their frequency of VL play. Overall, based on their geometric averages, respondents reported spending on average, $47.80 per session and $134.20 per month on VL.

While it did approach significance (p=.06), respondents' frequency of play was not related to the average number of dollars spent per session. It was associated, however, with their average reported monthly spending as those who played more than once a week spent the most ($411.98), while the once a month players spent the least ($43.96).[29]

TABLE 46: Reported Dollars Spent on VL per Session and Month by VL Player Frequency

VL Player Frequency		Dollars Spent	
		Per session N =225	**Per month*** N =223**
More than once a week	Average (SE)	91.05 (10.43)	621.67 (113.19) ^
	Geometric average	69.51	411.98
	Median	60.0	400.00
Once a week	Average (SE)	73.38 (9.61)	240.02 (24.46) ^
	Geometric average	57.30	190.83
	Median	60.0	200.00
2-3 times a month	Average (SE)	61.35 (8.04)	183.71 (30.02) ^
	Geometric average	41.78	109.76
	Median	40.00	100.00
Once a month	Average (SE)	56.64 (11.00)	82.47 (17.35) ^
	Geometric average	33.80	43.96
	Median	30.00	45.00
All VL players	**Average (SE)**	**70.00 (5.00)**	**279.52 (33.68)**
	Geometric average	**47.80**	**134.20**
	Median	**50.00**	**150.00**

* <.05, ** <.01, *** < .001 ^ significant cell difference

ii) Time Expenditure

Table 47 presents the average number of hours reportedly spent per session and per month in the past year for all respondents according to their frequency of VL play. Overall, based on

[29] F (222) = 56.16, p<.001. Due to unequal variances of the raw scores, we transformed the raw scores into their log values to conduct the ANOVA and Sheffe tests.

geometric averages, respondents reported spending on average, 2.08 hours per session and 14.35 hours per month on VL. Frequency of VL play was related to both number of hours spent per session[30] and per month.[31]

The most frequent players (i.e., more than once a week) averaged 2.42 hours per session and 26.12 hours per month, while the least frequent players (i.e., once a month) averaged 1.04 hours per session and 1.76 hours per month. Those who played once a week or 2-3 times a week did not differ in the number of hours they played per session. The more frequent the player, generally, the more time they spent per session ($r=.356$, $p<.001$) and per month ($r=.531$, $p<.001$) on VL.

TABLE 47: Reported Hours Spent on VL per Session and Month by VL Player Frequency

VL Player Frequency		Hours Spent	
		Per session* N=224**	**Per month*** N=219**
More than once a week	Average (SE)	3.07 (.30) ^	38.53 (5.66) ^
	Geometric average	2.42	26.12
	Median	2.25	25.00
Once a week	Average (SE)	2.15 (.18)	10.63 ^
	Geometric average	1.77	8.34
	Median	2.00	8.50
2-3 times a month	Average (SE)	1.81 (.17)	6.36 (.72) ^
	Geometric average	1.30	4.29
	Median	1.50	5.00
Once a month	Average (SE)	1.43 (.14) ^	2.79 (.49) ^
	Geometric average	1.04	1.76
	Median	1.00	2.00
All VL players	**Average (SE)**	**2.08 (.11)**	**14.35 (1.74)**
	Geometric average	**1.52**	**6.10**
	Median	**2.00**	**6.00**

3) VL Limits

Respondents were asked if they had set limits on their VL play in the past 12 months. The most common type of limit they set was a money limit with 78% of respondents reporting that they limited the amount of money spent on VL (see Table 48). The most common reasons for imposing a money limit was to control spending (33.3%) and keep within a budget (15.8%).[32]

About one-third of respondents (35.2%) said they imposed a time limit on their play, while about one-quarter (28.6%) indicated they had set a limit on the number of visits to a VL site (see Table

[30] $F(223) = 12.02$, $p<.001$
[31] $F(218) = 92.69$, $p<.001$
[32] Percentages are of those who set money limits (N=177). See Appendix for table listing all reasons.

48). The most common reasons for setting time limits were to keep other appointments (37.5%), control time spent (23.8%), and avoid overspending (20%).[33] For those who limited their visits to VL sites, the most common reasons were to control money spending (50.8%) and prevent their playing from becoming a habit (30.8%).[34]

Setting limits on visits to VL sites varied by frequency of VL play. Those who played once a month were far more likely than the other groups to impose these types of limits (44.4%) (see Table 48).

TABLE 48: Types of Limits Set in the Past Year by VL Player Frequency

In past year, set …	% of VL Players					N
	More than once a week	Once a week	2 - 3 times a month	Once a month	Total	
Limit on money spent	71.9	77.8	74.2	87.3	**78.0**	227
Limit on amount of time spent	38.6	37.8	30.6	34.9	**35.2**	227
Limit on visits to site*	24.6	20.0	22.6	44.4^	**28.6**	227

* <.05, ** <.01, *** < .001 ^ significant cell difference

VL Attitudes

Almost two-thirds of all respondents (62.1%) *very* or *completely* enjoy playing VL, although the most frequent players (more than once week) were the most likely to express this level of enjoyment (77.2%). About 1 in 10 (11%) of all respondents enjoyed playing VL a *little* or *not at all* (see Table 49).

TABLE 49: General Enjoyment of Playing VL by VL Player Frequency

Enjoyed VL …**	% of VL Players				Total N=227
	More than once a week	Once a week	2 -3 times a month	Once a month	
Not at all/a little	7.0	4.4	8.1	22.2 ^	**11.0**
Somewhat	15.8 ^	24.4	33.9	31.7	**26.9**
Very/completely	77.2 ^	71.1	58.1	46.0 ^	**62.1**

* <.05, ** <.01, *** < .001 ^ significant cell difference

Table 50 shows respondents' self-perceived knowledge about how VL work. Overall, approximately 4 in 10 (38.1%) described themselves as *very* or *completely* knowledgeable in this area; although a larger proportion of those who played more than once a week described themselves as *completely* knowledgeable (28.1%).

[33] Percentages are of those who set time limits (N=80). See Appendix for table listing all reasons.
[34] Percentages are of those who set time limits (N=65). See Appendix for table listing all reasons.

TABLE 50: General Knowledge of VL by Frequency of VL Play

Overall, how knowledgeable would you say you are about how VL works?*	% of VL Players				
	More than once a week	Once a week	2 -3 times a month	Once a month	Total N=226
Not at all	12.3	15.6	6.6	9.5	**10.6**
A little	12.3	11.1	26.2	20.6	**18.1**
Somewhat	26.3	37.8	26.2	42.9	**33.2**
Very	21.1	26.7	29.5	22.2	**24.8**
Completely	28.1 ^	8.9	11.5	4.8 ^	**13.3**

* <.05, ** <.01, *** < .001 ^ significant cell difference

When respondents were asked for their reasons for playing VL, the most common reason was to win money (40.5%), followed by fun and excitement (23.9%) (see Table 51). Reasons for playing VL was not related to respondents' frequency of play, p>.05.

TABLE 51: Reasons for Playing VL

Played VL for Following Reasons … (open ended)	% of VL Players N=222
To win	40.5
Fun/Excitement	23.9
Entertainment	14.4
Boredom	9.0
Escape	8.6
Socialize	3.6

VL Site Behaviour and other Gambling Activities

1) VL Site Behaviour

Respondents were asked a series of questions about their general behaviour at the VL sites. Overall, the majority of them spent between 1-2 hours at the site (44.5%). A further 26.4% spent 3-5 hours at the site (see Table 52).

TABLE 52: Total Time spent at VL sites for Research Panel

Spent following amount of total time at VL site…	% of VL Players N=227
Less than 30 minutes	6.6
Less than 1 hr	19.4
1 - 2 hrs	44.5
3-5 hrs	26.4
6-9 hrs	1.8
Greater than 9 hours	1.3

Table 53 shows the percentage of time that respondents spent playing VL at the sites by their frequency of play. Overall, about one-quarter of them (25.6%) said they played VL 100% of the time, with the most frequent players (i.e., than once a week) being the most likely to do this (38.6%). Almost half (48.5%) of respondents reported spending between 50% and 75% of their time at the site playing VL. In general, the more frequent the player, the higher the percentage of the time they played VL at the site ($r=.29$, $p<.001$).

TABLE 53: Percentage of time playing VL at site by VL Player Frequency

Spent following amount of time at site playing VL ***	% of VL Players				
	More than once a week	Once a week	2 - 3 times a month	Once a month	Total N=226
10%	1.8 ^	6.7	13.1	28.6 ^	**13.3**
25%	10.5	15.6	9.8	14.3	**12.4**
50%	26.3	24.4	23.0	28.6	**25.7**
75%	22.8	31.1	32.8 ^	7.9 ^	**23.0**
100%	38.6 ^	22.2	21.3	20.6	**25.7**

* <.05, ** <.01, *** < .001 ^ significant cell difference

Besides playing VL, respondents reported doing a number of other activities at the VL site. About half said they eat (56.4%), hang out with friends (54.2%), and drink (53.7%). About 3 in 10 said they play games (29.1%) and meet people (28.2%). About 1 in 5 respondents said they watch TV (23.8%) and people-watch (20.3%) (see Table 54). Participation in these activities did not vary by their frequency of VL play, $p>.05$.

TABLE 54: Activities at Site Other than Playing VL

Did following non-VL activities at site …	% of VL Players N=227
Eat	56.4
Hang out with friends	54.2
Drink	53.7
Play games (e.g. pool, darts)	29.1
Meet people	28.2
Watch TV	23.8
People watch	20.3
Other	11.9

2) Other gambling activities

In addition to playing VL, respondents reported playing other gambling activities in the past year. The most common activities given were lottery tickets (88.5%), instant win/scratch, break open, or pull tab (77.1%), and casino slot machines (55.9%). About one-quarter of respondents played casino table games (26.9%) and bingo (27.8%), while 1 in 10 played sports select (11.5%) (see Table 55). Frequency of VL play was not related to participation in these activities, $p>.05$.

TABLE 55: Past year Gambling Activity Participation of All Respondents

Gambled on following activities in past year …	% of VL Players N= 227
Lottery Tickets	88.5
Instant win scratch tickets, break open or pull tab	77.1
Slot machines at casinos	55.9
Casino games like poker, blackjack, roulette or keno	26.9
Bingo	27.8
Sport select like Pro-line, over/under	11.5
Internet (casino table games, slot machines/VL, poker)	10.6
Horse races - both live and off-track	3.5
Other	2.7
Internet sports betting	2.2

Gambling Problems

1) Prevalence of Gambling Problems

The respondents were approximately evenly split among the 4 PGSI classification groups. In particular, 53.1% had moderate or severe gambling problems (see Table 56).

TABLE 56: PGSI Classification of Research Panel

Classified as …	% of VL Players N=226
Non-problem gambling	23.5
At-risk gambling	23.5
Moderate problem gambling	27.0
Severe problem gambling	26.1

Table 57 shows the frequency of VL play for each PGSI group. Severe problem gambling respondents were most likely to play more than once a week (49.2%) while those with in the moderate problem gambling group tended to play once a week (29.2%). More than half of the non-problem gambling group (56.6%) gambled once a month. Overall, frequency of play was strongly correlated with level of gambling problems with the more severe the problems, the more frequent the VL play ($r=.404$, $p<.001$).

TABLE 57: Past Year VL Play Frequency by PGSI Classification

Classified as…***	% of VL Players N=226			
	More than once a week	Once a week	2 -3 times a month	Once a month
Non-problem gambling	11.3 ^	7.5 ^	24.5	56.6 ^
At-risk gambling	17.0	22.6	34.0	26.4
Moderate problem gambling	21.3	29.5 ^	27.9	21.3
Severe problem gambling	49.2 ^	16.9	23.7	10.2 ^
Total	**25.2**	**19.5**	**27.4**	**27.9**

* <.05, ** <.01, *** < .001 ^ significant cell difference

In addition to the PGSI questions, the survey asked a couple of other direct questions about gambling problems. Roughly half of respondents (47.1%) reported having experienced problems with their own gambling. This proportion is similar to the proportion of moderate or severe problem gambling groups according to the PGSI. About 1 in 10 felt they experienced problems with their own gambling *most* or *all of the time* (see Table 58).

Almost one-third of all respondents (31.3%) felt that gambling caused problems with their family members and 3.1% felt it occurred *most* or *all of the time* (see Table 58).

TABLE 58: Frequency of Gambling Problems

% of VL players who…	Frequency				
	Never	Rarely	Some of the time	Most of the time	All of the time
Experienced problems with own gambling	52.9	18.1	19.4	7.9	1.8
Gambling caused problems with family members	68.7	15.4	12.8	1.3	1.8

Overall, about 4 in 10 respondents (39.6%) were concerned about their own VL play, although a much higher proportion of those who played more than once a week (70.2%) expressed such a concern (see Table 59).

TABLE 59: Concern with own VL Play by Frequency of Play

VL Player Frequency*	% Concerned About Own VL Play N=227
More than once a week	70.2 ^
Once a week	37.8
2 -3 times a month	25.8 ^
Once a month	27.0 ^
Total	**39.6**

* <.05, ** <.01, *** < .001 ^ significant cell difference

2) VL Expenditures

Table 60 shows the average dollars that respondents reported spending on VL in the past 12 months according to their PGSI classification. Generally, the more problematic the gambling, the more money spent per session ($r=.36$, $p<.001$) and per month ($r=.30$, $p<.001$).

Using the geometric averages, the severe problem gambling respondents reported spending the most at $88.80 per session and $352.30 per month. The next highest spending groups were moderate problem gambling and at risk problem gambling. They reported spending approximately the same amount at $40-$50 per session and $200-$225 per month. The least amount spent was by the non-problem gambling group at $25.83 per session and $47.60 per month.

TABLE 60: Reported Dollars Spent on VL per Session and Month by PGSI Classification

PGSI Classification		Dollars Spent	
		Per session*** N=224	Per month*** N=222
Non-problem gambling	Average (SE)	43.16 (8.84) ^	117.45 (47.60) ^
	Geometric average	25.83	47.60
	Median	20.00	40.00
At-risk gambling	Average (SE)	52.26 (5.54)	193.68 (26.94)
	Geometric average	41.30	120.16
	Median	40.00	100.00
Moderate problem gambling	Average (SE)	60.13 (4.69)	223.82 (30.87)
	Geometric average	49.85	141.68
	Median	50.00	140.00
Severe problem gambling	Average (SE)	119.69 (14.19) ^	565.37 (112.96) ^
	Geometric average	88.80	352.30
	Median	100.00	360.00

* <.05, ** <.01, *** < .001 ^ significant cell difference

Table 61 shows the average number of hours that respondents reported spending on VL in the past 12 months based on their PGSI classification. Similar to money expenditures, generally the more problematic the gambling, the more time spent per session ($r=.44$, $p<.001$) and per month ($r=.44$, $p<.001$). The correlation with time expenditures, however, was even stronger.

The severe problem gambling group reported spending the most at 2.68 hours per session and 15.25 hours per month. The non-problem gambling group reported spending the least amount of hours at .8 hours per session and 2.04 hours per month. In between were the at-risk and moderate problem gambling groups who spent roughly the same amount of hours per session (1.38 and 1.64 respectively) and per month (5.60 and 6.81 respectively).

TABLE 61: Hours Spent on VL per Session and Month by PGSI Classification

PGSI Classification		Hours Spent	
		Per session***[35] N=223	Per month*** N=218
Non-problem gambling	Average (SE)	1.26 (.18) ^	4.21 (.87) ^
	Geometric average	.80	2.04
	Median	1.00	1.50
At-risk gambling	Average (SE)	1.69 (.14)	13.84 (5.16)
	Geometric average	1.38	5.60
	Median	1.75	6.00
Moderate problem gambling	Average (SE)	1.94 (.14)	12.79 (1.92)
	Geometric average	1.64	6.81
	Median	2.00	9.50
Severe problem gambling	Average (SE)	3.31 (.28) ^	25.46 (3.96) ^
	Geometric average	2.68	15.25
	Median	3.00	16.00

* <.05, ** <.01, *** < .001 ^ significant cell difference

MPS Attitudes and Opinions

1) MPS Player Information Tools

Baseline I Results

The Baseline I survey asked respondents how likely they would be to use six specific MPS[36] tools. The tools that most felt they would be *very* or *extremely* likely to use are seeing how much money they are winning and losing while actually playing (65.5%), seeing how much money they have won or lost over a period of time (60.7%), and setting their own money limits on their VL play (56.3%) (See Table 62)

The tools that most respondents felt they would *not at all* be likely to use were banning themselves from playing on specific days (45.7%) or for a specified period of time (e.g., 48 hours) (43.4%) (see Table 62). The views for these last two tools, however, varied according to frequency of VL play. In general, the more frequent the VL player, the greater the likelihood of intending to use the self-banning tools for specific days (r=.14, p <.05) or a specified period of time (r=.18, p<.001).

[35] Due to unequal variances for the original raw data and log values, these significant results are based on a non-parametric test, the Kruskal-Wallis test. $X^2 = 49.31$ df = 3, p<.001

[36] During the Baseline I survey, the player card system was known as the IPCS. After the subsequent name change, the player card system is referred to as MPS in the Baseline II survey.

TABLE 62: Intention to use MPS Player Information Tools among Research Panel (Baseline I)

Player Information Tool	% of VL Players Who Would Use Tool …					N
	Not at all	A little	Somewhat	Very	Extremely	
Show you how much money you have won or lost playing VL over a period of time	9.4	6.7	23.2	33.5	27.2	224
Show you how much you are winning and losing while you actually play a VL	11.1	5.8	17.7	35.0	30.5	226
Allow you to set your own money limits on your VL play	13.5	7.7	22.5	26.6	29.7	222
Allow you to set your own time limits on you VL play	28.3	10.3	25.6	16.6	19.3	223
Ban yourself from playing on specific days	45.7	11.2	15.7	10.8	16.6	223
Ban yourself from playing VL for a specified period of time (e.g., 48hrs)	43.4	10.4	15.8	16.3	14.0	221

The intention to use the player information tools also varied according to respondents' PGSI classification. Generally, the more gambling problems, the greater the intention to use the following five tools: seeing how much money was won or lost over a period of time ($r=.15$, $p<.05$); setting money limits ($r=.15$, $p<.05$) and time limits ($r=.14$, $p<.05$); and banning players on specific days ($r=.29$, $p<.001$) and for a specified period of time ($r=.43$, $p<.001$).

In particular, about 3 in 10 severe problem gambling respondents felt they would be *extremely* likely to use the tools of banning themselves from VL on specific days (31%) or a specified period of time (32.1%), which is about double the percentage found for all respondents.

Overall, when asked if these tools would help VL players set limits and stick to them slightly more than half (55.1%) said they would and 35.2% said "maybe." Only 9.7% did not believe so.

Baseline II Results

The Baseline II survey also asked the same questions about the likelihood of using specific MPS player information tools. Table 63 shows the mean responses from each baseline survey from 0 (not at all likely to use) to 5 (most likely to use) for each tool and the t-test for significant differences between the two baseline mean responses. Compared to their views at Baseline I, the panel indicated they were less likely to use each tool at Baseline II except for the self-banning tool for specific days.

Table 63: Mean Scores for Likelihood of Use of the MPS Player Information Tools by Baseline Survey

MPS Player Information Tool	Mean VL Player Rating of Likelihood of Tool Use		t (df)
	BL I	BL II	
Show you how much money you have won or lost playing VL over a period of time	2.64	1.76	t (138) = 7.098 p < .001
Show you how much you are winning and losing while you actually play a VL	2.71	1.82	t (140) = 6.775, p < .001
Allow you to set your own money limits on your VL play	2.51	1.72	t (136) = 6.396, p < .001
Allow you to set your own time limits on your VL play	1.43	1.17	t (138) = 4.441, p < .001
Allow you to ban yourself from playing on specific days	1.26	1.04	p >.05
Ban yourself from playing VL altogether for a specified period of time (e.g., 48 hrs)	1.42	1.01	t (135) = 3.271, p = .001

As found in the Baseline I results, the likelihood of using the information tools also varied with VL playing frequency and PGSI classification at Baseline II, although not to the same extent. While VL frequency varied with the self-banning tools for specific days and for a specific period of time at Baseline I, it only varied with self-banning for a specific period of time at Baseline II (r=.167, p<.05).

For problem gambling severity, although PGSI classification was significantly associated with the perceived likelihood of using five tools at Baseline I, it was only associated with using three tools at Baseline II: self-limits based on time (r=.167, p<.05); self-ban based on specific days (r=.348, p<.001); and self-ban based on specific period of time (r=.421, p<.001).

Despite the reduction in the research panel's perceived likelihood of use of the tools from Baseline I, it appears that at Baseline II, there was still a general consensus that the MPS tools would be helpful. Over 85% of Baseline II respondents felt that the tools were a good thing to offer VL players and could help them be more informed about their play, as well as manage their play (see Table 64).

Table 64: Perceptions of the MPS Player Information Tools (Baseline II)

Player Information Tools …	% of VL Players Who Believe N=141
Are a good thing to offer to VL players	88.7
Can help VL players be more informed about their play	92.9
Can help VL players manage their play	87.9

When asked to explain in their own words what they felt these information tools would do for VL players, 38.1% indicated that they would help players monitor their VL play and outcomes, while 11.1% reported that they would help players control their play. Overall, 55.6% believed

that the tools would help players to either monitor or control their VL gambling. On the other hand, 1 in 10 believed the tools would do nothing for VL players (see Table 65).

Table 65: Perceived Purpose of the MPS Player Information Tools (Baseline II)

Purpose of Player Information Tool is to …	% of VL Players Who Believe N=126
Monitor VL play/outcomes	38.1
Address gambling-related problems	13.5
Control play	11.1
Help people or certain types of people	10.3
Nothing	9.5
Reduce or abstain from gambling	7.1
Monitor and control play	6.3
Other	2.4
Not sure	1.6

2) MPS Enrolment

Baseline I Results

Respondents were asked if they would enroll for the MPS when it is introduced and a little over half of them said "yes" (55.9%) and a third said "maybe" (33.9%). One in ten (10.1%) did not intend to enroll. The most common reasons for not enrolling were they were not interested or thought there was no benefit in doing so (26.1%) and they did not play enough to warrant enrolling (26.1%). About 1 in 6 (17.4%) believed the MPS was only for gamblers with problems (see Table 66).

TABLE 66: Reasons for NOT Enrolling with the MPS (Baseline I)

Reasons (open ended)	% of Non-enrollers N=23
Not interest/benefit	26.1
I don't play often enough	26.1
I know my limits	17.4
Its only for gamblers with problems	17.4
I don't agree - its government control	13.0

Intention to enroll was associated with frequency of VL play as respondents who played VL more than once a week were the most likely group to intend on enrolling (70.2%) (see Table 67). Intention to enroll was not, however, associated with PGSI classification, $p>.05$.

TABLE 67: Intention to Enroll for a MPS card by Frequency of VL Play (Baseline I)

Intend to enroll	% of VL Players				
	More than once a week	Once a week	2 -3 times a month	Once a month	Total N=227
No	8.8	11.1	14.5	6.3	**10.1**
Yes	70.2 ^	64.4	48.4	44.4 ^	**55.9**
Maybe	21.1 ^	24.4	37.1	49.2 ^	**33.9**

* <.05, ** <.01, *** < .001 ^ significant cell difference

Baseline II Results

Generally, at the time of the Baseline II survey, the research panel believed they were not too knowledgeable about the MPS as 82.3% described themselves as "not at all" or "a little" knowledgeable about the system (see Table 68).

Table 68: Self-perceived Knowledge of My-Play (Baseline II)

Overall, how knowledgeable would you say you are about the MPS?	% of VL Players N=141
Not at all	44
A little	38.3
Somewhat	12.1
Moderately	3.5
Extremely	2.1

Knowledge of MPS was not significantly correlated with VL play frequency but was correlated with PGSI classification, (r=.28, p=.001). The more severe the classification of problem gambling, the more knowledgeable respondents felt they were about the system.

i) Voluntary Enrolment Period

The Baseline II survey asked the panel specifically if they enrolled[37] or would enroll during the voluntary enrolment period. The survey explained to survey participants that this period did not require people to enroll with My Play to play the VL but they did need to enroll if they wished to use its information tools. As shown in Table 69, 31.9% said they would enroll and 27.7% said they would not. The majority, however, were undecided (40.4%).

[37] At the time of the Baseline II survey, the MPS had been implemented in some counties. Some members of the research panel then may have had the opportunity to actually enroll with MPS.

Table 69: My-Play Enrolment during Voluntary Enrolment Period (Baseline II)

Have you enrolled or will you enroll with MPS during the voluntary enrolment period?	% of VL Players N=141
Yes	31.9
No	27.7
Maybe	40.4

The intention to enroll was not related to VL playing frequency but was correlated with PGSI classification (r=.193, p<.05). The more severe the problem gambling classification of the respondent, the more likely the respondent intended to enroll during the voluntary enrolment period.

The 96 participants who responded "no" or "maybe" were asked to indicate from a list of reasons why they had not or did not intend not to enroll with MPS (see Table 70). The most common reasons were related to believing there was need for it; that is, they felt they had no problems with their gambling (66%) or did not play VL enough (63.7%) to warrant needing the MPS and its information tools.

Just under half of these respondents reported not enrolling or intending to enroll because they wanted to try out the MPS first before making any commitments (48.3%); did not want to give out their personal information (47.8%); and did not know enough about the enrolment process (46.7%) or MPS in general (42%).

Table 70: Reasons for not Enrolling with the MPS (Baseline II)

Reason	% of Non-enrollers	N
I don't have problems with my gambling to need to use MPS and its information tools	66.0	94
I don't play VL enough to need to use MPS and its information tools	63.7	91
I want to try out MPS first before I make any commitments to it	48.3	89
I don't want to give out my personal information	47.8	90
I don't know enough about the enrolment process	46.7	90
I don't know enough about MPS in general	42.0	88
I don't trust the MPS system	19.5	87
Enrolment with MPS seems too complicated	19.1	89
MPS will take too much time to use	15.6	90
I plan to stop playing VL and therefore I don't need to use the MPS and its information tools	13.8	87
MPS seems too difficult to understand or use	13.3	90

ii) Mandatory Enrolment Period

Enrollers

The Baseline II survey informed respondents that the MPS might become mandatory, meaning that to play VL, all players would need to enroll in the system. The use of the information tools, however, would remain optional. If enrolment became mandatory, the large majority of respondents indicated they would enroll for the MPS (85.7%) (see Table 71).

Among those who would enroll, about half would use the information tools, while 40% said they would try them out first and then decide if they wanted to continue being enrolled with MPS. Less than 1 in 10 would enroll in MPS but not use the information tools (see Table 71).

Table 71: My-Play Enrolment during Mandatory Enrolment Period

Enrolment Characteristics	**% of VL Players N=140**
Enroll with MPS	85.7
Among those who would enroll would …	**% of Enrollers N=120**
Use the information tools	54.2
Not use the information tools	5.8
Try out the information tools and then decide if they want to continue to be enrolled with MPS	40.0

Non-enrollers

Of those who would not enrol in the MPS (14.3%), a little less than half of them reported that they would stop playing VL altogether. Another 30% of them said they would either start gambling on something else besides VL or play VL somewhere else besides Nova Scotia (e.g., internet, another province). Lastly, one quarter (25%) said they would wait to see how their friends or others like the MPS before enrolling (see Table 72).

Table 72: My-Play Non-Enrolment during Mandatory Enrolment Period

Non-enrolment Characteristics	% of VL Players N=140
Would not enroll with MPS	14.3
Behaviour of Non-enrollers	**% of Non-enrollers N=20**
Stop playing VL altogether	45.0
Wait to see how your friends or others like it	25.0
Start gambling on something else besides VL (e.g., bingo, table games)	25.0
Play VL somewhere else besides Nova Scotia (e.g., Internet, another province)	5.0
Use someone else's MPS card	0.0

Concerns with Mandatory Enrolment of the MPS

In order to understand the types of issues VL players may have with mandatory enrolment, the respondents who would not enrol in the MPS during the mandatory enrolment period were read nine potential concerns they might have with the mandatory requirement. As shown in Table 73, the most common concern, which was endorsed by almost everyone, was that there was no benefit to enroll other than allowing them to play VL (95.2%). Eight out of 10 respondents thought that the MPS would make VL a hassle to play (81%).

The next most common concerns related to personal privacy and trust with 66.7% being concerned about giving out their personal information to enroll in the MPS; 61.9% being concerned about the government having information on their personal gambling activity; and 42.9% not trusting the MPS in general (see Table 73).

Table 73: Concerns with the Mandatory Enrolment of the MPS

Have following concern about mandatory enrolment …	% of Non-Enrollers N=21
There is no benefit to me to enrol and obtain a card other than allowing me to play VL	95.2
MPS will make VL a hassle for me (e.g., need to have my card all the time)	81.0
I don't like the fact that I have to give out my personal information to enroll for the MPS	66.7
I don't want the government to have information on my personal gambling activity	61.9
I don't trust the MPS	42.9
I don't know enough about the enrolment process for the MPS	33.3
I don't know enough about the MPS in general	33.3
Enrolment with the MPS seems too complicated	14.3
MPS seems to difficult to understand	9.5

Respondents who did not like the fact that they had to give out personal information to enroll in MPS or did not want the government to have information on their personal gambling activity were asked if they would enroll in MPS if it could be shown that their "personal information was only used to generate a unique player account and then permanently deleted" and that their information would be "completely anonymous"; 13.3% said they would enroll while 60% said they would "maybe" enroll.

All respondents who would not enroll with MPS during the mandatory enrolment period were asked if they would enroll, if the mandatory enrolment system could help other VL players to stay within their playing limits, even if the respondents themselves did not need MPS. About a third of them said they still declined to enroll (35%), while 15% said they would enroll for this reason. The majority, however, reported they would "maybe" enroll in this situation.

Table 74: Enrolment of the MPS

If you knew that requiring everyone to enroll for the MPS may help many VL players stay within their limits when playing video lotteries, would you enroll for MPS even though you, yourself, may not need it?	% of Non-enrollers N=20
Yes	15.0
No	35.0
Maybe	50.0

Summary of Key Baseline Measures

The overall goal of the *Research Panel Survey Study* is to follow a panel of regular VL players (i.e., played at least once a month) over two years to directly assess how their VL gambling and related behaviours and attitudes were influenced by the MPS availability. The original methodology proposed one pre-MPS survey that would act as a baseline measure to compare the panel's behaviour and attitudes post-MPS implementation. For this survey, we had a sample size of 227, which is the total sample size for this study.

However, due to the one year delay in the implementation of the MPS, we conducted a second baseline survey to obtain more recent measures of attitudes and behaviours of the panel. For this, survey we had a sample size of 141 in a shortened recruitment and survey administration period.

The current report provides the results of the two surveys of their behaviours and attitudes prior to the MPS implementation. These results will serve as baseline measures to compare the panel's responses to the four *Research Panel Surveys* that will be subsequently administered at various points after the MPS has been implemented. For the current report, we are less interested in any changes that may have occurred between the two baseline surveys but rather want to provide a "snapshot" of the panel's attitudes and behaviours with respect to gambling and the MPS.

For the sake of brevity and parsimony, we relegated certain results to the main section of the report and others to an appendix. Since the Baseline I survey contains the total sample size (N=227) we included all its results in the main section of the report since they would be the "starting point" of our longitudinal study. However, for the Baseline II survey results, we only included those related to the MPS since the survey asked additional questions on this topic than what was contained in the Baseline I survey. These questions provided a richer and more recent picture of their attitudes towards the MPS since it was administered closer to the actual MPS implementation. However, it should be remembered that only 62% of the total research panel completed Baseline II survey. For now, the rest of the Baseline II survey results are presented in tabular form in an Appendix but may become more pertinent in our longitudinal analysis of the research panel; the results of which will be presented in the Final Report of the *Research Panel Study*.

This summary lists the key highlights for each of the main sections of the Results Section. These highlights pertain mostly to those areas that will be monitored and evaluated over the course of the *Research Panel Study* to assess the impact of the MPS on the research panel's VL-related behaviours and attitudes.

VL Gambling

- In the past year, 25.1% of the research panel played VL more than once a week; 19.8% played once a week; 27.3% played 2-3 times a month; and 27.8% played once a month.

- The more frequent VL players in research panel tended to be older, retired, and have less education and a lower annual household income.
- In the past year the research panel reported spending, on average, $47.80 per session and $134.20 per month on VL. The more frequent players reported spending more money per month but not per session.
- In the past year, the research panel reported spending, on average, 2.08 hours per session and 14.35 hours per month on VL. The more frequent players reported spending more per session and per month.
- The most common types of VL spending limits the research panel used in the past year were limits on money (78%), followed by time (35.2%) and VL site visits (28.6%).

VL Attitudes

- Almost two-thirds of the research panel (62.1%) *very* or *completely* enjoy playing VL with the more frequent players expressing the most enjoyment. About 1 in 10 (11%) of the research panel enjoyed playing VL *a little* or *not at all*.

VL Site Behaviour and Other Gambling Activities

- The majority of the research panel (44.5%) reported spending between 1 and 2 hours at the VL site and a further 26.4% reported spending 3-5 hours.
- One-quarter of the research panel (25.6%) said they played VL 100% of the total time they were at the VL site. In general, the more frequent the VL player, the higher the percentage of the time they spent playing VL at the site.
- Besides playing VL at the site, about half of the research panel said they also eat (56.4%), hang out with friends (54.2%), and drink (53.7%).
- The most common gambling activities of the research panel were lottery tickets (88.5%), instant win/scratch, break-open, or pull tab tickets (77.1%), and casino slot machines. About one-quarter of the panel played casino table games (26.9%) and bingo (27.8%).

Gambling Problems

- 26.1% of the research panel had severe gambling problems; 27% had moderate gambling problems; 23.5% were at risk of having problems; and 23.5% gambled without problems.
- VL players with severe gambling problems were most likely to play more than once a week. Generally, the more severe the gambling problems, the more frequent the VL player.

- Almost half (47.1%) of the research panel reported experiencing problems with their own gambling in the past year. About 1 in 10 felt they experienced these problems *most* or *all* of the time.

- Almost one-third of the research panel (31.3%) felt that gambling caused problems with their family members and 3.1% believed it occurred *most* or *all* of the time.

- VL players with severe gambling problems spent the most money on VL at $88.80 per session and $352.30 per month. Generally, the more problematic the gambling, the more money spent per session and per month on VL.

- VL players with severe gambling problems spent the most time on VL at 2.68 hours per session and 15.25 hours per month. Generally, the more problematic the gambling, the more time spent per session and per month on VL.

MPS Attitudes and Opinions

- At Baseline I (one year prior to the MPS implementation), just over half of the research panel (55.9%) intended to enroll for the MPS when it is introduced and a third (33.9%) may enroll. One in ten (10.1%) did not intend to enroll. The most frequent VL players were the most likely to intend on enrolling.

- At Baseline II (shortly after MPS implementation or a few months prior to implementation), about a third of the research panel (31.9%) intended to enroll for the MPS during the voluntary enrolment period and 40.4% "may" enroll. A little over one-quarter of the panel did not enroll or intend to enroll (27.7%). The VL players with more gambling problems were more likely to enroll or intend on enrolling than those with fewer gambling problems.

- The most common reasons reported at Baseline II for not enrolling during the voluntary enrolment period was that the research panel did not perceive a need for the MPS. About two thirds of them felt they either had no problems with their gambling or did not play VL enough to warrant needing the MPS.

- At Baseline II, the large majority of the research panel (85.7%) intended to enroll for the MPS during the mandatory enrolment period. About half said they would use the MPS player information tools although another 40% said they would use the tools and then decide if they want to continue to be enrolled.

- At Baseline II, among those who said they would not enroll during the mandatory enrolment period, 45% said they would stop playing VL altogether. Another 30% said they would either play VL somewhere else besides Nova Scotia or gamble on something else besides VL.

- At Baseline II, most of the panel (over 80%) who would not enroll during the mandatory enrolment said that the MPS offers them no benefit to enroll or that it would make playing VL a hassle. Significant proportions also said they were concerned about giving out their personal information to enroll in MPS (66.7%) and the government having information on their personal gambling activity (61.9%).

- The research panel reported that they were most likely to use the following MPS player information tools: tracking winning and losing while playing (65.5%), tracking of wins and losses over a period of time (60.7%), and setting money limits on VL play (56.3%). While the ranking of the perceived likelihood of using the tools stayed the same from Baseline I to Baseline II, overall, the panel expressed a lower likelihood of use for all the tools at Baseline II.

- At both Baselines I and II, the more frequent the VL gambling, the more likely they would use the self-banning for a specific period of time. With respect to problem gambling, the more gambling problems a player had, the more likely they intended to use the self-limits based on time and the self-bans based on specific days and a specific period of time.

- Although the self-banning tools (i.e., on specific days or for a specified time period) were the least likely tools to be used by the research panel overall, panel members who played most frequently and had the most problems expressed a greater likelihood of using them.

- At Baseline II, over 85% of the research panel felt the information tools were a good thing to offer VL players and could help them be more informed about their play, as well as manage their play. Overall at both Baselines I and II, slightly more than half of the panel (55%) believed the MPS tools would help VL players either monitor and control their VL gambling.

CHAPTER 4: ENVIRONMENTAL SCAN: AN ECONOMIC ANALYSIS OF THE VL MARKET IN NOVA SCOTIA

This study includes:

- The general economic context in Nova Scotia
- Information about the gaming industry in the province
- Highlights of the evolution of VLs in the province, including measures to encourage responsible gaming
- A brief assessment of the current state of VLs in the gaming sector
- A look at the future for VLs, including any planned changes outside of the MPS

GENERAL ECONOMIC CONTEXT

The current population of the province is approximately 935,000 (Nova Scotia Department of Finance) and is holding constant. In 2002, the population was 934,507 and in 2007 it was 934,147 – virtually unchanged. There is some net internal migration to Halifax, whose population grew by 3.1% (from 373,817 to 385,457) during this same time period.

Real personal income per capita has been rising in recent years; e.g., an increase of 8.8% in personal income per capita compared to a 5.3% increase in the consumer price index in the two year period 2005-2007.

Despite this trend, income levels remain below the national average, although moving slightly upward over time. In 2002, the average individual income in Nova Scotia ($20,300) stood at 84.9% of the income of the average Canadian. By 2006, this had risen to $23,900, or 87.2% of the average.

The unemployment rate in Nova Scotia, although historically higher than the national average, had been trending down. The unemployment rate for Canada between August 2007 and August 2008 stayed constant at 6.1%, while the rate in Nova Scotia declined from 8.1% to 7.0%.

However, since then the unemployment rate has risen by 1.6% for Canada and 1.8% for Nova Scotia. In other words, the province is experiencing the effects of recent world wide economic downturn on a relatively proportional basis within Canada.

Provincial finances for 2008-09 indicate a surplus is expected for the year, albeit much smaller than originally forecast. In August 2008, the province projected a surplus of $355million based on revenues of $8,296,000. That was revised in December to show a surplus of $213million on revenues of $8,120,000.

GAMING INDUSTRY IN NOVA SCOTIA

In 1995, the province enacted the *Gaming Control Act*, which allocated responsibilities to two agencies:

- The NSGC, a Crown corporation, carries out the business, including casinos and ticket lotteries, in addition to VLTs; and,
- The Nova Scotia Alcohol and Gaming Division regulates and evaluates gaming.

The NSGC has a mandate to ensure gaming is as socially responsible as possible and generates reasonable economic returns. They oversee the gaming operators, namely:

- The Great Canadian Gaming Corporation, with casinos in Halifax and Sydney
- The Atlantic Lottery Corporation (ALC), which operates the ticket and VL business lines

There are five types of regulated gambling in Nova Scotia. The following table shows amounts wagered in 2006-07 in declining order by type. (Source: 2007 Adult Gambling Prevalence Study, Department of Health Promotion and Protection, Nova Scotia). It also indicates that three types of gaming, namely VLTs, casinos and lotteries account for 93.4% of the sector.

Table 75: Amounts Wagered in 2006 – 07

TYPE OF GAMING	$M's	% Total
VL	717	47.2
CASINOS	489	32.1
ALC LOTTERY SALES	215	14.1
BINGO	68	4.5
CHARITABLE LOTTERY	32	2.1
TOTAL	1,521	100.0

The net revenues from gaming become part of general revenues to the provincial government. In 2007-08, the NSGC contributed $153.6 million to the province and is budgeting for $152 million for 2008-09. The latest forecast of provincial revenues by the Department of Finance (December 19, 2008) shows a total revenue forecast of $8,107,000. Consequently, as a percent of total revenues, the NSGC contributes about 1.9%.

EVOLUTION OF VLTS IN NOVA SCOTIA

The history of regulated VLTs in the province is a relatively short one; prior to 1991, the province had no formal role and the terminals were located in many different types of businesses, including small corner stores. In that year, VLTs were legalized. In 1993, they were restricted to liquor licensed sites only, including legions.

The province specifies the revenue sharing arrangements for the Atlantic Lottery Corporation and the 391 retailers themselves. Separate gaming agreements are also in place for First Nations.

From 1991 to 1998, the number of terminals grew steadily from about 1,500 to more than 3,000. In 1998, provincial legislation imposed a maximum of 3,234 excluding VLTs on reserves.

Amounts wagered using VLTs as a percentage of totals wagered on regulated gambling have varied over time. Annual gaming reports indicate:

- The percentage was 47.6% in 1996;
- It rose to 57.3% by 2005; and,
- Since 2005 it has declined to 46.1%.

The decline in totals wagered using VLTs since 2005 is primarily the result of changes announced by the province in April of that year in the report entitled *A Better Balance: Nova Scotia's First Gaming Strategy.* The specific actions contributing to the decline were:

- Removal of 1,000 VLTs in profit retail locations, taking the total from 3,234 to 2,234;
- Reduction in hours of operation (eliminated play after midnight);
- Removal of 'stop' button on all VLTs; and,
- Reduction in speed of VLT games by 30%.

CURRENT STATE OF VLTS IN THE GAMING SECTOR

Compared to traditional types of economic activity, regulated gambling is still relatively new:

- The ALC was established some 33 years ago, in 1976;
- On-line ticket lotteries and instant lottery tickets date back to the early 1980's (e.g. Lotto 6/49 in 1982 and instant games in 1983); and,
- As mentioned, regulation of VLTs began in 1991.

Despite its relatively short history, there are indications some types of gambling are more 'mature' than others. Figures from the ALC for ticket lotteries indicate small declines in absolute dollar terms over the past four years, as shown in the Table 76.

Table 76: ALC Wagering, Prizes and Revenues – Ticket Lotteries

	2003-04 ($m)	2007-08 ($m)	OVERALL % DROP
TOTAL WAGERED	206.3	203.3	1.5
PRIZES	114.6	113.6	.9
GROSS REVENUE	91.6	89.7	1.0

Business plans of the NSGC point to new products and a greater share of sales devoted to prizes as part of the strategy for these products.

In contrast, casino revenues over the same four-year period show growth each year in provincial net revenues. For 2003-04, these stood at $24.7 million. By 2007-08, they had reached $32.7 million – an average annual increase of some 7.2%. Maintaining growth will likely rely on popular entertainers, new games and fine hospitality.

The figures for VLTs in this time frame indicate the extent to which the changes announced in April of 2005 can be seen as a watershed event. (see Table 77)

Table 77: Annual VL Results

YEAR	REVENUES ($m)	NET INCOME ($m)
2002-03	182.3	117.9
2003-04	182.9	117.9
2004-05	200.2	132.6
2005-06	182.2	117.4
2006-07	151.3	95.7
2007-08	140.7	94.9

Examination of the amounts of Payment to the Province (i.e. net of all expenses) from VLTs on a quarter by quarter basis highlights some specific events which have had an impact. (see Table 78)

Table 78: Quarterly Amounts of Payment to the Province

2006-07		2007-08		2008-09	
Quarter	$m	Quarter	$m	Quarter	$m
Q1	23.8	Q1	22.2	Q1	24.8
Q2	25.2	Q2	23.4	Q2	25.1
Q3	25.2	Q3	24.3		
Q4	21.4	Q4	24.0		

In the fiscal year 2006-07, the drop in payments between Q1 and Q2 can be attributed to the complete smoking ban in establishments with VLTs as of December 1, 2006.

Revenues have since resumed an upward trend, due to the new WinWave terminals and the Asset Management Program of the NSGC. As part of this program, some VLTs were "moved to sites that meet NSGC's new Retailer Policies which are aimed at improving customer service and further integrating social responsibility principles." (NSGC financial highlights for first quarter ended June 30, 2008 (unaudited)).

It is important to note the revenues from First Nations' VLTs has been growing steadily over a long time period:

- In 1997-98 there were 403 VLTs in First Nation communities, generating about $10.6 million;
- Five years later (2002-03) this had grown to 568 VLTs and some $26.7 million; and,
- After another six years, (i.e., the projection for 2008-09) the expectation is for 595 VLTs and revenues of about $51 million, according to the NSGC.

This points to a shift by consumers to First Nations' locations, likely due to the fact that they operate VLTs past midnight and allow smoking. It should be noted that the MPS will also be introduced in First Nations sites and therefore should not be a factor in moving the proportion of gaming either towards or away from First Nations sites.

CHAPTER 5: IMPLICATIONS FOR THE MPS IN NOVA SCOTIA

The baseline report presents the findings from the first stage of data collection in the evaluation of the MPS. The objective of this report is to describe the current status of the various impact areas prior to the implementation of the MPS; namely, behaviour and attitudes among VL players in Nova Scotia and our specific VL player research panel, as well as VL revenue and economic activity. Findings in these areas will take on greater meaning when the subsequent stages of data collection have been completed. At this point, they represent the pre-MPS baseline measurements for three study components of the evaluation.

The *General Population Survey Study* provides an initial snapshot of the general adult population in Nova Scotia. The *Research Panel Survey Study* describes the characteristics of a group of regular VL players who will be followed over time during the three-year course of the MPS implementation. Lastly, the *Environmental Scan* describes the broader context of VL provision in Nova Scotia and highlights some other factors that may need to be considered when examining the impact of the MPS.

While each study has their own specific objectives, their baseline findings provide some insight about future MPS use among VL players.

□ VL players were generally interested in the MPS

- About half of all the players surveyed indicated they were interested in the MPS by intending to either enroll for a card or use its information tools
- Greater interest was expressed among VL players who played very frequently (i.e., weekly) and who had gambling problems.

□ While mandatory enrolment may not discourage regular gamblers, it may still discourage a significant portion of players from enrolling with the MPS to continue playing VL.

- 44% of all players would stop playing VL if MPS enrolment was a requirement to play
- 20.9% of players who would not get a card and 47.6% of those who said they would maybe get a card during the voluntary enrolment phase said they would enroll for a card and continue playing VL if the card became mandatory

□ VL players generally thought that the specific player information tools would be useful.

- Whereas 20% of the *general population survey* players would enroll for the card, 41.7% said they would use the card's information tools, suggesting that more players were interested in using the actual information tools than enrolling for the card.
- Over 80% of players who would enroll for the card during the mandatory phase would use the card's information tools.

- Of the large majority of the *Research Panel* believed the tools generally would help VL players be more informed about their play, as well as manage it.

- The tools that VL players thought would be most useful were the abilities to see how much they were winning and losing (during a game or over a specified time period) and to set money limits on their VL play.

□ The MPS was more attractive to VL players with gambling problems.

- Almost two-thirds of players with gambling problems (64.7%) said they would get a card and use its information tools during the voluntary enrolment period.

- Players with more gambling problems generally viewed the specific information tools to be more useful or reported that they would be more likely to use them.

- The self-exclusion function, in particular, which was considered to be the least useful feature among all the VL players, was more likely to be seen as useful by players with gambling problems.

APPENDIX A

Detailed Statistical Procedures and Criteria

Pearson Chi-Square

The adjusted standard residuals for each table cell were used to identify the individual variable groups that specifically differed from the total population (i.e., adjusted standard residual > |2|). Due to the low counts for some variables, some chi-square analyses were limited by cells with expected value counts of less than five. If a chi-square result was significant in these cases, the overall number of cells for the analysis had to be greater than nine to qualify for further interpretation. Furthermore, for analyses with over nine cells, at least 80% of the cells had to have expected counts greater than five for a significant result to be reported. In some cases, original categories with low counts were combined to increase statistical power of the chi-square analyses and circumvent the expected value cell requirements.

ANOVA (Analysis of Variance)

Significant mean differences were accepted only when the assumptions of homogeneity of variance and normal distribution had been satisfied. Because the money and time expenditures were skewed with extreme outliers, we transformed the data into their log values to normalize the sample distribution. ANOVA was conducted using the log values and log means.

Averages

Due to the high variability in the raw data for these gambling expenditure variables, we refer to the geometric means or averages in the report. The geometric mean is the average of the logarithmic values of a dataset, converted back to base 10 number.[38] This type of average is a more stable indicator of the central tendency of the data because it is more resistant to extreme outliers (as opposed to the arithmetic mean which is affected greatly by extreme scores).

[38] The geometric mean is calculated by multiplying the scores and taking the nth root of the product. For monthly money and time expenditures, there were 0 scores, which would result in a geometric mean of 0. To eliminate 0 scores, we added 1 to all the scores and calculated the geometric mean from those adjusted scores.

APPENDIX B

VL Gambling

Frequency of VL Play at Baseline

Baseline	Daily %	2-6 times a week %	Once a week %	2 -3 times a month %	Once a month %	N
I	5.3	19.8	19.8	27.3	27.8	**227**
II	1.4	12.1	25.5	30.5	30.5	**141**

Reported Dollars Spent on VL at Baseline

Measure	Baseline I	Baseline II
	Reported Dollars Spent on VL per Session	
Average (SE)	70.00 (5.00)	64.75 (5.76)
Geometric average	47.80	45.63
Median	50.00	47.50
N	**225**	**140**
	Reported Dollars Spent on VL per Month	
Average (SE)	279.52 (33.68)	187.95 (16.77)
Geometric average	134.20	109.69
Median	150.00	120.00
N	**223**	**140**

Reported Hours Spent on VL at Baseline

Measure	Baseline I	Baseline II
	Reported Hours Spent on VL per Session	
Average (SE)	2.08 (.11)	1.72 (.101)
Geometric average	1.52	1.31
Median	2.00	1.50
N	**224**	**139**
	Reported Hours Spent on VL per Month	
Average (SE)	14.35 (1.74)	10.06 (1.87)
Geometric average	6.10	4.70
Median	6.00	5.00
N	**219**	**138**

Types of Limits Set in the Past Year at Baseline

Type of Limit Set in Past Year	Baseline I N=227 %	Baseline II N=141 %
Limited amount of money spent	78.0	85.8
Limited amount of time spent	35.2	32.6
Set limit on visits to site	28.6	30.5

VL Attitudes

General Enjoyment of Playing VL at Baseline

Enjoyment level	Baseline I %	Baseline II %
Not at all	3.5	2.8
A little	7.5	4.3
Somewhat	26.9	32.6
Very	38.3	43.3
Completely	23.8	16.3
Don’t know	0.0	.7
N	**227**	**141**

General Knowledge of VL at Baseline

Knowledge Level	Baseline I %	Baseline II %
Not at all	10.6	16.3
A little	18.1	13.5
Somewhat	33.2	37.6
Very	24.8	23.4
Completely	13.3	8.5
Don't know	0.0	.7
N	**226**	**141**

VL Site Behaviour and Other Gambling Activities

Total Time Spent at VL Sites at Baseline

Total Time Spent at VL site	Baseline I %	Baseline II %
Less than 30 minutes	6.6	8.6
Less than 1 hr	19.4	13.7
1 - 2 hrs	44.5	45.7
3-5 hrs	26.4	28.8
6-9 hrs	1.8	1.4
Greater than 9 hours	1.3	0.0
N	**227**	**139**

Percentage of Time Playing VL at Site at Baseline

Percentage of time playing VL at site	Baseline I %	Baseline II %
10%	13.3	18.7
25%	12.4	14.4
50%	25.7	18.0
75%	23.0	22.3
100%	25.7	26.6
N	**226**	**139**

Activities at Site Other than Playing VL at Baseline

Activity	Baseline I N=227 %	Baseline II N=141 %
Eat	56.4	56.7
Hang out with friends	54.2	50.4
Drink	53.7	57.4
Play games (e.g. pool, darts)	29.1	22.0
Meet people	28.2	26.2
Watch TV	23.8	16.3
People watch	20.3	9.2
Other	11.9	4.3

Past year Gambling Activity Participation at Baseline

Gambling Activities	Baseline I N=227 %	Baseline II N=141 %
Lottery tickets	88.5	95.0
Instant win scratch tickets, break open or pull tab	77.1	80.9
Slot machines at casinos	55.9	57.4
Casino games like poker, blackjack, roulette or keno	26.9	29.8
Bingo	27.8	24.8
Sport select like Pro-line, over/under	11.5	9.2
Internet (casino table games, slot machines/VL, poker)	10.6	9.9
Horse races - both live and off-track	3.5	5.7
Other	2.7	.7
Internet sports betting	2.2	.7

Gambling Problems

Frequency of Spending More than One can Afford on Gambling at Baseline

Baseline	Never	Rarely	Some of the time	Most of the time	All of the time	N
I	42.3	22.9	18.5	11.9	4.4	**227**
II	53.2	24.1	15.6	4.3	2.8	**141**

PGSI Classification at Baseline

PGSI classification	Baseline I %	Baseline II %
Non-problem gambling	23.5	29.1
At-risk gambling	23.5	26.2
Moderate problem gambling	27.0	29.1
Severe problem gambling	26.1	15.6
N	**226**	**141**

Concerned about Own VL Play at Baseline

Concerned about own VL play	Baseline 1	Baseline II
%	39.6	30.5
N	**227**	**141**

Frequency of Experiencing Problems with Own Gambling at Baseline

Baseline	Never	Rarely	Some of the time	Most of the time	All of the time	N
I	52.9	18.1	19.4	7.9	1.8	**227**
II	58.2	23.4	12.8	3.5	2.1	**141**

Frequency of Gambling Causing Problems with Family Members at Baseline

Baseline	Never	Rarely	Some of the time	Most of the time	All of the time	N
I	68.7	15.4	12.8	1.3	1.8	**227**
II	75.9	11.3	8.5	2.8	1.4	**141**

My-Play System Evaluation 2008-2011: Interim Report

August 2012

RGC | CENTRE FOR THE ADVANCEMENT OF BEST PRACTICES

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CHAPTER 1: BACKGROUND

The *RGC Centre for the Advancement of Best Practices* is undertaking the evaluation of the My-Play System (MPS) (formerly known as the Informed Player Choice System or IPCS) in Nova Scotia. The MPS is a card-based system that was integrated into video lottery terminals (VLTs) in Nova Scotia in July 2010 to enable players to obtain information about their play activity, as well as set limits on their play. The overall goal of the evaluation is to assess the impact of the MPS on video lottery (VL) play activity in the province over time.

The complete evaluation will take place over four years during which time the MPS will be available on a voluntary and then mandatory enrolment basis. The evaluation consists of six individual study components: *General Population Survey Study*, *Research Panel Survey Study*, *Focus Groups*, *Player Tracking Data Study*, *VL Revenue Activity Study*, and *Environmental Scan*. This interim report assesses the impact of MPS during its voluntary enrolment period based on data from the *General Population Survey Study*, *Player Tracking Data Study*, and *VL Revenue Activity Study.* The findings provide the first look at the overall impact of the province-wide implementation of the MPS on VL activity and related perceptions, attitudes and behaviours when VL players have the option to enrol with the MPS to play VLTs.

My-Play System Background

In 2005, the Government of Nova Scotia introduced *A Better Balance: Nova Scotia's First Gaming Strategy.* It was a five-year plan that focused on addressing problem gambling treatment and prevention. Among the 23 initiatives outlined in the *Gaming Strategy*, those that pertained to VL called for the reduction of VL hours, terminals, speed of games, the removal of the stop button feature, and the pilot of a VL "player management tool" that would provide players with their play information.

In line with this strategy, the NSGC conducted an 18-month research study on the responsible gaming tools of Techlink Entertainment's *Responsible Gaming Device* (Techlink; RGD). The RGD is a device that is attached to existing VLTs to track and store player data. The purpose of the study was to assess the impact of various responsible gaming tools had on players' attitudes and behaviours. The tools gave players information on their play history and the ability to set money or time limits. The study sought to determine if the tools:

- Had a positive effect of informing players;
- Provided players with an opportunity to exercise more control of their play; and,
- Facilitated responsible gambling behaviour.

The RGD study was pilot tested in Windsor and Mt. Uniacke, Nova Scotia in 2005-06. All VL players in these two areas were required to use a 'responsible gaming card' to begin play on a VLT during the study period. After entering their personal PIN, players had the option of using or ignoring the player information tools of the card during play. The study found that a majority

of players benefited from having the ability to check their play history by helping them to stay within budget.

Independent evaluations of the RGD study were conducted by three research groups: Omnifacts Bristol Research, Focal Research Consultants Ltd. and Dr. Bo Bernhard of the University of Nevada. All three evaluations recommended the implementation of the RGD with voluntary or mandatory player enrolment and voluntary access to all the information tools.

2010 My-Play System

With the positive findings from three independent evaluations of the RGD, the NSGC committed to a province-wide launch of the MPS for its VLTs. The MPS has five information tools that are intended to help players make more informed gaming decisions:

- *My Live Action*: Shows players information on the VLT currently in play for the current session. It begins when the player logs into the system and ends when the card is removed.
- *My Account*: Displays the total amount of money spent and time played for the current year, month, week or day. The tool gives the player two options to view - money played or time played.
- *My Money Limit*: Allows players to choose the maximum amount they wish to spend for a day, week, month or year.
- *My Play Limit*: Allows players to restrict the amount of time played and block the times they do not want to play.
- *My Stop Play*: Immediately stops players from playing for 24, 48 or 72 hours. Once the Stop is set, it cannot be undone.

The roll-out of the MPS began in October 2009 after a 4 month field test in Sydney. In July 2010, the system went province wide offering all VL players the option to enrol with the MPS, although enrolment was not required to play a VLT. After the voluntary enrolment period (from July 2010 to March 2012), the MPS is expected to transition to *mandatory* enrolment whereby players would be required to enrol with the MPS to play a VLT. Irrespective of either type of enrolment, the use of the specific MP information tools would remain voluntary.

VL players can enrol at any venue across the province. To create an account, a player swipes or scans a government issued ID at an enrolment terminal. The ID data is then scrambled and discarded to make a unique, confidential account identifier in the system. This unique identifier allows players to access their play activity as well as use the player information tools. These tools are accessed through a separate player interface that has been integrated into each VLT.

Goal of the MPS Evaluation

In 2008, the NSGC issued a Request for Proposal to assess the impact of the MPS in Nova Scotia and the *RGC Centre for the Advancement of Best Practices* (RGC) was awarded the project. To conduct this evaluation the RGC proposed a longitudinal study design where VL activity and related perceptions, attitudes and behaviours are monitored over time to determine any changes from before the system was available to after the system was available. Central to all the study components of the evaluation are two features:

- A *baseline* measurement whereby data on VL activity and related attitudes and behaviours are collected prior to MPS implementation.
- An *impact assessment* whereby data on VL activity and attitudes is collected for a time period during MPS availability and compared to the baseline measurements to determine any changes in VL activity and attitudes.

Evaluation Study Components

The complete evaluation consists of six individual study components that investigate the impact of the MPS from different perspectives.

General Population Survey Study

Purpose: Assess the impact of the MPS at a provincial populational level.

This study surveys the general adult population of Nova Scotians about their VL play behaviours and attitudes, gambling and problem gambling behaviour, MPS perceptions and use, and general perceptions and attitudes towards VL provision in Nova Scotia. The study will administer at total of three surveys at different times: a baseline survey prior to the implementation of the MPS and two subsequent surveys when the MPS is made available on a voluntary enrolment basis (Time 1) and a mandatory enrolment basis (Time 2). The study will aim to identify changes in VL and MPS perceptions, attitudes and behaviours in the general population across the baseline and voluntary and mandatory enrolment periods.

Research Panel Survey Study

Purpose: Assess the more direct impact of the MPS on regular VL players

The study follows a research panel of 227 regular VL players (i.e., played at least once a month) on their VL play behaviour and attitudes, MPS attitudes and usage, and gambling and problem gambling behaviour. The panel will be surveyed six times over a three-year period that will cover the pre-system, voluntary enrolment, and mandatory enrolment periods.

Focus Group Study

Purpose: Obtain qualitative feedback on VL players and retailers' opinions of the MPS and its information tools for the development of MPS promotional materials and an elaboration of findings from the *Research Panel Survey Study*.

This study will obtain specific views of VL players towards the MPS as well as information about their information usage. Focus groups enable a deeper and richer understanding of players' views than that collected from the *General Population Survey* and *Research Panel Survey*. Two focus groups were conducted in November 2008 with VL players and retailers to aid in the development of promotional materials. Two focus groups were conducted in February 2011 to obtain player impressions of the MPS and its information tools during the voluntary enrolment period. Two additional focus groups will take place during the mandatory enrolment periods of the MPS to further explore findings from the *Research Panel Survey*.

Player Tracking Data Study

Purpose: Assess impact of MPS information tool usage on actual VL play activity

Whereas the *General Population Survey* and *Research Panel Survey* studies rely on self-reported data, this study will be based upon actual play activity and MPS usage data of VL players, which is held within the VL central computer system database. Therefore, only VL players who enrol for and use the card are eligible for this study. Specific data on VL play activity (e.g., cash-in, cash-out) and player information tool usage (e.g., viewing play history, setting limits) will be tracked over the course of the roll-out for both the research panel and all VL players enrolled for the MPS card.

The tracking of the research panel members will enable an analysis of their actual VL play patterns and MPS usage, as well as an assessment of the accuracy of the research panel's self-reported play activity by comparing their estimates to their actual play activity. The tracking of all VL players enrolled for the MPS will enable an analysis of VL play and MPS usage on a wider level for all VL players, particularly in the mandatory enrolment period when all players must be enrolled to access terminals in Nova Scotia.[1]

VL Revenue Tracking Data Study

Purpose: Assess the impact of the MPS on VL revenue activity

[1] In order to familiarize players with mandatory enrolment, in addition to "full" enrolment where players provide their personal information to create a unique identifier that is attached to their card, the government will also offer a "light" enrolment option that does not require personal information to obtain a card. MPS cards obtained through either through full or light enrolment will be required to play VLTs, however. Light enrolment will be available to players at all times so if players lose their card, they can simply enrol for another card and continue playing. However, in doing so, any spending information or settings (e.g., limits) from the first card cannot be carried over to the new card because the government will be unable to track the card since no personal information was attached to it. For the purposes of tracking VL player data then, we cannot assume that one player has one card. With light enrolment, a player may have multiple cards.

This study explores any changes to the VL revenue activity in Nova Scotia as it relates to the MPS implementation. Revenue activity of all VL in Nova Scotia will be collected in aggregate and assessed throughout the evaluation period including the pre-system, voluntary enrolment, and mandatory enrolment periods.

Environmental Scan

Purpose: Provide the broader context in which the MPS is being implemented and evaluated

This study looks at other factors that may have an impact on the VL business line. These include: government regulations; economic environment of Nova Scotia; VL market in Nova Scotia, emerging trends and any new strategies developed by government. A total of two scans will be conducted: one prior to the implementation of the MPS and another at the end of the evaluation.

The Institutional Review Board[2] reviewed and approved all study components' methodologies, including the following instruments: recruitment advertisements, consent forms, general population surveys, research panel surveys, pre-focus group questionnaires, and focus group discussion guides.

The results of all study components will be presented in three reports based on the stage of data collection for each study:

- Baseline Report;
- Interim Report; and,
- Final Report.

Interim Report

This report presents the current findings from the *General Population Survey Study*, *Player Tracking Data Study*, and *VL Revenue Tracking Data Study*. These results provide a snapshot of MPS involvement, the impact of MPS availability on people's perceptions, attitudes and behaviours and VL revenue activity in the province when VL players have the option to enrol in the MPS.

[2] The IRB is a private, independent company that specializes in expediting Ethics Review for proposed research involving human participants in Canada and other countries.

CHAPTER 2: VOLUNTARY MPS ENROLMENT TIME 1 SURVEY STUDY

GENERAL POPULATION SURVEY STUDY OBJECTIVES

The general population survey study assesses the broad impact of the MPS on the VL players and the general adult population in Nova Scotia. The study employs a longitudinal design whereby a baseline survey is administered to a randomly selected sample of adult Nova Scotians prior to the MPS implementation and two subsequent surveys are administered after the MPS has been implemented. Each subsequent survey will assess a specific approach to MPS enrolment. The first survey (i.e., Time 1) occurs when VL players have the option to enrol in the system and the second survey (i.e., Time 2) occurs when VL players are required to enrol in the system to play VLTs. By comparing the results from the baseline, Time 1 and Time 2 surveys, we will attempt to understand the broader impact of the MPS on the general Nova Scotian adult population in terms of VL gambling and related perceptions, attitudes, and behaviours.

This chapter presents the findings from the Time 1 survey and provides a broad current snapshot of MP involvement in Nova Scotia during the voluntary enrolment period of the MPS. Further, it compares VL gambling and related perceptions, attitudes, and behaviours of this period with that of the baseline period to identify any changes in these areas from when the MPS was not available.

Before we provide the details of the Time 1 survey, we first present a discussion of the key findings.

MPS INVOLVEMENT AND IMPACT IN NOVA SCOTIA DURING THE VOLUNTARY ENROLMENT PERIOD: A DISCUSSION OF KEY TIME 1 SURVEY FINDINGS

MPS Involvement

MPS enrolment was relatively low as 7% of past year VL players voluntarily enrolled or intended to enrol in the MPS. Another 7% expressed some interest in MPS. Only 1 in 10 VL players said they would enrol in the MPS when enrolment becomes mandatory; although about a third indicated that they would at least try it for a bit and then decide. On the other hand, 43% said they would stop playing VL if they were required to enrol with MPS to play.

From their own perspective, the most common reason for the reluctance to enrol during the voluntary enrolment period was that VL players did not perceive a need. At least three-quarters of VL players indicated they either did not play enough or did not have any gambling problems to warrant its use. Roughly half also said they did not enrol because they did not know enough about the MPS or its enrolment process, or they did not trust the MPS in some way (e.g., privacy assurance).

While the large majority of VL players admitted they were not at all knowledgeable about the MPS, this self-perceived knowledge was not related to whether a VL player was interested in the

MPS or not (as measured by their actual enrolment, intention to enrol or possibly enrol). In fact, we did not find any of the other examined variables related to socio-demographics, VL play frequency, expenditure, and limit-setting, reasons for playing VL, knowledge of how VLTs work, opinion of VL provision in Nova Scotia, and gambling concerns and problems, to vary with voluntary enrolment.

Voluntary MPS Enrolment Impact

There were some general indications that VL gambling intensity declined from the time that there was no MPS to the time that the MPS was fully available for VL players to voluntarily enrol. While overall VL participation and self-reported money or time expenditures did not change, there was some evidence of a significant decrease of VL players who played at least once a month. In addition, VL players tended to place limits on the play sessions than when there was no MPS. There was also strong indication of a decrease in gambling concerns and problems amongst VL players between the pre-MPS and voluntary MPS enrolment periods.

Lastly, although there was strong evidence to show that VL players increased their lottery and instant win ticket purchases from the pre-MPS to voluntary MPS enrolment periods, it is unlikely that this is due to the MPS discouraging VL play since there was a general increase in lottery and instant win ticket purchases amongst all gamblers during this same time period.

TIME 1 SURVEY METHODOLOGY

Consistent with the baseline general population telephone survey administration, the RGC commissioned *Thinkwell Research Inc*. to administer the Time 1 survey on adults 19 years and over in Nova Scotia. Located in Halifax, Nova Scotia, *Thinkwell Research* designed and managed the sampling process, as well as managed the data collection process throughout the telephone survey administration.

Sampling Strategy

Originally, the *General Population Telephone Survey Study* was intended to follow the same baseline survey participants over time. A total of 2001 adults (19+) completed the Baseline survey. For the Time 1 survey we recruited 445 people from the baseline (22% of original sample). This low recruitment was likely due to the long two year delay between the Baseline and Time 1 surveys and only 44% of the 2001 baseline respondents consenting to being contacted for the subsequent surveys in the first place. In light of further expected sample attrition, we risked having insufficient statistical power to analyze for population changes particularly in relation to the last Time 2 survey when it was mandatory to enrol in the MPS to play VLTs. Thus, we recruited another random sample from the general adult population to complete the Time 1 survey. This additional sample improves our analytical power for the study in three ways:

- The larger Time 1 survey sample size provides more reliable population estimates at Time 1

- The new Time 1 recruits enable an additional Baseline vs Time 1 analysis that compares two large separate cross-sections of the random population taken at Baseline and Time 1. This comparison supplements the original follow-up of the Baseline recruits from Baseline to Time 1.
- The larger Time 1 survey sample size increases the recruitment potential for a larger Time 2 follow-up sample from Time 1, thereby strengthening the follow-up comparison of the Time 1 recruits between the voluntary and mandatory MPS enrolment periods.

In total, 2064 people completed the Time 1 survey; 445 people were recruited from the baseline survey (i.e., Baseline recruits) and 1619 were newly recruited at Time 1 (i.e., Time 1 recruits) (see Table 1).

Table 1: Time 1 Survey Sample Recruits and Sample Size

Survey Sample Recruitment	Sample Size
Baseline Recruits	445
Time 1 Recruits	1619
Total	**2064**

Baseline Recruits

The Baseline recruits were obtained from a list that was prepared from the Baseline survey administration. At the completion of the Baseline survey, respondents were asked if they would be interested in doing a follow-up survey. If yes, they were asked how they would like to do the survey (i.e., telephone or online) and to provide an email address as well as other phone numbers with which we would be able to contact them in over a year's time. The total number of people who consented was 878.

Time 1 Recruits

Following the sampling recruitment method for the Baseline survey, Sampling Modeling Research Technologies Inc. (SMRT) provided the survey sample in co-ordination with *Thinkwell Research Inc*. Using SMRT's "Instant Sampler", the telephone sample was drawn from a compiled database of all listed numbers along with injected RDD (Random Digit Dialling) numbers that were cleaned against listed and injected numbers to represent the proportion of unlisted numbers in each geographic region.

Survey Design

The RGC designed the Time 1 survey in consultation with the Nova Scotia Gaming Corporation (NSGC). The areas of enquiry were:

- General gambling behaviours;
- VL gambling behaviours and specific attitudes;
- MPS involvement and attitudes;

- General attitudes towards VL and VL provision;
- Gambling-related problems and;
- Socio-demographic characteristics.

To assess gambling-related problems, the survey included the Problem Gambling Severity Index (PGSI) from the Canadian Problem Gambling Index (CPGI). The PGSI measures the severity of gambling-associated problems that survey respondents experienced in the past 12 months (Ferris & Wynne, 2001). The PGSI has nine question items, which include chasing losses, escalating to maintain excitement, borrowing/selling to get gambling money, betting more than one can afford, feeling guilty, being criticized by others, harm to health, financial difficulties, and feeling one might have a problem with gambling. Scoring is based on the frequency in which respondents experienced these items within the past 12 months and the scores can range from 0 to 27.

Respondents were divided into four main classifications based on their PGSI score. Table 2 gives a description of each classification and their respective PGSI scores. Due to the low counts found in each group, those who had moderate to severe gambling problems were combined into one group (i.e., problem gambling) to enable more statistically reliable and useful PGSI analyses.

Table 2: PGSI Classification Used For General Population Survey Study

PGSI classification	Description	PGSI score
Non-gambling	Did not gamble in past 12 months	PGSI not administered
Non-problem gambling	Gambled without problems in past 12 months	0
At-risk gambling	Are at risk of having gambling problems	1-2
Problem gambling	Have moderate to severe gambling problems	3+

The CPGI has received extensive psychometric testing (Ferris & Wynne, 2001). Reliability of the measure has been shown to be good, with a co-efficient alpha of .84. Test-retest analysis produced an acceptable correlation of .78.

Survey Administration

Under the supervision of *Thinkwell Research, Vision Research Inc.*, a call centre facility in Charlottetown, PEI, conducted the telephone interviews during March 3-23, 2011. All interviews were done by fully-trained and supervised interviewers. Once someone answered the phone, the interviewer first introduced themselves as a representative from *Thinkwell Research* who was conducting a research survey on behalf of the *Responsible Gambling Council*, an independent non-profit organization committed to problem gambling prevention. For calls to the Baseline recruits, the interviewer asked to speak to the specific individual by name while for

calls to the Time 1 recruits (i.e., new recruits), the interviewer asked for the person in the household with the most recent birthday and who was over 19 years of age. The interviewers told the Baseline recruits that they were following up on a survey study in which the recruit had previously participated in November 2008. They reminded the recruit that at the completion of that survey, the recruit indicated that they were interested in participating in a follow-up survey.

Both the Baseline and Time 1 recruits were told the current survey was about gambling among Nova Scotia adults and would like to include a variety of people with different perspectives. Participation would be completely voluntary and anonymous. For their participation, the study offered participants the chance to win a $1,000 gift certificate by entering their names into a draw.

The survey took about 10 to 12 minutes to complete. Upon completion, the interviewer asked all respondents if they would be interested in being contacted for a follow-up survey in approximately 1 year. The total number of people who completed the Time 1 survey was 2064.

At a minimum, 5% of calls were validated randomly through telephone and visual monitoring of at least 75% of the interviews. In these cases, the supervisor listens in to the call and watches the interviewer's computer screen (remotely) at the same time to ensure that the interviewer is coding the responses correctly on screen.

Response Rate

The response rates for the Baseline and Time 1 recruits for the Time 1 survey are shown in Table 3 below, which presents the final disposition of all telephone numbers called in accordance with the Marketing Intelligence and Research Association's *Empirical Method of Response Rate Calculation Formula.*

Baseline Recruits

Of the 2001 original baseline survey participants, 878 provided phone numbers at the baseline survey to be contacted for participation in a follow-up survey. However, only 657 numbers were eligible due to encountering invalid numbers (e.g., not in service, fax). Of the eligible numbers, interviewers were unable to talk to anyone at 131 numbers, leaving a total of 526 numbers at which potential participants were asked participate in the study. Of this group, 71 refused producing an acceptance rate of 87%. In total, the rate of response for the Baseline recruits was 69% (Co-operative Contact/Total Eligible).

Time 1 Recruits

The rate of response for the Time 1 recruits was 10%. The response rate was calculated as the number of cooperative contacts (2,266) divided by the total number of eligible numbers attempted (22,649). Of the eligible numbers, the interviewers were unable to talk to anyone at 12,594 numbers, leaving a total of 10,325 numbers at which potential participants were asked to participate in the study. Of this figure, 2,266 co-operated for an acceptance rate of 22%.

Table 3: Response Rate Calculations

		Baseline Recruits	Time 1 Recruits
A(1-14)	**Total Attempted**	878	39,504
1	Not in service	129	15,456
2	Fax	1	891
3	Invalid#/Wrong#	91	508
B (4-14)	**Total Eligible**	657	22,649
4	Busy	1	217
5	Answering machine	34	3,520
6	No answer	3	8,625
7	Language barrier	0	21
8	Ill/Incapable	84	126
9	Eligible not available/Callback	9	85
C (10-14)	**Total Asked**	526	10,325
10	Household/Company Refusal	5	264
11	Respondent Refusal	61	7,404
12	Qualified Termination	5	391
D (13-14)	**Co-operative Contact**	455	2,266
13	Not qualified	10	647
14	Completed interview	445	1,619
	REFUSAL RATE	**13%**	**78%**
	(10+11+12) /C		
	RESPONSE RATE	**69%**	**10%**
	D (13-14)/B (4-14)		
	INCIDENCE	**N/A**	**79%**
	[(14+12) / (13+14+12)]*100		

Analytical Strategy

The statistical analyses of the Time 1 survey sought to determine the following:

1) MPS involvement in the province
2) Impact of MPS voluntary enrolment in the province

1) MPS Involvement

To estimate the extent of MPS involvement in Nova Scotia during the voluntary enrolment period, we calculated measures of central tendency, frequency distributions, and cross-tabulations for our Time 1 recruit survey sample (N=1619). Since the MPS is more relevant to VL players, we examined MPS involvement in relation to past year VL play frequency, where appropriate. For these analyses, survey respondents were categorized according to 2 groups based on their VL participation frequency in the past year. Table 4 below defines each group.

Table 4: PGSI Classification of All Survey Respondents

Frequency of Play	Description
Occasional player	Played less than once a month in past year
Regular player	Played at least once a month in past year

2) MPS Voluntary Enrolment Impact

To study the impact of the implementation of the MPS voluntary enrolment, we analyzed for differences before and after the MPS was implemented on a voluntary enrolment basis (i.e., Baseline vs Time 1) in two ways (see Table 5). The first assessment took a *within-subjects approach* that followed and compared the same group of individuals from Baseline to Time 1. The second assessment took a *between-subjects approach* that compared a randomly selected sample from the general population at Baseline to a randomly selected sample from the general population at Time 1.

Table 5:

Assessment	Time of Study Recruitment	General Population Survey Completion		Type of Comparison	Sample Size Analysis
		Baseline Survey	Time 1 Survey		
Within-subjects	Baseline	yes	yes	Compare Baseline and Time 1 measures of Baseline recruits	445
Between-subjects	Baseline	yes	no	Compare Baseline measures of Baseline recruits with Time 1 measures of Time 1 recruits	3620
	Time 1	no	yes		

i) Within-subjects Comparison (N=445).

The Baseline and Time 1 survey responses of the Baseline recruits were compared to identify any changes in the Baseline recruits from the time that the MPS was not available to the time that it was available on a voluntary enrolment basis. To test for differences in their response distributions between the two survey periods, we conducted paired sample t-tests for normal response distributions with significantly large correlations between measures. For measures with small or no significant correlations or are not normally distributed, we conducted the non-parametric Wilcoxon Signed Ranks Test.

ii) Between-subjects Comparison (N=3620)

The Time 1 survey responses of the Time 1 recruits were compared to the Baseline survey responses of Baseline recruits to assess for any differences between the Baseline and Time 1 surveys. Baseline recruits who also completed the Time 1 survey were not included within the Time 1 survey responses in order to ensure a comparison between two different populations that were surveyed separately at different times. Since both survey samples were randomly selected, we can make a valid cross-sectional comparison of two different points in time (i.e., Baseline vs Time 1). The Time 1 survey responses of the Baseline recruits were examined in the within-subject comparison.

We used the Pearson Chi-square to test for associations between survey time and the variables of interest. A chi-square is a statistical procedure used with data that fall into mutually exclusive categories (e.g., gender, survey) and tests whether one variable is associated with another and not independent of one another. To test for group differences on continuous measures such VL gambling (money and time) expenditures, we conducted Student's t-tests. These tests assess whether the average of one group is significantly different from the average of another group.

Survey respondents' reported per session and per month VL expenditure estimates were somewhat inconsistent as a sizable number of players reported higher than expected monthly estimates given their relatively infrequent participation (i.e., less than four times a year). Infrequent players may have had some difficulty providing an average monthly amount since 17 players who reported a money estimate and 31 who gave a time estimate for their session expenditures did not give a corresponding monthly estimate. Presumably this is because there are various ways to determine the monthly spending for infrequent players. Respondents could have reported 0 dollars or hours since they do not play in a typical month or they could have taken their total amount spent for the year and averaged it out over the months.

To achieve some consistency for both the within- and between-subjects analyses, we calculated our own monthly spending estimate by multiplying the session estimate by frequency of gambling and converting it to a monthly expenditure. For example, if a respondent played daily and reported a session spending of $10, we calculated a monthly expenditure of $280 (i.e., $10 * 7 (days in week) * 4 (4 weeks in a month)). For respondents who reported playing VL two to six times a week, we coded their frequency as 4 times a week. For those who reported playing less than 4 times a year, we coded their annual frequency as 2 times. Lastly, it should be noted that this calculation assumes that each session counts as one day played. It is possible that players may have played multiple sessions in a day and therefore, the estimate may under-estimate the actual amount spent.

Most survey data are presented in table format. For tables presenting data that was subject to statistical testing, we provided asterisks to indicate overall statistical significance. The probability (p) levels of significance used for this study are $p<.05$ (*), $p<.01$ (**), and $p<.001$ (***). The levels of significance indicate the probability that a statistical finding is due to chance alone and not some significant difference or association between the variables. The lower the probability (i.e., $p<.001$), the more confident we can be that there is some real association or difference between the variables and it is not due to random chance.

For chi-square tables reporting proportion frequencies between variables, a bolded numerical value in an individual cell indicates that the value was significantly different (i.e., higher or lower) than the value for the total group. These markers are given only if an overall significant relationship was found between the variables and indicate which specific group is different (i.e., has a higher or lower proportion) from the rest.

All statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) computer software program.

Sampling Error

As with any quantitative study, the data reported in this study are subject to sampling error, which can be defined as the likely range of difference between the reported results and the results that would have been obtained had we been able to interview everyone in the relevant population. Sampling error decreases as the size of the sample increases and as the percentage of people giving a particular answer moves towards unanimity.

For our newly recruited Time 1 sample of 1619, with 95% confidence, the "worst-case" sampling error is +-2.4%. That is, based on a survey sample size of 1619, estimates for the overall population of Nova Scotia are accurate within +- 2.4%, 95 out of 100 times. For the original baseline sample of 2001, the 95% confidence interval is +- 2.2 (see Table 6).

Table 6:

Sample	Sample Size	95% Confidence Interval
Time 1	1619	+-2.4
Baseline	2001	+-2.2

The tables present the 95% confidence intervals for all the estimates. Estimates based on lower sample sizes (e.g., on a segment of the total sample) will have larger confidence intervals.

Sample Weighting and Socio-demographic Characteristics

The Time 1 recruits sample was weighted by gender and age to ensure it was representative of the Nova Scotia population on these variables.[3] Table 7 shows the proportions of the unweighted and weighted samples for each of these variables.

Table 7: Gender and Age Characteristics of General Population Time 1 Recruit Sample (Weighted and Unweighted)

Demographic Variable	% of T1 Recruit Sample Unweighted (N=1619)	% of T1 Recruit Sample Weighted (N=1619)	% of BL Sample Weighted (N=2001)
Gender			
Male	46.9	47.9	48.4
Female	53.1	52.2	51.6
Age			
19-24	6.8	11.7	11.3
25-34	15.0	15.4	14.6

[3] Note that due to sample weighting and estimate rounding, table values may not add up exactly.

Demographic Variable	% of T1 Recruit Sample Unweighted (N=1619)	% of T1 Recruit Sample Weighted (N=1619)	% of BL Sample Weighted (N=2001)
35-44	19.5	18.4	18.5
45-54	23.2	20.0	20.7
55 +	35.5	34.5	34.0
Refused	0	0	.9

Table 8 shows the proportions of the weighted sample for the other socio-demographic variables that were included in the study for analysis: marital status, education, employment status, and household income.

Table 8: Marital Status, Education, Employment, and Household Income Characteristics of General Population Time 1 and Baseline Samples (Weighted)

Demographic Variables	% of BL Sample (N=2001)	% of T1 Recruit Sample (N=1619)
Marital Status		
Single	23.0	25.1
Married	52.8	54.4
Common law	8.4	7.5
Separated/divorced	7.6	6.1
Widowed	6.8	6.9
Refused	1.6	0.0
Education		
Elementary	2.5	2.3
Some High School	10.7	10.6
Completed High School	21.9	23.4
Some Post-Secondary	10.1	8.8
Completed Post-Secondary	25.8	29.6
Some Post-Graduate	7.2	4.3
Completed Post-Graduate	21.1	21.0
Refused	0.6	0.0
Employment Status		
Employed - Part-Time	10.8	10.6
Employed - Full-Time	48.1	50.6
Retired	22.2	24.0
Unemployed	8.9	13.0

Demographic Variables	% of BL Sample (N=2001)	% of T1 Recruit Sample (N=1619)
Disability	2.1	1.8
Other	5.9	0.0
Refused	0.8	0.0
Household Income		
No Income	1.6	20.9
< $20,000	9.8	9.3
$20,001 -$40,000	19.2	17.2
$40,001 – $60,000	16.6	15.0
$60,001 – $80,000	11.2	13.7
$80,001 - $100,000	7.7	9.9
> $100,000	11.4	13.9
Refused	22.7	0.0

RESULTS

The results of the Time 1 survey are divided into 2 general sections:

- MPS Involvement
- Voluntary MPS Enrolment Impact
    - Within-subjects Comparison
    - Between-subjects Comparison

MPS INVOLVEMENT

I) My-Play Knowledge and Awareness

The large majority of all past year gamblers (80%) and VL players specifically (72%) in the Time 1 survey felt they were *not at all* knowledgeable about MPS. Less than 5% reported being *very* or *extremely* knowledgeable about the system (see Table 9).

Table 9: Knowledge of MPS among all Past Year Gamblers and VL Players

How knowledgeable would you say you are about the MP system?	% of All Gamblers N=996	% of VL Players N=197
Not at all	80.0	72.2
Somewhat	13.2	15.4
Moderately	4.3	7.3
Very	2.0	4.1
Extremely	.5	1.0

The survey asked VL players about their awareness of specific MP features. The most commonly known features were the money and time limit functions with about 1 in 5 players being aware of *My Money Limit* (23%) and *My Play Limit* (21%). Awareness of the MP features was not related to VL playing frequency, p>.05 (see Table 10).

Table 10: VL Players' Awareness of MP Features by Play Frequency

Aware of …	% of Occasional VL Players	% of Regular VL Players	% of All VL Players	N
My Money Limit	21.3	28.0	23.1	186
My Play Limit	19.3	24.0	20.5	185
My Account	13.3	26.0	16.8	185
My Live Action	13.2	24.0	16.1	186
My Stop Limit	13.3	14.0	13.5	185

* <.05, ** <.01, *** < .001

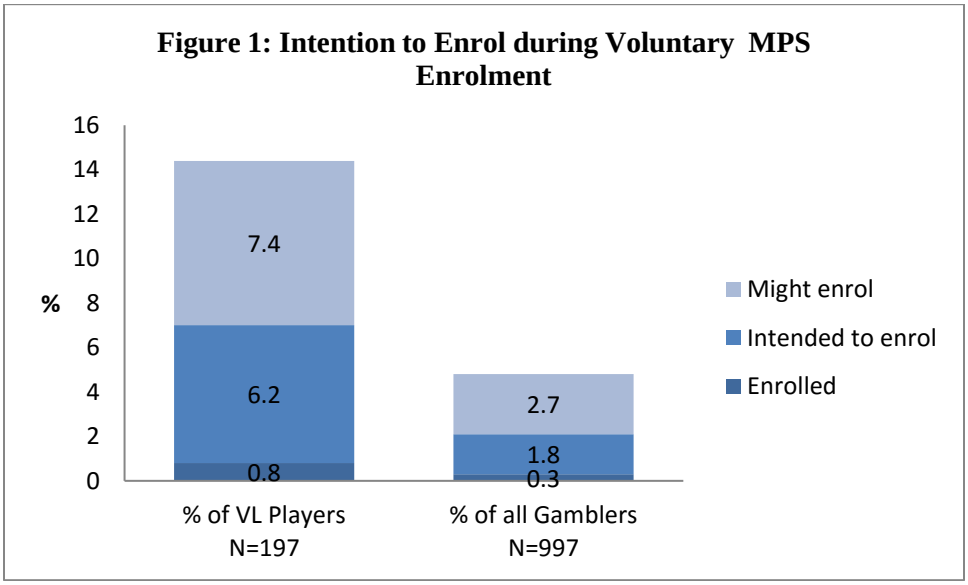
The MPS is a government initiative to help address VL-related problem gambling. To determine whether knowledge of MPS was related to people's perceptions of the government's efforts to address VL-related problem gambling, survey respondents were asked how much they agreed or disagreed with the statement "In the past year, Nova Scotia has made a reasonable effort to address VLT-related problem gambling" using a 7-point scale with 1 being "Completely disagree" and 7 being "Completely agree". We conducted correlation analyses to see if their opinion of this statement was related to their knowledge of the MPS, as measured using a 5-point scale with 1 being "Not at all knowledgeable" and 5 being "Extremely knowledgeable". There was no significant correlation between these two measures ($r=-.001$, $p > .78$)[4], indicating that people's knowledge of the MPS was not related to their views about whether Nova Scotia has made a reasonable effort to address VLT-related problem gambling.

II) My-Play Enrolment

1) My-Play Enrolment during Voluntary Enrolment Period

Only three people in the survey actually enrolled in the MPS at the time of the survey.[5] About 7% of all past year VL players enrolled or intended to enrol in the MPS. Another 7% indicated that they might enrol. In total, about 14% of past year VL players expressed some interest in voluntarily enrolling with MPS (see Figure 1).

Figure 1: Intention to Enrol during Voluntary MPS Enrolment



[4] The response option "neither agree nor disagree" was coded as 4 and therefore in the middle of the extreme ends of "agree" or "disagree" continuum. Since some might interpret this response as meaning that the person does not know and therefore, should not be placed on the continuum at all, we ran the correlation analysis excluding these options but still found no significant correlation ($r=-.01$, $p=.780$, $N=744$).

[5] Their reasons for enrolling were curiosity (n=1), tracking winnings and losses (n=1), and birthday (n=1). Two of the three enrollers used the My-Play tools (i.e., My Account, My Live Action, My Money Limit) and they rated their satisfaction with the system as *not at all* and *very* satisfied.

Survey respondents who did not enrol with MPS were asked to select from a list of reasons for why they did not enrol. Table 11 lists the reasons according to VL player frequency. Overall, the most common reasons were that the VL players felt they did not need the MPS and its informational tools because they did not play enough (90%) or did not have any gambling problems (75%). Not surprisingly, occasional players (i.e., less than once a month) were more likely to cite these reasons than regular gamblers (i.e., at least than once a month) do not play enough (95% vs. 76%)[6]; do not have problems (83% vs. 54%)[7].

A significant portion of VL players also cited reasons suggesting that a lack of knowledge or accurate understanding of the MPS dissuaded them from enrolling. About half of the VL players reported they did not enrol because they did not know enough about MPS or its enrolment process (55%) or did not trust the MPS (e.g., privacy issues) (42%). Almost 1 in 5 players felt MP use or enrolment was too complicated (20%) or it would take too much time (16%). The endorsement of these reasons did not vary significantly by VL play frequency (see Table 11).

Table 11: Reasons why VL Players Would Not Enrol during the Voluntary MPS Enrolment Period

Reasons for not enrolling with MPS	% of Occasional VL Players	% of Regular VL Players	All VL Players	N
I don't play VL enough to need to use MP and its informational tools* **	**94.8**	**76.0**	89.7	184
I don't have problems with my gambling and don't need to use MP and its informational tools* **	**82.8**	**54.0**	75.0	184
I don't know enough about MP or its enrolment process	56.3	52.0	55.1	185
Don't trust MP (e.g., privacy issues)	39.6	46.9	41.5	183
I want to try out MP first before I make any commitments to it	23.1	22.4	23.0	183
MP use or enrolment seems too complicated	20.9	16.0	19.6	184
I plan to stop playing VL and therefore don't need to use MP and its informational tools	18.7	20.4	19.1	183
MP will take too much time to use	17.9	10.0	15.8	184
Other (e.g., no interest or need, not available)	5.2	22.4	9.8	184

* <.05, ** <.01, *** < .001

[6] X^2=13.86; df=1, p<.001
[7] X^2 = 16.15; df=1, p<.001

2) Intention to Enrol during My-Play Mandatory Enrolment

The voluntary enrolment of MPS will be transitioned to mandatory enrolment meaning that people will have to enrol in the MPS to play VLTs. VL players were given several options for what they would do if they were required to enrol with MPS in order to play VLTs. About 1 in 10 (8%) said they would enrol for the MPS card and continue playing but a further 35% said they would try for a bit and then decide what to do. The most common reaction though, was to stop playing VLTs with 43% of the players selecting this intention. Reactions to the mandatory enrolment did not vary by VL play frequency, p >.05 (see Table 12).

Table 12: VL Players' Intentions for MP during VL Mandatory Enrolment by Play Frequency

When the card becomes mandatory, player will …	% of Occasional VL Players	% of Regular VL Players	% of All VL Players	N
Enroll for card and continue playing	6.4	10.0	7.5	160
Stop playing VLTs	43.6	41.2	42.9	161
Will try for a bit and decide	33.6	39.2	35.4	161
Don't know	18.0	9.8	15.4	161
Other	0.0	2.0	.6	160

* <.05, ** <.01, *** < .001

III) Factors Related to Interest in My-Play during Voluntary Enrolment Period

The low number of people in our sample who actually enrolled in MPS prevented us from examining characteristics of VL players who enrolled. We therefore investigated VL players who exhibited some interest in enrolling; that is, people who either enrolled, intended to enrol, or might enrol during the MPS voluntary enrolment period (i.e., "enrollers"). We compared them to VL players who showed no interest in enrolling (i.e., "non-enrollers) on the following factors:

1. Socio-demographic Characteristics
2. MPS Knowledge
3. VL Play Characteristics
4. Beliefs and Attitudes towards VL
5. Gambling Concerns and Problems

1) Socio-demographic Characteristics

The MPS enrollers in our sample tended to be male (61%), 19-24 years old (41%), single (57%), high school educated (50%), employed full-time (61%); and have a household income between

$20,000 and $60,000 (41%). This demographic makeup however, was not significantly different from that of the non-enrollers who showed no interest in enrolling with MPS (see Table 13).

Table 13: Demographic Characteristics of Voluntary MPS Enrollers and Non-enrollers (N=197)

Demographic Variables	% of Enrollers	% of Non-enrollers
Gender		
Male	60.7	54.4
Female	39.3	45.6
Age		
19-24	41.4	17.8
25-34	6.9	20.7
35-44	17.2	14.8
45-54	10.3	20.7
55+	24.1	26.0
Marital Status		
Single	57.1	36.7
Married/common law	42.9	53.3
Separated/divorced/widowed	0.0	10.1
Education		
Less than High School	7.1	14.7
Completed High School	50.0	31.8
Completed Post-Secondary	25.0	42.4
Completed Post-Graduate	17.9	11.2
Employment Status		
Employed - Part-Time	7.1	11.2
Employed - Full-Time	60.7	55.9
Retired	14.3	17.6
Unemployed/disability	17.9	15.3
Household Income		
< $20,000	13.3	25.4
$20,000 -$60,000	40.0	40.8
$60,001 – $100,000	13.3	20.7
> $100,000	33.3	13.0

* <.05, ** <.01, *** < .001

2) MPS Knowledge

Survey respondents were asked how knowledgeable they were about the MPS based on a scale of 1 to 5 with 1 being "not at all" and 5 being "extremely. To determine if VL players who were interested in MPS enrolment were more knowledgeable about MPS compared to those who were not interested, we compared the mean ratings of enrollers to non-enrollers for this question. As shown in Table 14, there was no significant difference in their mean ratings; VL players who were interested in MPS enrolment did not feel any more knowledgeable about MPS than those who were not interested.

Table 14: Knowledge of MPS among Voluntary MP Enrollers and Non-enrollers (N=196)

How knowledgeable would you say you are about the MP system? Scale: 1"Not at all" to 5 "extremely"	Enrollers	Non-enrollers
Mean rating (StD)	1.60 (1.10)	1.44 (.84)

* <.05, ** <.01, *** < .001

3) VL Play Characteristics

Overall, interest in MPS enrolment did not vary significantly with the examined play characteristics of VL players in the past 12 months.

i) Play frequency

As shown in Table 15, VL play frequency was not related to interest in MPS enrolment. The proportion of regular VL players was not significantly different between the MPS enrollers and non-enrollers, p>.05.

Table 15: VL Play Frequency among Voluntary MP Enrollers and Non-enrollers (N=197)

VL Play Frequency	% of Enrollers	% of Non-enrollers
Occasional (less than once a month)	64.3	74.0
Regular (at least once a month)	35.7	26.0

* <.05, ** <.01, *** < .001

ii) Play expenditure

Table 16 presents the reported dollars spent per session and per month of VL players by their interest in MP enrolment. Enrollers reported spending about $22.53 per session and $17.88 per month. These amounts were not significantly different from those reported by the non-enrollers (session: $26.34; month: $10.85), p>.05.[8]

[8] The monthly spending estimates were not higher than the per session estimates because the majority of the VL player sample gambled less than once a month and therefore, when their total yearly spending was averaged by month, their monthly spending

Table 16: Reported Dollars Spent on VL per Session and Month by Voluntary MP Enrollers and Non-enrollers

MP Enrolment		Dollars Spent	
		Per session N=192	Per month N=192
Enrollers	Mean (SE)	30.04 (5.48)	142.33 (64.91)
	Geometric mean	22.53	17.88
	Median	20.00	7.67
Non-enrollers	Mean (SE)	52.74 (8.55)	223.93 (131.61)
	Geometric mean	26.34	10.85
	Median	20.00	7.67

* <.05, ** <.01, *** < .001

There were also no differences between MPS enrollers and non-enrollers in terms of time spent playing VLTs. Enrollers reported playing .56 hours per session and .43 hours per month, while non-enrollers reported .61 hours per session and .24 hours per month (see Table 17).[9]

Table 17: Reported Hours Spent on VL per Session and Month by Voluntary MP Enrollers and Non-enrollers

MP Enrolment		Hours Spent	
		Per session N=193	Per month N=193
Enrollers	Mean (SE)	.81 (.25)	3.25 (1.28)
	Geometric mean	.56	.43
	Median	.52	.17
Non-enrollers	Mean (SE)	1.22 (.24)	5.97 (4.72)
	Geometric mean	.61	.24
	Median	.52	.17

* <.05, ** <.01, *** < .001

iii) Play limits

About 8 in 10 MPS enrollers (79%) said they had set a limit on the amount of money they spent and 14% said they did not set any money or time limits in the past 12 months. These limit setting behaviours were not related to their interest in MPS enrolment (see Table 18).

was less than the amount gambled per session.

[9] The monthly spending estimates were not higher than the session estimates because the majority of the VL player sample gambled less than once a month and therefore, when their total yearly spending is averaged by month, their monthly spending is less than the amount gambled per session.

Table 18: Past Year VL Limit-setting Behaviour of Voluntary MP Enrollers and Non-enrollers (N=191)

Did you set any of the following limits on your VLT play? (in past 12 months)	% of Enrollers	% of Non-enrollers
A limit on amount of money you spend	78.6	65.6
A limit on amount of time you spend on VLTs	0.0	2.5
A limit on amount of money and time you spend on VLTs	7.1	16.0
You do not set any limits	14.3	16.0

* <.05, ** <.01, *** < .001

4) Beliefs and Attitudes Related to VL

i) Reasons for VL play

Interest in MPS enrolment did not vary with VL players' reasons for playing VLTs. The most common reasons for playing VL selected by enrollers from a list were leisure and entertainment (33%), passing time (25%), winning money (25%), and socializing (20%). These proportions were not significantly different from the proportions found for the non-enrollers (see Table 19).

Table 19: Reasons for Playing VL among Voluntary MP Enrollers and Non-enrollers

Reasons for playing VL	% of Enrollers	% of Non-enrollers	N
For leisure and entertainment	33.3	47.5	162
To pass time	25.0	26.4	160
To win money	25.0	21.4	160
To socialize	20.0	19.1	161
Other	5.0	3.6	160
For excitement/thrill	4.8	12.8	162
To forget problems	0.0	0.0	161

* <.05, ** <.01, *** < .001

ii) Knowledge of VL

The survey asked VL players how knowledgeable they were about how VLTs work using a scale of 1 to 5 with 1 being "Not at all" and 5 being "Extremely". To assess whether interest in enrolment was related to their knowledge of VLTs, we compared the mean ratings of the MPS enrollers and non-enrollers and found no significant difference (see Table 20). Self-perceived knowledge of VLTs was not a factor in stimulating interest in My-Play.

Table 20: Self-perceived Knowledge of how VLTs Work among Voluntary MP Enrollers and Non-enrollers (N=161)

How knowledgeable are you about how VLTs work? Scale 1"Not at all" to 5 "extremely"	Enrollers	Non-enrollers
Mean rating (StD)	3.34 (1.16)	2.88 (1.38)

* <.05, ** <.01, *** < .001

iii) Opinion of VL Provision in Nova Scotia

Lastly, the survey posed questions to gauge people's sentiment regarding VL provision in Nova Scotia. In particular, the survey asked all respondents if they agreed or disagreed with the statement "In the past year, Nova Scotia has made a reasonable effort to address VLT-related problem gambling. Among the VL Players who enrolled in the MPS, 64% agreed with the statement while 21% disagreed; 14% neither agreed nor disagreed. These proportions were not significantly different from those found for the non-enrollers (see Table 21).

Table 21: Perception of Nova Scotia Problem Gambling Effort among Voluntary MP Enrollers and Non-enrollers (N=196)

How much do you agree or disagree with the following statement? In the past year, Nova Scotia has made a reasonable effort to address VLT-related problem gambling	% of Enrollers	% of Non-enrollers
Disagree	21.4	19.0
Neither agree nor disagree	14.3	21.4
Agree	64.3	59.5

* <.05, ** <.01, *** < .001

5) Gambling Concerns and Problems

To determine if interest in MPS enrolment was related to any concerns or problems VL players might have with their gambling, we compared the rates of people who had some concerns amongst the enrollers and non-enrollers. As shown in Table 22, 10% of MPS enrollers had such concerns compared to 4% of non-enrollers, but this difference was not statistically significant. Concern about one's own VL play was not related to interest in MPS enrolment.

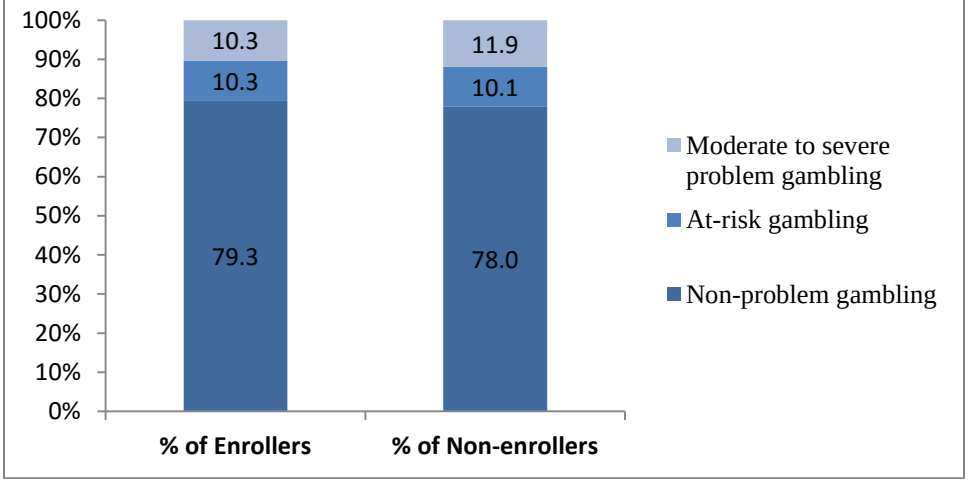
Table 22: Concerns about own VL Play among Voluntary MP Enrollers and Non-enrollers

Have concerns about own VL play	% of Enrollers	% of Non-enrollers	N
Yes	9.5	4.3	162

* <.05, ** <.01, *** < .001

Similarly, we also did not find that problem gambling varied with MPS enrolment. About 10% of both enrollers and non-enrollers had moderate to severe gambling problems and another 10% were at-risk of having problems (see Figure 2).

Figure 2: PGSI Classification among Voluntary MP Enrollers and Non-enrollers (N=197)



VOLUNTARY MPS ENROLMENT IMPACT

To assess the impact of the voluntary MPS enrolment we compared people's attitudes and behaviours from the time the MPS was not available (as measured by the Baseline survey) to the time that the voluntary MPS enrolment was available (as measured by the Time 1 survey) to see if there were any differences between these two survey periods. This comparison was conducted using two methodologies that both incorporated the responses of the Time 1 survey:

- Within-subjects Comparison
- Between-subjects Comparison

Within-subjects comparison

This section presents the results of the analyses of the Baseline recruits who completed both the Baseline and Time 1 surveys. The analyses assess for any changes in their VL play, beliefs and attitudes related to VL, other gambling behaviours, and gambling concerns and problems from the time that the MPS was not available (i.e., Baseline) to the time that it was available on a voluntary enrolment basis (i.e., Time 1).

I) VL Play

As shown in Tables 23 and 24, the rate of VL participation amongst the Baseline recruits did not change from Baseline to Time 1; about 12% of the sample played VL in the past 12 months at both times. Further, the rates of occasional (less than once a month) and regular gambling (at least once a month) amongst this group did not change significantly between the two periods.

1) Play participation

Table 23: Past Year VL Participation by Survey N=434

Played VL in past 12 months	Baseline % (CI:95%)	Time 1 % (CI:95%)
Yes	12.2 (9.1-15.3)	12.0 (8.9-15.1)

* <.05, ** <.01, *** < .001

Table 24: VL Play Frequency by Survey (N=31)

Play Frequency	Baseline % (CI:95%)	Time 1 % (CI:95%)
Occasional Gamblers (less than once a month)	41.9 (23.5-60.3)	38.7 (20.6-56.9)
Regular Gamblers (at least once a month)	58.1 (39.7-76.5)	61.3 (43.1-79.5)

* <.05, ** <.01, *** < .001

2) Play expenditure

In terms of self-reported VL play expenditure, the Baseline recruits did not change from Baseline to Time 1. There were no significant differences in their reported dollars and minutes spent per session or per month (see Tables 25 and 26).

Table 25: Reported Dollars Spent on VL per Session and Month by Survey

MP Enrolment		Dollars Spent	
		Per session N=30	Per month N=30
Baseline	Mean (CI:95%)	49.00 (32.38-65.62)	264.83 (86.83-442.83)
	Geometric mean	35.42	38.66
	Median	32.50	27.50
Time 1	Mean (CI:95%)	61.83 (20.88-102.79)	266.11 (-21.24-553.46)
	Geometric mean	33.64	27.18
	Median	25.00	20.00

* <.05, ** <.01, *** < .001

Table 26: Reported Hours Spent on VL per Session and Month by Survey

MP Enrolment		Hours Spent	
		Per session N=30	Per month N=30
Baseline	Mean (CI:95%)	1.77 (.75-2.78)	5.69 (2.61-8.77)
	Geometric mean	.89	1.02
	Median	1.00	.86
Time 1	Mean (CI:95%)	1.42 (1.00-1.86)	5.32 (.45-10.20)
	Geometric mean	.95	.80
	Median	1.00	.67

* <.05, ** <.01, *** < .001

3) Play limits

The Baseline recruits were asked if they had set money or time limits in the past 12 months of doing each survey and a higher proportion of them reported setting these limits at Time 1 than at Baseline (87% vs. 61%)[10] (see Table 27). Further, at Time 1, about 3 times more recruits set money session limits than at Baseline (67% vs. 22%).[11]

Table 27: VL Limit-Setting Behaviour by Survey

Spending-limit Behaviour	Baseline % (CI:95%)	Time 1 % (CI:95%)	N
Set money or time limits in past 12 months*	**61.3 (43.1-79.5)**	**87.1 (74.6-99.6)**	31
Type of money limit set			
Session*	**22.2 (1.0-43.5)**	**66.7 (42.5-90.8)**	18
Daily	11.1 (-5.0-27.2)	0	18
Weekly	11.1 (-5.0-27.2)	5.6 (-6.1-17.3)	18
Monthly	28.8 (4.9-50.7)	28.8 (4.9-50.7)	18
Exceeded limit in past 12 months	55.6 (30.1-81.0)	50.0 (24.4-75.6)	18

* <.05, ** <.01, *** < .001

[10] The medians for Baseline and Time 1 are 1 and 1, respectively. Z=-2.53, p=.011, r=.45
[11] The medians for Baseline and Time 1 are 0 and 1, respectively. Z=-2.53, p=.011, r=.60

II) Attitudes and Beliefs Related to VL

The survey contained several questions that pertained to survey respondents' reasons for playing VL, knowledge of VL, and opinion of VL provision in Nova Scotia.

1) Reasons for VL Play

Both the Baseline and Time 1 survey asked VL players to select from a list of reasons why they played VL. As shown in Table 28, the VL players' reasons for playing VL did not change from Baseline to Time 1.

Table 28: Past Year VL Players' Reasons for Playing by Survey

Reasons for playing VL	Baseline % (CI:95%)	Time 1 % (CI:95%)	N
To socialize	7.1 (-3.0-17.3)	21.4 (5.2-37.6)	28
To forget problems	3.6 (-3.8-10.9)	0.0	28
To pass time	42.9 (23.3-62.4)	28.6 (10.7-46.4)	28
To win money	18.9 (2.7-33.0)	14.3 (.5-28.1)	28
For leisure and entertainment	42.9 (23.3-62.4)	53.6 (33.9-73.3)	28
For excitement/thrill	17.9 (2.7-33.0)	7.1 (-3.0-17.3)	28

* <.05, ** <.01, *** < .001

2) Knowledge of VL

Similarly, the self-perceived knowledge of how VLTs work did not change from Baseline to Time 1. Using a scale of 1 to 5, with 1 being "Not at all" and 5 being "Extremely", we asked VL players how knowledgeable they were about how VLTs work. VL players at Baseline did not perceive themselves to be any more knowledgeable than they were at Time 1, scoring roughly a mean of 3 at both times (see Table 29).

Table 29: VL Players' Self-perceived Knowledge of how VLTs Work by Survey

How knowledgeable are you about how VLTs work? Scale 1"Not at all" to 5 "extremely"	Baseline	Time 1	N
Mean score (CI:95%)	3.3 (2.8-3.7)	3.2 (2.7-3.7)	28

* <.05, ** <.01, *** < .001

3) Opinion of VL Provision in Nova Scotia

The implementation of the MPS on VLTs in the province represents an initiative of the Nova Scotia government to address VLT-related problem gambling. To assess whether this initiative had some effect on how Nova Scotians perceived the government's effort in addressing VLT-related problem gambling, we asked survey respondents how much they agreed or disagreed with

the statement: "In the past year, Nova Scotia has made a reasonable effort to address VLT-related problem gambling". Respondents answered using a 7 point scale with 1 being "Completely disagree" and 7 being "Completely agree". The total sample (including gamblers and non-gamblers) agreed more with the statement at Time 1 than it did at Baseline (4.4 vs 4.0)[12,13] (see Table 30).

Table 30: Perception of Nova Scotia Problem Gambling Effort by Survey among Total Sample

How much do you agree or disagree with the following statement? In the past year, Nova Scotia has made a reasonable effort to address VLT-related problem gambling	Baseline	Time 1	N
Mean rating (CI:95%)***	**4.0 (3.9-4.2)**	**4.4 (4.2-4.5)**	**422**

* <.05, ** <.01, *** < .001

III) Other Gambling Behaviour

To determine whether the Baseline recruits increased or decreased their participation in other gambling activities from Baseline to Time 1, we compared VL players' participation rates in these other activities between the two survey periods. Table 31 shows the proportions of participation for selected gambling activities at Baseline and Time 1. Participation rates significantly increased in lotteries (66% to 85%)[14] and instant win, scratch and break-open/pull tab tickets (37% to 51%)[15]. On the other hand their participation in casino table games (25% to 9%)[16] and casino slots (55% to 34%)[17] significantly decreased (see Table 31).

These changes, however, seem to reflect a more general trend over this time period as they were also found amongst the general population (see Appendix B).

Table 31: Past Year Gambling Participation of VL Gamblers by Survey

Activity	Baseline % (CI:95%)	Time 1 % (CI:95%)	N
Lottery*	**66.0 (52.9-79.2)**	**84.9 (74.9-94.9)**	53
Casino table games (e.g., poker, blackjack, roulette and keno)*	**24.5 (12.6-36.5)**	**9.4 (1.3-17.6)**	53
Instant win, scratch, break-open or pull tab tickets*	**36.9 (22.5-49.2)**	**50.9 (37.0-64.9)**	53
Casino slots*	**54.7 (40.9-68.6)**	**34.0 (20.8-47.1)**	53

[12] t=-3.90 df=421, p=.000
[13] The scale scored 4 as "neither disagreed nor agreed". Some may argue that this reflects a "don't know" response and therefore should be omitted from the analysis. If we omit those who answered this option, the findings remain significant (4.5 vs 4.0) (t=-3.71 df=290, p=.000).
[14] The medians for 2008 and 2011 are 1 and 1, respectively. Z=-2.36, p=.018, r=.32
[15] The medians for 2008 and 2011 are 0 and 1, respectively. Z=-2.00, p=.046, r=.27
[16] The medians for 2008 and 2011 are 0 and 0, respectively. Z=-2.53, p=.011, r=.35
[17] The medians for 2008 and 2011 are 1 and 0, respectively. Z=-2.29, p=.022, r=.32

Activity	Baseline % (CI:95%)	Time 1 % (CI:95%)	N
Bingo	5.7 (-1.0-12.1)	3.8 (-1.5-9.1)	53
Sports select (e.g., Pro-line, Over/under)	1.9 (-1.9-5.7)	3.8 (-1.5-9.0)	53
Internet sports gambling	0.0	1.9 (-1.9-5.7)	53
Horse racing (on and off-track)	1.9 (-1.9-5.7)	1.9 (-1.9-5.7)	53
Internet non-sports gambling	5.7 (-0.8 - 12.1)	1.9 (-1.9-5.7)	53

* <.05, ** <.01, *** < .001

IV) Gambling Concerns and Problems

To assess whether the MPS system had any impact on VL player's gambling concerns, we assessed Baseline recruits' concerns about their own VL play at Baseline compared to Time 1. Although a lower percentage of VL players said they had concerns about their own VL play at Time 1 than at Baseline, this difference was not statistically significant (see Table 32).

Table 32: VL Players' Concerns about own VL Play by Survey

Have concerns about own VL play	Baseline % (CI:95%)	Time 1 % (CI:95%)	N
Yes	17.2 (2.6 - 31.9)	10.3 (-1.4 - 22.1)	29

* <.05, ** <.01, *** < .001

When looking at problem gambling rates though, as measured by the PGSI, we found a significant decrease in rates of VL players who had moderate to severe gambling problems. VL players had a significantly lower raw mean PGSI score at Time 1 than they did at Baseline (2.02 vs .84)[18]. In terms of changes in the proportion of players who could be classified as having moderate to severe gambling problems, there was a significant decrease from 25% at Baseline to 10% at Time 1 (see Table 33).[19]

However, these changes may not be exclusive to VL players as there was a general decrease in PGSI scores among all gamblers (see Appendix B), which indicates a general trend rather than a specific event related to VL players only (i.e., MPS implementation).

Table 33: PGSI Classification among VL Gamblers by Survey

PGSI classification	Baseline	Time 1	N
Mean PGSI score (CI:95%)**	**2.02 (.79-3.25)**	**.84 (-.18-1.87)**	51

[18] The medians for Baseline and Time 1 are 0 and 0, respectively. Z=-2.70, p=.007, r=.38

[19] The medians for Baseline and Time 1 are 0 and 0, respectively. Z=-2.33, p=.02, r=.33

PGSI classification	Baseline	Time 1	N
PGSI classification			
% At-risk gambling (CI:95%)	10.2 (1.4-19.0)	4.1 (-1.7-9.8)	49
% Moderate and severe problem gambling (CI:95%)*	**24.5 (12.0 - 37.0)**	**10.2 (1.4-19.0)**	49

* <.05, ** <.01, *** < .001

Between-subjects comparison

This section presents the results of the cross-sectional analyses of the Baseline and Time 1 surveys. These analyses compare the Baseline survey sample with a separate Time 1 survey sample to identify any differences in their VL play, beliefs and attitudes related to VL, other gambling behaviours, and gambling concerns and problems. From this determination, we can assess whether there were any population changes from the time that the MPS was not available (i.e., Baseline) to the time that it was available on a voluntary enrolment basis (i.e., Time 1).

I) VL Play

1) Play frequency

The past year VL participation did not change from Baseline to Time 1. Just over 10% in each of the Baseline and Time 1 groups played VLTs in the past 12 months of doing the survey (see Table 34).

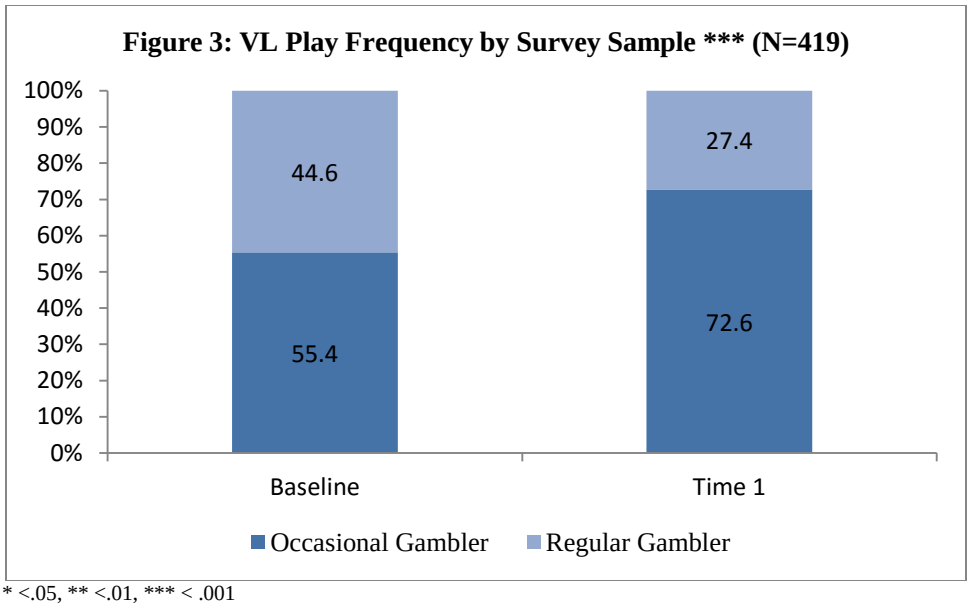
Table 34: Past Year VL Participation by Survey Sample N=3619

Played VL in past 12 months	Baseline % (CI:95%)	Time 1 %(CI:95%)
Yes	11.1(9.8-12.5)	12.1 (10.6-13.7)

* <.05, ** <.01, *** < .001

However, the frequency of VL participation decreased from Baseline to Time 1 as 45% of Baseline VL players played regularly (i.e., at least once a month) compared to 27% of Time 1 VL players (see Figure 3)[20].

[20] X^2=13.30 df=1, p<.001



* <.05, ** <.01, *** < .001

2) Play Expenditure

Tables 35 and 36 provide the self-reported dollars and hours spent per session and per month on VLTs of the Baseline and Time 1 VL players. The two groups did not differ significantly in their reported by session and by month money and time VLT expenditures.

Table 35: VL Players' Reported Dollars Spent on VL per Session and Month by Survey Sample

MP Enrolment		Dollars Spent	
		Per session N=410	Per month N=410
Baseline	Mean (CI:95%)	56.39 (41.19-71.58)	329.44 (68.50-590.37)
	Geometric mean	30.76	22.49
	Median	20.00	16.67
Time 1	Mean (CI:95%)	49.40 (34.89-63.91)	210.92 (-11.20-433.04)
	Geometric mean	25.74	11.68
	Median	20.00	6.67

* <.05, ** <.01, *** < .001

Table 36: VL Players' Reported Hours Spent on VL per Session and Month by Survey Sample

MP Enrolment		Hours Spent	
		Per session N=393	Per month N=393
Baseline	Mean (CI:95%)	1.64 (1.17-2.11)	6.98 (2.66-11.29)
	Geometric mean	1.99	2.21
	Median	.87	.33
Time 1	Mean (CI:95%)	1.15 (.69-1.62)	5.60 (-2.39-13.59)
	Geometric mean	1.80	1.17
	Median	.50	.17

* <.05, ** <.01, *** < .001

3) Play limits

A greater proportion of Time 1 VL gamblers than Baseline VL gamblers set a money or time limit on their VL gambling in the past 12 months (84% vs 64%).[21] In terms of the specific types of money limits set, 77% of Time 1 VL players set a money limit by session compared to 46% of Baseline players.[22] Time 1 players were less likely to set monthly limits than their Baseline counterparts (13% vs 23%). There was no difference between the Baseline and Time 1 groups in their rates of exceeding their limits, p>05 (see Table 37).

Table 37: VL Spending Limit-setting Behaviour by Survey Sample

Spending-limit Behaviour	Baseline % (CI:95%)	Time 1 % (CI:95%)	N
Set money or time limits in past 12 months ***	**64.1 (57.8-70.5)**	**84.5 (79.3-89.6)**	416
Type of money limit set			
Session***	**46.2 (37.9-54.6)**	**76.9 (70.1-83.7)**	291
Daily	6.3 (2.2-10.4)	3.7 (.7-6.8)	293
Weekly	3.3 (.3-6.3)	1.8 (-.3-4.0)	293
Monthly*	**22.7 (15.7-29.8)**	**13.0 (7.6-18.4)**	293
Other (e.g., annual)*	**9.8 (4.8-14.8)**	**4.0 (.8-7.1)**	292
Exceeded limit in past 12 months	27.0 (19.6-34.3)	30.9 (23.7-38.1)	306

* <.05, ** <.01, *** < .001

[21] X^2=21.45 df=1, p<.001
[22] X^2=29.54 df=1, p<.001

II) Attitudes and Beliefs Related to VL

1) Reasons for VL play

The Baseline and Time 1 survey asked VL players to select from a list of reasons why they play VLTs. The Baseline and Time 1 players did not differ in their reasons with the exception of playing to win money where 21% of Time 1 respondents played VL to win money compared to 13% of Baseline respondents[23] (see Table 38).

Table 38: Past Year VL Players' Reasons for Playing VL by Survey Sample

Reasons for playing VL	Baseline % (CI:95%)	Time 1 % (CI:95%)	N
To socialize	13.8 (9.2-18.3)	19.2 (13.2-25.2)	392
To forget problems	2.4 (.4-4.5)	.4 (-.6-1.5)	391
To pass time	25.3 (19.6-31.1)	25.3 (18.6-31.9)	391
To win money*	**13.3 (8.8-17.7)**	**21.1 (14.8-27.3)**	391
For leisure and entertainment	48.8 (42.2-55.4)	54.8 (47.1-62.4)	392
For excitement/thrill	16.7 (11.8-21.6)	11.0 (6.2-15.8)	390
Other	4.5 (1.8-7.3)	4.9 (1.6-8.1)	392

* <.05, ** <.01, *** < .001

2) Knowledge of VL

We also tested to see whether there was a difference in self-perceptions of VL players' knowledge of how VLTs work between the Baseline and Time 1. VL players were asked how knowledgeable they were about how VLTs work using a scale from 1 "Not at all" to 5 "Extremely". Comparing the mean scores of the Baseline VL players to the Time 1 VL players, we found no difference as both groups scored about 2.9 (see Table 39).

Table 39: VL Players' Self-perceived Knowledge of how VLTs Work by Survey Sample

How knowledgeable are you about how VLTs work? Scale 1"Not at all" to 5 "Extremely"	Baseline	Time 1	N
Mean score (CI:95%)	2.86 (2.66-3.05)	2.92 (2.71-3.13)	390

* <.05, ** <.01, *** < .001

3) Opinion of VL provision in Nova Scotia

The MPS is an initiative of the Nova Scotia government to help address VL-related problem gambling. To assess whether this initiative had some impact on how people perceive the

[23] X^2=3.95 df=1, p<.05

provision of VLTs in Nova Scotia, we asked survey respondents how much they agreed or disagreed with the statement: "In the past year, Nova Scotia has made a reasonable effort to address VLT-related problem gambling". Respondents used a 7 point scale with 1 being "Completely disagree" and 7 being "Completely agree". There was no difference in agreement with this statement between the Baseline and Time 1 respondents[24] (see Table 40).

Table 40: Perception of Nova Scotia Problem Gambling Effort among Total Population by Survey Sample

How much do you agree or disagree with the following statement? In the past year, Nova Scotia has made a reasonable effort to address VLT-related problem gambling	Baseline	Time 1	N
Mean rating (CI:95%)	4.1 (4.0-4.2)	4.1 (4.0-4.1)	3616

* <.05, ** <.01, *** < .001

Although the mean scores of the Baseline and Time 1 groups were not significantly different but when their responses are analyzed according to the percentages of people who agreed or disagreed with the statement, we find some significant differences. In particular, while Time 1 respondents were less likely to disagree (28% vs 34%) or agree (42% vs 49%) with the statement, they were more likely to neither agree nor disagree (30% vs 17%) (see Table 41).[25]

This finding provides evidence to suggest that in Time 1 when the MPS was available on a voluntary enrolment basis, people were more uncertain about whether Nova Scotia has made a reasonable effort to address VLT-related problem gambling whereas at Baseline they were more certain that Nova Scotia made reasonable or unreasonable efforts to address VLT-related problem gambling.

Table 41: Perception of Nova Scotia Problem Gambling Effort among Total Population by Survey Sample N=3616

How much do you agree or disagree with the following statement? In the past year, Nova Scotia has made a reasonable effort to address VLT-related problem gambling***	Baseline % (CI:95%)	Time 1 %(CI:95%)
Disagree	**33.6 (31.6-35.7)**	**27.9 (25.7-30.1)**
Neither agree nor disagree	**17.1 (15.4-18.7)**	**30.4 (28.2-32.7)**
Agree	**49.3 (47.1-51.5)**	**41.6 (39.2-44.0)**

* <.05, ** <.01, *** < .001

[24] The scale scored 4 as "neither disagreed nor agreed". Some may argue that this reflects a "don't know" response and therefore should be omitted from the analysis. When we omit those who answered this option, there was still no significant differences in their mean responses, p>.05.

[25] X^2=89.71, df=2, p<.001

III) Other Gambling Behaviour

In order to determine whether more VL players participated in other gambling activities when the voluntary enrolment MPS was offered, we compared participation rates of Baseline VL players with Time 1 VL players. As shown in Table 42, a higher percentage of Time 1VL players played the lottery (74% vs 63%)[26] and instant win, scratch, break-open or pull tab tickets (46% vs 35%)[27] than Baseline VL players.

However, the increase in lottery and instant win play between Baseline and Time 1 appears to be a part of a broader trend as we found similar increases to have occurred amongst the general population of all gamblers (see Appendix B).

Table 42: Past Year Gambling Participation of VL Gamblers by Survey Sample

In past year, participated in…	Baseline % (CI:95%)	Time 1 % (CI:95%)	N
Lottery*	**62.7 (56.3-69.1)**	**74.3 (68.1-80.4)**	420
Casino table games (e.g., poker, blackjack, roulette and keno)	32.9 (26.7-39.1)	30.2 (23.8-36.7)	420
Instant win, scratch, break-open or pull tab tickets*	**35.2 (28.9-41.6)**	**46.4 (39.4-53.5)**	420
Casino slots	49.9 (43.3-56.6)	53.1 (46.1-60.2)	420
Bingo	11.4 (7.2-15.6)	13.9 (9.1-18.8)	420
Sports select (e.g., Pro-line, Over/under)	5.4 (2.4-8.4)	8.5 (4.5-12.4)	420
Internet sports gambling	1.0 (-.3-2.3)	0.0	420
Horse racing (on and off-track)	2.1 (.2-4.0)	1.5 (-.2-3.2)	420
Internet non-sports gambling	4.6 (1.8-7.4)	4.7 (1.7-7.7)	420
Other	.9 (-.4-2.1)	2.6 (.3-4.8)	420

* <.05, ** <.01, *** < .001

IV) Gambling Concerns and Problems

VL players' concerns about their VL play appear to have decreased from Baseline to Time 1; 11% of Baseline VL gamblers reported that they had concerns with their own VL play compared to only 4% of Time 1 VL players (see Table 43).[28]

[26] X^2=6.18 df=1, p<.05
[27] X^2=5.24 df=1, p<.05
[28] X^2=5.77 df=1, p<.05

Table 43: VL Players' Concerns about own VL Play by Survey Sample

Have concerns about own VL play	Baseline % (CI:95%)	Time 1 % (CI:95%)	N
Yes*	**11.7 (7.4-15.9)**	**4.4 (1.3-7.6)**	390

* <.05, ** <.01, *** < .001

The findings for the PGSI classifications also suggest a lessening of problematic gambling amongst VL players. While the proportions of players with moderate to severe gambling problems among the Baseline and Time 1 VL players were not significantly different, Time 1 players had a lower proportion of at-risk gamblers than did Baseline players (19% vs 10%) (see Table 44).[29]

These findings appear to be a part of a broader trend though within the general gambler population as the proportion of at-risk gambling was significantly lower amongst all gamblers at Time 1 than the gamblers at Baseline (see Appendix B).

Table 44: PGSI Classification among VL Gamblers by Survey Sample

Problem gambling measure	Baseline % (CI:95%)	Time 1 %(CI:95%)	N
Mean PGSI score (CI:95%)	1.7 (1.1-2.3)	1.7 (1.0-2.4)	413
PGSI classification			
At-risk gambling % (CI:95%) *	**19.0 (13.7-24.2)**	**10.2 (5.9-14.5)**	413
Moderate and severe problem gambling % (CI:95%)	15.1 (10.2-19.8)	11.4 (6.9-15.9)	413

* <.05, ** <.01, *** < .001

WITHIN AND BETWEEN SUBJECTS COMPARISON RESULTS SUMMARY

The following tables present the basic findings from each of the Within- and Between- Subjects comparisons that were used to assess the impact of the voluntary MPS enrolment on past year VL play, attitudes and beliefs related to VL, other past year gambling, and gambling concerns and problems. Those areas highlighted in yellow indicate that both comparison methods produced statistically significant findings in the same direction, suggesting that there is strong indication of a real change occurring from Baseline to Time 1. Areas highlighted in grey indicate that one of the two comparisons yielded a significant result.

Past Year VL Play

Measure	Within Subjects	Between Subjects
Participation	No difference	No difference
Frequency	No difference	Decrease in regular VL play
Expenditure		

[29] X^2=5.97 df=1, p<.05

Money	No difference	No difference
Time	No difference	No difference
Set money or time limit	Increase	Higher rate time 1
Types of limit set		
Session limit	Increase	Higher rate time 1
Daily limit	No difference	No difference
Weekly limit	No difference	No difference
Monthly limit	No difference	decrease
Other limit	No difference	decrease
Exceeded limit	No difference	No difference

Attitudes and Beliefs Related to VL

Measure	Within Subjects	Between Subjects
Reasons for VL Play		
To socialize	No difference	No difference
To forget problems	No difference	No difference
To pass time	No difference	No difference
To win money	No difference	Higher rate time 1
For leisure and entertainment	No difference	No difference
For excitement/thrill	No difference	No difference
Self-perceived Knowledge of VLTs	No difference	No difference
Perception that Nova Scotia has made reasonable effort to address problem gambling	Increase	No difference

Other Past Year Gambling Behaviour

Past year participation in…	Within Subjects	Between Subjects
Lottery	Increase	Higher rate time 1
Casino table games (e.g., poker, blackjack, roulette and keno)	Decrease	No difference
Instant win, scratch, break-open or pull tab tickets	Increase	Higher rate time 1
Casino slots	Decrease	No difference
Bingo	No difference	No difference
Sports select (e.g., Pro-line, Over/under)	No difference	No difference
Internet sports gambling	No difference	No difference
Horse racing (on and off-track)	No difference	No difference
Internet non-sports gambling	No difference	No difference

Gambling Concerns and Problems Amongst VL Players

Indicator	Within Subjects	Between Subjects
Have concerns about own VL Play	No difference	Lower rate time 1
Problem gambling		
PGSI score	Decrease	No difference
At-risk gambling	No difference	Lower rate time 1
Moderate/severe problem gambling	Decrease	No difference

SUMMARY OF TIME 1 GENERAL POPULATION TELEPHONE SURVEY RESULTS

This summary lists the key findings from the Time 1 general population telephone survey for each of the two main areas of the Results Section pertaining to MPS involvement and impact of voluntary MPS enrolment.

MPS INVOLVEMENT

- The large majority of all past year gamblers (80%) and VL players specifically (72%) felt that they were not at all knowledgeable about MPS.

- The most commonly known MPS tools were *My Money Limit* (23%) and *My Play Limit* (21%).

- The average adult's knowledge of the MPS was not related to their opinion about whether Nova Scotia has made a reasonable effort to address VLT-related problem gambling.

- 7% of past year VL players voluntarily enrolled or intended to enrol in the MPS; in total, 14% expressed some interest in voluntarily enrolling in MPS.

- At least three-quarters of VL players indicated they did not enrol in the MPS because they felt there was no need for the MPS and its informational tools because they either did not play enough (90%) or did not have any gambling problems (75%).

- Roughly half of VL players did not enrol because they did not know enough about the MPS or its enrolment process (55%) or did not trust the MPS in some way (e.g., privacy issues) (42%)

- About 1 in 10 VL players said they would enrol in the MPS when there is mandatory enrolment; a further 35% said they would try it for a bit and then decide.

- 43% of VL players indicated they would stop play VL if they were required to enrol with MPS to play VLTs

- Interest in voluntary MPS enrolment among VL players did not vary according to socio-demographics, knowledge of MPS, VL play characteristics (frequency, expenditure, limit-setting), reasons for playing VL, knowledge of how VLTs work, opinion of VL provision in Nova Scotia, and gambling concerns and problems.

VOLUNTARY MPS ENROLMENT IMPACT

- While there is some indication of a significant decrease in regular VL play (at least once a month) between the pre-MPS and voluntary MPS enrolment, there was no indication of changes in overall participation and VL money and expenditures.

- There is strong indication that setting limits on VL play sessions increased from pre-MPS to voluntary MPS enrolment periods.

- There is no indication of changes in self-perceived knowledge of VLTs, and opinion that Nova Scotia has made a reasonable effort to address VLT-related problem gambling between pre-MPS and voluntary enrolment MPS periods.

- There is strong indication of an increase in lottery and instant win ticket purchases from pre-MPS to voluntary MPS enrolment periods.

- There is strong indication of a decrease in gambling concerns and problems amongst VL players between pre-MPS and voluntary MPS enrolment periods.

CHAPTER 3: VOLUNTARY MPS ENROLMENT PLAYER TRACKING DATA STUDY

PLAYER TRACKING DATA ANALYSIS STUDY OBJECTIVES

The player tracking data analysis study assesses the use and impact of the MPS in Nova Scotia, using the player card data obtained from Techlink.[30] Player tracking data refers to the data collected by the MPS when a player inserts their card into a VLT to gamble and/or use a MPS feature. The analysis found in this chapter includes analysis from the voluntary enrolment period (from July 2010 to March 2012). This data is divided into two periods[31], due to the loss of nine months of data (from January 2011 to September 2011) from the transfer of database systems by Techlink.

The data analysis in this chapter consists of two general scopes of review. First, a set of summary and frequency statistics are provided to illustrate the use of the MPS features and the relative intensity of gambling by those users. These results are provided for each period separately. Second, an econometric analysis is used to identify whether there are any strong relationships between the use of My-Play features by players and those players' gambling behaviour.

This chapter presents an overview of the key findings from the player tracking data analysis, and provides a deeper overview of the MPS data, including methodological limitations of the data features and summary/frequency statistics and the econometric modelling.

Before we provide the details of the MPS player tracking data, we first present a discussion of the key findings.

Voluntary MPS Enrolment Player Tracking Data Key Findings

Analysis of MPS player card data found that among the control features, money limits, play limits, and quick stops, money limits were the most popular feature. Close to 16% of Period 1 player accounts used the feature, and 11.5% of Period 2 player accounts used the feature. This was widely the most popular control feature as no other control reached 5% usage in any period.

Only self-exclusion controls were found to have a statistically significant effect on reducing play. On average, each use of the self-exclusion option is related to a reduction in six-month spending by roughly $4,100 in cash played (including re-invested winnings) and $250 in out of pocket cash played. Similarly, a 12 to 17 hour reduction in time spent gambling is observed in response to each use of the control.

[30] Techlink Entertainment developed the My-Play device and in charge of housing My-Play data.

[31] Period 1 - July 2010 to December 2010 and Period 2 - October 2011 to March 2012

The monitoring features were noted to be much more popular among players than the control features. Roughly 74% of player accounts had used the current gameplay monitoring feature (My Live Action) at some point during the first six months of system availability, while 70% had viewed their money spent account summary and 50% had viewed their time spent account summary.

Despite the popularity of these monitoring features among players, we caution that they may be causing more harm than intended. Each view of the current gameplay monitoring feature was found to be related to a reduction of $65 to $100 in cash played and $2 to $3 in out of pocket spending during the period, but each instance of a player viewing their account summary screen is associated with a $250 to $370 increase in cash played and $11 to $16 increase in out of pocket spending (on average over the six month period). At the current juncture, it is unclear if this observation is a correlation that represents another relationship, or whether this is evidence of players being more aware of their losses and choosing to chase them.

PLAYER TRACKING DATA STUDY METHODOLOGY

Overview of Data

The data used in the player tracking study was provided by Techlink, which queried aggregate results directly from the MPS database. The data contains information by player card on MPS features/characteristics. This information includes, but is not limited to the following figures:

- Number of sessions where the card was inserted into a device
    - Gameplay sessions
    - Responsible gaming sessions (i.e., use of any control or monitoring feature)
    - Null session (no play or RG features accessed)
- Time on device
- Cash inserted into the device
- Cash withdrawn from the device
- Number of games played
- Amount of money won
- Responsible gaming feature used
    - Monitoring features
        - Current session history (*My Live Action*)
        - Past session history (*My Account*)
    - Control features
        - Money limits (*My Money Limit*)
        - Time limits (calendar stop options) (*My Play Limit*)
        - Self-exclusion
        - Quick-stop (*My Stop Play*)

Data Time Periods

The data occurs during the voluntary enrolment period from July 2010 to March 2012. This data is divided into two six month periods (Period 1 - July 2010 to December 2010 and Period 2 - October 2011 to March 2012), due to the loss of nine months of data (from January 2011to September 2011) from the transfer of database systems by Techlink. The advantage of using more than a single time period is that it allows for empirical analysis that controls for idiosyncratic differences in players. That is, instead of simply looking at differences across players (cross-sectional models), models that examine the same players over time can also be estimated (panel models). In many cases, this approach allows for more unbiased measurement of model effect sizes.

Data Limitations

As this chapter involves analysis of secondary data (rather than primary data collection as in the surveys for example), it is more challenging to determine causal effects or adequately control for all confounding variables. For example, a player may simultaneously set money limits and time limits, which creates difficulties in ascertaining how either individually affected aspects of play, such as time on device or coin-in. As such, this section contains several qualifying statements where results should be interpreted with caution. Nevertheless, this data is important to analyse since it reflects actual play (as opposed to surveys which rely on players to respond honestly and without bias). When combined with the results from the other chapters, a more complete picture of the overall effectiveness of the MPS can be made.

In terms of specific issues with this data set, the first key limitation is the missing period of data. Losing nine months of relevant data could cloud many results, and therefore creates bias in the results. For example, use of a self-exclusion feature at the end of the first six-month period would be expected to reduce play over the nine-month period of missing data, but this effect would be missed.

Another key limitation of this data set is attrition in the sample. Due to the long period of time in this study, many player cards that appear in the first period no longer appear in the second period, and it is unclear why the attrition may have occurred. For example, it may be the case that the player no longer gambles on the My-Play devices or the player may have simply lost the original player card and now has a new account with a different database key value. Attrition can also occur within a single period, since all results over the six month period are aggregated, further reducing the ability to detect temporal relationships.

Other minor issues with the data set have caused some concern over data reliability. For example, many of the control features that were originally described by Techlink to be frequency of use values (i.e., the count of control feature uses by the player), were later noted to simply be view feature (i.e., the player simply looked at the control feature screen but did not use the feature). This occurred with the money limit control, the self-exclusion control, and the quick stop control, but not the time limit control. Initial review of the data set by RGC revealed several errors in the dataset due to query errors by Techlink. Although these appear to be resolved, the results provided below rely on the validity of the data figures provided to RGC.

Data Analysis

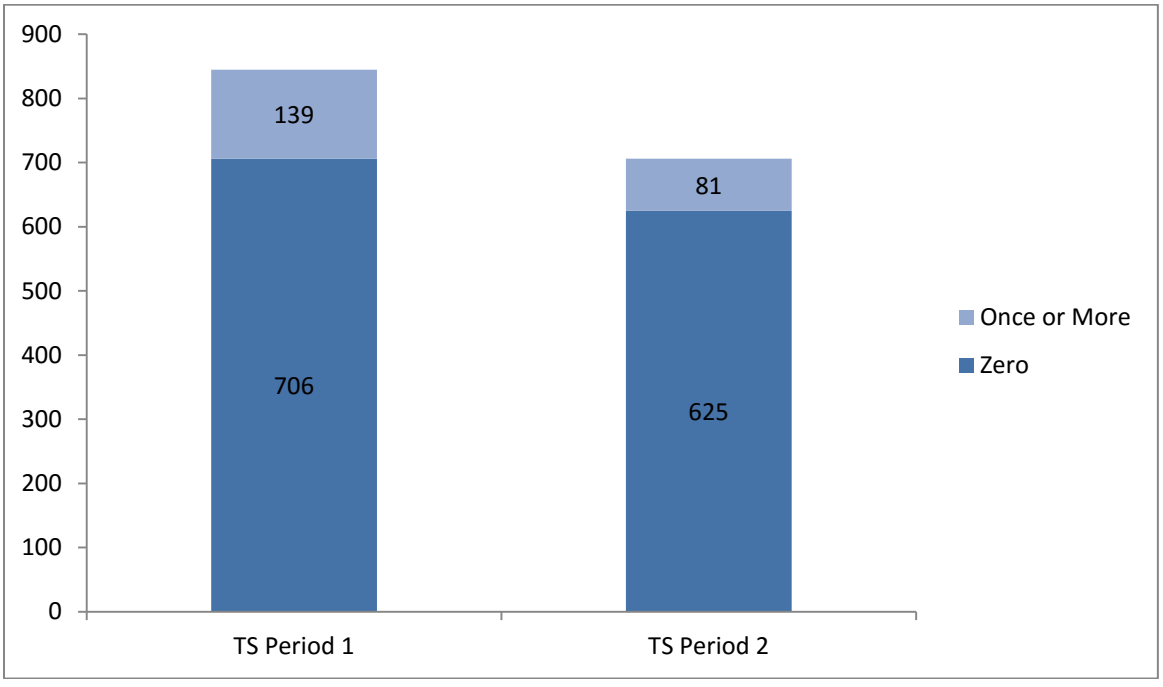
The analysis of MPS data includes a series of tabulations showing the prevalence of use of the My-Play features, along with a series of models that attempt to show how these features may affect behaviour by users. Note that since enrolment in the MPS was voluntary during this period, it seems likely to be the case that use of control and monitoring features will be biased upwards, versus the expected results from a mandatory enrolment design.

RESULTS

My-Play Feature Use

As shown in Figure 4 to Figure 7, the control features available in the MPS are used by a minority of users. The most popular control feature is the money limit feature. In Period 1, 139 player accounts (16%) used the money limit feature (*My Money Limit*), and in Period 2, the feature was still relatively popular, with 81 player accounts (11.5%) setting a money limit (See Figure 4).

Figure 4: Total number of player accounts that used My-Money Limit



The 'My-Play Limit' control option was much less popular than the money limit option. Roughly 1% of MPS player accounts used the calendar stop option, which restricted play on either given days of the week, weeks of the month (four week period), and/or months of the year. The rate of use of the calendar stop option was unchanged from Period 1 to Period 2. Close to 3% of Period 1 player accounts used the self-exclusion option to restrict play, and 1% of Period 2 player accounts did likewise. The "My-Play Limit" control usage levels are illustrated in Figure 5 and

Figure 6.

Figure 5: Total number of player accounts that used My-Play Limit (calendar stop option)

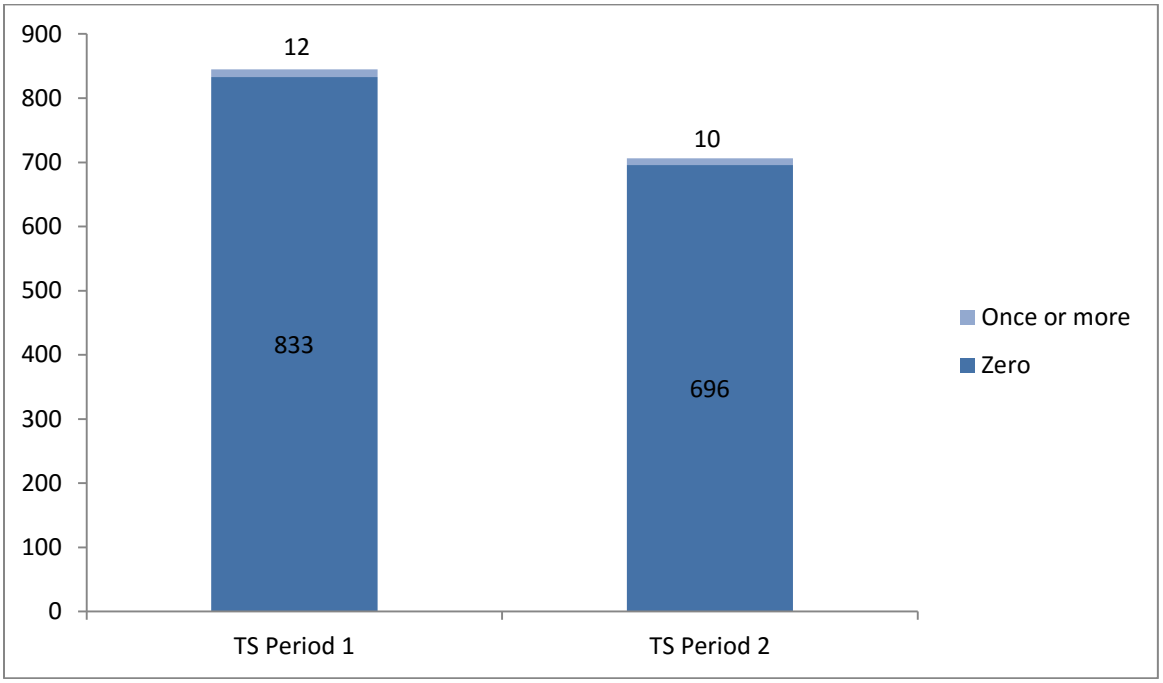
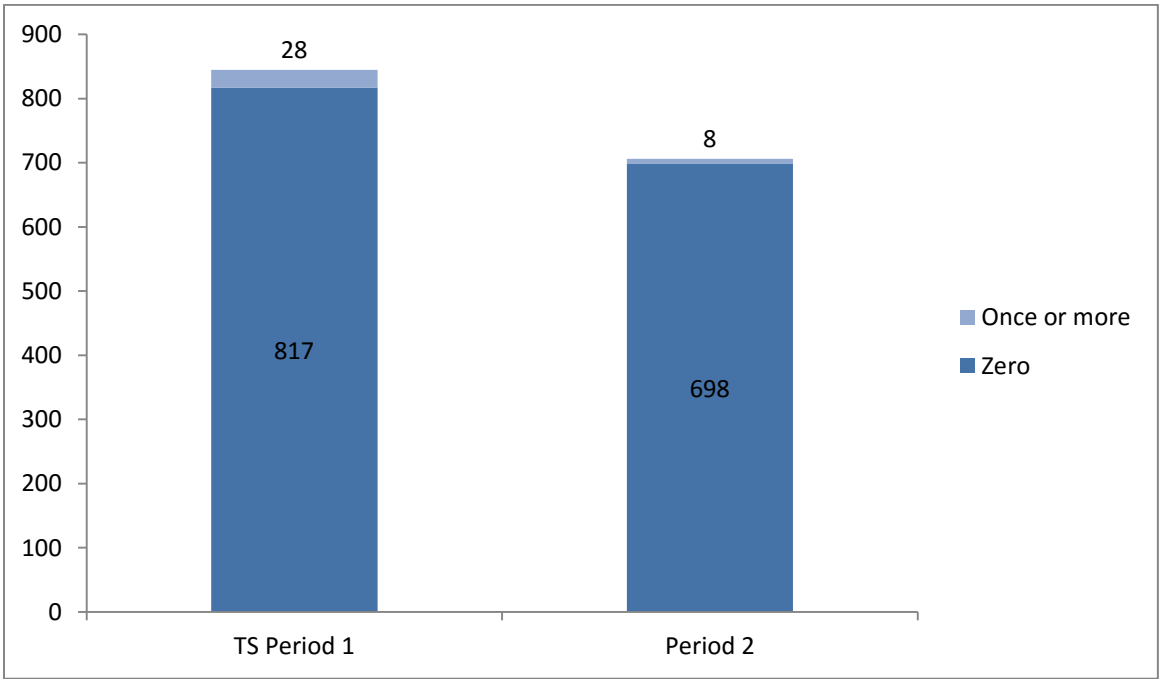


Figure 6: Total number of player accounts that used My-Play Limit (self-exclusion option)



Though slightly more popular than the longer term play restriction options, the *My Stop Play* option was still used by few player accounts during either six-month period. During Period 1, 30 player accounts (4%) used the *My Stop Play* option to end play for 24 to 72 hours. During Period

2, 12 player accounts (2%) used the same option. The *My Stop Play* use values are illustrated in Figure 7.

Figure 7: Total number of player accounts that used My-Stop Play option

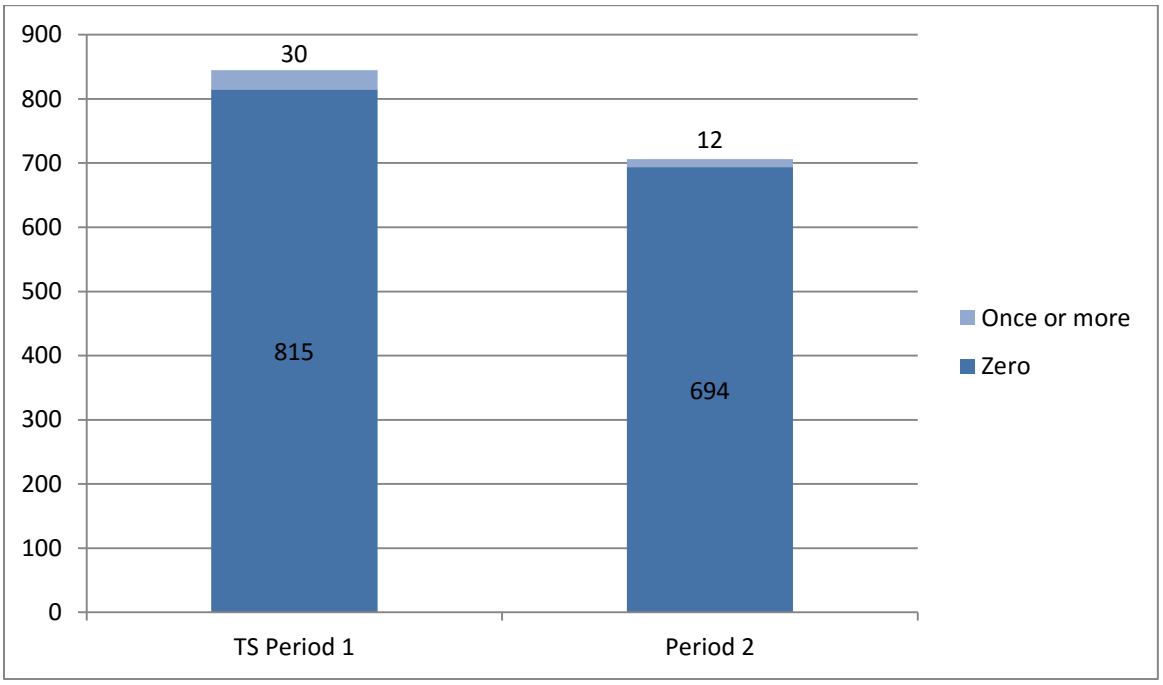
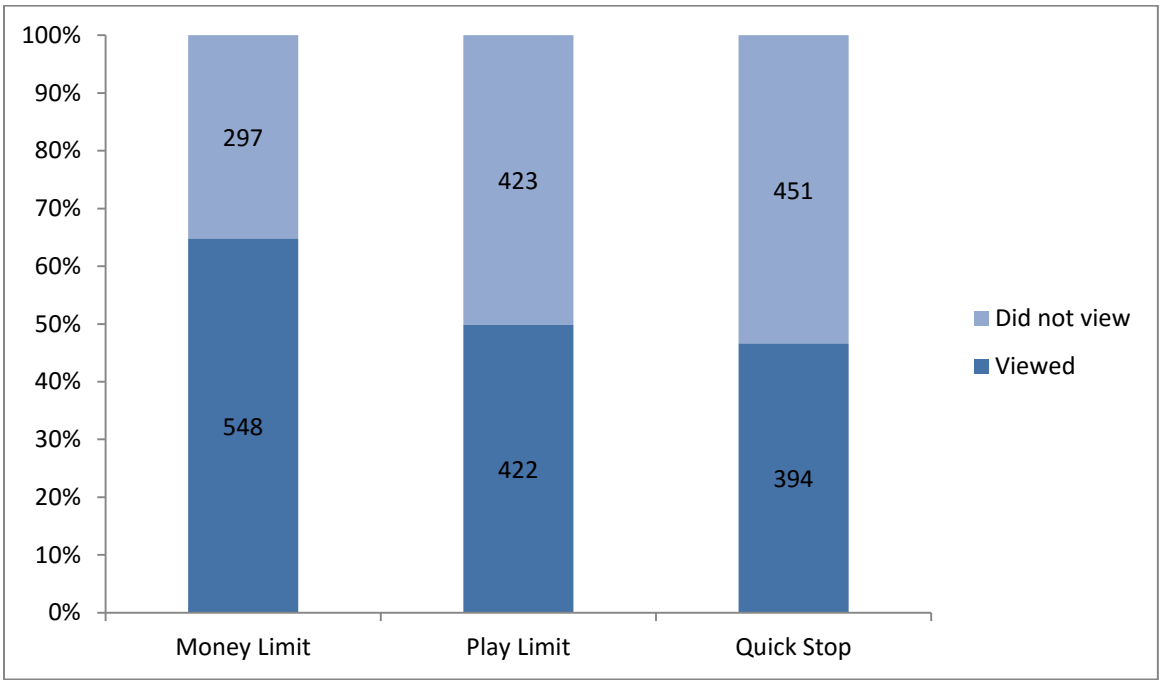


Figure 8: Controls Views (Period 1)



My-Play Feature Views

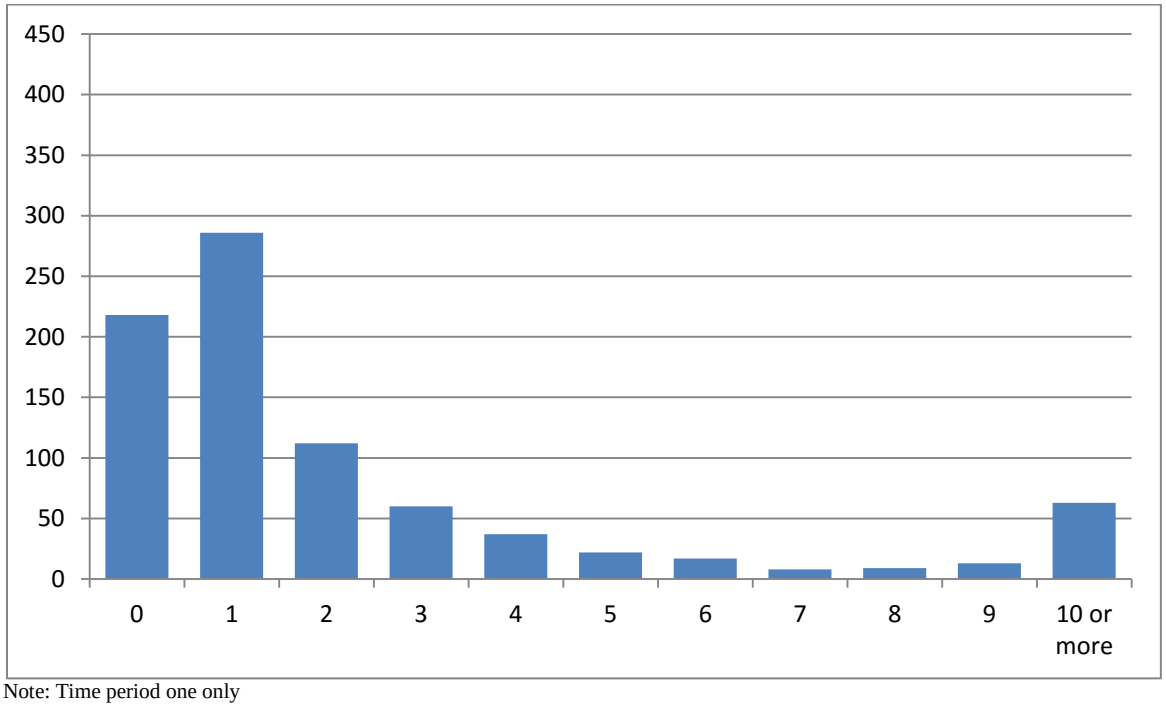
The data available from the MPS also allows for some information to be gleaned about players' awareness and/or interest in the control features. As shown in Figure 8, the MPS provides the ability to extract a view feature of which players looked at the limit controls. In Period 1, roughly 65% had viewed the money limit setting tool, 50% had viewed the play limit setting tool, and 47% had viewed the quick stop tool. Based on these results, it seems that there is still a large amount of MPS players that remain unaware or uninterested of how these tools can be used, and that many more players have seen the limit setting tools than have used them.

In terms of the actual monitoring features, usage was typically much higher than control features, suggesting that players do like the ability to track their current and past gameplay. Given the setup of the voluntary enrolment period, the ability to track gameplay (past or present) would appear to be the most advantageous feature to using a MPS card. This is because control features could be circumvented by playing without the MPS card, or by obtaining another card.

As shown in Figure 9, the *My Live Action* feature is popular with MPS players, as 74% of player accounts had used the monitoring feature at some point during the first six months of system availability. A small group of player accounts used the feature extensively, with 7% having used the feature 10 or more times during Period 1.

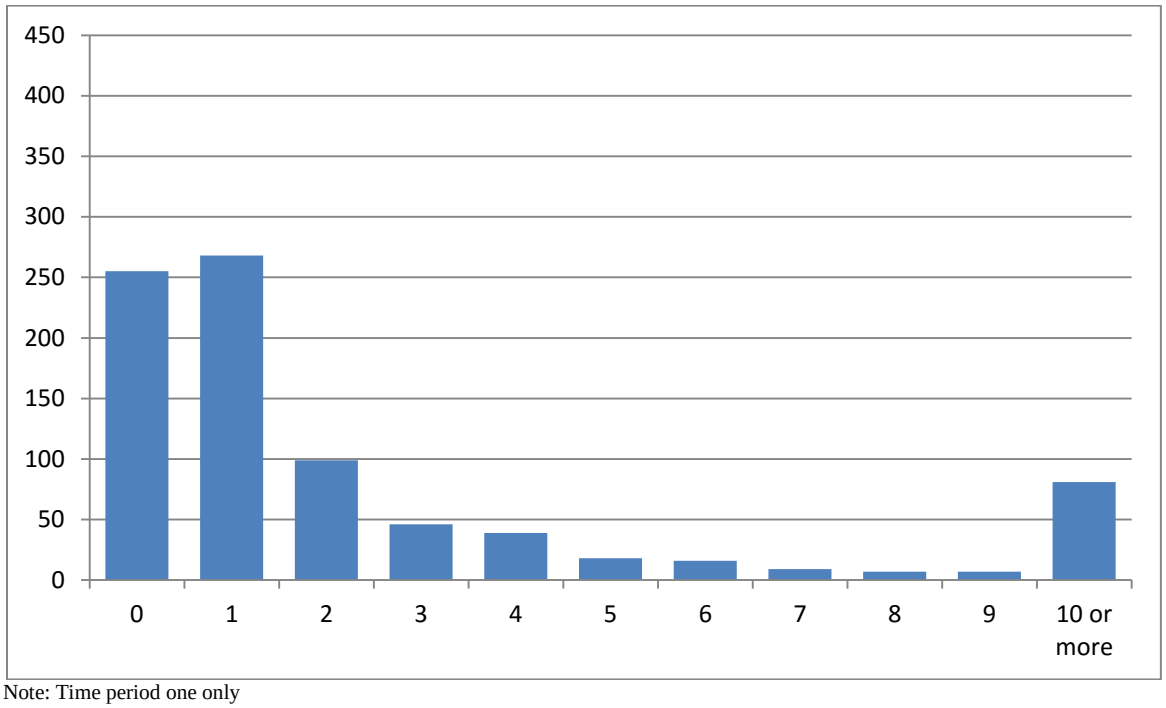
Figure 10 and Figure 11 illustrate the use of the past history monitoring features. In general, players were more interested in their past money spent playing than their past time spent playing, as roughly 70% of player accounts had viewed past money spent (*My Account Summary*), but only 50% had viewed past time spent. There was also a large contingent of player accounts that heavily monitored past money spent; 10% monitored past money spent 10 or more times in the first six-month period, including one player account which viewed the figure 955 times.

Figure 9: Frequency of Use of 'My Live Action' Monitoring Feature



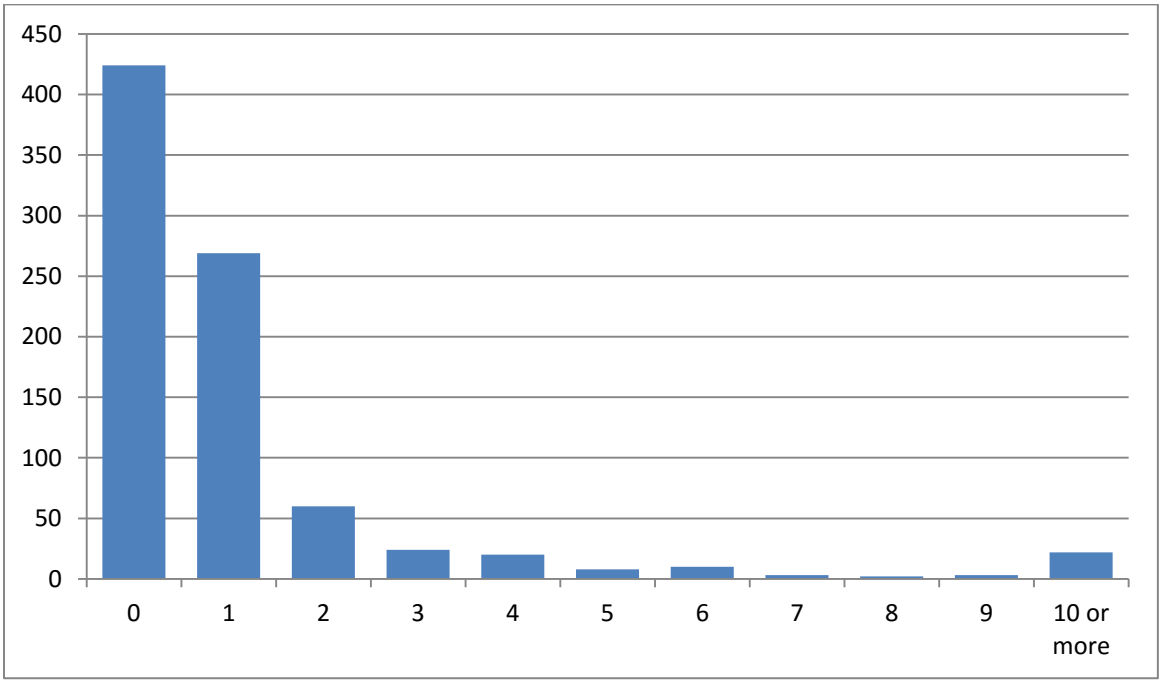
Note: Time period one only

Figure 10: Frequency of Use of 'My Account Summary' Monitoring Feature (past money spent)



Note: Time period one only

Figure 11: Player frequency using the 'My Account Summary' Monitoring Feature (past time spent)



Note: Time period one only

My-Play Feature Effectiveness

In order to ascertain whether use of the MPS features had any effect on player behaviour, an extensive secondary data analysis was conducted using cross-sectional and panel data methods. In general, the data analysis procedures involved the use of two estimation procedures to ensure reliability. As a limitation, both of these procedures require more than one period of observation to produce results, so this analysis relies on a subset of the data, which is players that had activity in both sample periods. This is obviously a non-random sample, which will create some biases that need to be kept in consideration, but the results may nevertheless provide some insight into the effectiveness of these features.[32]

The first procedure used to measure the effect of the features was ordinary least squares modeling that examined the effect of the MPS features on current behaviour (e.g., the effect of using self-exclusion features in Period 2 on money spent in Period 2), and the effect on future behaviour (e.g., the effect of using self-exclusion features in Period 1 on money spent in Period 2). The second estimation method was a fixed-effects modeling procedure that looked at the effect of the features within the same individuals over time. As opposed to estimating the parameter coefficients over a pooled sample, fixed-effect regression instead looks at variation across time, within each person to eliminate idiosyncratic bias. The fixed-effect model design allows for the removal of potential inter-personal error that is constant over time. Fixed-effect models are commonly used in panel data sets when there is an immeasurable unobserved effect in each person. In this model, the fixed-effects design can control for constant individual differences that affect play behaviour, such as personal proclivity to gamble.

There is evidence that some MPS features may reduce play, but also that certain monitoring features are related to increased play (provided in Appendix C, Tables 45-50). We observe that an increase in the number of gameplay sessions will increase the amount spent gambling – roughly $200 to $300 in increased cash played over the six month period for every gameplay session (Table 48, models 1-7) translating to $5-$10 in increased out of pocket spending (Table 50, models 1-7). However, we simultaneously find evidence that an increase in the number of those sessions that involve the use of an RG feature will be related to a reduction in player spending – roughly a $400 reduction in cash played over six months for each session (Table 48, model 3), translating to just under $20 in decreased out of pocket spending over the same period (Table 50, model 3).

There is similar evidence that suggests that sessions where RG features were used, but no gameplay occurred, lead to reduced cash played overall and reduced out of pocket spending, though these types of sessions are much less prevalent among players. In terms of the effect of RG sessions on future play, we find reasonably strong evidence that an increase in use of the features during sessions in the first six months is related to a decrease in play during the second six month period (e.g., Appendix C

[32] Other modeling procedures were also pursued, for example, to examine whether use of any MPS feature, such as self-exclusion in Period 1, was predictive of whether a player was active in Period 2. The results of this analysis were largely inconclusive, but a richer data set may yield productive results.

Table 45, model 3; Table 47, model 3). Of course, since we are unable to validate lagged effects in a fixed-effect model design, this may simply be capturing a relationship that people more mindful of their gambling (and therefore more likely to use the features), will be more likely to curb their spending.

Illustrative of this issue of the inability to discern whether there are confounding variables in the lagged analysis, is the finding that the lagged effect of using the self-exclusion option (i.e., use of self-exclusion in Period 1) is related to a roughly 17 hour increase in Period 2 time played (Appendix C

Table 45, model 6), a $8700 increase in Period 2 cash played (Table 47, model 6), and a $600 increase in Period 2 out of pocket spending (Table 49, model 6). Rather than suggest that the use of self-exclusion leads to increases in future play, what this more likely represents is the discovery of potential problem gamblers in the sample who have self-excluded at some point, but when they returned to playing (i.e., during Period 2), had much higher spending levels that the general population due to their likely control issues. This theory is supported by the fact that when we look at the same player over time (through the fixed effect models), we find that this positive effect on spending disappears and each use of the self-exclusion feature actually *reduces* spending by a statistically significant margin. Hours spent gambling reduces by roughly 12 hours (Table 46, model 6), cash played reduces by $4,100 (Table 48, model 6), and out of pocket spending reduces by $250 (Table 50, model 6), on average over the six month period.

Besides the results with the self-exclusion control, there is no robust evidence that control features (*My Money Limits*, *My Play Limits – Calendar*, and *My Stop Play*) have an effect on player behaviour. This is a consistent observation across all dependent variables, time played, cash played, and out of pocket spending. However, the sample issues due to player attrition and significant aggregation of time periods may be hiding significant effects. A more detailed data set may yield different conclusions about these variables.

The monitoring features in this data, namely *My Live Action* and *My Account Summary*, both appear to have an important (and statistically significant) relationship with player spending. The results from
Table 47 to

Table 50 suggest that there is a negative relationship between a player viewing their current play (*My Live Action*) and their spending. Each instance of the player viewing the screen is associated with a reduction of roughly $65 to $100 in cash played on average (Table 47, model 3; Table 48, model 3), equating to a decrease of roughly $2 to $3 in out of pocket spending (Table 49, model 3; Table 50, model 3).

Despite the negative relationship between a player viewing their current play and their spending, there appears to be a strong and statistically significant relationship between views of past play history (*My Account Summary*) and spending. Each instance of a player viewing their account summary screen is associated with approximately a $250 to $370 increase in cash played, on average over the six month period (Table 47, model 3; Table 48, model 3). Similarly, each instance is associated with an increase of $11 to $16 in out of pocket spending (Table 49, model 3; Table 50, model 3). This finding was supported in both the ordinary least squares model with lagged variables and the fixed-effect model, suggesting that the results are fairly robust.

Given prior research on gamblers chasing losses, the finding in regards to the monitoring features provides support for an explanation that the ability to observe past history may make players more likely to increase their play, in order to recoup past losses. That is, the evidence from this analysis suggests that the ability to view past history (and generally, on average, past losses) may be making these losses more lucid in players' minds, and therefore is encouraging chasing of losses. It should be noted that this could also be an occurrence of reversed causality, where players that have lost in the past and are chasing losses tend to view their account summary more often to review their progress; at this juncture it is unclear in which direction the effect is occurring. Nevertheless, this finding is quite disconcerting and this topic certainly warrants further study.

SUMMARY OF PLAYER TRACKING DATA RESULTS

This summary lists the key findings from the analysis of MPS Player Tracking data during the voluntary enrolment period.

- Money limits were the most popular feature among users, with roughly 16% of Period 1 player accounts using the feature, and 11.5% of Period 2 player accounts using the feature.

- No control feature other than money limits reached 5% usage in either period.

- On average, each use of the self-exclusion option is related to a reduction in six-month spending by roughly $4,100 in cash played (including re-invested winnings) and $250 in out of pocket cash played.

- Roughly 74% of player accounts had used the *My Live Action* monitoring feature at some point during the first six months of system availability, while 70% had viewed their money spent account summary and 50% had viewed their time spent account summary.

- Each view of the *My Live Action* feature is related to a reduction of $65 to $100 in cash played and $2.00 to $3.00 in out of pocket spending during the period, but each instance of a player viewing their account summary screen is associated with a $250 to $370 increase in cash played and $11 to $16 increase in out of pocket spending (on average over the six month period).

CHAPTER 4: VOLUNTARY MPS ENROLMENT VLT REVENUE IMPACT

VL REVENUE TRACKING DATA STUDY OBJECTIVES

This study assesses the impact of the MPS on VLT revenue activity in Nova Scotia. The study compiles, tracks, and analyzes VLT revenue activity across different periods of time when the MPS was not available to when the system was available on a voluntary and mandatory enrolment basis.

This chapter specifically charts and compares VLT revenue activity from the time that the MPS was not available to the time of full voluntary MPS enrolment. Before we provide the details of the study, we first present a discussion of the key findings.

Voluntary MPS Enrolment: VL Revenue Impact Key Findings

In general, VLT revenue activity decreased from the year prior to the MPS was implemented to the first year of full province-wide availability of the voluntary MPS enrolment. More specifically, the total wagered on VL and the total net revenue in the province each decreased by about 6%. In terms of per VLT revenue, weekly net revenue per VLT decreased by about 5.7%. The largest decline in net VL revenues per VLT was experienced by VLTs located in break-open and VL charity/non-profit outlets and bowling lanes (-11%). VLTs in motels, hotels, motor lodges, and restaurants/takeout, on the other hand, did not experience a decrease in the net revenues per VLT that they generated.

VL REVENUE TRACKING DATA STUDY METHODOLOGY

The Atlantic Lottery Corporation (ALC) compiled and provided monthly VL revenue data for Nova Scotia from July 2008 to June 2011. This data includes all revenue activity for VLTs in Nova Scotia. The ALC is jointly owned by the four Atlantic provincial governments and is responsible for operating all lottery games, including VLTs, in the Atlantic provinces. This chapter presents VL revenue activity for three periods, which covers the process of full implementing the voluntary MPS enrolment across the province of Nova Scotia.

- **Pre-MPS**

This period was the 12 months prior to the MPS being implemented anywhere in the province. It occurred from July 2008 to June 2009.

- **Partial MPS**

This period covers the 12 months during which the voluntary MPS enrolment was only available to some of the province. It includes the initial four-month field test conducted in Sydney to test the system and a VL retailer MPS promotion program to players, as well as the slow gradual

rollout of the system to eventually cover all VL retailers in the province. This period went from July 2009 to June 2010.

- **Full MPS**

This period covers the first 12 months during which the voluntary MPS enrolment was implemented province wide and available to all VL players in the province. It was from July 2010 to June 2011.

RESULTS

Total Wagered (i.e., Cash-in)

In the 12 months prior to the MPS being available to Nova Scotia, VL players in Nova Scotia wagered a total of about 712 million dollars[33] on VLTs in the province (see Table 51: "Cash In"). In the next year when the voluntary MPS was implemented to some degree in the province, this number decreased by more than 33.3 million and by the time the MPS was fully implemented in the province, the total wagered decreased by another 5 million to about 673 million dollars (see Table 51: "Cash In")

Net Revenue (i.e., Cash in – Cash out)

In the 12 months before the MPS was available, VL generated net revenues (i.e., Cash in – Cash out) of approximately148 million dollars for the province. In the first year of the voluntary MPS enrolment when the system was not widespread, there was a decrease of about 3.1% to about 143 million dollars. In the next year, when the system was fully implemented across the province, net revenue dropped another 2.7% to 139 million dollars (see Table 51). In total, after 12 months of the MPS being fully available to the entire province on a voluntary enrolment basis, net VL revenue decreased 5.7% from pre-MPS net revenue levels.

Table 51 also presents the number of VL establishments and terminals during these same three time periods. While total wagered and net revenue decreased from the pre-MPS to Partial or Full MPS, the number of terminals actually rose slightly from 2,228 pre-MPS to over 2,245 during the Partial and Full years. VLT establishments, on the other hand, declined from 369 Pre-MPS to 346 at Full MPS (-6.2%).

Table 51: Net VL Revenue By Voluntary MPS Enrolment Availability

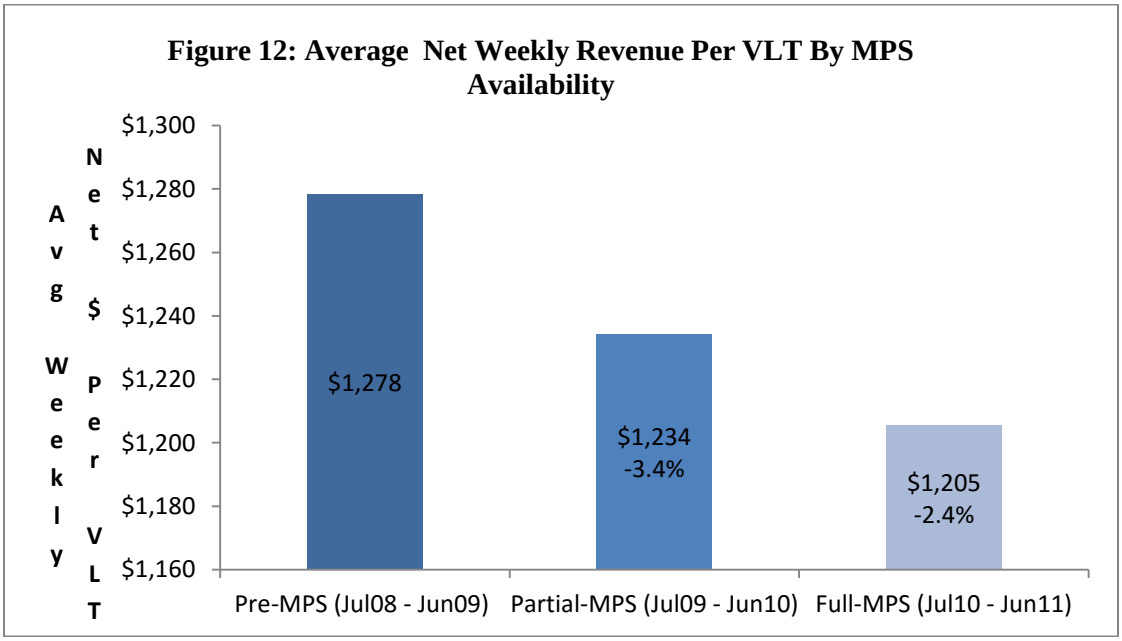
MPS Period	Pre-MPS	Partial MPS	Full MPS
Year	July 08 – June 09	July 09 – June 10	July 10 – June 11
Cash In	$711,893,705	$678,523,271	$673,441,489
Cash Out	$564,198,771	$535,418,183	$534,186,943

[33] This amount refers to the total wagered on machines, including money from "out of pocket" and recycled winnings occurring during a playing session.

MPS Period	Pre-MPS	Partial MPS	Full MPS
Net Revenue	**$147,694,934**	**$143,105,087**	**$139,254,546**
% Change from Previous Year		-3.1%	- 2.7%
VL Establishment Count	369	360	346
Terminal Count	2,228	2249	2246

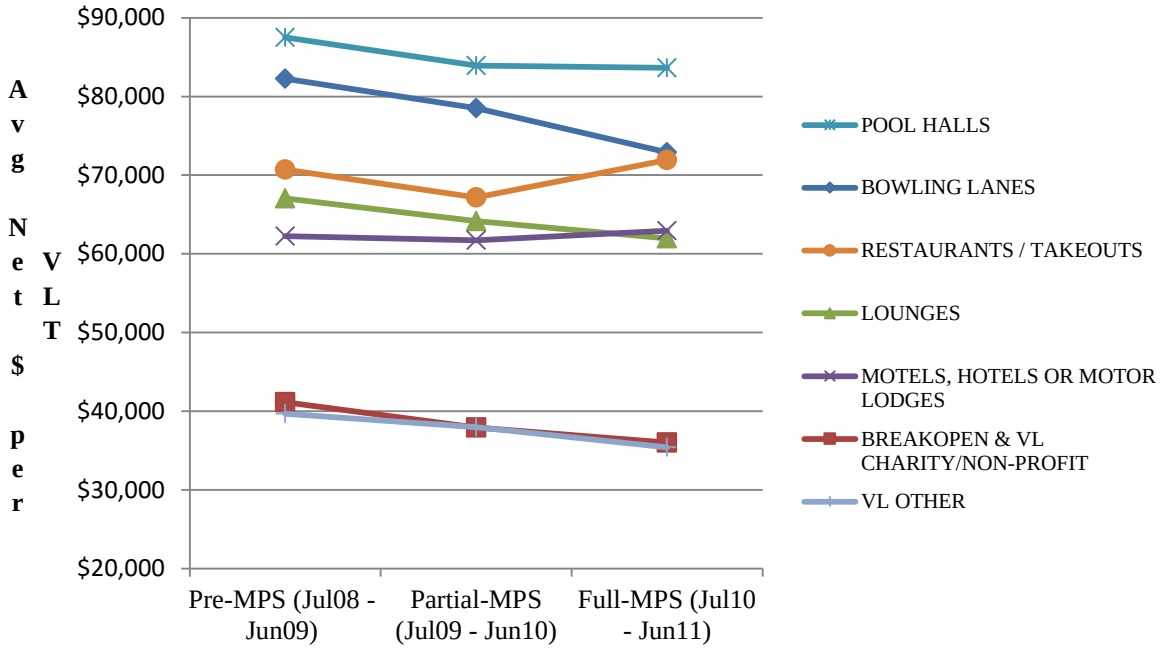
Since VL revenue varies with the number of VLTs available to players, we analyzed calculated revenue per VLT over the evaluation period. Figure 12 reports the average net weekly revenue per VLT for all VLTs in the province. As shown, there was a steady decline across the time periods. Prior to MPS implementation, VLT averaged net revenues of $1,278 per VLT. This figure decreased 3.4% during the partial-MPS and another 2.4% by the full-MPS. In total by the time the voluntary MPS enrolment had been available for a full year, weekly net revenue decreased about 5.7% from pre-MPS level.

Figure 12: Average Net Weekly Revenue Per VLT By MPS Availability



Lastly, VLTs are available in 7 different types of business establishments in Nova Scotia. We broke down the net VL revenue according to VL retailer type across the three MPS availability periods in Figure 13. As indicated by those retailers with the steepest downward slopes, revenue per VLT decreased the most for VLTs located in break-open and VL charity/non-profit outlets (12% decrease) and bowling lanes (11% decrease). All other VLT retailers experienced declines except for motels, hotels and motor lodges (1.1% increase) and restaurants/takeouts (1.7% increase), where revenue remained relatively stable or increased.

Figure 13: VL Retailer Average Net VL Revenue by MPS Availability



SUMMARY OF VOLUNTARY MPS ENROLMENT VLT REVENUE DATA RESULTS

This summary lists the key findings from the analysis of VL revenue activity occurring during the pre-MPS and partial and full voluntary MPS enrolment periods.

- The total wagered on VLTs during the first year of the full province-wide implementation of the voluntary MPS enrolment was about 673 million dollars. This amount was lower than the roughly 712 million wagered in the year prior to the MPS being implemented.

- Net VL revenue decreased 5.7% from pre-MPS levels in the first year of full province-wide availability of voluntary MPS enrolment. During this same period, the number of VLT retailers decreased about 6%.

- After the first year that the voluntary MPS enrolment had been available province wide, weekly net revenue per VLT decreased about 5.7% from the pre-MPS revenue level.

- Amongst the 7 types of VL retailers, only VLTs in motels, hotels, motor lodges, and restaurants/takeouts did not experience a decrease in net revenue per VLT after the voluntary MPS enrolment had been fully implemented across the province.

- Net revenue per VLT decreased the most (approximately 11%) from VLTs located in break-open and VL charity/non-profit outlets and bowling lanes.

Appendix A

Detailed Statistical Procedures and Criteria

Pearson Chi-Square

The adjusted standard residuals for each table cell were used to identify the individual variable groups that specifically differed from the total population (i.e., adjusted standard residual > |2|). Due to the low counts for some variables, some chi-square analyses were limited by cells with expected value counts of less than five. If a chi-square result was significant in these cases, the overall number of cells for the analysis had to be greater than nine to qualify for further interpretation. Furthermore, for analyses with over nine cells, at least 80% of the cells had to have expected counts greater than five for a significant result to be reported. In some cases, original categories with low counts were combined to increase statistical power of the chi-square analyses and circumvent the expected value cell requirements.

ANOVA (Analysis of Variance)

Significant mean differences were accepted only when the assumptions of homogeneity of variance and normal distribution had been satisfied. Because the money and time expenditures were skewed with extreme outliers, we transformed the data into their log values to normalize the sample distribution. ANOVA was conducted using the log values and log means.

Averages

Due to the high variability in the raw data for these gambling expenditure variables, we refer to the geometric means or averages in the report. The geometric mean is the average of the logarithmic values of a dataset, converted back to base 10 number.[34] This type of average is a more stable indicator of the central tendency of the data because it is more resistant to extreme outliers (as opposed to the arithmetic mean which is affected greatly by extreme scores).

[34] The geometric mean is calculated by multiplying the scores and taking the nth root of the product. For monthly money and time expenditures, there were 0 scores, which would result in a geometric mean of 0. To eliminate 0 scores, we added 1 to all the scores and calculated the geometric mean from those adjusted scores.

Appendix B

Past Year Gambling Participation of Total Sample by Survey

Gambling Activity	Baseline (95%:CI)	Time 1 (95%:CI)	N
Lottery***[35]	**35.3 (30.7-39.8)**	**57.6 (52.9-62.3)**	434
Casino table games (e.g., poker, blackjack, roulette and keno)**[36]	**6.0 (3.8-8.2)**	**2.5 (1.0-4.0)**	434
Instant win, scratch, break-open or pull tab tickets***[37]	**15.9 (12.4-19.4)**	**26.5 (22.3-30.7)**	434
Casino slots***[38]	**12.4 (9.3-15.6)**	**7.1 (4.7-9.6)**	434
Bingo	3.0 (1.4-4.6)	3.9 (2.1-5.8)	434
Sports select (e.g., Pro-line, Over/under)	1.6 (0.4-2.8)	0.7 (-0.7 - 1.5)	434
Internet sports gambling	.2 (-0.0 - 6.8)	.4 (-0.2-1.1)	434
Horse racing (on and off-track)	.9 (0.0-1.8)	.5 (-.2-1.1)	434
Internet non-sports gambling	1.4 (0.3-2.5)	0.9 (0.0 - 1.8)	434

* <.05, ** <.01, *** < .001

PGSI Classification among All Gamblers by Survey

PGSI classification	Baseline	Time 1	N
Mean PGSI score ***[39]	**.89 (.45-1.33)**	**.31 (.02-.60)**	**184**
PGSI Classification			
% of at-risk gambling	8.4 (4.2-12.7)	4.2 (1.1-7.3)	166
% of moderate/severe problem gambling **[40]	**10.2 (5.6-14.9)**	**4.2 (1.3-7.3)**	**166**

* <.05, ** <.01, *** < .001

Past Year Gambling Participation of Total Sample by Survey Sample

Gambling Activity	Baseline % n=2001	Time 1 % n=1619	N
Lottery***	**29.3**	**51.5**	3620
Casino table games (e.g., poker, blackjack, roulette and keno)	8.5	7.5	3620
Instant win, scratch, break-open or pull tab tickets***	**13.3**	**22.5**	3620

[35] The medians for baseline and time 1 are 0 and 1, respectively. Z=-7.87, p=.001, r=.38
[36] The medians for baseline and time 1 are 0 and 0, respectively. Z=-2.89, p =004, r=.14
[37] The medians for baseline and time 1 are 0 and 0, respectively. Z=-4.56, p =000, r=.22
[38] The medians for baseline and time 1 are 0 and 0, respectively. Z=-2.26, p =001, r=.16
[39] The medians for baseline and time 1 are 0 and 0, respectively. Z=-3.41, p=.001, r=.25
[40] The medians for baseline and time 1 are 0 and 0, respectively. Z=-2.67, p=.008, r=.21

Gambling Activity	Baseline % n=2001	Time 1 % n=1619	N
Casino slots***	**10.9**	**7.7**	3620
Bingo**	**3.4**	**5.6**	3620
Sports select (e.g., Pro-line, Over/under)*	**2.1**	**3.2**	3620
Internet sports gambling	.3	.2	3620
Horse racing (on and off-track)	.7	.7	3620
Internet non-sports gambling	1.2	1.8	3620
Other **	**.7**	**1.7**	3620

* <.05, ** <.01, *** < .001

Problem Gambling among All Gamblers by Survey Sample

Problem gambling indicator	Baseline	Time 1	N
Mean PGSI score (CI:95%)	.71 (.52-.91)	.55 (.39-.71)	1779
PGSI classification			
% At-risk gambling (CI:95%) *[41]	**10.5 (8.3-12.7)**	**7.8 (6.2-9.5)**	1779
% Moderate and severe problem gambling (CI:95%)	6.5 (4.7-8.2)	4.6 (3.3-5.9)	1779

* <.05, ** <.01, *** < .001

[41] X^2=3.92 df=1, p=.046

Appendix C

Table 45: Time played using OLS model with lags

DV: Time Played	(1)	(2)	(3)	(4)	(5)	(6)	(7)
All gameplay sessions	0.337*** (3.88)	0.599*** (11.87)	0.706*** (11.65)	1.715*** (21.25)	1.711*** (21.25)	1.688*** (23.15)	1.713*** (21.24)
Lag of gameplay sessions	-0.00616 (-0.16)	-0.0586* (-2.33)	-0.114*** (-4.40)	-0.172* (-2.33)	-0.171* (-2.32)	-0.190** (-2.85)	-0.171* (-2.32)
RG only sessions	0.430** (3.24)	0.115 (1.27)	0.00892 (0.10)	0.444 (1.58)	0.398 (1.48)	-0.0735 (-0.28)	0.416 (1.51)
Lag of RG only sessions	-0.0597 (-0.65)	-0.00815 (-0.09)	-0.00562 (-0.06)	-0.0270 (-0.15)	-0.0258 (-0.14)	-0.0779 (-0.46)	-0.0232 (-0.13)
RG and gameplay sessions	0.320*** (3.56)	-0.274*** (-5.04)	-0.482*** (-5.85)	-0.836*** (-6.74)	-0.829*** (-6.71)	-0.831*** (-7.45)	-0.831*** (-6.71)
Lag of RG and gameplay sessions	-0.00184 (-0.03)	0.151 (1.78)	0.229* (2.40)	-0.0369 (-0.29)	-0.0368 (-0.29)	0.0477 (0.41)	-0.0372 (-0.29)
Number of times player views "My Live Action"	0.0880*** (16.38)		-0.0406*** (-3.59)				
Lag of number of times player views "My Live Action"	-0.00640 (-0.24)		0.0702*** (3.75)				
Number of times player views "My Account Summary"		0.291*** (27.33)	0.394*** (12.51)				
Lag of number of times player views "My Account Summary"		-0.0525 (-0.89)	-0.0712 (-1.02)				
Number of times player sets "My Money Limit"				-0.887 (-0.55)			
Lag of number of times player sets "My Money Limit"				0.140 (0.11)			
Number of times player sets "My Play Limit" to calendar					-0.0538 (-0.01)		
Lag of number of times player sets "My Play Limit" to calendar					-0.202 (-0.03)		
Number of times player sets "My Play Limit" to self-exclude						1.352 (0.37)	
Lag of number of times player sets "My Play Limit" to self-exclude						16.97*** (4.91)	
Number of times player sets "Quick Stop" to 24-72 hours							0.0829 (0.04)
Lag of number of times player sets "Quick Stop" to 24-72 hours							-0.491 (-0.20)
Model Constant	-0.201 (-0.57)	-0.449 (-1.92)	-0.666** (-3.04)	-0.758 (-1.07)	-0.776 (-1.11)	-0.600 (-0.94)	-0.783 (-1.12)

t statistics in parentheses, n=116
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 46: Time played using fixed-effect model

DV: Time Played	(1)	(2)	(3)	(4)	(5)	(6)	(7)
All gameplay sessions	0.273*** (3.96)	0.300*** (5.43)	0.435*** (10.39)	0.523*** (5.23)	0.523*** (5.23)	0.532*** (5.56)	0.523*** (5.23)
RG only sessions	-0.196 (-1.13)	-0.375** (-2.69)	-0.885*** (-7.92)	-0.620* (-2.37)	-0.610* (-2.35)	-0.611* (-2.46)	-0.609* (-2.35)
RG and gameplay sessions	0.458*** (4.37)	0.141 (1.61)	-0.529*** (-5.85)	0.480** (3.02)	0.479** (3.01)	0.429** (2.80)	0.479** (3.01)
Number of times player views "My Live Action"	0.0494*** (12.31)		-0.121*** (-10.36)				
Number of times player views "My Account Summary"		0.206*** (17.00)	0.645*** (14.90)				
Number of times player sets "My Money Limit"				0.567 (0.33)			
Number of times player sets "My Play Limit" to calendar					0.417 (0.07)		
Number of times player sets "My Play Limit" to self-exclude						-12.35** (-3.29)	
Number of times player sets "Quick Stop" to 24-72 hours							-0.0289 (-0.01)
N	232	232	232	232	232	232	232

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 47: Cash played using OLS model with lags

DV: Cash Played	(1)	(2)	(3)	(4)	(5)	(6)	(7)
All gameplay sessions	-132.7 (-1.97)	-119.2* (-2.49)	206.6*** (6.25)	274.7*** (7.41)	272.4*** (7.36)	260.0*** (7.98)	273.1*** (7.37)
Lag of gameplay sessions	77.32* (2.52)	78.84** (3.32)	-3.681 (-0.26)	39.00 (1.15)	39.48 (1.16)	29.96 (1.00)	39.49 (1.17)
RG only sessions	185.2 (1.79)	70.96 (0.83)	-181.5*** (-3.80)	204.1 (1.59)	176.5 (1.43)	-65.78 (-0.56)	185.3 (1.46)
Lag of RG only sessions	-111.2 (-1.56)	-78.05 (-0.95)	-268.3*** (-5.46)	-94.69 (-1.11)	-95.96 (-1.13)	-126.0 (-1.68)	-94.68 (-1.11)
RG and gameplay sessions	275.6*** (3.94)	123.7* (2.40)	-447.4*** (-9.95)	-71.73 (-1.26)	-67.70 (-1.19)	-68.61 (-1.37)	-69.08 (-1.21)
Lag of RG and gameplay sessions	-113.9* (-2.30)	-50.38 (-0.62)	-163.4** (-3.14)	-131.9* (-2.26)	-131.6* (-2.25)	-88.23 (-1.70)	-131.7* (-2.25)
Number of times player views "My Live Action"	23.30*** (5.58)		-101.4*** (-16.45)				
Lag of number of times player views "My Live Action"	19.44 (0.95)		63.11*** (6.18)				
Number of times player views "My Account Summary"		104.0*** (10.33)	370.3*** (21.56)				
Lag of number of times player views "My Account Summary"		-30.00 (-0.54)	141.0*** (3.71)				
Number of times player sets "My Money Limit"				-520.9 (-0.71)			
Lag of number of times player sets "My Money Limit"				-51.10 (-0.09)			
Number of times player sets "My Play Limit" to calendar					-477.1 (-0.25)		
Lag of number of times player sets "My Play Limit" to calendar					7.717 (0.00)		
Number of times player sets "My Play Limit" to self-exclude						-202.9 (-0.12)	
Lag of Number of times player sets "My Play Limit" to self-exclude						8699.7*** (5.63)	
Number of times player sets "Quick Stop" to 24-72 hours							-79.84 (-0.08)
Lag of number of times player sets "Quick Stop" to 24-72 hours							-205.8 (-0.19)
Model Constant	349.5 (1.28)	330.6 (1.49)	14.66 (0.12)	246.2 (0.76)	227.7 (0.71)	329.0 (1.15)	219.0 (0.68)

t statistics in parentheses; n=116
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 48: Cash Played spending using fixed-effect model

DV: Cash Played	(1)	(2)	(3)	(4)	(5)	(6)	(7)
All gameplay sessions	264.5*** (5.25)	254.2*** (5.15)	326.8*** (6.93)	267.5*** (5.56)	267.4*** (5.55)	270.4*** (5.73)	267.4*** (5.55)
RG only sessions	-98.05 (-0.77)	-88.98 (-0.71)	-363.9** (-2.89)	-101.5 (-0.81)	-102.9 (-0.83)	-103.4 (-0.85)	-102.9 (-0.83)
RG and gameplay sessions	-15.31 (-0.20)	-35.12 (-0.45)	-396.0*** (-3.89)	-15.27 (-0.20)	-15.06 (-0.20)	-31.62 (-0.42)	-15.06 (-0.20)
Number of times player views "My Live Action"	0.577 (0.20)		-65.02*** (-4.95)				
Number of times player views "My Account Summary"		12.23 (1.13)	248.9*** (5.10)				
Number of times player sets "My Money Limit"				-76.52 (-0.09)			
Number of times player sets "My Play Limit" to calendar					51.46 (0.02)		
Number of times player sets "My Play Limit" to self-exclude						-4109.2* (-2.22)	
Number of times player sets "Quick Stop" to 24-72 hours							-1.429 (-0.00)
N	232	232	232	232	232	232	232

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 49: Out of pocket spending using OLS model with lags

DV: Out of pocket spending	(1)	(2)	(3)	(4)	(5)	(6)	(7)
All gameplay sessions	-24.96*** (-4.46)	-19.63*** (-4.47)	-10.24 (-1.82)	19.49*** (5.66)	19.49*** (5.68)	18.65*** (5.79)	19.50*** (5.67)
Lag of gameplay sessions	12.19*** (4.80)	10.81*** (4.95)	9.234*** (3.85)	6.618* (2.10)	6.620* (2.11)	5.965* (2.02)	6.621* (2.11)
RG only sessions	3.586 (0.42)	-5.075 (-0.64)	-11.68 (-1.43)	2.690 (0.22)	2.667 (0.23)	-13.86 (-1.20)	2.685 (0.23)
Lag of RG only sessions	-8.173 (-1.38)	-14.19 (-1.87)	-21.55* (-2.57)	-7.105 (-0.90)	-7.182 (-0.91)	-9.234 (-1.24)	-7.178 (-0.91)
RG and gameplay sessions	20.78*** (3.59)	5.743 (1.21)	-10.13 (-1.32)	-16.28** (-3.07)	-16.28** (-3.09)	-16.35** (-3.32)	-16.28** (-3.08)
Lag of RG and gameplay sessions	-16.16*** (-3.93)	-20.04** (-2.70)	-26.60** (-3.00)	-17.15** (-3.16)	-17.15** (-3.16)	-14.18** (-2.76)	-17.14** (-3.15)
Number of times player views "My Live Action"	2.902*** (8.38)		-2.715* (-2.58)				
Lag of number of times player views "My Live Action"	-0.654 (-0.39)		0.394 (0.23)				
Number of times player views "My Account Summary"		9.104*** (9.84)	16.32*** (5.58)				
Lag of number of times player views "My Account Summary"		5.569 (1.08)	12.66 (1.95)				
Number of times player sets "My Money Limit"				-0.452 (-0.01)			
Lag of number of times player sets "My Money Limit"				-5.144 (-0.10)			
Number of times player sets "My Play Limit" to calendar					-21.26 (-0.12)		
Lag of number of times player sets "My Play Limit" to calendar					5.849 (0.02)		
Number of times player sets "My Play Limit" to self-exclude						-15.02 (-0.09)	
Lag of number of times player sets "My Play Limit" to self-exclude						596.4*** (3.90)	
Number of times player sets "Quick Stop" to 24-72 hours							-6.259 (-0.07)
Lag of number of times player sets "Quick Stop" to 24-72 hours							1.640 (0.02)
Model Constant	48.03* (2.13)	42.28* (2.08)	36.43 (1.79)	29.19 (0.96)	28.96 (0.97)	36.19 (1.29)	28.73 (0.96)

t statistics in parentheses; n=116
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 50: Out of pocket spending using fixed-effect model

DV: Out of pocket spending	(1)	(2)	(3)	(4)	(5)	(6)	(7)
All gameplay sessions	5.776* (2.29)	5.834* (2.41)	8.563*** (3.55)	8.273** (3.28)	8.270** (3.28)	8.456*** (3.45)	8.270** (3.28)
RG only sessions	4.181 (0.66)	2.617 (0.43)	-7.706 (-1.19)	0.115 (0.02)	0.0684 (0.01)	0.0383 (0.01)	0.0683 (0.01)
RG and gameplay sessions	-1.364 (-0.36)	-4.835 (-1.26)	-18.39*** (-3.53)	-1.163 (-0.29)	-1.157 (-0.29)	-2.193 (-0.56)	-1.157 (-0.29)
Number of times player views "My Live Action"	0.492*** (3.35)		-2.441*** (-3.63)				
Number of times player views "My Account Summary"		2.242*** (4.22)	11.13*** (4.46)				
Number of times player sets "My Money Limit"				-2.550 (-0.06)			
Number of times player sets "My Play Limit" to calendar					-0.0342 (-0.00)		
Number of times player sets "My Play Limit" to self-exclude						-257.1** (-2.68)	
Number of times player sets "Quick Stop" to 24-72 hours							-1.143 (-0.01)
N	232	232	232	232	232	232	232

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$